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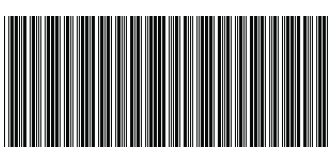

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IMPORTANCE OF INDUSTRY-ACADEMIA COLLABORATION IN HIGHER EDUCATION

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Abstract:
University-Industry cooperation is important. Student and staff placement for internship, industrial visits, final year projects, faculty consultancy and research will result from industry-university cooperation. A communication channel should be established between the program department and relevant industry. Ways to establish cooperation channel are suggested in this paper.

Introduction:
In to-day's world, we must be aware of the fact that in developed countries a student graduating from a University without the industry knowledge is unthinkable. While recruiting new graduates in our country, industries often face lot of problems because no one basically possesses any practical knowledge. Their theoretical knowledge is far away from the industry practice. That is why everyone looks for the experienced people. But a fresh graduate does not possess any practical experience in his or her field of studies despite the University having enough resources to set up the learning environment for the faculty members and students. The main reason, there is no effective collaboration between academia and industry in our country.

1.Mission of some Universities:
The mission of Higher Education Funding Council of England equivalent to our University Grants Commission (UGC) is quoted here: "To promote and support productive interaction between higher education and industry & commerce in order to encourage the transfer of knowledge & expertise, and enhance the relevance of programs of teaching and research to the needs of employers and the economy". The mission statements of some Universities at home and abroad are as follows:

MIT: The mission of MIT is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.
TEXAS A&M: The mission of Texas A&M University-Kingsville is to develop well-rounded leaders and critical thinkers who can solve problems in an increasingly complex, dynamic and global society.
Bangladesh University of Engineering and Technology (BUET): The vision of BUET is to be a Model Center of Excellence through sustained engagement with business, industry, public sector and international partners; shaping the future success of our graduates operating in a global environment, and advancing the prosperity of Bangladesh.
AIUB: American International University-Bangladesh (AIUB) is committed to provide quality and excellent computer-based academic programs responsive to the emerging challenges of the rapid technological advancements. The AIUB is dedicated to nurture and produce competent world-class professionals imbued with strong sense of ethical values ready to face the competitive world of arts, business, science, social science and technology.
From all the above statements it appears that the mission of a University should be to generate new knowledge, pursue research and disseminate them through teaching, training and publications to dispel ignorance and to ensure welfare of humankind. The University should always create an enabling environment to encourage and reward innovation and entrepreneurship. Industry-academia collaboration is an essential requirement to promote research and quality education in a University and also to achieve the above objectives. This collaboration may be pursued in different ways:

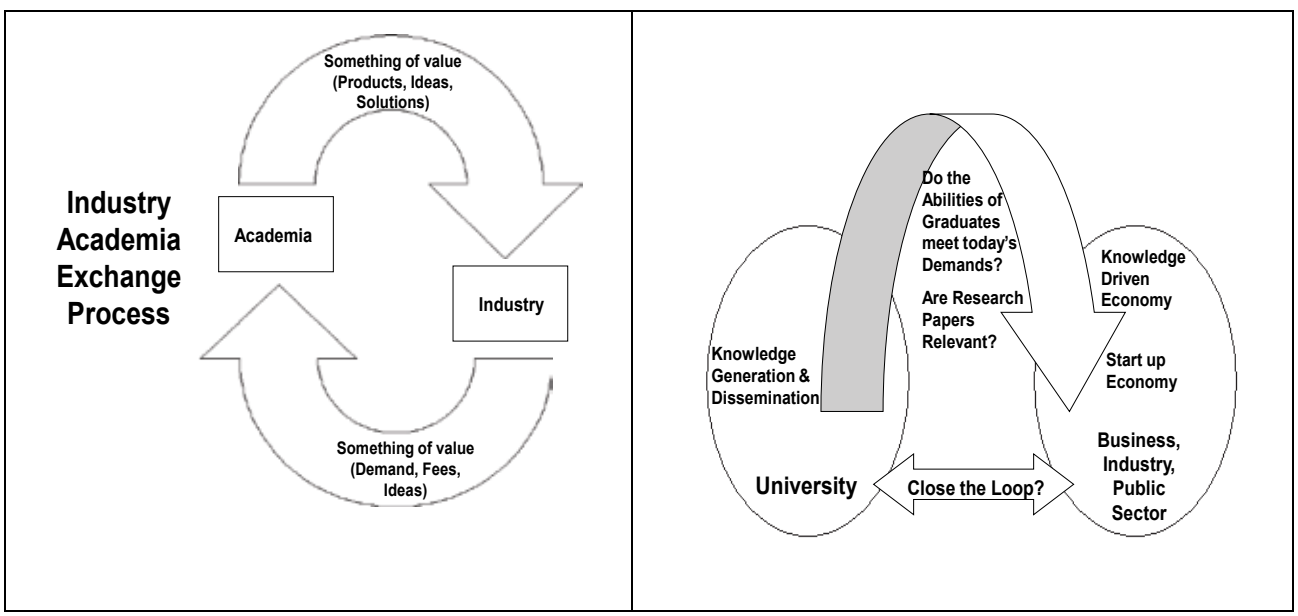
2.Interaction with the Industry:
The common interaction between academia and industry is that of producer-consumer relationship that necessitates some collaboration as the consumer has to ensure that the output of the producer satisfies their needs to a large extent. Hence, one form of collaboration, which is more in the nature of a feedback loop, is for the industry to provide inputs back to the academic institutions regarding their perception or evaluation of their products.
Many institutions have the courseware and ability to provide training for high-end manpower development. Many of these topics may be of interest to industry. Therefore, a natural collaboration possibility is for the academic faculty and

institutes to conduct training in topics of interest for industry. This form of relationship is also beneficial to both. Typically, in this form of collaboration, continuing education programs are offered which are designed for industry participants. Or, short courses may be offered by some faculty in some company or some common place.

One way to have interactions with industry is by establishing an Industry Advisory Panel (IAP) in which majority members are from the industry including the chairperson. IAP should meet at least once annually. The meeting agenda should include, among others, discussions on Program Educational Objectives (PEOs), Program Outcomes (POs), Curriculum and performance of past graduates. Assessment Committee prepares the survey questionnaire and conducts PEO assessments. Discrepancies and shortcomings from PEOs targets should be discussed at IAP meetings. IAP recommendations on PEOs may prompt adjustment of POs, Course Outcomes (COs), teaching and learning activities and the curriculum.

Another way to secure industry cooperation is by establishing Alumni Association Office (AAO) to work full time on alumni related activities. The AAO should have updated contact information (names, telephone numbers, email addresses, place of work, nature of work with position held, etc.) of past graduates. The AAO should regularly send to alumni university newsletters, bulletins, important event notices, etc. Invite alumni on special occasions and also for guest lectures. They should be invited to provide feedback on review of PEOs, POs, curriculum, and teaching-learning practices.

Other areas of collaboration are applied research where industry has interest, consultancy, outsourcing, product design, software development and customization etc. Research can be considered as the activity of creating new knowledge which helps an industry generate more revenue and profits. In Bangladesh, till recently there was no awareness for research in most companies but that seems to be changing now in view of changing global scenario. Research can help service the constant demand for improvement in quality, lowering costs by using energy efficient methods and creating more value. It can also help develop new approaches for solving problems, as engineers and managers may not be able to do this using the existing knowledge. Industry in Bangladesh often looks for "consultants" in academic community – basically experts who can guide them in solving their problems considering long term sustainability and environmental issues. Industry-Academia exchange process can be summarized in the following diagrams:



Conclusion:

The above vision can be realized by organizing seminars, workshops, conferences, job fairs, visits involving industry and academia people and regular up gradation of academic curricula matching with industry needs and technology trends. This is possible only when academia seeks to understand industry requirements in creating new knowledge, new ideas, new product development, solution to problems faced etc. Such links can be promoted by seeking joint research projects, selecting faculty to be members of professional societies, granting sabbaticals to faculty and encourage them to spend time in industry, recruiting teaching people having industry experience, setting-up innovation and enterprise centers. The outcome of such sustainable links would be relevant curricula, faculty with real life experience, business case writing ability, relevant research, more funds for R&D, quality graduates to cope with real world, reduce academia-industry barriers and bring them closer, remove fear of real world from the minds of students and thereby contribute to nation building efforts.

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Board of Accreditation for Engineering and Technical Education (BAETE), Accreditation Manual for Undergraduate Engineering Programs (March 2019) Baetebangladesh.org. Available at: https://baetebangladesh.org/ (Accessed: July 19, 2023).

IEA graduate attributes and professional competency profiles (2013) Ieagreements.org. Available at: https://www.ieagreements.org/assets/Uploads/Documents/Policy/Graduate-Attributes-and-Professional-Competencies.pdf (Accessed: July 19, 2023).

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4IR001

THREE DEVELOPMENT TRENDS OF HIGHER EDUCATION QUALITY ASSURANCE IN THE ASIA-PACIFIC REGION IN POST-COVID ERA: LITERATURE REVIEW ON APQN ACADEMIC CONFERENCE IN SINGAPORE

-Jianxin Zhang , Xianmei Zhu ,Yangyang Wang , Siyu Zhang

Abstract:
The COVID-19 pandemic has a broad and long-term impact on politics, economy, culture, education and other fields around the world. Based on the new changes and challenges in higher education quality assurance(HEQA) in the post-COVID era, the Asia-Pacific Quality Network(APQN) held APQN Academic Conference with the theme of "Quality Assurance for Higher Education under COVID-19 Pandemic and Beyond in the Asia-Pacific Region" in Singapore. More than 120 representatives from 27 countries/regions conducted 36 speeches to delve into the development trends of digitization, internationalization and diversification in HEQA. Firstly, based on the concept of "human-centred", HEQA digitization reshapes the characteristics and connotation of HEQA digitization from three levels of idea guidance, practical exploration and evaluation transformation; secondly, HEQA internationalization is based on the dual perspectives of internationalization and glocalization to explore QA issues with the tendency of globalization; finally, HEQA diversification focuses on the "trinity" made up of universities, quality assurance agencies and governments to improve the quality of higher education. It can be said that the new transformation of QA in the post-COVID era is digitization, the way out for global economy QA is internationalization, and the main body of excellent quality in higher education is diversification.
Key words: the Asia- Pacific Region; higher education; quality assurance; development trend; digitization; internationalization; glocalization, diversification

Prologue
On November 24-27, 2022, the Asia- Pacific Quality Network (APQN) successfully held APQN Academic Conference (AAC) at Institute for Lifelong Learning in Singapore. More than 120 representatives from 27 countries and regions attended this face-to-face international event. The theme is "Quality Assurance for Higher Education under Covid-19 Pandemic and Beyond in the Asia-Pacific Region". APQN President, Prof.\Dr. Jianxin Zhang delivered the opening speech and made the theme speech entitled "Development trend of quality assurance of higher education in the the Asia- Pacific Region in the post-COVID pandemic era". Dr Wang Libing, Chief of Section for Educational Innovation and Skills Development (EISD) of Asia and Pacific Regional Bureau for Education of UNESCO and Dr Tariq Al-Sindi, the Chief Executive of the Education and Training Quality Authority of the Kingdom of Bahrain made the keynote speeches. Representatives from different countries focused on the three trends of "digitization", "internationalization" and "diversification" in higher education quality (HEQA), focusing on five sub-topics: (1) HEQA digitization: (2) information technology innovation; (3) HEQA internationalization; (4) outcome-based teaching and learning; and (5) the role of government. The whole AAC was well organized, with clear process, rich content and abundant information.

Trend 1: digitization of quality assurance is "human-centred"
The world is moving towards a digital era, and AAC placed "people" at the center of the entire educational ecology. Based on the core idea, technology represented by artificial intelligence (AI) has promoted the digital development of "human-centred" education, and has effectively guaranteed the improvement of HEQA.

1.1 Idea guidance: reshaping digital certification framework and standards
The description of the characteristics of digital education mainly focuses on two aspects. Firstly, the development of digital education cannot be separated from digital sharing. It has the characteristics of interconnection and dynamic sharing. It can break through the time and space constraints and spread educational resources across higher education institutions (HEIs), regions and countries. Secondly, the development of digital education is gradually shifting from "computational intelligence" to "human-centred intelligence", which means that the single technical attribute is gradually changing to a combination of technical and social attributes, with emphasis on "human" culture, emotions and value judgments[1]. Focusing on "sharing idea" and "human-centered intelligence", APQN and FIBA have respectively developed online teaching QA standards and learning QA tools.

1.1.1 Teaching quality: APQN online quality assurance standard
The application of AI technology in online teaching has been widely concerned, and online teaching QA has gradually become a hot topic around the world. Prof. Jianxin Zhang, APQN President developed "APQN Online

Teaching Quality Assurance Standard" (hereinafter referred to as "APQN Standard") from five aspects: (1) online teaching environment; (2) teachers' online teaching; (3) learners' online learning; (4) presentation of online teaching outcomes; and (5) online teaching quality assurance. Based on 5 principles of information, "teaching by learning", development, validity and objectivity/evidence, APQN Standard consists of 5 criteria, 14 indicators and 45 observation points (Table 1)[2]. which was released to the globe on May 31, 2021.

#	Criteria	Indicator	Observation points
1	**Online teaching environment**	service	3
		openness	3
		sustainability	3
2	**Teachers' online teaching**	Teaching design	4
		Teaching process	4
		Teacher's ICT literacy	5
3	**Learners' online learning**	Learning process	4
		Learner's ICT literacy	3
4	**Presentation of online teaching outcomes**	Outcomes of teaching and learning	2
		objective achievement	3
		satisfaction	2
5	**Online teaching quality assurance**	assessment method	3
		assessment mechanism	3
		quality improvement	3
Total	**5**	**14**	**45**

Table 1: APQN Standard for Online-Teaching Quality Assurance[3]

1.1.2 Learning quality: FIBAA's certification of Excellence in Digital Education

Quality assurance is essential at the digital age. Foundation for International Business Administration Accreditation (FIBA) has developed a new certification called "Excellence in Digital Education" – an innovative instrument to evaluate and assure quality of digital learning. Representing a holistic approach, the assessment of the digital teaching and learning environment is carried out on the basis of 5 standards and 23 associated criteria, all anchored in a detailed assessment guide. The FIBAA guide focuses on the following five areas: digitization strategy, staff, technology, didactic design and quality assurance .(Fig.1)[4]

[1] .Le Zhou , Xiumeng Feng. Education Evaluation: The Opportunities Challenges and Paths of High-quality Development from the Perspective of Digital Transformation[Z]. 2022 APQN Academic Conference, 2022-11-26.

[2].Jianxin Zhang. APQN Annual Report[R]. 2022 APQN Academic Conference, 2022-11-26.

[3].Jianxin Zhang. Theme Speech: Development trend of quality assurance of higher education in the the Asia- Pacific Region in the post-COVID pandemic era[Z]. 2022 APQN Academic Conference, 2022-11-26.

[4].Freiberger D, Antonia L. How the innovative FIBAA Quality Seal "Excellence in Digital Education" can contribute to Quality Assurance in a Digital World[Z]. 2022 APQN Academic Conference, 2022-11-25.

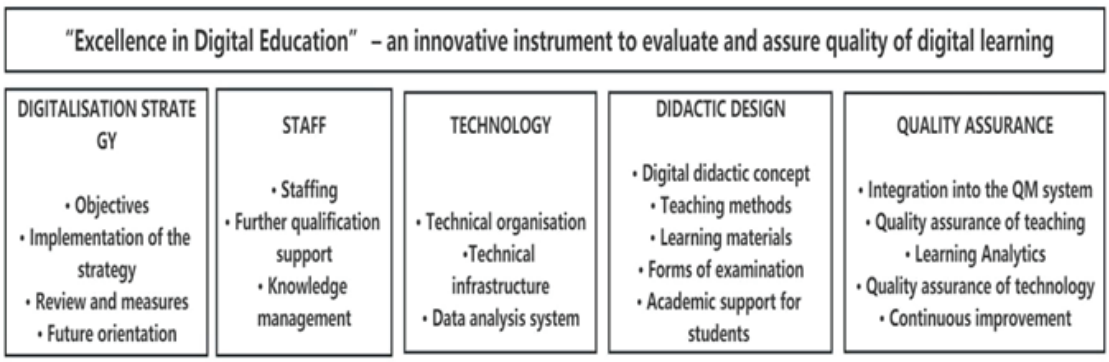

Fig. 1: Criteria map for "Excellence in Digital Education[1]

The most important criteria is "quality assurance", whose standard contains five underlying criteria: integration into the quality management(QM) system, quality assurance of teaching, learning analysis, quality assurance of technology and continuous improvement. This standard deals with the question of how the quality of digital teaching is ensured at HEIs. According to standard, the successful implementation of digital teaching requires its embedding in a systematic QM system that takes into account the specifics of digital teaching. According to FIBAA, HEIs should collect data from students in order to measure study progress, predict study performance and identify risks that jeopardize study success. Antonio Lü tgens of Mannham University in Germany pointed out, one of the advantages of the learning analysis system is to optimize the learning process in a transparent way to achieve its personalization.

1.2 Practice and exploration: focus on digital infrastructure and management

With the help of technological innovation and digital resource sharing, AAC gave full play to such technological empowerment as ChatGPT, so as to promote the development of digital education

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1.2.1 Technological innovation: Pakistan online learning management system

The development and maturity of digital technologies such as AI technology, big data technology, cloud computing technology and block chain technology have laid a solid technical foundation for the active development of innovative evaluation tools[2]. Associate professor Marlon Gamido from Tarak State University in U.S pointed out, the control objectives for information and related technology (COBIT) framework can help define the scope and expectations of information and communication technology resource. COBIT can be divided into four steps: (1) plan and organize; (2) acquire and implement; (3) deliver and support; and (4) monitor and evaluation[3]. The implementation of this technical framework lays the foundation for the future online learning management system.

Professor Arisha Maham from Pakiatan believes, online learning management system (LMS) is an automated software application for management, recording, tracking, reporting, teaching courses and online learning. Pakistan Higher Education Commission established an online learning management system (Fig. 2).

[1] Freiberger D, Antonia L. How the innovative FIBAA Quality Seal "Excellence in Digital Education" can contribute to Quality Assurance in a Digital World[Z]. 2022 APQN Academic Conference, 2022-11-25.

[2] Le Zhou , Xiumeng Feng. Education Evaluation: The Opportunities Challenges and Paths of High-quality Development from the Perspective of Digital Transformation[Z]. 2022 APQN Academic Conference, 2022-11-26.

[3] Marlon Gamido. ICT Resources Mobilization of State Universities and Colleges in Region III: Towards an Enhanced Management[Z]. 2022 APQN Academic Conference, 2022-11-26.

[4]Arisha Maham. The Role of Learning Management System in Online Teaching Readiness During the Challenging Time of Covid-19 Pandemic at Higher Education Institutions (HEIs)[Z]. 2022 APQN Academic Conference, 2022-11-26.

Focusing on the two cores of "system readiness" and "class readiness", the system realizes the dynamic monitoring of a series of activities such as collecting students' individual information data, verifying curriculum information, evaluating learning achievements, evaluating teachers' teaching and the survey of curriculum satisfaction, so as to improve the overall quality of

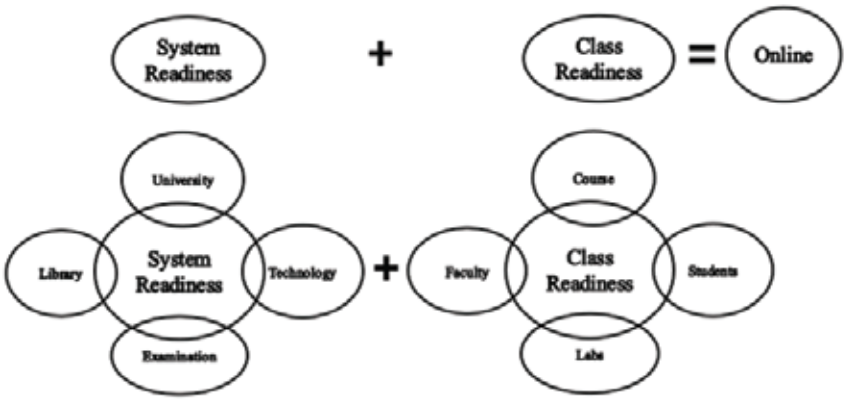

Fig. 2: Learning Management System.[2]

The online LMS brings three benefits to quality assurance: (1) LMS have become more transparent, and each individual is more accountable for his/her actions. It creates an environment in which everyone works to improve their teaching methodology and to improve his/her teaching methodology and to bring in more innovations to cater to the online students' demand; (2) LMS has also proven to be highly advantageous for instructors because it allows them to effortlessly manage students, update course information in real time, adapt to students' needs, and fix the problems; (3) the application of information technology has proven to be very beneficial for students in the sense that they have more time to spend on studying available course material, more access to information which helps in learning new concepts, and also proves to be beneficial in learning new skills such as analytical skills, great emphasis on teamwork, and it also equips them with the required skills for the job market in the future.[3]

1.2.2 Co-development and co-sharing: construction of digital resource platform

The online library system of Lahore School of Economics in Pakistan, is a typical example of digital resource platform. It consists of an internal resource library (12 communities) and an external resource library (19 communities). Users can use the online LMS to access both internal databases and external repository materials around the world. Prof. Wang Libing from UNESCO stressed that the establishment and operation of "large-scale open online courses" (MOOCs) platforms, such as Indonesia's ICEI, Japan's JMOOC, South Korea's KMOOC, Malaysia's M-MOOCs, China's School Online and Thailand's ThaiMOOC, have also contributed to the construction of digital resources. Florina Pînzaru said that digital resources not only help knowledge capital serve countries in the knowledge economy, but also simplify business operations, promote regional partnerships, and build complex networks(Fig.3).[4]

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[1]. Arisha Maham. The Role of Learning Management System in Online Teaching Readiness During the Challenging Time of Covid-19 Pandemic at Higher Education Institutions (HEIs)[Z]. 2022 APQN Academic Conference, 2022-11-26.

[2]. Arisha Maham. The Role of Learning Management System in Online Teaching Readiness During the Challenging Time of Covid-19 Pandemic at Higher Education Institutions (HEIs)[Z]. 2022 APQN Academic Conference, 2022-11-26.

[3]. Tanveer A, Syeda A.Digitization of Quality Assurance at the Lahore School of Economics[Z]. 2022 APQN Academic Conference, 2022-11-26.

[4]. Tanveer A, Syeda A.digitization of Quality Assurance at the Lahore School of Economics[Z]. 2022 APQN Academic Conference, 2022-11-26.

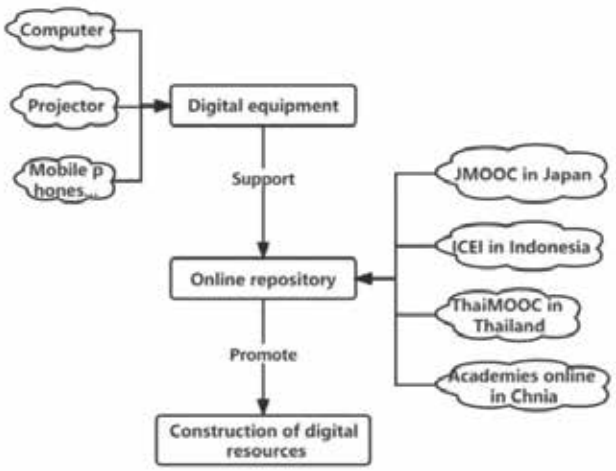

Fig. 3: Digital Resource Building Model

1.2.3 Technology empowerment: ChatGPT boosts the transformation of teaching path

We should move from "technology assistance" to "technology support", "technology enhancement" and "technology empowerment", and finally to HE learning and governance ecosystem of "technology embedding" and "technology integration".[1] On November 30, 2022, the ChatGPT technology released by American OpenAI triggered a global storm. Based on the large language model (LLM) of GPT-3.5 architecture, this technology promotes the value of digital transformation of university education, and explores the changes of new technology in "teaching" and "learning" in HEIs (Fig. 4).[2]

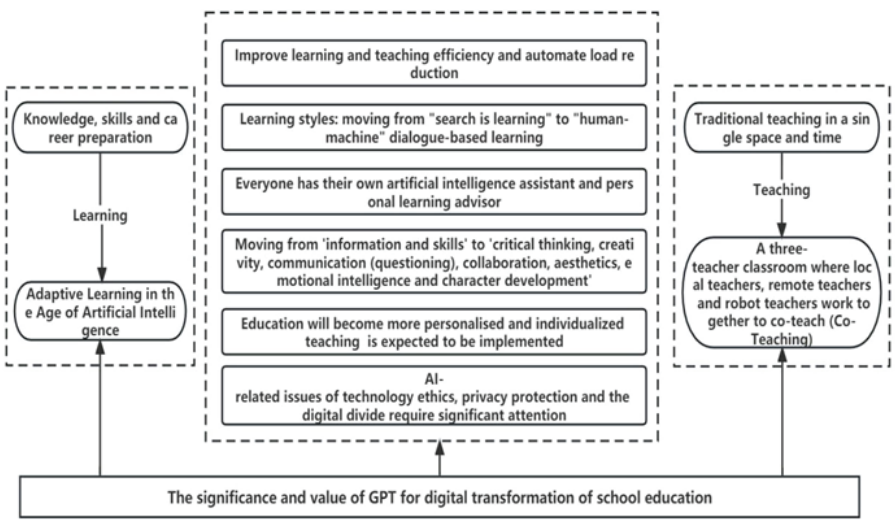

Fig.4: Chat GPT Boosting the path of Teaching Transformation

1.3 Evaluation transformation: innovative evaluation method of digital education

Innovating the evaluation method of digital education is a major reform of the traditional evaluation method. This new evaluation method pays more attention to students' active participation and feedback, and also ensures the objectivity and accuracy of the evaluation through peer review.

[1]. Libing Wang. The future of higher education: Takeaways from the UNESCO World Higher Education Conference 2022[EB/OL].(2022-12-13)[2023-05-08]. https://bangkok.unesco.org/content/future-higher-education-takeaways-unesco-world-higher-education-conference-2022-whec.

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1.3.1 Student feedback: comparison of the pre-revised and revised accreditation framework in India

The student feedback and peer evaluation are two key areas succumb to digitization. In terms of student feedback, compared with the hard (page) copy, the effect of soft (online) copy feedback submitted by students is poor. Therefore, Dr. Shyam Singh from Indian NAAC introduced that NAAC adopted the revised accreditation framework (RAF) (Table 2) in order to make the assessment more objective.[1] The completely subjective "student feedback system" is transformed into an objective and subjective "online student satisfaction survey". In digital education, the integration of both qualitative and quantitative indicators makes student feedback more objective, transparent and unified.

Pre-revised accreditation framework(PRAF)	Revised accreditation framework (RAF)
Completely subjective	Objective subjective
Based on questions and answers	Based on quantitative and qualitative indicators
Submission Self Study Report (SSR) in hard copies	Online submission of SSR
No data validation and verification	Third party data validation and verification
Student feedback system at Institution Level	Online Student Satisfaction Survey by NAAC
Benchmark not applied	Benchmark applied in quantitative indicators
Manual selection of peers for on-site peer team visit	System enabled selection of peers for on-site visit restricted to Qualitative Metrics
Peer Team Report – determines the grade of the institution	Peer Team Report – plays only minor part in determination of institution's grade

Table 2: Main differences between pre-revised and revised RAF

1.3.2 Peer review: five QA levels of Australian Peer Review Portal

The Tertiary Education Quality and Standards Agency (TEQSA) in Australia, refers to Peer Review Portal (PRP) as an online support mechanism which individuals, education providers, industry, networks and professional associations in reaching the national and international standards in external peer review. Dr. Sara Booth, PRP co-founder, takes the Online Peer Solutions Pty Ltd (OPS) as an example . She pointed, five QA levels in higher education have been impacted by digital and cloud-based technologies. PRP can support all QA levels, which includes: program/course review, institution review, cross-institution review, cross-agency and acceptations and cross-sector review.[2]

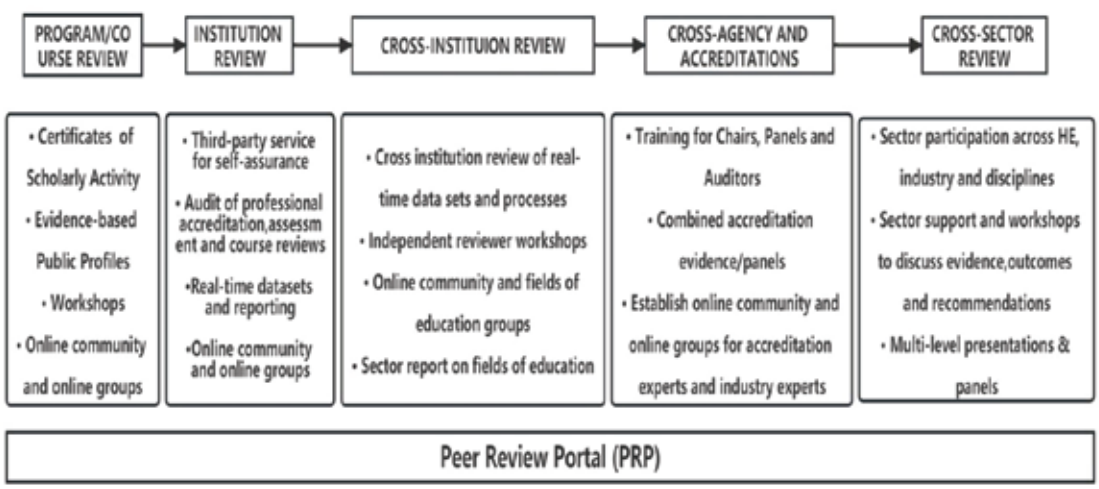

Fig. 5: The diagram of peer review portal model

Through its cloud-based platform, PRP and its QA support services can support glocal HE by building a glocal QA ecosystem which links partners across HE and communities to meet UNESCO's SDG4.

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[1].Inda S, Vinita S, Umashankar V, et al. Role of digitization in improving the Quality standards of Higher Education in India with special reference to Administration and Finance (NAAC) perspective[Z]. 2022 APQN Academic Conference, 2022-11-26.

[2].Sara Booth. Peer Review Portal: Digitizing Quality Assurance[Z]. 2022 APQN Academic Conference, 2022-11-25.

Trend 2: Internationalization of quality assurance: internationalization and glocalization go hand in hand

With the fast development of economic integration, the multi-dimensional regional and global cooperation among countries in the world is deepening. On the basis of international cooperation in quality assurance of transnational higher education (THE), cooperation in different regions and globally has increasingly become a new THE highlight in quality assurance.

2.1 Internal quality assurance of internationalization

As the main bodies of the construction and implementation of internal QA system, HEIs can learn from and exchange international education experience by carrying out international education exchange projects and implementing joint- researches, so as to improve the teaching effect and student quality.

2.1.1 Learning experience: comparison of learning effect satisfaction in four countries and regions

The Asia-Pacific Region has always attached great importance to education, but comprehensive researches on the learning satisfaction of local students are less conducted. In 2021, the QAAs and evaluation associations in Chinese Taiwan, Japan, Thailand and Vietnam jointly carried out an international survey. It found that students in these four regions were satisfied with the teaching results, but there were great differences in the teaching methods. The favorite teaching methods are "case study" in Chines Taiwan, "lecture and explanation from teachers" in Japan and Vietnam, "teamwork" in Thailand. Based on the result, it is inferred that students might value more how and what they learn, rather than who delivers the lesson.[1]

2.1.2 Teaching effect: Australian NEAS guarantees the quality of international English teaching

National ELT Accreditation Scheme (NEAS) is not only the leader of Australian QA English Language Teaching (ELT), but also the pioneer of international QA ELT. NEAS has a team of highly qualified and experienced QA assessors, who use their expertise to drill down into the QA framework areas to ensure that quality is not compromised in ELT centre and programs.[2] Besides, it is prudent to recognize the expected attributes – also known as 21st Century skills – that Generation Alpha will need to have, and to start engaging with international students, by embedding these skills in the major of English Language Intensive Course for Overseas Students (ELICOS). Thus, we should re-purpose ELICOS to align with higher education and the expected graduate attributes for global career readiness in the future.[3] HEIs should continue to provide students with practical learning opportunities, promote digital skills they learned, and encourage students to study sustainable development, social justice, tolerance and glocalization in project learning.

2.1.3 Joint accreditation: Japan, Chinese Taiwan and Thailand build international joint certification

As global society continues to change dramatically with Industry 4.0, the demand for quality higher education that fosters a global mindset is increasing. Responding to this demand, universities worldwide are undertaking their education internationalization: classes taught in English, study abroad opportunities, dual/double degree courses with overseas universities, and branch campuses.[4] Japan University Accreditation Association (JUAA), Chinese Taiwan Assessment and Evaluation Association(TWAEA) and Thailand Office for National Education Standards and Quality Assessment (ONESQA) launched a joint accreditation project called "International Joint Accreditation Standards (iJAS)", aiming to promote the further university internationalization. This project is also an attempt to carry out international cooperation among national QAAs . The project evaluates universities not only locally, but also internationally, the experience gained will in turn lead to improve local accreditation, and can promote the in-depth promotion of education QA.

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[1]. Ying-Li Chou, Kazuyo Hara, Somyot Cheejaeng, Tuan La.Improving the Student Experience of Teaching Methods: Learning from a Comparative Study of Four Asia-Pacific Regions[Z].2022 APQN Academic Conference, 2022-11-25.

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[3]. Marlon Gamido. ICT Resources Mobilization of State Universities and Colleges in Region III: Towards an Enhanced Management[Z]. 2022 APQN Academic Conference, 2022-11-26

[4]. Kazuyo Hara, Ying-Li Chou, Somyot Cheejaeng.International Joint Accreditation among Japan, Taiwan, and Thailand[Z].2022 APQN Academic Conference, 2022-11-26.

2.2 Internationalization of external quality assurance

External QA system of higher education is a system for implementing effective quality control over HEIs' internal education quality, composed of international, national, regional or guild specialized institutions, whose main task is to guide, organize, implement and coordinate HEQA activities.

2.2.1 Database construction: APQR database serves as a key tool for quality assurance

The external QA database of APQN Quality Register (APQR) is a key tool to promote quality assurance and HE evaluation. Based on Database of External Quality Assurance Result (DEQAR) of the European Quality Assurance Register for Higher Education(EQAR), together with the colleagues from the National Centre For Public Accreditation (NCPA) in Russia, Dr. Galina Motova, APQN Vice-President, proposed that APQR should also try to establish a digital database - Database of APQN Quality Register (DAPQR). The main purposes is to establish a information database to set up for easy access, management and updating and facilitate exchange of data and recognition of qualifications. The data bank has the following functions: (1) contribute to the transparency of QA outcomes, supply clear and reliable information; (2) find out what kinds of accreditation and external QA procedures agencies; (3) promote free movement of students across borders; (4) information contained in the database could be a valuable source for different scientific research.[1]

2.2.2 Meta-evaluation: an evaluation research on APQR

With the advent of "quality era", the guarantee of the quality of educational evaluation has attracted attention of all the stakeholders. APQN Quality Register (APQR), as an international, non-governmental, self-disciplined constraint and regulation activity for the QAAs, has played an important role in ensuring quality assurance. The APQR review conforms to the concept of "the fourth generation evaluation", emphasizing "developmental review" and "promoting reform through review". The focus of review mainly includes 11 dimensions (Table 3) [2] .

c	Criterion
1	Organization Category
2	Operations
3	Mission and Objectives
4	Staff and Reviewers
5	Independence
6	Resources
7	Process and Criteria
8	Appeals
9	Quality Assurance
10	Monitoring and Review
11	Agency Linkages

Table 3: Eleven review dimensions of APQR

From the focus of the APQR review, meta-evaluation on APQR shows the following three characteristics: (1) being committed to quality improvement; (2) all stakeholders' participation; (3) open information and updating it regularly in order to establish and enhance the public trust. In the whole review process, decisions mainly rely on "evidence" and "performance", which can effectively guarantee the review quality to a certain extent. Therefore, APQR has gained rich experiences for reference.

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[1].Vladimir Navodnov, Galina Motova, Daria Efremova.The Database of External Quality Assurance Results of the Asia-Pacific Quality Register as a key tool for the development of QAAs and HEIs[Z].2022 APQN Academic Conference, 2022-11-25.

[2].Jianxin Zhang, Zhijie Xiang, Jagannath Patil.Research on the Meta-Review to the Asia-Pacific Quality Register (APQR)[Z].2022 APQN Academic Conference, 2022-11-25.

2.2.3 Indicator management: Mongolia calls for the establishment of unified QA standards

Approaches to cross-border education in Asian countries emphasize global, regional and multi-domestic strategies.

Mongolian HEIs use a uniform mechanism for calculating study load, an extensive "information package" and a "ranscript of records" to give a sufficient confidence in the quality of a learning experience. Besides, HEIs need to develop a new international regulatory framework to deal with the impact of HE globalization. Especially QA and accreditation are crucial regulation elements in a more trade-oriented international HE market.[1] Therefore, the HEQA cooperation has certain comparability for education in different countries, and can meet the international QA standards. We need to design unified indicators of quality and facilitate mobility through the QAAs.

2.3 Glocalization of quality assurance

Internationalization of higher education has become a trend, but there are two aspects that can not be ignored. Firstly, the students who can achieve international mobility are basically elite cohorts, accounting for only a small part of the total students, and mobility is still the privilege of a minority of student. Secondly, in the era of the global COVID pandemic and international tensions, there are many obstacles to international exchanges and cooperation in higher education. The glocalization of HEQA will be a beneficial exploration to improve the quality and connotation of international activities.

2.3.1 Course construction: Gottingen University uses the Lewin Model to implement glocal courses

Curriculum internationalization is the integration of international, cross-cultural and global perspectives with curriculum contents, learning objectives, teaching-learning process, coaching and others. Internationalization courses do not have to be taught in English. The core is to train students to change their perspective, to make students have keen senses of "global differences", so that they can reasonably explain complex academic and social issues. According to Lewin's change management model, German researchers take the Sino-German cross-cultural Master of Arts as an example. Based on a fixed framework and flexible design plan (Fig. 5), the programme can achieve close transnational cooperation and reach understanding and consensus[2] . The adoption of this reform mode can systematically realize all curriculum development of a programme, rather than the internationalization of a single module.

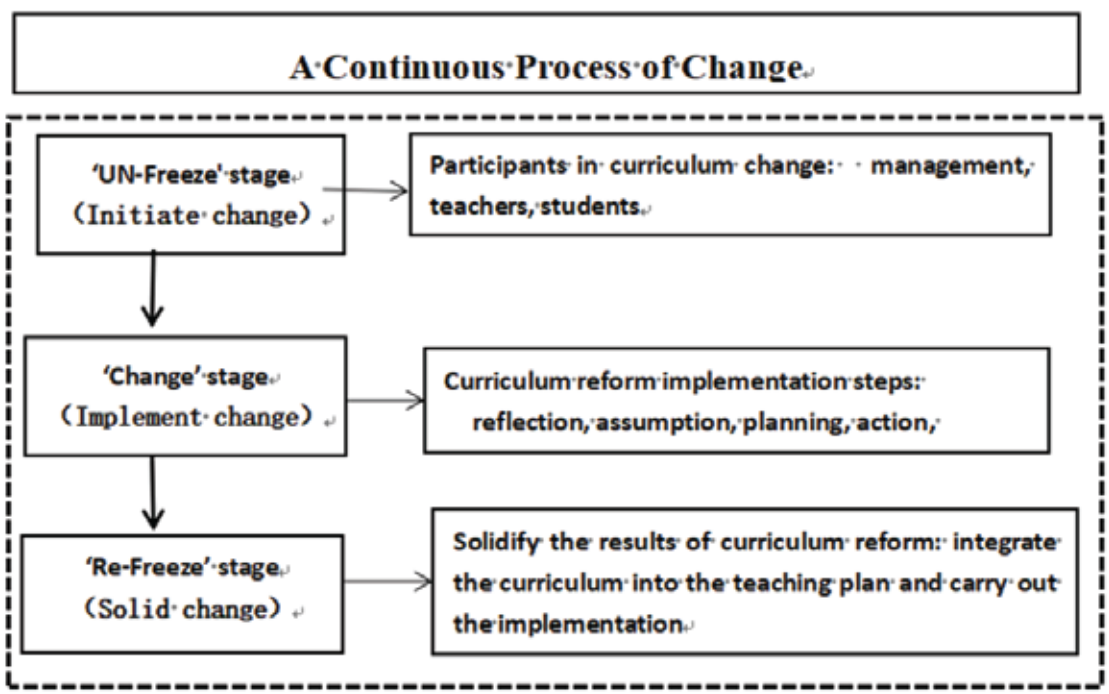

Fig. 5: Implementation of glocalization courses in Lewin's management model

[1].Narantuya.O ,Chuluundorj.B .Quality assurance of cross border Higher education[Z].2022 APQN Academic Conference, 2022-11-26.

[2].**Casper-Hehne H ,Dengel B ,Reiffenrath T , et al.**教学"在地国际化"——以哥廷根大学的一个变革管理过程为例[J]. 应用型高等教育研究, 2019, 4(03) :10-17.

The premise of the internationalization of curriculum and teaching is teachers' internationalization, which includes the internationalization of teachers' components, as well as the internationalization of teachers' abilities and qualities. Firstly, the HEIs in Chinese Taiwan actively import foreign teachers and promote the internationalization of teacher structure. For example, Mingchuan University attaches great importance to teachers' employment of different counties. They evaluate the English-teaching teachers, and forms an international teaching group to carry out international teaching. Secondly, HEIs implement a combination of overseas research and on campus training to improve teachers' international teaching and research capabilities. For example, Furen University provides English teaching related resources, including teacher training courses of global dialogue, teachers' overseas English teaching training, etc. Thirdly, HEIs adopt the mode of collaborative teaching with foreign teachers, strengthen the interaction and learning between local teachers and foreign teachers, and provide students with diversified teaching experience [1].

2.3.3 Student community: local-integration and local-exchange of native and foreign student

As the most basic community organization for native students, undergraduate classes and graduate research groups should be consolidated, transformed and developed in the development of glocalization, promote the exchange and integration of local and foreign students in the direction of "small-scale, high-quality and stable-development". Therefore, HEIs should further guide international students to participate in the most active communities of local students, such as classes and research groups, improve the "convergence" management of local and foreign students. It is recommended to strengthen the guiding role of counselors, class teachers, graduate supervisors for the collective integration, and rely on academic exchanges, emotional construction, cultural and sports activities and other forms enable the international transformation of the local "meta community". Creating conditions for successful learning in the context of glocalization, as well as a learning atmosphere of "local and foreign schoolmates, equal and mutual assistance, learning from each other", freely carry out cultural and ideological exchanges and collisions, so as to achieve individual development of all the students.

Trend 3: Diversification of quality assurance: the "trinity" approach

With the popularization of higher education in various countries, HE quality assurance has attracted more and more attention. The government, universities and quality assurance agencies(QAAs) are facing new missions and challenges in both internal and external quality assurance of higher education.

3.1 Internal quality assurance at HEIs: focusing on "improving quality" and "fostering excellence"

As one of the diversified main bodies of HE quality assurance, HEIs' core task is to improve the quality of education and teaching, and to cultivate talents for the society. The teaching framework of results-oriented education and the "triple helix model" of professional talent training will provide a new development path for HEIs' internal quality assurance.

3.1.1 Improving teaching quality: Shanghai education model of "AI Curriculum" application

Outcome-based education (OBE) first appeared in the basic education reform in the U.S. and Australia, referring to the education model based on learning output. OBE requires that HEIs and teachers should first clarify the learning outcomes, cooperate with the diversified and flexible personalized learning requirements, make students complete the challenges of their self-realization through the learning process, and then feedback the outcomes to improve the original curriculum design and teaching. The research in Bangladesh has shown that OBE can change students' learning experience and provide significant assistance in academic, attitude, and instruction[2].

[1].Casper Hehne H, Dengel B, Reiffenrath T, et al. Teaching "Local Internationalization" -- Taking a change management process of Gottingen University as an example [J]. Applied Higher Education Research, 2019, 4 (03): 10-17

[2].Masuma Habib, Golam Mohammod Mostakim.Impact assessment of Outcome-Based Education (OBE) Paradigm in universities of Bangladesh[Z].2022 APQN Academic Conference, 2022-11-26.

During online teaching process in Shanghai in China, the framework of outcomes-based teaching and learning (OBTL) has been applied in practice, which mainly consists of three parts: (1) articulate learning outcomes; (2) design learning activities; and (3) design assessment (Fig.6). The first one reflects the results that students expect to reach at the end of the course [1].

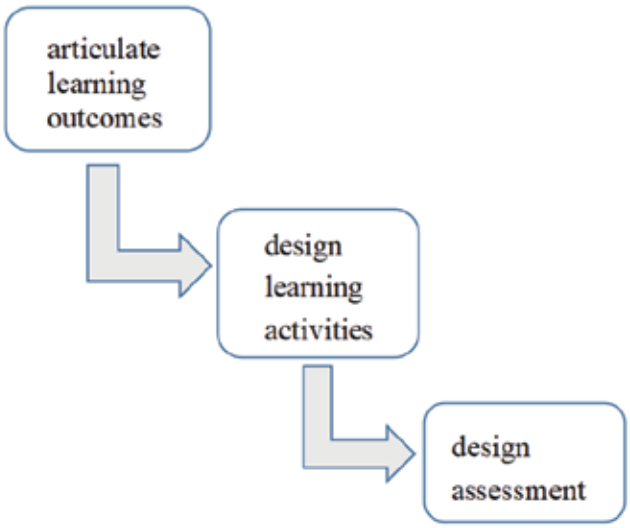

Fig.6: The teaching process of the OBTL Framework

The OBTL framework still needs further exploration and improvement. In the post pandemic era, online teaching based on OBTL framework needs further development and improvement to ensure the continuous improvement of teaching quality.

3.1.2 Cultivating professional talents: Chinese scholars put forward the theory of "triple helix model"

Currently, the integration of industry and education has become an important educational strategy for countries around the world to cultivate technical and skilled talents. However, with the development of HEI-enterprise cooperation, some problems have also emerged: (1) the fundamental cooperation goals between HEIs and the enterprises are different results in asynchronous teaching requirements and standards; (2) the imperfect mechanism of interest reward leads to a low willingness of the enterprises to participate ; (3) the enterprises are generally in an auxiliary position, with few decision-making power and also lack relevant legal supports. All of those mentioned above greatly affect the long-term cooperation between HEIs and enterprises.

In the post pandemic era, the government, HEIs and enterprises need to work together to establish talent cultivation goals through the "three helix model" to integrate government, industry and education (Fig. 7). Based on the direction and requirements of students' professional knowledge and skills, developing a curriculum system based on job-tasks and job-abilities, and provide talent services for industrial development strategies[2]. The governments, HEIs and enterprises must form a helix community, optimize the allocation of funds, manpower, technology, and other advantageous resources, accurately meet market demand, and carry out "one-stop training service", providing new ideas and references for higher education reform[3].

[1].Zhiyuan Sun, Quanhui Tian, Jie Pan, Dan Wang, Shanghai Publishing and Printing College.A Study on Online Teaching of the "Artificial Intelligence" Course Using Outcomes-Based Teaching and Learning (OBTL) Framework[Z]. 2022 APQN Academic Conference, 2022-11-26.

[2].Zhu Jun, Zhang Wenzhong. Talent cultivation mode for integration of industry and education based on'triple helix model'theory[Z]. 2022 APQN Academic Conference, 2022-11-25.

[3].Zhu Jun, Zhang Wenzhong. Talent cultivation mode for integration of industry and education based on'triple helix model'theory[Z]. 2022 APQN Academic Conference, 2022-11-25.

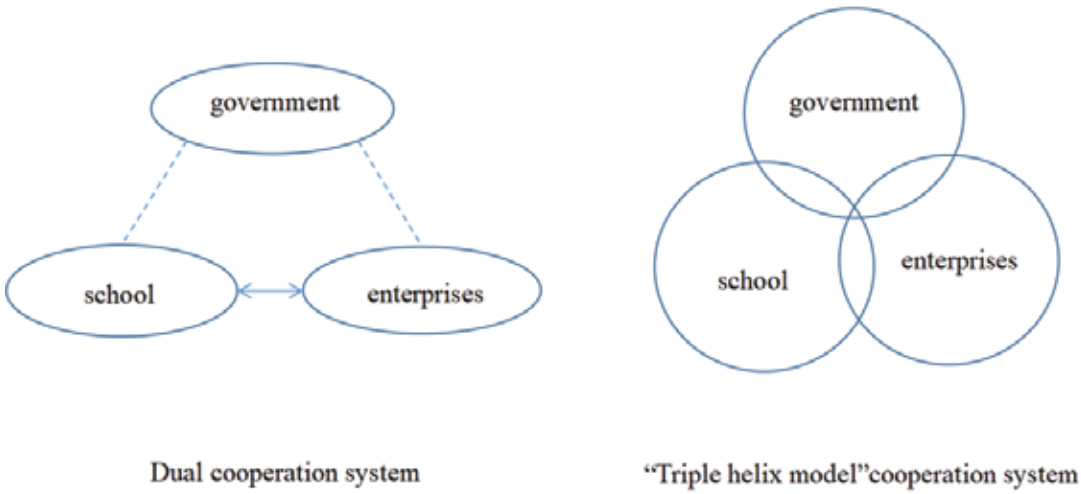

Fig. 7: "Three helix model" of integrating government, industry and education

3.2 External quality assurance: grasp the "direction" and "methods"

The methods and strategies of the QAAs will affect the efficiency and cost of the whole QA process. The correct direction, appropriate methods and strategies can reduce risks and make the whole QA process "twice the result with half the effort".

3.2.1 Evaluation direction: Chinese Ministry of Education focus on professional evaluation

China's higher education has entered a new era with improving quality as the core and promoting connotative development. China began to explore professional evaluation in the late 1980s. From 1986 to 1988, many national ministries and commissions jointly carried out pilot work on multiple majors in HEIs, laying the foundation for the establishment of professional evaluation system. In 2022, the Ministry of Education announced the results of the register and approval system to undergraduate majors in HEIs. 24 HEIs in Shanghai newly established 56 undergraduate majors, and a total of 49 register majors, 7 approval majors, 2 majors with adjusted degree granting categories or length of study, and 7 majors were withdrawn, including political science, economics, philosophy and others [1]. It can be seen that the newly established majors should serve the local economic layout and national development strategy, and major development is increasingly in line with the market and economic development.

Major is the focus of promoting the connotation development of higher education in China. QAAs needs a more scientific and effective evaluation model to supervise HEIs to achieve professional excellence and characteristic development. Confronting new professional connotation, training mode, quality management and other requirements, it is urgent for QAAs to deal with the challenging and arisen problems.

3.2.3 Evaluation method: HEEI's application of the modular approach

In evaluating , QAAs may face the issues such as high requirements from the client, tight deadlines, and lack of experience of the review panel. The modular approach adopted by Shanghai Education Evaluation Institute (HEEI) can effectively solve this problem.

The modular approach refers to "disassembly" and "integration" of evaluation content, process, and work tasks, which are decomposed into modular without overlap or omission. Then, according to the characteristics of different modular, professional division of labor, optimization, and re-engineering carried out to improve overall work efficiency. At the same time, through interactive communication and emphasis on "seamless and trace-less" collaboration, to maintain standardization of the process and achieve cohesion and consistency throughout the entire work [2].

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[1]. Shanghai Education Evaluation Institute, Zhang Lingfei, Project manager.Challenge and Countermeasures Faced by Standards of Majors Evaluation in Colleges and universities in Shanghai[Z]. 2022 APQN Academic Conference, 2022-11-26.

[2]. Le FANG, Xiumeng FENG&Pingping LIU.Application of Module Approach in the Education Evaluation Projects-Take the Performance Evaluation of Phase I Construction and Demonstration of Phase II Construction Scheme of Shanghai New Type Research Institute as an Example[Z]. 2022 APQN Academic Conference, 2022-11-26.

The essence of the modular approach is a "converging-dividing-converging" working approach. The evaluators need to fully understand the characteristics of each modular, make appropriate personnel assignments, and make full use of the talents and initiative of each department. At the same time, during the process re-engineering, it is necessary to have a thorough understanding of the personality of each teammates, the evaluated HEIs and experts, as well as the time requirements and working environment characteristics of each
department [1].

3.3 Government intervention and regulation: reshaping "power" and "role"

As an organization implementing higher education and knowledge innovation, HEIs are the "axis organizations" of modern society. To ensure HEIs' quality , it is required to give full autonomy to them as well as a certain degree of government intervention. Especially in the the Asia- Pacific Region with the oriental cultural tradition, the government's actions will greatly affect the external quality assurance system of higher education.

3.3.1 Simplified administration and decentralization of governments: the governments of India and Bangladesh support HEIs' governance

The concept of simplified administration and decentralization of government is also applicable in the field of education. While strengthening professionalism, HEIs should be given more freedom and more space .However, funding plays a decisive role in the development of scientific research in HEIs. Behind the respect for HEIs' academic freedom, the governments should also establish departments to ensure HEIs' investment. In India, the University Grants Commission(UGC) is a governmental body formed in 1956 by an Act of Parliament for the purpose of coordinating, establishing, and upholding the standards of higher education. In addition to awarding grants to qualified HEIs, UGC also counsels the federal and state governments on the policies required to advance higher education [2]. In Bangladesh, UGC is the authority that acts as the intermediary between the Government and HEIs for regulating the affairs of all HEIs. With the help of the World Bank, UGC has implemented the Higher Education Quality Enhancement Project (HEQEP), which is responsible for managing the affairs of all HEIs [3].

The reduction of unnecessary control over HEIs as well as the increasing their research funding will make HEIs' governance less caged with more freedom, which will ultimately benefit academic progress and national strategic progress.

3.3.2 Role transformation: New Zealand government coordinating the relationship between the private and the public sector

The modern education industry needs both the private and the public sector to interact in an integrated way. The goal is to seek a balance between the private and the public sector in the right to participate in vocational education. In New Zealand, technical and vocational education and training (TVET) emphasizes the skills, knowledge and attributes needed to do a particular job, or work in a specific industry. Effective TVET systems rely on private sector involvement to ensure skills. At the same time, government has an important part to play in promoting equal access, ensuring quality and considering wider societal goals. TVET in New Zealand, as part of government and private sector reforms, is redefining the relationship between the government and the private sector.

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[1]. Le FANG, Xiumeng FENG&Pingping LIU.Application of Module Approach in the Education Evaluation Projects-Take the Performance Evaluation of Phase I Construction and Demonstration of Phase II Construction Scheme of Shanghai New Type Research Institute as an Example[Z]. 2022 APQN Academic Conference, 2022-11-26.

[2]. H. V. Chandrashekhara.Governance and Management of Indian Higher Education[Z]. 2022 APQN Academic Conference, 2022-11-26.

[3]. Sheikh Anwar Hossain.Study on Quality Assurance of Higher Education and Outcome-Based Education in Bangladesh[Z].2022 APQN Academic Conference, 2022-11-26

In 2018, New Zealand government began a review of its post-secondary vocational education. The reforms established new government-funded agencies which aim to strengthen the ability of industry to steer and contribute to the TVET system. The reforms also involved changes to the roles and structures of all public TVET institutions and the funding of both public and private institutions. The government has established "a strong, unified, and sustainable system for all vocational education through the reform, providing the skills required by learners, employers, and communities" . New Zealand is merging all 16 institutes of technology and polytechnics and 9 of 11 industry training institutions to create one publicly funded vocational institution, Te Pūkenga.
In addition, the New Zealand Qualifications Authority (NZQA), a government agency, has simplified the design of vocational qualifications, supported the establishment of Tpukenga and 6 labor development committees, reviewed and updated the quality assurance framework, and updated NZQA's educational product repository.

Conclusion

The world education revolution has been accelerated with the challenges brought about by the COVID pandemic. HEQA is also characterized by the trend of digitization, internationalization and diversification. From the digitization perspective, digital HE quality assurance should be "human-centred"", make ChatGPT and other emerging "computational intelligence" to "human-oriented intelligence", emphasize both technical attributes and social attributes. From the internationalization perspective, HE quality assurance is still continuing to promote the process of internationalization. However, due to the consideration of fair opportunities for studying abroad and the prevalence of the COVID pandemic as well as the uncertainty of the world, internationalization and glocalization are showing a parallel trend. From the diversification perspective, the "trinity" of the government, universities and QAAs bear different roles and missions. They should form a joint force to improve the internal and external quality assurance of higher education. It can be said that the new transformation of QA in the post-COVID era is digitization, the way out for global economy QA is internationalization, and the main body of excellent quality in higher education is diversification.

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[1]. Eve McMahon, Amy Davis, Terry Neal.Aotearoa New Zealand's Reform of Vocational Education (RoVE): Changing roles for government and private sector in technical and vocational education and training[Z]. 2022 APQN Academic Conference, 2022-11-26.

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DQE001

TOWARDS CONTINUOUS QUALITY IMPROVEMENT (CQI) IN HIGHER EDUCATION:ENHANCING EDUCATIONAL QUALITY THROUGH COURSEOUTCOME (CO), PROGRAM OUTCOME (PO), AND PROGRAM EDUCATIONAL OBJECTIVE (PEO)

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Abstract:
This paper delves into how Course Outcome (CO), Program Outcome (PO), and Program Educational Objective (PEO) foster Continuous Quality Improvement (CQI) in higher education. Embedding these aspects in teaching-learning, curriculum and assessment aids data collection, performance evaluation, and enhancement identification. Integrating COs, POs, and PEOs engages stakeholders, maintains job market relevance, and uplifts educational quality. This approach enhances institutional reputation, produces skilled graduates, and contributes to national development.

1. Introduction:

Continuous Quality Improvement (CQI) has become vital in global higher education, particularly in Bangladesh, as institutions strive to elevate education quality and meet changing demands (UGC, 2022), (Ferdousi and Rahman, 2020). This study examines the role of Course Outcome (CO), Program Outcome (PO), and Program Educational Objective (PEO) in fostering CQI for educational excellence (BAETE, 2022). CQI practices drive institutional improvement and student learning by aligning curricula with COs, POs, and PEOs (Tooba et al., 2017). Regular assessment and stakeholder engagement ensure relevancy and continuous enhancement (Namasivayamat et al., 2013). This approach aids curriculum refinement, teaching-learning methods, and resource allocation to achieve desired outcomes. Integration with industry partners, employers, and accrediting bodies further ensures graduates possess sought-after skills (Shuaib et al., 2009).

This paper highlights CQI's significance in higher education, emphasizing COs, POs, and PEOs. By examining their integration, it underscores CQI's role in advancing education quality and higher education improvement.

Additionally, this study offers an adaptable CQI framework for Outcome-Based Education (OBE) compliance, aiding institutions in higher education programs. It includes sample survey forms and aids in achieving international recognition and accreditation.

2. Continuous Quality Improvement (CQI)

2.1. Feedback from students:

Student feedback in higher education is an essential component of the continuous improvement process. Gathering insights from students about their experiences, perceptions, and suggestions can help institutions enhance the quality of education and the overall learning environment. This feedback can be collected through various methods, such as surveys, and online platforms.

2.1.1. Student evaluation of courses:

Utilizing student evaluations, CQI in engineering courses gathers feedback to enhance teaching-learning, learning, and overall course quality. Insights from surveys help refine content, teaching-learning methods, assessments, COs, and POs. Instructors use feedback to make adjustments, address concerns, and track progress, leading to continuous improvements in higher education courses.

No.	Clarification	Agree	Less agree	Disagree
	The Course Teacher	3	2	1
1.	Was well prepared for the class			
2.	Used effective teaching-learning method			
3.	Demonstrated command over the subject			
4.	Is an effective communicator			
5.	Took classes regularly according to the routine			
6.	Used full class time			
7.	Cited example and stressed upon practical implications whenever relevant			
8.	Encouraged participation of students in the class			
9.	Encouraged students to raise question in class			
10.	Answered questions of students convincingly			

11.	Followed syllabus in the class lecture			
12.	Was available during consulting hours			
13.	Checked and returned answer scripts well in time			
14.	Used English in class room as medium of instruction			
15.	Described COs			
16.	Taught COs			
17.	Described POs			
18.	Taught POs			
19.	Described Course assessment method			
20.	I benefitted from the class lectures			

Table 1: Course/Instructor evaluation Form

2.1.2. Student survey

CQI through student exit surveys in higher education collects feedback to enhance course quality. Surveys gather insights on content, instructor, assignments, assessments, COs, POs, and overall experience. Analysed feedback pinpoints improvements, adjusts teaching-learning methods and course design, elevating courses of higher education quality.

Level No.	Clarification	Poor 1	Fair 2	Excellent 3
1.	Course hand-out is distributed in the class to all the students during the first week of the semester.			
2.	Course Outcomes (COs) were discussed upfront and clear.			
3.	Instructional activities helped in the attainment of the COs.			
4.	Time devoted to each CO was quite adequate.			
5.	All COs have been assessed through continuous assessment and central examinations.			
6.	Quality of quizzes/assignments/midterm/final.			
7.	Usefulness of the quizzes/assignments/presentation/viva in promoting learning.			
8.	Positive interaction between students and instructor existed.			
9.	Students were always allowed to interrupt the instructor to seek clarifications.			
10.	Classroom discussions were encouraged and well moderated.			
11.	Required learning resources were easily available.			
12.	Evaluation is fair and transparent.			

Table 2: Course exit survey form

2.2 Feedback from course instructors

CQI with instructor feedback in higher education gathers insights to enhance teaching-learning quality. Input on content, methods, assessments, and engagement informs course improvement. Analysed feedback identifies enhancements, refines teaching-learning strategies, and ensures ongoing betterment of higher education.

.

Sample Faculty Course Review Report
(To be filled by each teacher at the time of Course Completion)

Department:					
Course Code:		Title:		Sec:	
Session:		Semester:	Spring	Summer	Fall
Credit Value:		Level:		Prerequisites:	
Name of Course Instructor:			No. of Students	Lectures Planned: Lectures Actual:	Seminar:
	No of quizzes	Length of quizzes(syllabus weighting)	No of exams:	Length of exams:	Weightings(in terms of marks)
Assessment Methods:					
Topics:	Covered: yes		Not covered(reason):		
Grade Distribution (%)					
(Figure from Grade sheet)					
Overview/Evaluation (Course Teacher's Comments): Feedback:					
1) Student (Course Evaluation) Questionnaires					
2) Question Moderators (if any)					
3) Curriculum: comment on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the Approved / Revised National Curriculum Guidelines					
4) Assessment: Comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course objectives)					
5) Enhancement: Comment on the implementation of changes proposed in earlier Faculty Course Review Reports					
6) How to improve COs(Write down the CO1, CO2,…, achieved/not achieved): CO1: CO2: …					
7) How to improve POs(Write down the PO1, PO2,…, achieved/not achieved): PO1: PO2: …					
8) Course curriculum improvement plan(from Grade sheet):					
9) Outline any changes in the future delivery or structure of the Course:					
Name: _____ Date: _____ *(Course Instructor)* Name: _____ Date: _____ *(Head of Department)*					

Table 3: Sample Faculty Course Review Report

2.3 Feedback from external stakeholders

CQI with alumni, employer and industry advisory panel (IAP) feedback in higher education courses collects valuable insights to improve the program. By gauging experiences, curriculum effectiveness, and skill relevance, alumni input informs enhancement. It identifies alignment with industry needs and potential improvements. Analysed feedback refines the curriculum, bridging gaps, and maintaining alignment with related evolving demands.

2.3.1 Feedback from alumni

Alumni feedback for higher education's continuous quality improvement, centred on CO, PO, and PEO, can be categorized as follows:

1. Relevance and applicability of curriculum
2. Effectiveness of COs and POs
3. Bridging academia-industry gap
4. Practical application and experiential learning
5. Faculty quality and teaching-learning methods
6. Professional development support
7. Alumni engagement and support

Sample Alumni Survey Form

Alumni feedback of program outcome (PO) and program educational objective (PEO)

1. Indicate how well you agree with each Program Educational Objectives PEOs as a predicted accomplishment for the degree.

Program Educational Objectives (PEO)		**Disagree**	**Less Agree**	**Agree**
No.	Clarification	**1**	**2**	**3**
PEO 1.	Can you apply your engineering expertise and updated skills to lead technically in Electrical and Electronic Engineering professionally, either individually or within interdisciplinary teams?			
PEO 2.	Do you see yourself, as a graduate, pursuing further education or professional endeavors while also dedicating yourself to ongoing independent and lifelong learning to keep up with ever-changing technological advancements?			
PEO 3.	As an Electrical and Electronic Engineering graduate, do you intend to create solutions while maintaining ethical standards, considering design criteria, practical constraints, and the economic, environmental, and social impacts of your solutions?			
PEO 4	As an Electrical and Electronic Engineering graduate, how will you demonstrate teamwork skills, effective communication, and adaptability in presenting solutions to diverse audiences?			

2. Do you suggest any changes in the PEOs? (Specify):

3. Indicate how well you agree with each Program Outcomes POs as a predicted accomplishment for this program.

No.	Program Outcome (PO)	Clarification	Dis agree	Less agree	Agree
			1	2	3
1.	PO1 - Engineering knowledge	Do you use your specialized engineering education to address complex challenges by integrating math, science, engineering fundamentals, and focused expertise for effective solutions?			
2.	PO2 - Problem analysis	Are you confident, as a graduate, in your ability to identify, analyze complex engineering problems, conduct literature research, and draw well-founded conclusions using mathematics, natural sciences, and engineering principles?			
3.	PO3 - Design/development of solutions:	Can you design engineering solutions that meet needs while prioritizing safety, public health, and considering cultural, societal, and environmental factors?			
4.	PO4 - Investigation:	Can you investigate complex problems, utilizing experimental design, data analysis, and information synthesis to arrive at valid conclusions?			
5.	PO5 - Modern tool usage:	Can you employ appropriate techniques, modern engineering tools, and IT resources, including prediction and modeling, to complex engineering tasks while considering their limitations?			
6.	PO6 - The engineer and society	Do you employ contextual knowledge to assess societal, health, safety, legal, and cultural issues, along with corresponding responsibilities in engineering practice?			
7.	PO7 - Environment and sustainability	Do you comprehend how professional engineering solutions influence societal and environmental contexts and recognize the significance of sustainable development principles?			
8.	PO8 - Ethics	Are you capable of applying ethical principles, upholding professional responsibilities, and adhering to the norms of engineering practice?			
9.	PO9 - Individual work and teamwork	Can you operate proficiently both as an individual and as a leader or member of diverse teams, including within multidisciplinary settings?			
10.	PO10 - Communication	Can you effectively convey complex engineering work to both technical and non-technical audiences using reports, presentations, and documentation?			
11.	PO11 - Project management and finance	Do you grasp engineering and management principles to adeptly manage projects, whether leading or collaborating, in diverse, multidisciplinary environments?			
12.	PO12 - Life-long learning	Do you recognize the significance of continuous, independent, lifelong			

4. List a few courses that you wish to include in the EEE (Electrical & Electronic Engineering) program which you think are important for building up a good career.
5. Do you agree that the ***program outcomes*** (POs) of EEE program help to achieve the PEOs ☐Disagree ; ☐Less agree ; ☐Agree
Other suggestions, if any:

Table 4: Sample Alumni Survey Form

2.3.2 Feedback from employers

CQI using employer feedback enhances engineering programs by aligning curriculum with industry needs, ensuring graduate preparedness for employment.

Sample Employer Survey Form				
Employer feedback of PO and PEO				
Program Educational Objectives (PEO)	Clarification	Dis agree	Less agree	Agree
No.		1	2	3
PEO 1.	Will the graduate have capability to lead technical projects in Electrical and Electronic Engineering, both individually and in interdisciplinary teams, within this organization?			
PEO 2.	Will the graduate have the ability for professional activities, and actively participate in independent and life-long learning to adapt to the ever-evolving technological landscape within this organization?			
PEO 3.	Is the graduate expected to craft ethical Electrical and Electronic Engineering solutions, considering various factors, within the organization's framework?			
PEO 4	Will the graduate need to excel in independent work and interdisciplinary collaboration, showcasing effective communication through graphical, verbal, and written means to present solutions to diverse technical audiences?			

2. Do you suggest any changes in the PEOs? (Specify):

3. Indicate (√) how well you agree with each Program Outcomes POs as a predicted accomplishment for this program.

No.	Program Outcome (PO)	Clarification	Dis agree	Less agree	Agree
			1	2	3
1.	PO1 - Engineering knowledge	Can the graduate adeptly apply their math, science, engineering knowledge to solve intricate challenges within the organization's scope?			
2.	PO2 - Problem analysis	Is the graduate be capable to proficiently identify, formulate, research relevant literature, analyze intricate engineering problems, and draw well-supported conclusions by applying foundational principles of mathematics, the natural sciences, and engineering sciences in their work within this organization?			

3.	PO3 - Design/development of solutions:	Does the graduate create solutions for complex engineering problems, incorporating safety, public health, and cultural/environmental considerations?				
4.	PO4 - Investigation:	Is the graduate capable of conducting investigations into complex problems, considering the design of experiments, analyzing and interpreting data, and synthesizing information to arrive at valid conclusions?				
5.	PO5 - Modern tool usage:	Does the graduate possess the ability to create, select, and apply suitable techniques, modern engineering and IT tools, including prediction and modeling, to address complex engineering tasks while being aware of their limitations?				
6.	PO6 - The engineer and society	Is the graduate capable of applying reasoning informed by contextual knowledge to evaluate societal, health, safety, legal, and cultural issues, as well as the resulting responsibilities pertinent to professional engineering practice?				
7.	PO7 - Environment and sustainability	Does the graduate grasp how engineering solutions affect society and the environment, showing awareness of sustainable development principles?				
8.	PO8 - Ethics	Does the graduate apply ethical principles and adhere to professional ethics, responsibilities, and the norms of engineering practice?				
9.	PO9 - Individual work and teamwork	Is the graduate proficient in functioning effectively both as an individual and as a member or leader within diverse teams, including in multidisciplinary settings?				
10.	PO10 - Communication	Can the graduate adeptly communicate complex engineering to both technical and general audiences, creating reports, presentations, and giving/receiving clear instructions?				
11.	PO11 - Project management and finance	Does the graduate display knowledge of engineering and management principles, effectively managing projects in diverse settings as team members or leaders?				

4. Do you agree that the Program outcomes of this program help to achieve the PEOs
Disagree Less agree Agree

5. Major weaknesses you have observed in the Graduates of EEE Program of Eastern University working at your organization:

6. Experience Requirement for Entry Level Employees Please put tick (√) in appropriate box:
Highly Experienced Experience for few years Fresh Cannot be generalized

7. Please make additional comments or suggestions, which you think would help to strengthen our academic programs for the improvement the quality of graduates:

Table 5:Sample Employer Survey Form

2.4. CQI loops

Starting with well-defined PEOs aligned with the institution's mission, defining POs aligned with goals and COs, assessments, analysis guides improvements. The process involves creating assessment tools for measuring PEO, PO and CO attainment. Data analysis identifies areas for improvement. Changes like curriculum revisions follow, with continuous monitoring and evaluation ensuring desired outcomes.

2.4.1 CQI Loop for PEO

Through data collection, analysis, and stakeholder engagement, including faculty, industry professionals, and students, PEOs stay relevant, industry-aligned, and enhance higher education.

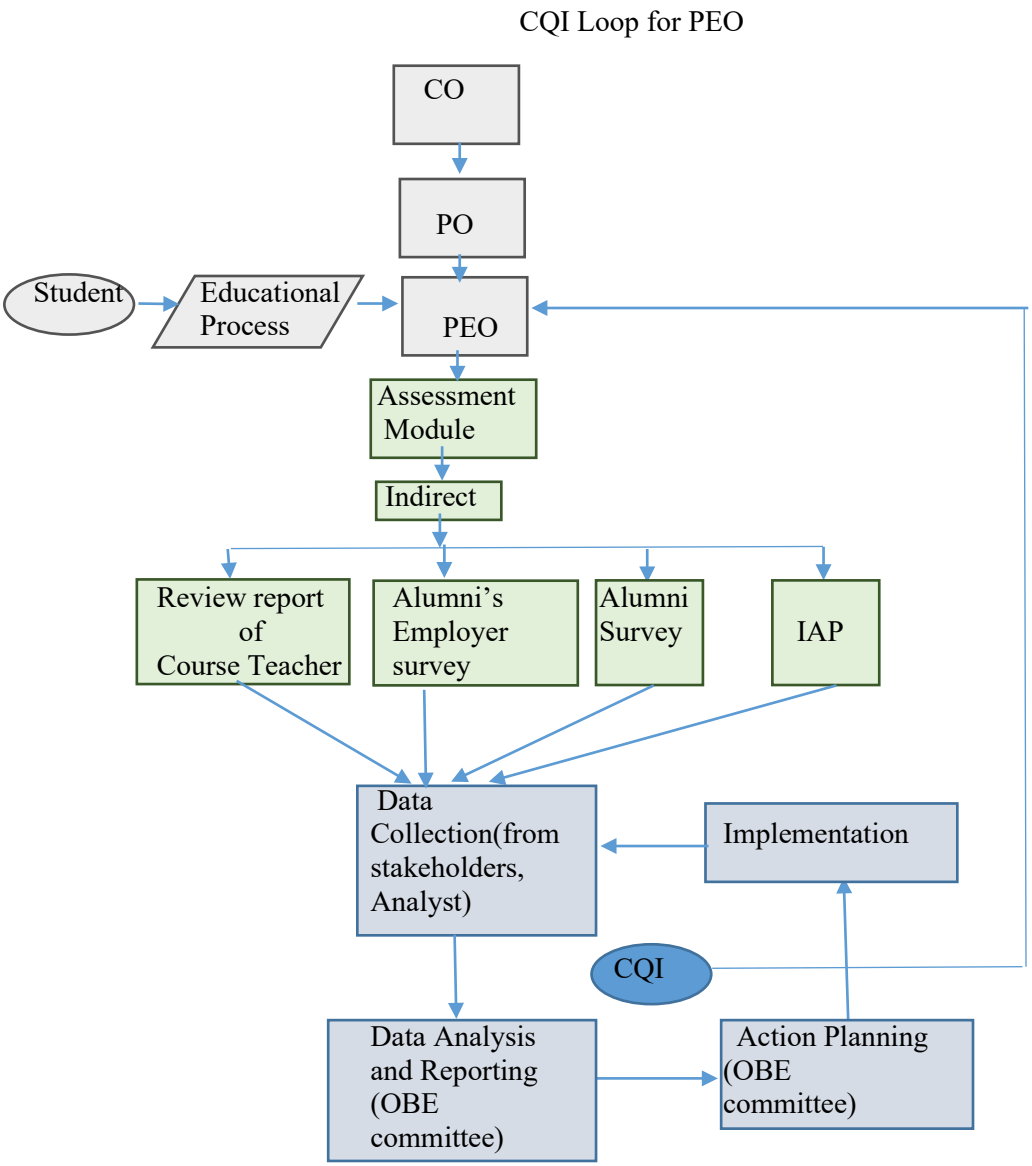

Figure 1: CQI PEO loop

3.4.2 CQI Loop for PO

CQI for Program Outcomes involves ongoing evaluation and enhancement (Syeed et al., 2023). Analysis identifies areas needing improvement.

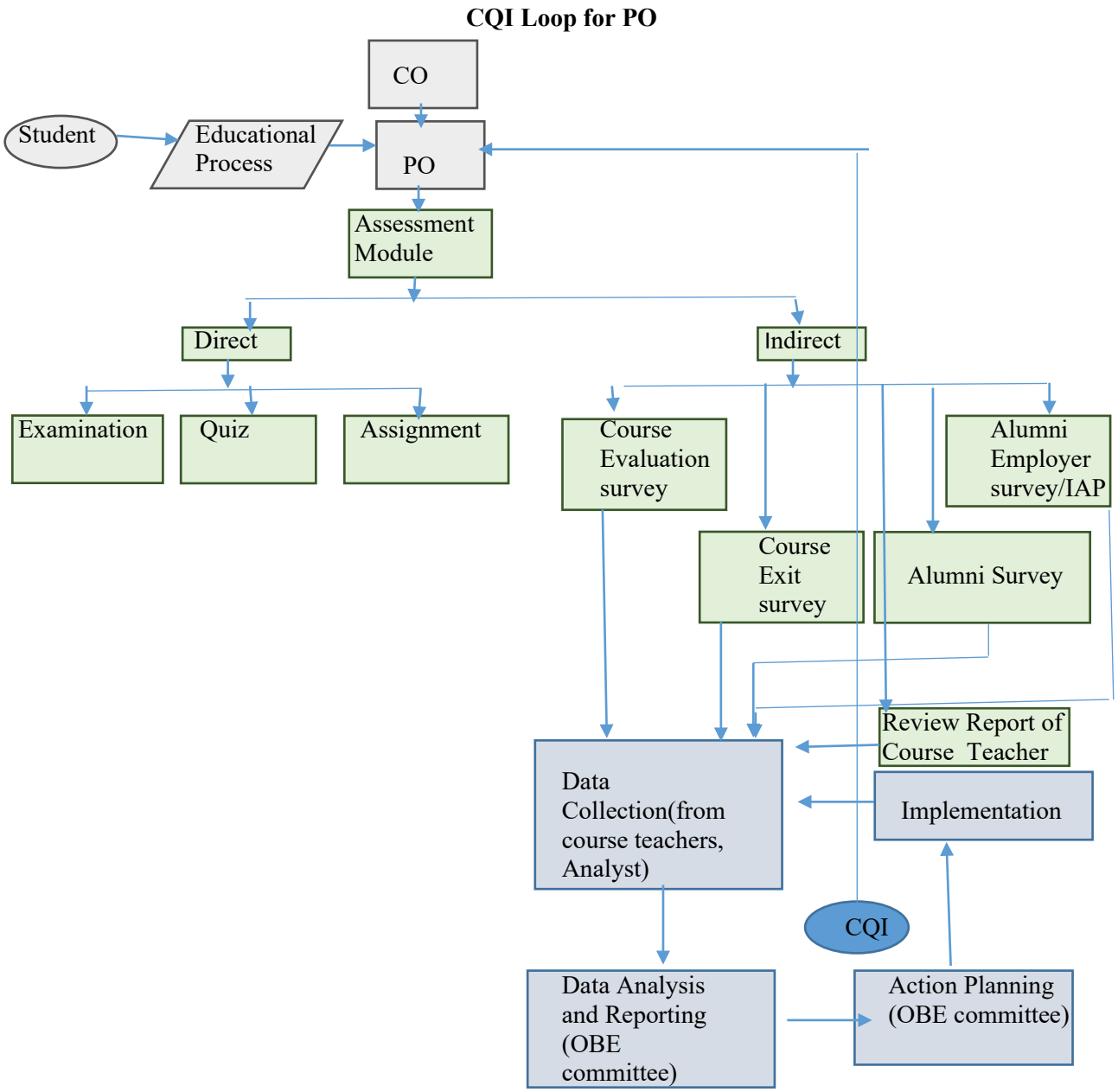

Figure 2: CQI PO loop

3.4.3 CQI Loop for CO and Curriculum

CQI involves assessing student performance for desired outcomes. Involving stakeholders, updating content, and monitoring progress ensures industry-aligned Course Outcomes (Rahimullah et al., 2020).

CQI Loop for CO and Curriculum

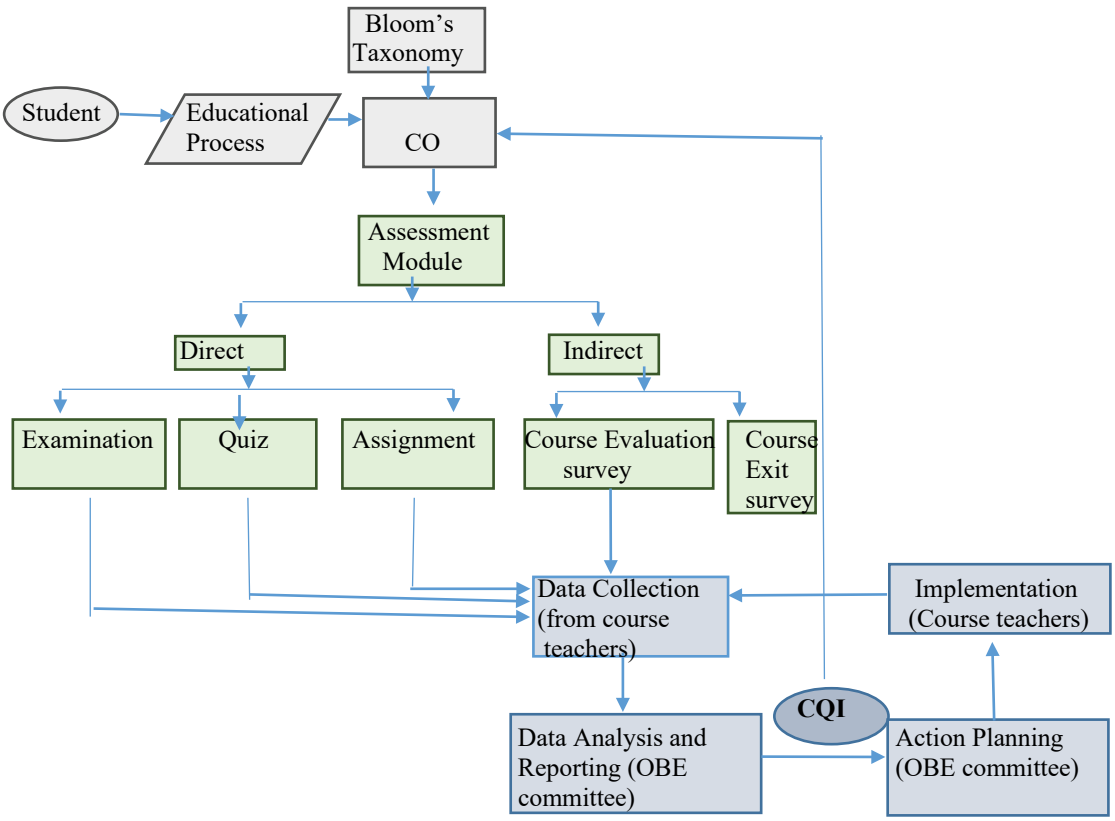

Figure 1: CQI CO and Curriculum loop

4. Conclusion

In higher education, Continuous Quality Improvement (CQI) ensures curriculum excellence and skill development. The CQI loop involves systematic steps: aligning curriculum with objectives and industry needs, creating effective assessment methods, analysing data for improvements, adjusting content and experiences, and monitoring outcomes. Regular reviews and revisions based on feedback complete the loop, sustaining a cycle of quality enhancement in higher education.

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DIGITAL TECHNOLOGIES AND ETHICAL APPROACHES IN QUALITY ASSURANCE: A CASE OF THE JUAA

-Akinori Matsuzaka, Miharu Kato

Abstract:
Digital technologies have changed many areas of society, including higher education. Today, Artificial Intelligence (AI) is opening a new stage of technological development, bringing people many new experiences. However, it is also evident that digital technologies involve negative aspects, suggesting a pressing need to address problems to ensure the sustainability of innovative higher education. Because digitalized higher education may become sustainable, only when it is less harmful to everyone. This paper aims to provide an overview of how the Japan University Accreditation Association (JUAA), one of the external quality assurance bodies in Japan, handles the negative facets of digital technologies, focusing on the ethical approaches in the standards of institutional accreditation. Because most of the problems relate to individual behaviors, people cannot prevent problems in the full sense without being aware of the behavior of individuals.

Contents

1. Introduction

Digital technologies have changed many areas of society, and higher education is no exception. Digital transformation (DX) in teaching and learning is now at the top of the higher education agenda in many countries worldwide. Digital technologies can improve teaching, learning, and other activities. For example, digital technologies enable students to join a class remotely and to access large amounts of data and information easily. For these reasons, most higher education institutions (HEIs), governments, and other stakeholders today are keenly interested in digitalizing.

Recent developments in digital technologies are remarkable, whose impacts are significantly different than previous effects, including high-performance computers that enable the handling of big data and artificial intelligence (AI). Daily scenes on campus show that more students and faculty increasingly use digital devices, rely on digital resources, and even use AI for teaching and learning. In the case of Japan, using big data or AI is not uncommon. For example, a private university of science accumulates much data on students through its learning management system (LMS) and analyzes the data with AI to offer tailor-made support to individual students. In another case, a private engineering university is equipped with an "AI tutor" system, supporting students' self-studies. These are examples of how technology brings many new experiences to people.

However, digital technologies often involve problems. As shown in the following section, several problems have arisen, even in higher education. These problems cannot be ignored; addressing them is key to ensure sustainability in innovative higher education. Because digitalized higher education may become sustainable, only when it is less harmful to everyone.

2. Digital Technologies and Problems

A significant problem today is the invasion of individual privacy. With digital technologies, people can easily collect and use large amounts of information, including personal information. Information brings people many benefits, but at the same time, the invasion of privacy is likely to happen. When AI is used in data collection and analysis, issues may become even more critical. Guided by particular algorithms, AI can perform tasks without human control. The information AI collects and how AI uses it are often invisible. These facts make the risk of invading privacy more critical than ever, not only due to data leaking but also due to data use by AI without anyone's consent.

In the context of higher education, plagiarism, and cheating are also problems. Although these have long existed, the problems have become more serious today. Digitalized information, including research outcomes, is a daily occurrence on campus, and almost all students rely on the internet for carrying out assignments. Here, the impacts of AI matter again. For example, students can write essays using AI, which is sometimes difficult to detect. Digital technologies are also likely to cause other problems. For example, there is much mis- or disinformation and much prejudice regarding recent use of cyberspace. Furthermore, AI sometimes generates wrong information and reinforces prejudice because AI itself cannot judge what is correct from what is incorrect and is not governed by any ethical principles. Operating without ethical principles means AI can also violate intellectual property rights. Therefore, all students, faculty, and other HEI staff must be aware of the risk of using AI. For this reason, the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) announced basic guidelines on AI in higher education. Additionally, an increasing number of HEIs in Japan set their own policies to articulate how students and faculty must and must not use AI (e.g., Chuo University, 2023).

3. Ethical Approach and the JUAA

3.1. Meaning of an Ethical Approach

Several approaches can help preventing the problems identified in the previous section. Strict data management is an essential one. Developing procedures and allocating the dedicated personnels are the other approaches, especially at HEIs collecting student data. Making rules or establishing regulations are also seen among HEIs, such as in the case described in the previous section. For addressing plagiarism, developing tools is one possible action.

While all the approaches we described are meaningful, the discussion must not stop here. Because most problems relate to individual behaviors, people cannot prevent problems in the full sense without being aware of the behavior of each individual. Awareness and norm-guided individual behaviors must underlie all the actions addressing the problem. In this sense, addressing ethical issues is indispensable. This is why a growing number of organizations are engaged in setting ethical frameworks or recommendations for digitalized society. The AI4People's Ethical Framework for a Good AI Society by a multistakeholder forum is one such example, covering the basic points comprehensively in five principles. In the area of education, the UNESCO document Recommendation on the Ethics of Artificial Intelligence is available. In 2023, UNESCO also published a quick guide, ChatGPT and Artificial Intelligence in higher education, which includes implications for correct behavior.

3.2. The Standards of the JUAA

The JUAA conducts accreditations both at the institutional and program levels. The JUAA has incorporated an ethical approach in its "University Standards," which are applied in the institutional accreditation of HEIs confer bachelor's, master's, doctoral, or the equivalent. The ethical approach refers here to "information ethics." Section 3.2 will illustrate this approach.

Before continuing to the standards of information ethics, the structure of the JUAA's standards should be briefly explained. The standards refer here to standards and a set of other associated tools such as "Evaluation Criteria" and "Evaluation Perspectives" (hereafter referred to collectively as "the Standards"). "Evaluation Criteria" paraphrases the"University Standards" to provide a framework for self-study and accreditation, and "Evaluation Perspectives" articulate additional viewpoints. The table below shows the statements in the Standards on information ethics.

Table1: Information Ethics in the Standards

University Standards Standard 8: The university stipulates a policy for establishing its education and research environment and provides each entity with the necessary and sufficient grounds and buildings appropriate to the scale and nature of its role in education and research in accordance with this policy. ... In view of recent advances in information technology, faculty, staff, and students are provided with a strong foundation in information ethics. ...
Evaluation Criteria The university should establish an environment for students and faculty based on its policy.
Evaluation Perspective Does the university make efforts to establish information ethics among students, faculty and staff?

The ethics referred to here are any norms or beliefs of individuals who conduct specific behaviors, while information ethics refers to norms or beliefs in handling information and information technologies. In this sense, the definition is similar to that used by UNESCO, which defines the term as the ethical, legal, and societal aspects of using information and information and communication technologies (UNESCO n.d.). As described in the table above, the Standards do not prescribe the substance of the ethical behaviors. Since establishment in 1947, the JUAA has respected the autonomy of HEIs and is convinced that HEIs bear the primary responsibility for quality assurance. Thus, the Standards do not specify what ethics HEIs should have, but rather require them to make all efforts to ensure the ethical use of information and information technologies on their own responsibility.

3.3. The Practices in the University Accreditation

Although the Standards referred to here are the revised version that will be applied from 2025, the current version on information ethics is nearly the same as the revised version. The current version has been applied to accreditation since 2018, and 195 HEIs have undergone accreditation by 2022.

When overviewing the accreditation results reports, people recognize that there are some patterns in HEIs' actions. These include setting rules or guidelines, offering student course subjects, and offering faculty and staff training sessions. For example, a university that is evaluated and accredited in 2022 has developed the guidelines for SNS and information security, so that students, faculty, and other staff are aware. This university also requires all the students to take a course subjects on information literacy. Offering course subjects can be seen in other HEIs. Students can take some subjects on information literacy or information security at some other HEIs too. In terms of enhancing awareness, the accreditation results have shown some examples. For example, a university that was evaluated and accredited in 2021 provided training sessions on information security to establish information ethics among all the faculty and staff.The examples described here show that any efforts to protect privacy and data security have been mainly evaluated so far. Accreditation by JUAA has helped HEIs to become more aware of the issues and to make efforts to establish ethical consciousness by each individual.

4. Scope and Limits

Then, what is the meaning of approaches to information ethics in the recent context? This section will discuss the scope and limits of the ethical approach in the Standards.

One of the problems this paper identified is the invasion of privacy. Preventing this problem requires everyone involved to act correctly, which requires norm consciousness by each individual. For example, staff in charge of data management must have awareness and handle data according to norms. This makes the ethical approach indispensable and meaningful in the Standards. The Standards require HEIs to establish ethical awareness among the students, faculty, and staff. The aforementioned accreditation results show the Standards have taken up HEIs' efforts, especially for protecting privacy and information security.

Today's problems are not limited to the issue of privacy invasion. This paper also identified other problems, such as plagiarism, cheating, dishonesty, and prejudice. These are problematic and critical today due to AI, or more precisely, due to how AI is used. This relates to the fact that AI has no ethical ground, and whether it works correctly or not depends on its users. Hence, establishing norm consciousness among users becomes important, and specifically, students' norm awareness may become decisive in dealing with the issues such as plagiarism. Here, the significance of the approach in the Standards is obvious. Information ethics provides us a crucial viewpoint for assuring the quality of higher education.

But there are also limits. While the Standards can be applied to issues such as plagiarism, there remains ambiguity in applying. The sentences of the Standards are quite simple, and just says the importance of establishing ethical foundation among students, faculty, and staff. There are no explicit statements concerning the issues like plagiarism, and, thus far, information ethics in accreditation has mainly targeted issues such as privacy protection. Of course, JUAA has evaluated the fair, objective, and appropriate assessment of students' performance. During the COVID-19 pandemic, when online learning had spread in a short time, JUAA verified through accreditation that HEIs ensured fair, objective, and appropriate assessments, even in remote learning. However, when it comes down to ethical issues, scarce approaches have thus far been integrated.

This is natural in a sense. The JUAA first incorporated information ethics into the Standards in 2016, when AI was not so widely used in higher education. For this reason, the main target has so far been the traditional issue of privacy protection. The limits also relate to the term itself. In a time when just privacy protection and correct data management mattered, the term "information" was enough to indicate what must be done. But, as technological development has expanded the range of issues, the term "information" might become insufficient to understand the issues. For this reason, the term "digital ethics" emerged (Müller, 2022, p. 2). All in all, JUAA needs to reexamine the Standards to make the ethical approach meaningful in today's context.

Looking through several ethical frameworks or recommendations, explicability or accountability is a widely recognized principle today. For example, the ethical framework by the AI4 people emphasizes explicability as a new principle in the AI era because AI's work is often invisible to all but the experts. The framework requires that the decision-making processes of AI be understandable and accountable (Floridi et al., 2018, p. 20). The same statements can be seen in the recommendations by UNESCO, which argue transparency and explainability as fundamental requirements (UNESCO, 2021, p. 22). As mentioned, invisible AI sometimes causes serious problems, even in the area of higher education. AI users such as HEIs in collecting and analyzing personal data need to account for what purpose, to what extent, and in what processes they use AI. In this sense, the principle of explicability is important for higher education. However, a principle itself is just a principle. It must be transformed into specific actions. To do so, ethics play a crucial role, and this makes the Standards worth attention, which require HEIs to make efforts in establishing ethics among all individuals.

Yet, limits exist here too. Due to lack of explicit statements and due to the term "information," applying the Standards in the meaning of explicability still remains somewhat uncertain. These impede the Standards from being used in recent contexts in the full sense.

4. Conclusion

As this paper described, digital technologies sometimes lead to negative problems, and the JUAA handles these problems in its quality assurance practices by incorporating information ethics into the Standards. Of course, an ethical approach is not the only way to prevent problems. The JUAA itself takes other approaches as well, including checking fairness, objectiveness, and appropriateness in student assessment and appropriate facility management. Only when these other approaches are used together, will an ethical approach be meaningful. However, when we want information ethics to further show its full potential, we must acknowledge that there are issues to be solved. These are, namely, the limits in the Standards that this paper described. The JUAA is going to start the fourth cycle of institutional accreditation in 2025. The JUAA must reexamine the Standards, including the term "information ethics," to ensure quality assurance of higher education in the digitalized era.

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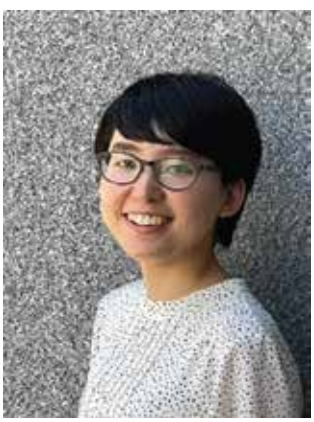

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DQE004

THE DEVELOPMENT PROSPECTS OF THE ASIA-PACIFIC QUALITY REGISTER AND DATABASE OF EXTERNAL QUALITY ASSURANCE RESULTS (DAQAR)

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Abstract:
This paper explores the importance of external reviews, their benefits, and key challenges related to the recognition of QA agencies by international networks. The evaluation conducted by the Asia-Pacific Quality Register (APQR) could be one of these recognition tools. APQR was established in 2015 on the initiative of the Asia-Pacific Quality Network (APQN). The number of APQN members who have underwent this review, meanwhile, is relatively low. This paper explores the reasons why Asia-Pacific QA agencies do not feel the need to be evaluated by APQR. The launch and enhancement of the Database of External Quality Assurance Results (DAQAR) is aimed at promoting the transparency of quality assurance results (reports, decisions, the list of study programmes, etc.) might encourage QA agencies to get recognition from APQR and upload the accredited programmes in DAQAR. The National Centre for Public Accreditation (NCPA) shares its experience in preparing for and undergoing the APQR review. The authors also explore the development of the Asia-Pacific Quality Register and the launch of the Database of External Quality Assurance Results (DAQAR) as a tool of the Asia-Pacific Quality Network's evolvement towards the transparency of external quality assurance procedures carried out by the APQR-registered agencies.

1. Introduction

Quality assurance and recognition of HEIs and QA agencies worldwide is one of the crucial issues when discussing the quality of higher education. Having internationally recognised QA agencies is important in promoting the recognition and portability of study programmes that foster global education cooperation and promote global education excellence. While the national requirements for QAAs vary, agencies preparing for an external review face similar challenges across regions.

The National Centre for Public Accreditation (NCPA) has successfully underwent the APQR review twice and is eager to identify challenges, best practices and develop strategies to disseminate good practice in the Asia-Pacific region. NCPA plays a key role in developing and maintaining a comprehensive DAQAR database that contains the results of accreditation for study programmes and higher education institutions. This database is of utmost importance as it provides valuable information and insights into the quality and standards of education across various institutions. It serves as a reliable source of information for students, educators, policymakers, and other stakeholders to make informed educational decisions.

2. Global studies and overview

International experience. Who Accredits the Accreditors?

International experience and the recognition of accrediting organisations are of paramount importance. When it comes to accrediting bodies in higher education across different countries and regions, it is important to understand the diversity of the players on the market. There are various types of accrediting bodies, each with their own specific roles and responsibilities.

Accreditation of accreditors is a globally recognised mechanism with extensive experience in implementation. In general, the phenomenon of accreditation of accreditors can be observed at the national and regional levels. The examples of the regional level are the European Quality Assurance Register (EQAR) and the Asia-Pacific Quality Register (APQR). As for the national level, it can be presented by three countries: the USA (CHEA), Germany (GAC), and Australia (TEQSA).

The Council for Higher Education Accreditation (CHEA) is indeed a pioneering network of accrediting organisations. Established in 1996, CHEA serves as a national advocate for self-regulation throughaccreditation and provides guidance and support to accrediting organizations. It represents 95 institutional and programmatic U.S.-recognized accrediting organisations and includes the database with over 8,200 accredited colleges, universities, and higher education institutions with over 44,000 accredited programmes, making it the largest institutional membership organisation in the United States focused on accreditation. Its diverse membership base indicates the widespread trust and reliance placed on CHEA's expertise and guidance.

The German case is presented by the German Accreditation Council (GAC). The German Accreditation Council assumes its overall responsibility for the accreditation system by ensuring the consistency and coherence of its accreditation decisions, supporting the states in the further development of the German quality management system, promoting international cooperation in the field of accreditation and quality assurance, and thus contributing to the realisation of a common European Higher Education Area. There are 11 QA agencies that have been authorised by GAC to operate in Germany, with the database of over 16,000 accredited programmes.

database of over 16,000 accredited programmes.

The Tertiary Education Quality and Standards Agency (TEQSA) is Australia's independent national quality assurance and regulatory agency for higher education. It includes 198 higher education providers with self-accrediting authority grants and higher education quality assurance bodies (HEQABs). To ensure that higher education providers meet the required standards of quality, TEQSA also accredits and re-accredits external quality assurance agencies, including accrediting bodies, that assess and evaluate higher education providers.

At the international (regional) level, the practice of accrediting accreditors is implemented by the European Quality Assurance Association. Accreditation agencies that have undergone external review and confirmed their compliance with established standards are included in the European Quality Assurance Register that represents a database of higher education institutions and study programmes accredited by these agencies.
DEQAR was officially introduced at EQAR's 10th anniversary celebration in 2018. DEQAR not only collects the reports and decisions, but also provides information about the national QA frameworks of the European Higher Education Area countries, helping to understand the reports in their context. The quantity of the reports in DEQAR with institutions and countries covered by August 28, 2023 is indicated in the table below. They cover both EHEA and non-EHEA area.

	Reports	Institutions	Countries
EHEA	83222	3284	49
Non-EHEA	7011	1017	54

* https://www.eqar.eu/qa-results

APQN landscape
Higher education in the Asia–Pacific region is very dynamic. Asia Pacific is the largest region in terms of HE student population, with more than 47 million students at over 6,000 HEIs, thus being the major contributor to international student mobility. The Asia Pacific Quality Network (APQN) is the voice of the QA community from 53 countries/territories in the Asia Pacific region, with 274 members as of July 27, 2023. The detailed information on APQN membership and country of origin is presented in Figure 1.
The Asia-Pacific region as a whole remains diverse in terms of education and QA systems, so the launch of the Asia-Pacific Register serves as a reliable source of information on the quality of Asia-Pacific higher education and its quality assurance systems.

APQN, with its mission statement to enhance the quality of higher education in the Asia Pacific region through strengthening internal and external quality assurance in all kinds of organisations and extending the cooperation among them, plays a crucial and unique role in improving the QA mechanism, exchanging theory and practice experiences, promoting substantive cooperation, establishing a Consultant Bank, reviewing the Asia-Pacific Quality Register (APQR) and Asia-Pacific Quality Label (APQL) in this region (www.apqn.org/about APQN).

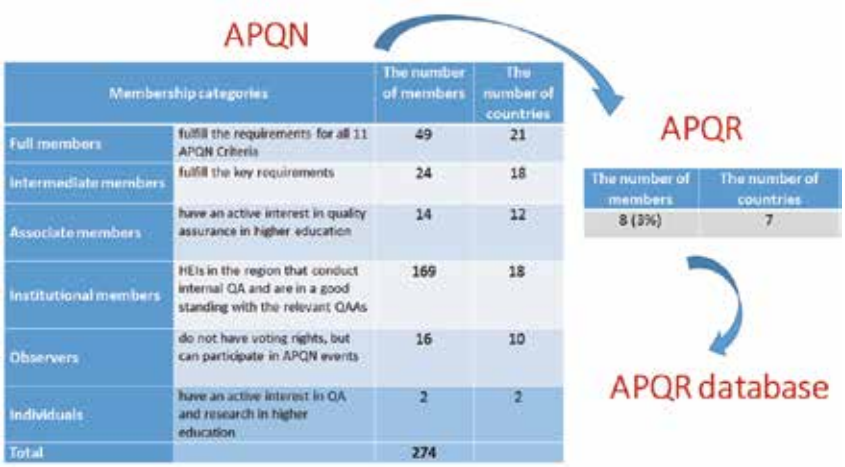

Figure 1. APQN and APQR statistics on membership and country origin

APQR milestones
The Asia-Pacific Quality Register (APQR) is a register of external quality assurance agencies (QAAs) that demonstrates certain thresholds of maturity compliance to the key APQN criteria that are harmonised with international requirements and Chiba principles. The Asia Pacific Quality Network has endorsed a proposal for the establishment of the Register as part of its Decennial Agenda in 2012. The first formal review was carried out in 2015, with the Fiji accreditation agency being the first registered member of APQR.

As of July 2023, APQR comprises 8 QA agencies from 7 countries: Indonesia, Mongolia, Russia, the Republic of Kazakhstan, Malaysia, the Kyrgyz Republic, and Samoa, and tends to expand further. Inclusion of a QA agency into APQR is based on the agency's compliance with the criteria for recognition under the APQR-Chiba Principles. APQR technology and criteria underwent changes and now comprise 11 criteria.

The table below discloses the content of APQR criteria and their overlap with international requirements (APQN Constitution and Chiba Principles) based on the research made by Zhang, J. and Patil, J. (2017), "Who guarantees the quality of the quality assurance agencies? The exploration of the establishment and growth of the Asia-Pacific Quality Register (APQR)", Higher Education Evaluation and Development, Vol. 11 No. 2, p. 62), European Standards and Guidelines for Quality Assurance in the European Higher Education Area (ENQA-ESG, 2015), International Standards and Guidelines for Quality Assurance in Tertiary Education (INQAAHE-ISG, 2022) and CHEA International Principles, including CHEA International Quality Group International Quality Principles (U.S.-CIQG, 2015).

APQR Criterion	Description	Intersection with other international standards
1. Organization	The QAA is a full member of APQN or is a QA body which is valid entity recognized by the appropriate authority in the relevant country/territory/region, and is accountable to stakeholders	Chiba Principle ESG 3.2 ISG 1.1 (Baseline Standards)
2.Operations	The quality assurance agency undertakes QA activities (at institutional and/or program level) on a cyclical basis	APQN Constitution No. 1 ESG 3.1
3.Mission and objectives	The mission statement and objectives of the agency are understood consistently by its stakeholders	APQN Constitution No. 2 ISG 1.1 (Baseline Standards)
4.Staff and reviewers	The profile of the agency staff and the profile of the reviewers the agency uses are consistent with the mission statement	APQN Constitution No. 3 and No. 4 ESG 2.4
5.Independence	The quality assurance agency is independent and has autonomous responsibility for its QA operations. The judgments and recommendations of the agency's reports cannot be changed by third parties	APQN Constitution No. 5 ESG 3.3
6.Resources	The agency has sufficient resources to run its operations in accordance with its mission statement and objectives	APQN Constitution No. 6 ESG 3.5, ISG 1.2 (Baseline Standards)
7.Process and criteria	The description of the processes and criteria applied by the agency are transparent and publicly available and normally include: self-evaluation, site visit, public report and follow-up measure. The published standards and criteria are applied consistently and rigorously	APQN Constitution No. 7 ISG 2, ESG 2.2 Quality Enhancement Continuum INQAAHE Principle (section 3) CIQG International Quality Principles
8.Appeals	An appeals mechanism is available for the institutions	Chiba Principle ESG 2.7, ISG 3.3 (Baseline Standards)
9.Quality assurance	The agency has effective quality assurance measures in place to monitor itself and is subject to occasional review	APQN Constitution No. 8 ESG 3.7, ISG 1.3 (Baseline Standards)
10.Monitoring and evaluation	The agency undertakes research on internal and external quality assurance and provides information and advice to the higher education institutions	Chiba Principle ISG 1.3, 2.4 (Baseline Standards)
11.Agency linkages	The agency cooperates and collaborates with other quality assurance agencies (QAAs) and key players across national borders	Chiba Principle, ISG 4.2 (Baseline Standards), ISG 6 (Baseline Standards)

The APQR review is very much similar to the EQAR review and includes an on-site visit to a QA agency with a review panel composed of up to five members. Among them are the APQN Board members, representatives of other QA networks and associations, and highly qualified experts. The agency prepares the self-evaluation report, which is carefully verified by the review panel. The key meetings with different stakeholders (QAA staff, QAA Board members responsible for the decision-making, representatives of the reviewers' pool, including international experts and representatives of HEIs evaluated by a QAA) are held, and they are often supported by video presentations, documents and facilities of the QAA.
The on-site visit primarily focuses on the verification of information that the review panel obtained from the self-evaluation report and the official website of the quality assurance agency. The review team members use different evaluation methods, such as interviews with the key stakeholders, study of the documents and feedback results, QA website analysis, etc. So the qualitative evaluation and face-to-face communication contribute to gathering the in-depth information that allows a deeper understanding of the QAA's current situation. A view from the outside helps to identify the difficulties, analyse them, define the areas for improvement and offer recommendations. A separate valuable contribution is the composition of the review panel, which includes experts from different spheres (executive staff of QAA, experts with experience in QA and international affairs) from different countries. Combining the expertise of experts from different countries with broad quality assurance experience and QA skills contributes to the development of the agency and enhances its credibility.

NCPA experience: challenges and opportunities
The National Centre for Public Accreditation (NCPA) has been officially registered in the Asia-Pacific Quality Register since March 23, 2018 and successfully reconfirmed its status in April 2023. The main motives of NCPA behind registering in APQR included fostering a high level of trust in the quality of higher education in the Asia-Pacific region, boosting reliability in Russian education, attracting foreign teachers and students to Russian higher education institutions, and promoting Russia's high-quality study programmes abroad.

NCPA is the only Russian accreditation agency that is registered in both the European Quality Assurance Register for Higher Education (EQAR) and the Asia-Pacific Quality Register (APQR). In May 2023, the APQR Council reconfirmed NCPA's membership in APQR for five years from that date. The Council concluded that NCPA carries out its activities in compliance with the APQR-Chiba principles.

The virtual site visit followed the standard format and activities of an on-site review: preliminary analysis of the self-evaluation report and relevant documents, zoom-based interviews with stakeholders and NCPA staff, and preparation of an external review report with key findings and recommendations. Successful completion of an externally organised review is an important milestone for the agency, as now NCPA is eligible to upload its accredited programmes to the Database of Quality Assurance Results in the Asia-Pacific region (DAQAR).

DAQAR. Fostering Trust in a Globalised World.
The Database of External Quality Assurance Results of the Asia-Pacific Quality Register (DAQAR) is an open source of the results of accreditation in the Asia-Pacific region including the results from EQAR as well. DAQAR offers access to review reports and decisions on HEIs and study programmes externally reviewed by APQR-registered agencies.

As of July 12, 2023, the DAQAR database includes 202 higher education institutions (HEIs) and 3,635 review reports from 8 agencies:
Indonesian Accreditation Agency for Higher Education in Health, IAAHEH (Indonesia)
-Independent Agency for Accreditation and Rating, IAAR (Kazakhstan)
-Eurasian Centre for Accreditation and Quality Assurance in Higher Education and Health Care, ECAQA (Kazakhstan)
-National Centre for Public Accreditation, NCPA (Russia)
-Agency for Quality Assurance in Education (Kyrgyzstan)
-Mongolian National Council for Education Accreditation, MNCEA (Mongolia)
-Samoa Qualifications Authority, SQA (Samoa)
-Finance Accreditation Agency, FAA (Malaysia).

Only 3% of the Network's total members are registered in APQR, which raises the question of why Asia-Pacific QA agencies do not feel the need to register in APQR and communicate their results internationally.

We think there are several reasons for developmental inhibition:
-A crucial factor in the developmental inhibition of a centralised database like DAQAR is the lack of information and weak promotion. If stakeholders are not aware of the existence and benefits of the database, they may not use it effectively. Insufficient promotion efforts can result in limited participation and engagement from agencies and other stakeholders. Therefore, a breakthrough in promoting DAQAR globally is necessary to increase its attractiveness and encourage wider dissemination.

-The process of mutual qualification recognition is still in its developmental stage. This means that the recognition of qualifications between different countries or regions may not be fully established or streamlined. As a result, agencies may have weak motivation to engage in the database, as the recognition of their accreditations may not hold the same value or significance across borders. This inhibits the development and utilization of the database on a global scale.

-QA agencies may face technical difficulties in implementing and using the centralised database.

-Implementing and maintaining a centralised database like DAQAR requires additional workload for QA agencies. They need to allocate resources, both in terms of time and human resources, to input, update, and manage the data in the database. This extra workload can strain the capacity of agencies, especially if they already have limited resources. The burden of additional responsibilities can act as a deterrent for agencies to actively participate in the database, slowing down its development and utilisation.

Understanding the current difficulties faced by QA agencies, the following solutions can be implemented through the following actions:

-In order to make DAQAR more attractive and available to different stakeholders, active promotion efforts should be undertaken. This would involve raising awareness about the benefits and functional capacity of the database among higher education

institutions (HEIs), governmental bodies, students, QA agencies, QA experts, and researchers. Through targeted marketing campaigns, workshops, conferences, and collaborations with relevant organisations, the promotion of DAQAR can encourage wider adoption and use.

-Development of the Asia-Pacific Network of National Information Centres (APNNIC) on academic mobility and recognition. APNNIC provides free information on the recognition of qualifications to facilitate student mobility. According to APNNIC, 12 countries have already established such information centres, which is a sign that the issue of qualification recognition is on the agenda of the national authorities. The same goals are reflected in the Tokyo Convention, which aims to facilitate international mobility and the recognition of qualifications in higher education. By aligning the goals of DAQAR with those of APNNIC, the database can become a helpful tool for facilitating diploma recognition in the Asia-Pacific region.

-To address the technical complications faced by QA agencies, the DAQAR team provides comprehensive support. This includes offering consulting services, methodological guidance, technical assistance, and 24/7 information support. By assisting agencies in navigating the technical aspects of the database, the DAQAR team can alleviate the challenges faced by agencies and ensure smooth implementation and usage.

-Recognising the additional workload placed on QA agencies, the DAQAR team is developing and implementing various tools to streamline processes and save time. These tools include user-friendly interfaces, and automated data uploading features. By providing agencies with such tools, the DAQAR team can help reduce the extra workload and enable agencies to input and update information in a faster and more efficient manner.

The launch and enhancement of the Database of External Quality Assurance Results (DAQAR) on promoting the transparency of quality assurance results (reports, decisions, study programmes etc.) might encourage QA agencies to get recognition from APQR and enter their programmes in the DAQAR.

Why do Asia-Pacific Region Universities and QA agencies need recognition? Benefits of being registered in APQR.
1. There is a need for the academic society to have a single centralised data storage system that enables various stakeholders to access information regarding review outcomes and accreditation results. It promotes transparency, accountability, quality assurance, collaboration, student mobility, and informed decision-making. It benefits academic institutions, students, governmental bodies, and other stakeholders, leading to the overall advancement and improvement of the education sector.

2. Higher education institutions access databases with the results of accreditation most frequently for several reasons. They rely on this information to evaluate the quality and credibility of other institutions. It helps them make decisions regarding collaborations, partnerships, and student exchanges. Accessing accreditation results allows them to ensure that they are engaging with reputable QA agencies that meet certain standards. On the other hand, governmental bodies, ministries, and other national authorities are also interested in accessing such databases. They rely on accreditation results to monitor and regulate the quality of education provided by higher education institutions within their jurisdiction. These bodies use the information to make decisions regarding funding, policymaking, and the recognition of qualifications. They often require institutions to meet specific accreditation standards to ensure the quality of education and protect the interests of students.

3. DAQAR has the potential to improve access to quality assurance reports and decisions on higher education institutions and programmes that have been externally reviewed by agencies registered with APQR. Through DAQAR, APQR can contribute to enhancing the transparency of external quality assurance throughout the Asia-Pacific region and facilitate future diploma recognition processes and the development of the source for scientific research.

Recommendations to develop the Asia-Pacific Quality Register:
1. Revision of APQR standards: to achieve a uniform interpretation of the criteria, it is necessary to revise the APQR standards. This would involve clarifying and standardising the criteria used for accreditation assessments. By ensuring a consistent understanding and application of these criteria, the accreditation results recorded in the register would be more reliable and comparable across different institutions and countries in the Asia-Pacific region.
2. Improvement of the assessment procedure: the procedure itself needs to be improved by establishing clear regulations that take into account the national context. This would involve developing guidelines and protocols for conducting accreditation assessments, ensuring transparency, fairness, and consistency in the process. By providing a clear and regulated assessment procedure, the register can maintain its credibility and trustworthiness.
3. Seek support from intergovernmental organisations: to expedite the development of the Asia-Pacific Register, it is crucial to seek the support of intergovernmental organizations. Unlike the European Register, which has an effective support mechanism facilitated by UNESCO through agreements like the Brisbon Agreement, the Asia-Pacific region may require similar support toaccelerate the development process. Raising the issue of the Register's development at the governmental level and seeking support from intergovernmental organisations can provide the necessary resources, expertise, and guidance to establish and promote the register effectively.

By implementing these recommendations, the development of the Asia-Pacific Register of Accreditation Results can be enhanced. The revision of APQR standards ensures a uniform interpretation of criteria, the improvement of the assessment procedure enhances transparency and fairness, and seeking support from intergovernmental organisations expedites the development process. These steps will contribute to the establishment of a reliable and recognised register that promotes quality assurance and facilitates mutual recognition of qualifications in the Asia-Pacific region.

4. Conclusions

The paper may be of interest to the national QA agencies and experts responsible for QA willing to undergo the APQR review and get experience from other QA agencies already listed in APQR. National governing bodies can get valid information from DAQAR as a source of the results of accredited HEIs and programmes by APQR-registered quality assurance agencies. DAQAR is a relatively new instrument in the sphere of higher education in the Asia Pacific region that helps raise awareness and improve recognition of all APQR-registered agencies and provides all stakeholders (students, QA agencies, governing bodies, national and international networks, etc.) with an open access to the results of accredited HEIs and study programmes.

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ADOPTION OF METAVERSE IN EDUCATION SECTOR: IDENTIFYING THE ENABLERS AND BARRIERS FOR A DEVELOPING COUNTRY

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Abstract:
The next iteration of the Internet is Metaverse, that promises to change the way see, feel, and interact with our environment. The promise of the metaverse to transform every aspect of life is putting new expectations on educational systems. The purpose of this article is to explore the enabler and barriers of the adoption of metaverse technologies in tertiary level education from organizational perspectives in developing nation such as Bangladesh. Qualitative research was undertaken for this research purpose, where extensive literature review and focus group discussion with industry experts helped the researchers to construct a semi structed interview questionnaire. This questionnaire was administered to academicians from universities in Bangladesh to identify the Technological, Organizational and Environmental factors important for the adoption of Metaverse or immersive teaching in academia. The main contribution of this article is to present both educators' and tech-experts' perspective on adoption of metaverse in industry 4.0.
Keywords: Metaverse, education, tertiary education, quality education, immersive learning, developing country, Bangladesh.

1. Introduction:

The future of education, Education 4.0, requires students to upskill very quickly. The speed of adaptability will ensure their relevance to the current learning environment (Qureshi et al., 2021). The metaverse, an amalgamation of the physical and virtual realms in a three-dimensional digital domain, has garnered much attention as a promising avenue for future education, characterized by its significant potential (Zhang et al., 2022). Countries around the world are gearing up to make use of this promising technology in diverse sectors, including education. United States, United Kingdom, Australia, Finland, China, Japan, South Korea, Taiwan and few other countries are already using or in their way to incorporate immersive learning in their educational sector. Developed countries will find it easier to adopt to such new technologies with their resources and infrastructural support, but for developing countries like Bangladesh, insulating immersive technologies in education will require more strategic planning. Interestingly developing countries have more to reap from immersive technology in learning with their limited exposure to the outer world and industry.

1.1 Research Objective:

Several studies have outlined the opportunities offered by metaverse for education and training industry, but there is a gap when it comes to the developing country context. A systematic literature review on journals focusing on metaverse in education reveals most of the works were undertaken in China, Taiwan, and the USA (Alfaisal, Hashim and Azizan, 2022). This paper aims to fill this gap by addressing the following research question (RQ).

RQ: What factors drive metaverse-technology adoption in tertiary level educational institutes in developing countries from an organizational context?

2. Literature Review:

2.1 Education and Technology:

The advent of digital technology is bringing in unforeseen changes in education, skills development, and employment, which often are outdating many traditional learning styles (Qureshi et al., 2021). Qureshi et al. (2021) also implies that industries are increasingly seeking for graduates who possess the skills necessary to navigate the challenges posed by the Fourth Industrial Revolution. But unfortunately, it is often found that there is a gap in the skill owned by job seekers and the skills required by the industry (Hernandez-Diaz, Polanco and Escobar-Sierra, 2020). The integration of new immersive technologies and novel instructional approaches have shown promise in promoting skill development and increasing the potential to improve the employability prospects (Qureshi et al., 2021).
Timotheou et al. (2023) explains the positive impacts of employing technologies in educational sector such as more interactive way to lessons, enhanced attention, motivation to continue, and an overall improvement in learners' behavior towards the learning process. Several papers pointed out the benefits acquired due to the use of gamification and innovative methods in mathematics, STEM education and with students with disabilities (Koh, 2022).
Developed nations consistently incorporate technical advancements, address talent deficiencies, and explore opportunities for accessing new resources. The circumstances surrounding an impoverished nation are significantly distinct as a result of limited capacity, political inefficiency, and protracted policy implementation procedures that hinder the adoption of digitalization initiatives

2.2 Metaverse:

Even though metaverse caught everyone's attention with Mark Zuckerberg's announcement to rename Facebook to Meta in October 2021, the concept has been in existence from Neal Stephenson's science fiction 'Snow Crash' from 1992 (Mitra, 2023). Meta means "beyond" in Greek, and verse denotes "the whole of something" and together metaverse promises to go beyond physical reality (Zhang et al., 2022).

The term "metaverse" denotes a comprehensive virtual environment that unites both the physical and digital domains. The integration described here is facilitated by merging the Internet, Web, and Extended Reality (XR), which comprises Mixed Reality (MR), Augmented Reality (AR), and Virtual Reality (VR) (Lee et al., 2021; Zhang et al., 2022).

A virtual world may be defined as a persistent, computer-generated environment where individuals gather and participate in interpersonal communication, resembling their interactions within a community context (Zhang et al., 2022). Lee et al., (2021) explains that in the metaverse, users have individual ownership of their avatars, which may be seen as digital representations of their physical identities. This ownership grants individuals the ability to participate in an alternate existence within a virtual domain that symbolically reflects their real-life circumstances. To achieve the state of duality, the evolution of the metaverse must experience a series of three successive stages: (I) digital twins, (II) appropriate content creation for the platform, and finally (III) co-existence of both physical and virtual world.

The technologies required to construct this virtual world has been outlined by Lee et al., (2021) as artificial intelligence, blockchain, computer vision, distributed network, pervasive computing, extended reality, IoT and Robotics. These technologies will in turn create an ecosystem based on avatar technology, the advancement of digital content, the exchange of data, the societal acceptance of these technologies, as well as the dimensions of security and privacy, and the formation of trust and accountability.

2.3 Metaverse in Education:

Universities around the world in experiencing an abundance of heterogeneous student demographics, and to address this diversity, technology can be of help. With features like personalized learning environments, cultural representation and understanding, experiential and language learning, customizable avatars and identities, and adaptive assessments, metaverse promises to be an aid for diverse population.

Industries are also embracing the technological opportunities offered by Metaverse with investments and are in look out for novel management and organizational leadership skills in workforce that will be important to efficiently tackle the metaverse environment. Researchers, who deployed metaverse in educational arena, mostly utilized problem-solving cases, and students tried to come up with the best possible solution in the imaginary world with the help of three-dimensional classes and the avatar. Even possible partnerships between scholars and programmers might entail the creation of educational resources specifically tailored to support instructors inside the context of metaverse reality. (Alfaisal, Hashim and Azizan, 2022).

Alfaisal et al. (2022) outlays that years 2019-2022, experienced a steady growth in research journals focusing on the impact of metaverse in educational sectors, showcasing the growing interest of educators to utilize metaverse opportunities. They also mentioned "Social Influence/Subjective Norm, Performance Expectancy, Effort Expectancy, Facilitating Conditions, Perceived Enjoyment, Self-efficacy, Immersion, Perceived Compatibility, User Satisfaction, Imagination, Interaction, Perceived Anxiety, and Personal innovativeness" as the driving factors for influencing the adoption and acceptance of immersive learning in education.

2.4 TOE Framework:

The theoretical construct of TOE characteristics, which provides insights into the process of technology adoption, was developed by Louis G. Tornatzky and Mitchell Fleischer almost three decades ago. The Technology-Organization-Environment (TOE) framework is a analytical tool that is widely used to examine the decision-making process around the adoption of various IT advancements. The inclusion of several important settings, such as the environment, together with technical and organizational elements, is a key feature of the TOE framework. The incorporation of the environmental context, as suggested by Tornatzky and Fleischer, enhanced the explanatory capacity of the Innovation Diffusion Theory, in understanding the dynamics of innovation dissemination and adoption behavior across diverse organizational settings (Osei et al., 2022). Alfaisal et al. (2022) majority research work investigating the adoption of metaverse in education made use of TAM and UTAUT models, so the utilization of TOE framework will have novel contribution to existing body of knowledge.

3. Methodology:

This exploratory study was conducted to explore the factors influencing the decision to adopt metaverse technologies in a tertiary level educational institute. The research was undertaken in two stages, a focus group discussion followed by several in-depth interviews. The focus group discussion was conducted in conjunction with in-depth interviews to unearth the underlying connection of the adoption factors of metaverse in education (Alfaisal, Hashim and Azizan, 2022).

Purposive sampling has been employed to identify the potential focus group participants and interviewees, to make use of the realistic assessment of the researchers (Eze et al., 2018). Later snowball sampling was also used as the first few interviewees introduced the researchers to a few more academicians who can contribute to the study with their valuable opinion. The reason behind using an in-depth interview approach is that researchers aimed not only to understand the drivers of adoption from the managerial perspective but also the impact of this adoption on organizational readiness.

In the first stage, a focus group discussion of two metaverse industry experts was conducted, to supplement the factors sorted via extensive literature review. With the findings of the focus group discussion semi-structured interview questionnaire was developed to administer to academicians in Dhaka, Bangladesh. 10 faculty members from 5 universities were contacted who are aware of the potential of metaverse technologies in the education sector. A positive response was received from 7 respondents from three universities with science, engineering, commerce, law, and fine-arts discipline background. The interviews were conducted in the year 2023. Each interview lasted around 25-30 minutes each and was recorded with prior permission. Responses were then transcribed for advance analysis. Apart from basic roles, responsibilities, and academic and professional background related queries, some of the questions asked in the interviews were as follows:

Q1. What are the potentials of metaverse in educational sector?
Q2. What are the expected outcomes of metaverse deployment in education?
Q3. What challenges are there in introducing metaverse or immersive learning in academia?
Q4. What prerequisites (courses/technologies) must be covered before thinking of implementation?

This process helped the researcher in understanding and clarifying current issues as well as exploring new ones in case of metaverse adoption and its impact on organizational readiness of educational institutes.

4. Analysis:

Figure 1 outlines the stages of data analysis process for this research. Deductive coding of the TOE framework is employed in conjunction with a thematic analysis (Braun and Clarke, 2006) to complete this research. The selected methodology was utilized based on its capacity to efficiently apply theoretical frameworks to the gathered interview data, while also enabling the identification of themes through an inductive approach.

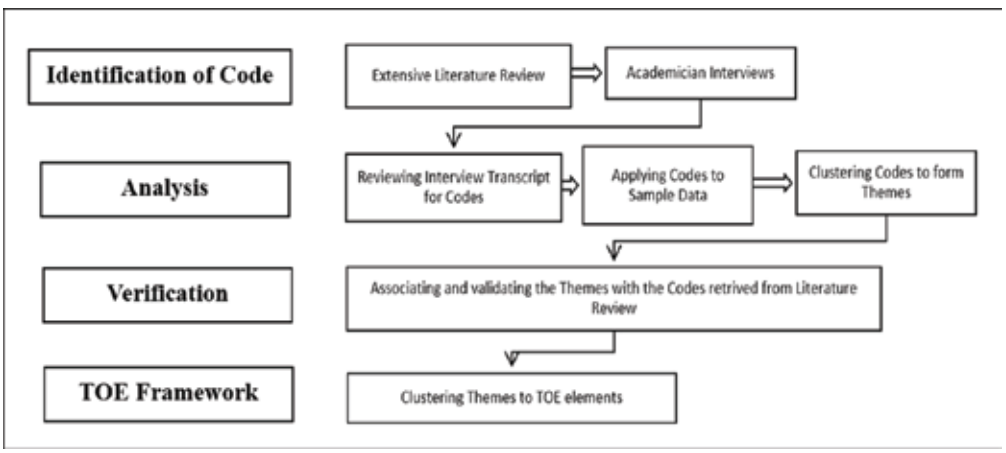

Figure 1 Research Process

Table 1 and 2 provides the details of the focus group participants and Academician Interviewees.

Identification No. IE=Industry Expert	Company type	Sector	Location
IE01	Multinational	Information Technology	Bangladesh
IE02	Local	Information Technology	

Table 1: Focus Group Participants Details

Identification No. (AC=Academician)	Educational Background	Current field of Teaching	Experience in teaching
AC01	Management Information System	Business School	6 Years
AC02	Arts and Social Science		10 Years
AC03	Engineering and Master of Business Administration		12 Years
AC04	Law		14 Years
AC05	Business Studies		10 Years
AC06	Computer Science	Science and Information Technology	12 Years
AC07	Computer Science		11 Years

Table 2: Interviewee Details

Excerpt from Interview	Code Group	Theme	Supporting Cases	TOE Factor
"Many teachers and also students are not aware of the benefits offered by Metaverse, it may take few years for everyone to get familiar with this concept."	Lack of awareness, Metaverse Knowledge (Osei *et al.*, 2022)	Uncertainty (Eze *et al.*, 2018)	AC01, AC02, AC03, AC05, AC07 Support Percentage: 71%	Technology
"I do not know how well this metaverse will blend in with current education structure in Bangladesh"	Infusion of new technology in current structure, Replacement of legacy system (Eze *et al.*, 2018)	Compatibility (Eze *et al.*, 2018; Gupta, 2023)	AC03, AC04, AC05 Support Percentage: 21%	
"Students will learn better and efficiently with immersive learning"	New technology will outperform the current in practice, Perceived benefit, Fit for purpose (Alshamaila, Papagiannidis and Li, 2013)	Relative advantage (Eze *et al.*, 2018)	AC01, AC03, AC04, AC06, AC07 Support Percentage: 71%	
"Bangladesh is yet to reach a point, where they will be producing this sort of (metaverse) hardware or software locally….it gets expensive." "The complexity of the system may play as a disabler for metaverse application in education sector"	Costly foreign manufactured devices, intricacy of the hardware and software involved, High Investment, Hardware / Device challenges, Complexity (Eze *et al.*, 2018; Gupta, 2023)	Perceived affordability (Eze *et al.*, 2018)	AC01, AC02, AC03, AC04, AC05, AC06 Support Percentage: 85%	
"Metaverse is at its inception stage, we are yet to see its final destination." "(For)…deploying metaverse, we need digital content relevant to our (Bangladesh) context"	More knowledge and deployment cases required before implementation, Limited Application scenarios (Osei *et al.*, 2022)	Insecurity of early adaption (Osei *et al.*, 2022)	AC02, AC03, AC04, AC05, AC06, AC07 Support Percentage: 85%	
"How secure will be metaverse, to put out all our student information, avatar, also how this will impact our students (physically and mentally), we are yet to figure out"	Risk of hacking, Risk of cyber-attacks, Network security challenges (Gupta, 2023)	Security Concern (Osei *et al.*, 2022; Gupta, 2023)	AC01, AC02, AC05 Support Percentage: 21%	
"Any new technology implementation requires huge top management commitment." "During Covid, we all easily got adapted to Microsoft Teams." "If strategic policy makers of the organization make technological advancement as an integral part of the organizational plan, ..deployment gets easier"	Technological adoption in organizational vision, Top management support (Osei *et al.*, 2022)	Owner Support (Eze *et al.*, 2018; Osei *et al.*, 2022)	AC01, AC02, AC03, AC04, AC05, AC06, AC07 Support Percentage: 100%	Organization
"Import duty on devices adds to the financial burden of the organization." "In our budget, we now must have a portion for technological advancement"	Budget allocation for metaverse technology, Inadequate Budget (Osei *et al.*, 2022),	Financial Challenges (Gupta, 2023)	AC02, AC03, AC05, AC07 Support Percentage: 57%	
"Teachers need to have training on metaverse applications, so that they can in turn teach students." "Covid made us teachers acquainted with technology, we can get used to metaverse as well, when widely available"	Preparedness of faculty, Prior technology experience, preparedness of students, Lack of skilled workforce (Gupta, 2023)	Organizational Readiness (Osei *et al.*, 2022)	AC01, AC02, AC03, AC04, AC05, AC06, AC07 Support Percentage: 100%	
"Local vendors providing these services, will take a little longer to form." "Formulating regulation for is another hurdle we need to cross for proper implementation"	Vendor availability, Regulatory and administrative challenges (Gupta, 2023)	Inadequate Infrastructure (Gupta, 2023)	AC01, AC04, AC06, AC07 Support Percentage: 57%	Environment

Table 3: Data Analysis

5. Findings:

Organizational Readiness to adopt new technology along with the top management support to implement, that turned out to be the most influential factor for deploying technologies like metaverse; and interestingly both adheres to the organizational factor of the TOE framework. As metaverse is still in its inception, insecurity to its early adoption stretches to the uncertainty of perceived advantage, affordability, to the lack of success stories. For a country like Bangladesh importing devices to support metaverse will prove to be expensive and must wait till it matures a bit. In this research one limitation is the unavailability of major environmental factors. This scarcity can be attributed to the fact vendors to provide infrastructural support to consumer opinion on metaverse are yet to form in Bangladesh.

6. Conclusion:

Bangladesh, like other developing countries, can reap better benefits from metaverse due to limited access in industry, culture, and practical exposure. Metaverse can allow the students to immerse themselves in virtual industry tours, visit historical places, participate in global training, and can get hands on experience on innovative and relevant topics, without leaving the boundaries of their native place. In these developing years of metaverse, industry experts, faculty members and organizations itself from Bangladesh should work hard on educating the students about the benefits metaverse has to offer, so when its available, they should be ready to get the utmost facilities out of it. As we wait for the metaverse technologies to get more affordable, countries like Bangladesh should work on developing its own IT infrastructure suitable to avail these technological marvels and create an industry that can contribute more for such innovation.

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DQE003

THE ESTABLISHMENT AND PRACTICE OF EDUCATION QUALITY ASSURANCE SYSTEM OF SHANGHAI OPEN UNIVERSITY

-Xu Yingjie, Feng Xiumeng

Abstract

In the context of the new era, open education is faced with the great challenges and opportunities such as the general colleges and universities' involvement in on-line education, big companies' attempt to start the business of online education, people's pursuit of high-quality education, and social discrimination against open education relating to employment, etc. How to grasp the opportunity is the key to the high-quality development of Shanghai Open University in the new period. Based on this thought and through years of practical exploration, setting up a quality assurance system and a digital monitoring system to get educational achievements and teaching experience that can be learned and spread easily, the author aims at enhancing the level of Shanghai Open University to ensure education quality.

Keywords: open university, education, teaching, quality assurance system

1. Background

Open education is an important part of the lifelong education system. Open universities in China are tasked with the mission of building a high-quality open education system. Shanghai Open University is one of the first batch of local open universities approved by the Ministry of Education of People's Republic of China, and it is a university that serves the development strategy of Shanghai. As an important platform of open education, SOU is gradually integrating higher education resources to form an open learning platform and create new talent cultivation and education service supply modes to better meet diversified learning needs. By 2022, the pilot project of Shanghai Open University to explore the transformation and development of a new type of higher education institution has lasted for ten years, and a new type of university development model has taken shape.

2. Challenges

Due to the factors of special positioning, unique development model of integrating vocational education, higher education and continuing education, diversified branch school-running bodies (42 branches) and differentiated learners' backgrounds, Shanghai Open University is facing problems in the process of developing such as lack of a strong grip on the management of the head office, big differences in the level of branch school-running, different levels of teaching staff and uneven professional development, which have affected the quality of its talent cultivation and development. Besides, for quite a long period of time, Shanghai Open University was evaluated with reference to the evaluation standards of common colleges and universities. Therefore, there was a lack of evaluation system targeting the characteristics of SOU and there were quite a number of problems in the quality assurance of SOU, which were the following three aspects:

2.1 Lack of a sound quality assurance system.

There are big differences in the level of teaching and staff between the main campus and branch campuses and among branches, and the standards for setting up specialties, teaching, branches setting up are not sufficiently perfect, making it difficult to ensure the quality of teaching and learning.

2.2 Lack of effective management and monitoring tools.

In Shanghai Open University, the head office lacks a strong grip on the management of its branches, and follows traditional practices in teaching quality management, making it difficult to dynamically grasp the situation of teaching. In addition, the motivational and restriction mechanisms are not perfect enough to provide incentives and constraints for the branches.

2.3 Lack of well-received educational and teaching experiences that can be easily learned.

The resources of the various branches of SOU have not been effectively integrated and utilized, and the features of the branches are not prominent.

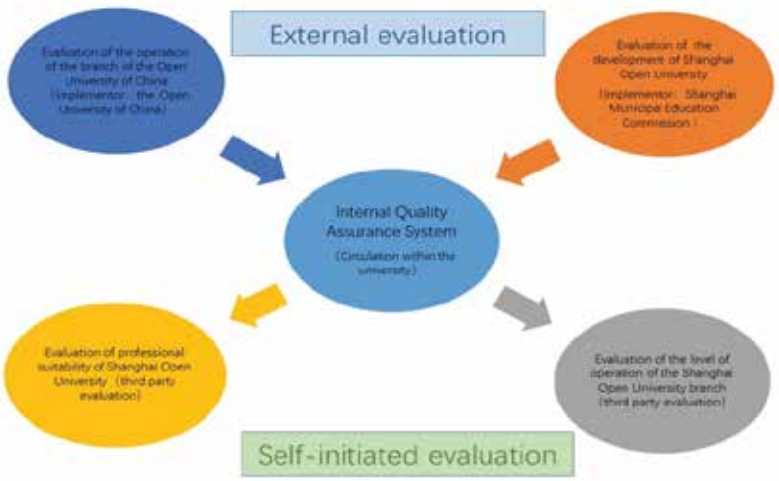
3. Solutions

3.1 Build a quality assurance system that links management, operation and evaluation, and that is internally and externally coordinated.

Shanghai Open University is not only an ordinary university, but also undertakes the responsibility of meeting the people's multi-level and diversified education and learning needs, exploring the formation of an open education model with Chinese characteristics, perfecting the lifelong education system, and helping to promote lifelong learning in the whole society. The internal quality assurance system of SOU covers the whole process of talent cultivation, from determining quality objectives to division of responsibilities, from resource allocation to process management, from monitoring and analysis to feedback and improvement, etc.,

which are interconnected and form a closed-loop operation. **T**he internal quality assurance system of SOU has clear objectives and tasks, sound departments and responsibilities; the responsibilities of management departments and learning support services are performed well; teaching supervision, specific evaluation and data monitoring are effectively implemented; and the information-based data platform is continually improved to achieve regular monitoring and timely feedback, while attention is paid to the utilization of the results and continuous improvement.

Shanghai Education Evaluation Institute is responsible for the implementation of the development evaluation project of Shanghai Open University. At the same time, according to the needs of SOU, it designs and implements the monitoring and evaluation of SOU's branches' running level and professional suitability, which is aimed at the synergy of internal and external evaluations, with external evaluations relying on internal evaluations, and meanwhile, external evaluations will push back and strengthen the improvement and upgrading of internal evaluations, and it will interactively adopt diversified evaluation modes during the evaluation process, and ultimately, form the internal-external interaction system with the concept of "management, operation, evaluation and synergy between the internal and external sectors", which is a closed circle, so as to push forward the sustained improvement of the quality of teaching and learning with the concept of the fourth-generation evaluation and consultative constructs.



3.2 Establish a data-driven digital college monitoring system covering the whole process of teaching and learning.
In 2019, Shanghai Open University and Shanghai Education Evaluation Institute jointly developed the quality monitoring platform for SOU, requiring branch campuses to fill in education and teaching related data through the platform, and the head office will review the data and use it as an important support data for the evaluation of the operation level of branch campuses. In 2021, the data analysis function of the platform was further developed and the platform system was optimized. At the same time, Shanghai Open University improved the quality of teaching staff and set up early warning mechanisms. With the close combination of manual assessment and intelligent evaluation, Shanghai Open University will eventually realize the integration of information sharing, self-evaluation, expert evaluation, management monitoring, data and information analysis and feedback functions with the database of teaching and management condition of SOU as the core, providing objective data support and effective implementation tools for quality assurance, and forming a digital school monitoring system covering the whole project of teaching and learning with data empowerment as the carrier.

3.3 Produce leading results of educational and teaching experience that can be spread and learned.
Integration of educational resources is a form of resource allocation in higher education, so enhancing the ability to integrate resources is crucial in development. And development needs to enhance features and promotes the level of education on the basis of one's own disciplinary characteristics and academic traditions. Through the evaluation, Shanghai Open University understands the effective use of various types of resources in the university, the distribution of resource allocation among the main campus and branches, etc. Shanghai Open University uses the advantageous resources in the place where it can achieve the greatest benefits, promotes the diversified development of SOU, and provides the society with diversified, rich and high-quality education services, highlighting the features of Shanghai Open University. After years of practical exploration of evaluation for development, the sharing of excellent experience, and the accumulation of optimization, Shanghai Open University wishes to produce the results of education and teaching experience that can be promoted, learned and sustained within the Shanghai Open University system

4. Innovation
4.1 Conceptual Innovation: Taking Shanghai Open University as an object, exploring a personalized and diversified evaluation index system suitable for this type of educational institution.
On the basis of the results of the previous research, Shanghai Education Evaluation Institute continues to explore and practice a series of evaluation index systems that are the first of its kind in China, which are in line with the characteristics of open education

and reflect the features of Shanghai. Through this series of tailor-made evaluation index system for Shanghai Open University, it can fully grasp the characteristics of Shanghai Open University in all aspects of education and teaching, strengthen the advantages and form the characteristics, and at the same time, identify the problems and rectify them in a timely manner according to the "pain points" and "difficulties". The evaluation will promote the development level of academic continuing education, enhance the capacity of non-academic continuing education, and promote the development of education informatization and innovative sharing of digital resources.

4.2 System Innovation: Exploring the development of an open education quality assurance system with linkage of management, operation and evaluation and internal and external synergy

The system is supervised by the government, hosted by the university, and evaluated by an independent third-party evaluation institution to form the linkage of management, operation and assessment, to formulate quality assurance standards and to improve the structure of quality assurance. Besides, establishing a quality assurance institution to promote and facilitate the internal quality assurance with external quality assurance, to synergize both internally and externally to form a closed-loop, and to build a culture of quality together. Especially in the context of the reform of separation of management, operation and evaluation, the system plays a catalytic role in promoting the transformation of government functions, realizing the synergy of management, operation and evaluation, and achieving the efficient development of comprehensive governance. The comprehensive application of this system will help Shanghai Open University to further define its orientation and development goals, form a distinctive talent training model and improve the quality of talent training.

4.3 Mechanism innovation: exploring the development of a multifunctional data monitoring and management platform that can cover the whole process of open education personnel training

We explore the development of a multifunctional data monitoring platform that integrates information management, dynamic monitoring, self-assessment (internal), expert assessment (external), information sharing, and scientific research, and serves the whole process of talent cultivation of Shanghai Open University. Through the development and operation of this data monitoring and management platform, it will provide strong technical support for the quality assurance system of Shanghai Open University, and then help form sustainable educational and teaching experiences that can be easily learned and spread in the field of open education.

5. Expected effect of talent cultivation

5.1 Through the quality assurance system of open education with the linkage of management, operation and evaluation and internal and external synergy, it helps to form a talent cultivation mode with the characteristics of Shanghai Open University and Shanghai features.

On the basis of regulating the operation of universities, the quality assurance system will improve the level of education, promote the development with features, help form a talent cultivation model with the characteristics of Shanghai Open University and Shanghai features, and cultivate talents with applied skills in line with the trend of national and socio-economic development and the needs of industry and industrial development.

5.2 Evaluate to develop, manage and improve SOU and promote new functions and concepts of the development of Shanghai Open University in the new era.

Through evaluation, we can get to know the implementation of some basic tasks in SOU, and then deeply explore the new functions and concepts of SOU. Efforts will be made to promote the high-quality development of open education. SOU plays an important role in the implementation of the strategy of developing the country through science and education, by relying on talents, and through innovation-driven development.

5.3 Optimize the allocation of resources, highlight the characteristics and promote the formation sustainable educational and teaching experiences that can be easily learned and spread in the field of open education

Through the research and application of the results of this project, Shanghai Open University optimize the allocation of resources and promote the diversified development. Shanghai Open University apply the talent cultivation model with its own characteristics and Shanghai features to further improve the quality of talent cultivation. Shanghai Open University developed a set of sustainable results of educational and pedagogical experience that can be easily learned and spread to disseminate in the field of open education.

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DQE002

FROM EXTERNAL QUALITY ASSURANCE TO INTERNAL QUALITY ENHANCEMENT

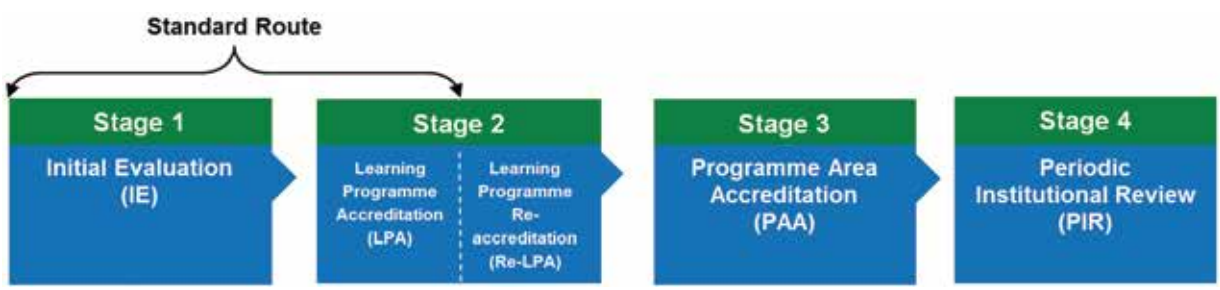
-Christina Ng

Abstract:
The Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) developed the Four-stage Quality Assurance Process and implemented it with accreditation standards for each stage to underpin the Hong Kong Qualifications Framework (HKQF). An analysis of the accreditation track records of sampled Operators in the programme accreditation stage shows improvement in their competence for meeting the quality standards, and supports the dual purposes of gate-keeping and gate-opening for the design of the external quality assurance process. The analysis also sheds light on the training needs of the Operators.

Content:
1.HKCAAVQ's External Quality Assurance Mechanism

The Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) performs the statutory roles of the Accreditation Authority under the Academic and Vocational Qualifications Ordinance (AAVQO) of Hong Kong, responsible for the quality assurance of qualifications awarded by non-self-accrediting Operators. The core function of HKCAAVQ is to develop and implement the standards and mechanism for academic and vocational qualifications accreditation to underpin the Hong Kong Qualifications Framework (HKQF). Qualifications accredited by HKCAAVQ are eligible for entry into the Qualifications Register for recognition under the HKQF.
Under the AAVQO, HKCAAVQ performs the dual roles of a gate-opener and a gate-keeper. As a gate-opener, HKCAAVQ supports Operators in understanding the minimum accreditation requirements through the provision of information and training about the accreditation standards and process. HKCAAVQ also performs its gate-keeping role through the accreditation process to ensure that HKQF-recognised programmes and qualifications are meeting the standards under the specified levels of the HKQF as described in the Generic Level Descriptors (GLD) of the HKQF.
Following the legislative intent, HKCAAVQ developed accreditation standards that have a focus on Operators' organisational competence in operating and ensuring the quality of its delivery of learning programmes under the HKQF throughout the accreditation validity period. The assessment of organisational competence takes into consideration the nature of the learning programme(s) that an Operator offers or plans to offer.
The mechanism developed is the Four-stage Quality Assurance Process (the Process) which ensures that Operators possess the competence required to operate their learning programmes (Stages 1 & 2), and in the long run encourages progressive development of organisational competence for continuous enhancement (Stages 3 & 4).

Figure 1: Four-stage Quality Assurance Process



The Process, shown in Figure 1, is designed with a particular purpose for each stage to develop the competence of Operators, and to recognise established track record of Operators. Stage 1, as the first stage for an Operator to seek accreditation, focuses on the institutional competence to assure the quality of its learning programmes for meeting the QF standards, whereas Stage 2 accredits individual learning programmes based on the standards, and requires cyclical reviews at the end of the validity period granted. Moving to the stage of Programme Area Accreditation (PAA) is not automatic and requires demonstration of a high level of competence of an Operator in effective management and continuous self-improvement in a systematic and information-driven manner. Therefore, accreditation by HKCAAVQ is not designed to replace internal QA, but rather works in collaboration with the internal QA of Operators for enhancement and recognition. The following table summarises the purpose of each stage in the Process:

Stage	Purpose Statement
Initial Evaluation (IE)	To ascertain whether an Operator is competent to operate learning programme(s) that meet HKQF standards up to a certain HKQF level.
Learning Programme Accreditation/ Re-accreditation (LPA/Re-LPA)	The purpose is twofold: To ascertain whether a learning programme (proposed or accredited) meets an HKQF standard to achieve the claimed objectives. To ascertain whether the Operator of a learning programme is competent to continuously monitor and improve the effectiveness of its programme operation to achieve the claimed programme objectives.
Programme Area Accreditation (PAA)	To ascertain whether an Operator is competent to quality assure its learning programme(s) within a programme area up to a certain HKQF level, as demonstrated from the track record of its operation of accredited learning programmes in a particular discipline or industry area, and its capacity to enhance its organisational effectiveness to achieve the educational/training objectives.
Periodic Institutional Review (PIR)	To ascertain whether an Operator continues to be effective in achieving its vision and mission by systematically enhancing the quality of its operation by formulating and implementing actions based on evidence.

2. Programme Accreditation Standards

Learning programme accreditation (LPA) and re-accreditation (Re-LPA) are shared the purpose to ascertain the quality of the learning programme, while LPA is the accreditation for new programme with a validity period granted on the accreditation status. Re-LPA is the process to monitor and re-confirm the quality during the validity period before another validity period is granted. Both LPA and Re-LPA use the same set of programme-based standards. There are 7 domain of competence and each is defined by an accreditation standard. The domains of competence and the accreditation standards for Learning Programme Accreditation (LPA)/Re-accreditation (re-LPA) are specified below.

	Domain of Competence	Accreditation Standard
LPA-1	Programme Objectives and Learning Outcomes	The learning programme must have objectives that address community, education and/or industry needs, with learning outcomes that meet the relevant HKQF standards, for all exit qualifications from the programme.
LPA-2	Learner Admission and Selection	The minimum admission requirements of the learning programme must be clearly outlined for staff and prospective learners. These requirements and the learner selection processes must be effective for recruitment of learners with the necessary skills and knowledge to undertake the programme.
LPA-3	Programme Structure and Content	The structure and content of the learning programme must be up-to-date, coherent, balanced and integrated to facilitate progression in order to enable learners to achieve the stated learning outcomes and to meet the programme objectives.
LPA-4	Learning, Teaching and Assessment	The learning, teaching and assessment activities designed for the learning programme must be effective in delivering the programme content and assessing the attainment of the intended learning outcomes.
LPA-5	Programme Leadership and Staffing	The Operator must have adequate programme leader(s), teaching/training and support staff with the qualities, competence, qualifications and experience necessary for effective programme management, i.e. planning, development, delivery and monitoring of the programme. There must be an adequate staff development scheme and activities to ensure that staff are kept updated for the quality delivery of the programme.
LPA-6	Learning, Teaching and Enabling Resources / Services	The Operator must be able to provide learning, teaching and enabling resources/services that are appropriate and sufficient for the learning, teaching and assessment activities of the learning programme, regardless of location and mode of delivery.
LPA-7	Programme Approval, Review and Quality Assurance	The Operator must monitor and review the development and performance of the learning programme on an on-going basis to ensure that the programme remains current and valid and that the learning outcomes, learning and teaching activities and learner assessments are effective to meet the programme objectives.

At the end of the accreditation process, HKCAAVQ makes an accreditation determination in the accreditation report after considering the Accreditation Panel's recommendation(s), taking into account the available evidence collected by the Accreditation Panel during the process. The possible determinations made by HKCAAVQ are:

(a) Approval

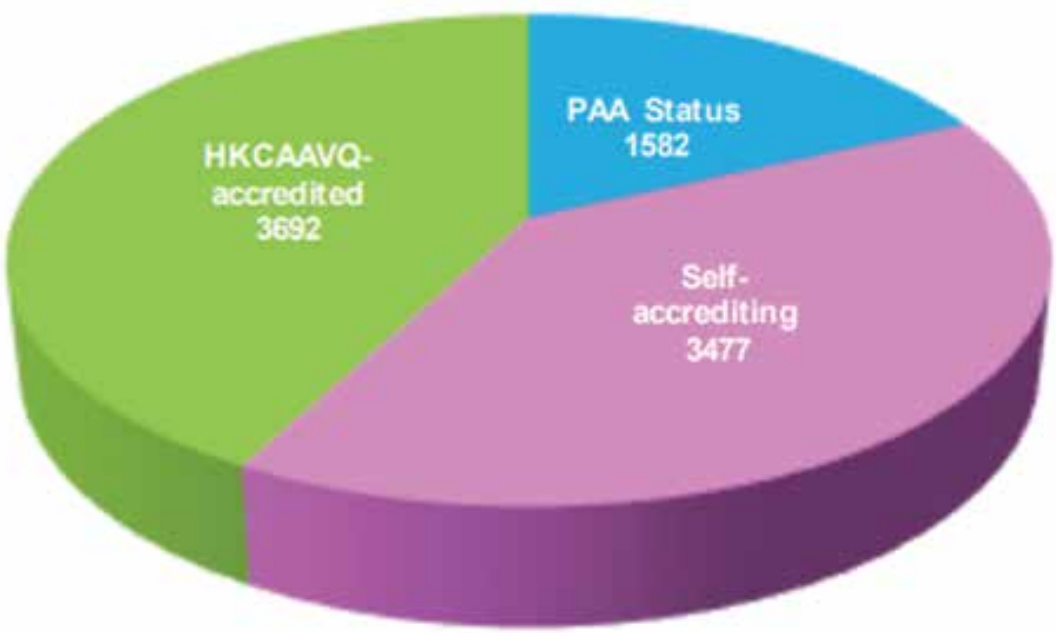
(b) Approval with condition(s) and/or restriction(s)

(c) Non-approval

A decision to stipulate Conditions forms part of HKCAAVQ's accreditation determination. Conditions are included in the accreditation determination when HKCAAVQ, based on the Panel's recommendation, considers that the Operator is to fill certain critical gaps in order to fully and holistically meet the accreditation standards through the fulfilment of specified Condition(s). Accordingly, if the accreditation report includes Conditions, the approval determination by HKCAAVQ has effect subject to those Conditions being fulfilled. Operator must provide evidence for fulfilment of Conditions by the specified dates. After considering the evidence, HKCAAVQ and/or the accreditation Panel may request further information or seek clarifications, if necessary. Operators are expected to complete the fulfilment of the Conditions normally within 3 months from the first submission. Conditions must be fulfilled in order for the programme or Operator to meet the relevant standards. This being the case, if an Operator fails to fulfil the Condition(s), the approval determination in the accreditation report does not have effect.

At present, there are 290 operators operating 8751 learning programmes. As illustrated in Figure 1 below, about 42% of the learning programmes were accredited by HKCAAVQ, while 40% were operated by self-accredited universities, and 18% were offered by 17 operators with PAA status.

Figure 1: Qualifications on HKQR



3. Accreditation as Enhancement Process

Programmes offered by HKCAAVQ accredited operators without PAA status are subject to cyclical reviews. The accreditation processes of LPA and re-LPA serve the dual purposes of "gate-keeping" and "gate-opening". The same set of standards for LPA is used for re-LPA, with different focus on evidence of programme operations. Conditions included in the accreditation determination are specific indications of areas of improvement that the Operator needs to work on in order to fully meet the related standard. Accreditation is thus a learning process for Operators to enhance their internal quality assurance mechanism for meeting the QF standards.

The Quality Management System (QMS) of HKCAAVQ is a database which hosts details of the outcomes for each accreditation exercise, including the Conditions stipulated in the determination. An initial analysis was conducted on the accreditation profiles of 7 higher education institutions to verify the expected improvement in their re-LPA performance as compare to LPA. These 7 Operators offer more than 10 accredited programmes on the QR, and have gone through substantial number of accreditation exercises.

In Table 1, the number of Conditions included in LPA is divided by the number of LPA, resulting in a performance index. The same formula is used for re-LPA. The performance indexes for LPA and re-LPA are listed in the table below. As shown, the re-LPA index is much lower than LPA for all the 7 Operators. Generally speaking, all the 7 Operators learned from the fulfilment of Conditions in LPA and improved the quality of their programmes in subsequent re-accreditation.

Table 1: Accreditation Performance Index of Operators

Operator	Accredited Programme on QR	LPA	LPA Conditions	LPA Performance index	Re-LPA	Re-LPA Conditions	Re-LPA Performance index
1	53	76	153	2.01	67	73	1.09
2	18	16	33	2.06	21	17	0.81
3	18	29	49	1.69	26	12	0.46
4	15	15	33	2.20	29	32	1.10
5	12	15	66	4.40	16	27	1.69
6	11	12	23	1.92	10	0	0.00
7	11	17	31	1.82	22	24	1.09

A further comparison of the number of Conditions in LPA and re-LPA under each standard shows improvement in all standards (Table 2). The biggest improvement can be found in LPA-5 Programme Leadership and Staffing, LPA-6 Learning, Teaching and Enabling Resources/Services, whereas the number of Condition under LPA-3 Programme Structure and Content remains high despite the drop in re-LPA.

Table 2: Number of Condition by Accreditation Standard

Programme Accreditation Standard		Number of Condition	
		LPA	Re-LPA
LPA-1	Programme Objectives and Learning Outcomes	41	10
LPA-2	Learner Admission and Selection	30	17
LPA-3	Programme Structure and Content	80	44
LPA-4	Learning, Teaching and Assessment	65	42
LPA-5	Programme Leadership and Staffing	79	24
LPA-6	Learning, Teaching and Enabling Resources/Services	50	10
LPA-7	Programme Approval, Review and Quality Assurance	56	26

The analysis above shows overall improvement in Operators' performance in terms of meeting the quality standards for delivering learning programmes. The numbers under LPA-1, LPA-3 and LPA-4, indicate that Operators may still have difficulties in programme design and delivery, despite efforts made after LPA for fulfilling the Conditions. The finding also sheds light on the training needs of Operators. More training should be provided to update Operators on the principles of programme design, development and delivery, as well as the latest policies under the HKQF.

4. Conclusion

HKCAAVQ has the statutory roles of gate-keeping the quality standards underpinning the HKQF, and gate-opening to support the development and enhancement of the internal quality of Operators for delivering learning programme under the HKQF. The Four-stage Quality Assurance Process developed by HKCAAVQ and implemented with the accreditation standards under each stage stipulated the competence requirements for programme operations. The Conditions included in the accreditation determinations provide guidance for Operators to enhance their internal quality assurance mechanism for meeting the standards. With the QMS database of accreditation outcomes, the initial analysis of the sampled Operators' performance confirms the design and the value of the external quality assurance process for the enhancement of internal quality assurance of Operators.

DQE005

QUALITY ENHANCEMENT THROUGH INTERNAL AND EXTERNAL QUALITY ASSURANCE IN A DIGITAL ENVIRONMENT

-Deepthi C. Bandara and M.D. Lamawansa

Abstract

The Institutional Reviews (IR) of Sri Lankan State Universities were conducted from 2017 – 2023 in its second cycle. Many setbacks occurred due to the pandemic in this period. However, the University of Peradeniya whose IR was scheduled for 2022 and postponed used this as an opportunity to introduce a new initiative in the form of an Internal Institutional Review (IIR) to prepare itself better for the actual IR. A review panel of 7 members comprising Emeritus and Senior Professors and 10 committees to work on the 10 criteria under review were appointed by the Vice Chancellor. All preparations were done on a digital platform where Self Evaluation Report writing and evidence uploading was done using a link to a G-drive. Reviewers made explicit comments regarding the claims and evidence and much insight was made available to the University. This output was taken to prepare intensely for the actual review and meta analyses were conducted on the evidence to produce summary outcomes for the period under review. This exercise proved to be a significant and useful process since the University was able to secure the highest rank in the actual compared to a one rank below that obtained in the IIR. This proves a point that for both IQA and EQA a digital environment provides an efficient platform in the journey towards quality enhancement.

1. Institutional Review (IR) in Sri Lanka

1.1 Background of the Quality Assurance (QA) system in Sri Lanka

The QA system operational for the Sri Lankan State Universities under the aegis of the Quality Assurance Council (QAC) of the University Grants Commission (UGC) is with an External Quality Assurance (EQA) system and the Internal Quality Assurance (IQA) system in each University that works in tandem as shown in the figure below.

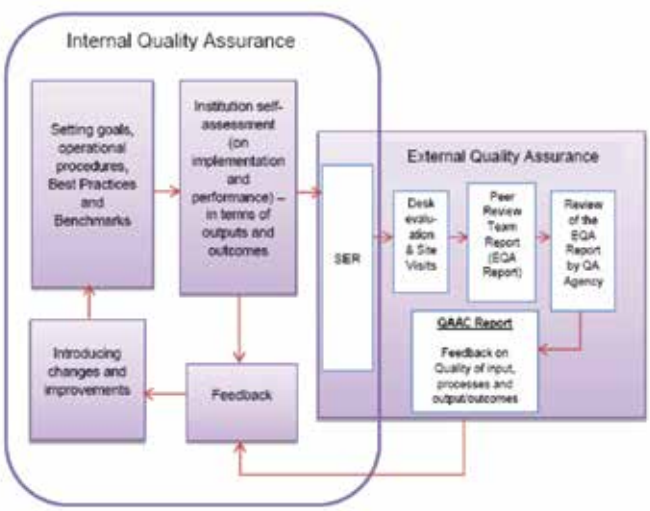


Figure 1 **Functional link between the Internal Quality Assurance and the External Quality Assurance.**

1.2 Summary of the First Cycle of IR

The Institutional reviews (IR) was initiated in 2006 and the first cycle was completed with reviewer panels comprising totally of local reviewers. There was a guideline manual for the reviewers which evaluated Universities on 8 criteria. No specific standards were given for evaluation in this manual.

1.3 Summary of the Second Cycle of IR

The second cycle of IRs was started in 2017 and continued through 2023 at which time all 15 Universities to be reviewed were scheduled to be completed. There were two new dimensions in the second cycle. One was the use of the "Manual for Institutional Review of Universities and Higher Education Institutes in Sri Lanka" developed through the University Grants Commission where Universities submitted a Self-Evaluation Report (SER) for which individual desk evaluation reports on a template provided by the Quality Assurance Council (QAC) were submitted by reviewers of the panel before proceeding to the respective sites. The evaluation was on 10 criteria as specified by the review manual (shown below).

Figure 2: The Manual for External Review of Universities and Higher Education Institutes in Sri Lanka

The second was where the reviewer panel included an international reviewer in addition to the local reviewers which significantly enhanced the quality of the reviews.

Not-withstanding the setback posed by the pandemic during the period of 2020 to 2023, the IR of the second cycle was expected to have developed a number of capacities over the first cycle. All the universities were expected to have capacities to set and realize their university goals and objectives in the Strategic Management plan and Action plans. Further, the capacity to implement strategies and procedures in accordance with the codes of practice, compliance with Sri Lanka Qualification Framework (SLQF) when developing new programs of study or modifying existing ones was expected. A desire to engage in a constructive critical self-evaluation without threat or hindrance, and willingness to submit oneself and the institution to external peer review with a sense of 'ownership' of the process of inquiry and review at all levels was also expected. By the time of starting the second cycle of reviews one of the essential pre-requisites for external quality assurance was a well-established internal quality assurance system entrenched within the university itself.

2. New initiative in Second Cycle by the University of Peradeniya: Inclusion of an Internal Institutional Review (IIR) in a Digital Environment

It is imperative that tertiary education provision and its quality assurance is an essential commodity to be ensured by any country that is aspiring to be in the global arena of higher education. Hence the Internal Quality Assurance (IQA) of any Higher Educational Institute (HEI) plays a crucial and significant role in the journey towards quality enhancement of an Institute.

The Center for Quality Assurance at the University of Peradeniya has been a dynamic entity in the last 5 years in forging new heights for attaining quality for the Institute and its' programs.

2.1 IIR Process in the second cycle

The University of Peradeniya was scheduled for its IR in 2022 in the second cycle. However, due to the pandemic the review was delayed. This delay was taken as an opportunity to prepare for the actual review by conducting an Internal Institutional Review (IIR). This initiative taken by the Vice Chancellor in early 2022, appointed a review panel comprising 3 Emeritus professors and 4 senior professors of the university. The University submitted a self -evaluation report as prescribed by the QAC.

The challenging and exiting aspect of this IIR was that 95% of the review was done in a digital environment. This was necessary as the COVID prevention protocols were still operative in Sri Lanka and mobility of academics, students and other Officers were restricted.

The University had appointed 10 working committees to address the 10 criteria with a chairman for each. All were guided and directed by the Director of the Center for Quality assurance (CQA) which is the entity responsible for the internal quality assurance of the University. Each committee worked on the standards in each criterion where the number of standards per criterion was different. As the members of the committees were working remotely, many online discussions, meetings, exchange of documents had to be accomplished. As the review was to be conducted on verifying evidence on support of the SER, availability of evidence online was a major activity which had to be fulfilled. Additionally, the authenticity of the documents had to be maintained.

2.2 Methodology of Review

An example of the manner in which the committees compiled the documents is shown below. For each criterion an introductory paragraph was provided and the claim in fulfilling each standard with supporting evidence documents was given in a template provided by the QAC. Each piece of evidence was coded and uploaded to a site in the google drive. The first 4 columns of the Table below is the template on which the SER writing team made their claims and stated their sources of evidence.

2.2.1 Example on Criterion 2: Curriculum Design and Development

The University has policies and procedures in place to design and develop curricula to produce graduates of relevance. National guidelines are adopted, and OBE-LCT principles are encouraged and applied in many programs. Guidelines and SOPs are made available to that effect. In addition, theoretical understanding and skills are provided during induction training and CPDPs. Those actively involved in producing/revising curricula are trained and guided at relevant entities by local/international experts to ensure constructive alignment and production of graduates of demand.

Standard	Claim	Documentary Evidence	Code	Comments by a reviewer
2.1	The UoP maintains conformity of academic programs with its M&V and goals. There is a well-established procedure for curriculum revision/development and approval. Faculty/PGI level committees undertake the tasks. The outcome will be approved by FB, ADPC, and Senate and UGC.	Faculty policies/plans	2.1.1	**Faculty level policies/plans** on curriculum revision and development: A University policy on Curriculum planning, Development and Revision has been approved on 4.4.21. It is a very good document and includes Overview, Scope and Application with Key Policy Principles: Planning, Design and Revision, Fall - back options and Discontinuations, Approval, Dissemination, Monitoring and Improvement. It includes Definitions and Related Policies also. Key concepts such OBE, SCL, ILOs, graduate profiles work-based placements ae included. FoAg – policy available on similar lines to the above – no date of approval; FoArts- A revision has taken place in 2018 and revision guidelines for Honors degree program available. Departmental meeting minutes of 1 dept.- irrelevant; F o Den Sc: Policy dated 2019 available; Fo Med- policy related to Mgt of MBBS 2019 which has a policy on CD is available; PGIA – Teachers handbook – 1 paragraph only on revision of curricular – no date for this book; PGIS – no specific policy (just 1 page about university policy) – no date
		TOR- CDCs	2.1.2	FoAg: significant work during review period; Fo AHS – considerable work during 2009-20 period; Fo Arts – considerable work especially after program reviews; F of Den Sc- considerable work. Remove docs of 2022 as period under review ends in 2021; F of Eng – considerable work; F of Mgt- considerable work; F of Med – considerable work; PGIA – no significant work in the period; PGIHA – no significant work during the period; F of Sc – some work, a note on policy – no date; F of Vet – some work; PGIS – considerable work.

The reviewer opened a column (5th column) to the right of the above template and an example of the comments given by one reviewer as evidence for code 2.1.1 is given in this column as shown above. For the same standard 2.1 several other pieces of evidence were uploaded as shown. One such coded as 2.1.2 on TOR of Curriculum Development Committees, the reviewer's comments were as above in the 5th column.

2.2.2 Example on Criterion 10: Quality Assurance

Quality Assurance is integral to the UoP, and it ensures that it fulfils its mandate from inception. The University adheres to national policies & regulations and follows prescribed guidelines. The QA network promotes adopting new best practices and sharing existing best practices among its entities. The University emphasizes the IQA and benefits from EQA activities by adhering to recommendations of external reviews following deliberations at the FBs, Senate and Council. The QA policy and by-laws of the University guarantee its assurance to ensure the quality and standards of its core functions.

Standard	Claim	Documentary Evidence	Code	Comments by a reviewer
10.1	The university adopts a comprehensive and integrated QA mechanism under the CQA with established policies & by-laws in line with national requirements.	Policy on Quality Assurance	10.1.1	Provide evidence that the university policy on QA is in line with the national policy on QA in higher education.
		CQA by-laws	10.1.2	CQA by-laws illustrates that the university is in line with the national policy on QA in higher education. This document is available at CQA archival.
		MC-CQA minutes	10.1.3	CQA minutes shows that the university adopts QA activities as per the requirements set out in the national policy on QA. CQA minutes are available at CQA archival.
		SP-22-26	10.1.4	University strategic plan The university strategic plan illustrates that the university has embedded QA matters in its strategic planning process. The following documents illustrate this. Goals Centre for Quality Assurance

2.2.3 Reviewer Comments

A link for the drive was made available to each of the reviewers who evaluated the claim with evidence. Each standard in a criterion could be scored on a 0 to 3 scale where the following score guide was used to evaluate the evidence supporting the claims in a Self-Evaluation Report submitted by the reviewed Institute: 0 – inadequate, 1- barely adequate, 2- adequate, 3- good. The totals in each criterion were then given a weightage on a predetermined 1000 scale. During the review, the evidence given against each standard by the University were carefully and objectively analyzed and assessed by the review team. Based on the documentary evidence, assessment of the extent to which each standard has been achieved by the University was recorded on the 4-point scale from 0-3. Then the performance of each Criterion was derived by tallying the scores given for all the standards in respect of the Criterion. The value obtained is the 'raw criterion-wise score'. Finally, the 'raw criterion-wise score' was converted into an 'actual criterion-wise score'. The university-wise score was derived by totaling all the 'actual criterion-wise scores' of the ten criteria and converting the total to a percentage.

The comments made by the reviewers for each standard in each criterion regarding the validity, fulfillment /non fulfillment of the claim was therefore critical for the SER writers to obtain a good understanding as to how they had made their claims and thereby contribute to the final result in an actual Institutional review. Since the drive was available for each reviewer for a specified period of time, the evidence documents could be perused anytime the reviewer wished to evaluate the SER. For practical purposes, each criterion was evaluated by two reviewers of the panel and they discussed with each other about their individual marks before a panel discussion was arranged to discuss the entire SER. Once this was over the "site visit" was made by the panel to the University. Here again the members of the panel were housed in a location and "site visits" were made by online discussions, focus group online meetings, video presentations and virtual tours. Since the members of the panel were together at this time it was convenient for them to make informed, collective decisions to conclude the "site visit" effectively. A few in-person meetings were also held for wrapping up the review.

3. Outcome of IIR

3.1 Reviewer Feedback

According to the final score received, the overall performance of the University of Peradeniya was given "B" grade with a performance descriptor of "Good". It was to be noted that the University-wise score was just above the required cut off mark to be qualified for the grade B. As indicated throughout the reviewers' report, some entities of the University of Peradeniya had very well established quality assurance process whilst others were yet to consolidate good practices, though they have taken initiatives. The Panel was of the opinion that the preparation of a very good SER with clearly formulated claims for each standard supported by relevant evidence is imperative for the pending actual Institutional Review (IR). In this regard, the compilation of relevant information from each faculty, PGIs and other entities followed by a meta-analysis at the University level was considered very important. The Review Panel conducted the Desk Review from 23rd February 2022 to 4th March 2022, based on the information contained in the SER provided by the Director-CQA. Zoom meetings were held with all members of the team to discuss the findings of the Desk Review. Having gone through the results of the Desk Review, the Panel identified two members for each criterion of the IR manual to go through the evidence uploaded in the Google Drive. These two members were requested to consult each other in assessing each standard under the assigned criteria.

The Panel visited the University thereafter for the "site visit" in March 2022. The meetings on the first and the last days with the university staff and students were conducted physically whilst rest of the meetings were conducted online. In view of the enormity of the task of checking evidence pertaining to all faculties and units, the Panel was divided into two groups. The UoP had made arrangements for the two groups to conduct meetings simultaneously without any interruption. Staff who coordinated these meetings with faculties and various units needs to be commended for their professionalism. The Review Panel was very satisfied with the agenda, and facilities provided by the University. Some of the evidence was made available when requested by the Panel.

The importance and significance of this new initiative in writing an SER for an Internal Institutional Review was well established and proven by then to the University community. They were also overwhelmed by the fact that almost the entire review could be done digitally providing them a golden opportunity to identify deficiencies and amend processes and collect necessary evidence to prepare for the actual review.

3.2 Further Training

Hence the Vice Chancellor once again took an initiative to appoint two of the Emeritus Professors who were in the IIR to conduct training for the 10 committees which were dealing with the 10 criteria of the IR manual. Thus the following training sessions were held in September/October 2022 to augment the compiling of the actual SER for the IR scheduled for 2023.

Training was conducted for Criterion Chairpersons and Training for the Chairperson and members of the committees given in the Table below.

Criterion No.	Criterion	Number of Standards in Criterion
1	Governance and Management	29
2	Curriculum Design and Development	15
3	Teaching and Learning	10
4	Learning Resources, Student Support and Progression	14
5	Student Assessments and Awards	15
6	Strength and Quality of Staff	11
7	Postgraduate Studies, Research and Innovation	25
8	Community Engagement, Consultancy and Outreach	06
9	Distance Education	13
10	Quality Assurance	07

As could be perceived since the number of standards varied in criteria and there were many pieces of evidence that could be used to substantiate the claim made by the University to prove their compliance with the standards selecting the most appropriate pieces of evidence and projecting it in a way which was most suitable to support the standard had to be decided. Thus several iterations had to be tried to come up with tables, figures, flow charts etc. to depict the evidence's support to be used for a standard. All these were done digitally and it was indeed a challenge to select the "best" method for proving a point. It also gave much flexibility to the committees to project their claims in the most useful manner. In addition, video clips, voice cuts and digital photographs were used to support evidence. It was an exciting and laborious task. However, the committees did the best they could since it was a challenge for them also to produce the most convincing pieces of evidence whilst maintaining the authenticity of their original source. The meta analysis of data over the period of evaluation and their projection was able to give insight to the reviewer within a short time.

3.3 Actual IR Outcome

Thus when the actual SER was expected to be sent in to the QAC of the University Grants Commission, the University was well prepared with updated versions of evidence for the criteria. Even though the actual IR occurred in May 2023, the QAC, UGC resorted to requesting digital evidence as was done in the initiative taken by the UoP. The QAC also believed that it gave more opportunity to members of the external review panel to peruse the documents whenever possible to them rather than go through hard prints of files and folders which they had to do before the pandemic and when on an IR site visit which provided very limited time availability.

4. Conclusion

The above exercise proves a very important point that internal quality assurance when conducted in a digital environment could actually bring the process of quality assurance as a practice which could be done on a daily basis as it should happen and form a neat platform and springboard for the actual external review which could also be done digitally. In the actual IR at UoP the review panel members did visit the University but used the digital platform before the site visit to have a thorough understanding as to what they should look out for when during the visit. With this we can conclude that internal and external quality assurance in a digital environment gives an Institute an edge in their journey towards quality enhancement. Additionally, it is with pleasure that we report that this exercise made the University secure an "A" grade in its actual institutional review which was concluded recently.

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M. D. Lamawansa, MBBS, MS, FRCS (Edin), PhD is currently the Vice Chancellor /University of Peradeniya, Sri Lanka and also Chair Professor of the Department of Surgery, Faculty of Medicine. He has bene a Council member of the College of Surgeons of Sri Lanka from 2002 and 2009. He was a member in the team which developed the Overall Policy framework of the 10- year Plan of the University of Peradeniya (2007-2016). He was the ambassador of the Democratic Socialist Republic of Sri Lanka to the Russian Federation from 2020 to 2021, till he took up position as the Vice Chancellor. He is an internationally recognized specialist in one of the most precise and most sought after areas of surgery — transplantation. Professor M. D. Lamawansa is a former Dean of Faculty of Medicine at University of Peradeniya and President of the Sri Lanka College of Surgeons. He was also the President of the South Asia Association for Regional Cooperation (SAARC) Surgical Care Society for the period 2020–2021.

REAL-TIME EMOTION DETECTION IN ONLINE VIVA EVALUATION

-Sazzad Hossain, Fatema Zuhura

Abstract

Web based Face orientation recognition enables virtual platforms to track facial orientation which can be helpful for organizations and educational institutions to monitor the employees and students during online meetings and classes. The researchers of this paper used MediaPipe Facemesh solution to detect face and facial landmarks with facial geometry. From the facial geometry, Euler rotational angle is calculated. Finally, Face orientation recognition was performed based on Euler rotational angle. The proposed solution provides on average 86.5% face orientation detection from maximum 4 ft. distances between camera and face.

1. Introduction

Facial recognition and orientation have attracted scholarly and business interest for over 50 years, with ongoing efforts to develop better algorithms for servers, desktops, and mobile devices. Web-based facial recognition is still relatively new but crucial for reducing latency and server load in one-click apps. Its wide-ranging applications include payment, security, advertising, and entertainment. Companies like Alipay, WeChat Pay, and MasterCard enable payment with facial recognition, while smartphone makers like Apple, Xiaomi, and Huawei use it for device unlocking. Facial++ collaborates with police to identify offenders at public events, and the entertainment industry employs it for video search and face-related tasks in film and TV production. Face identification aims to determine whether a given face appears within a specific dataset for comparison purposes (Chen, 2018). This research presents a Design Science Research (DSRM) web application that utilizes MediaPipe Facemesh for real-time face detection, facial landmark detection, and Euler rotational angle calculation. The web page uses basic HTML and CSS for front-end design, while a JavaScript library is the back-end. A systematic literature review was undertaken to create a web-based application for facial orientation detection, aiming to monitor facial movement, assess attentiveness, and curb cheating inclinations in students and employees. The results show satisfactory accuracy, achieving around 85% at different angles due to its mathematics-based system. The findings of this study demonstrate the feasibility and user acceptance of real-time face orientation detection in real-world applications. This technology has the potential to be seamlessly integrated into various virtual platforms, including online meetings, classes, online tests, and other similar applications.

2. Problem Analysis

After the covid pandemic outbreak, most of the offices and educational institutes shift to online platform to conduct their activity. Online based platforms give the flexibility to work and attend classes from home. For work and education purpose, employees and students need to attend meeting using online platform. But the problem with online platform is that, there is no authority to monitor the activity, attentiveness of the employees and students. Many students only attend the class and move away from the camera or start doing other things. It is not possible to monitor each student separately by a teacher. During online viva time many students check the answer from books, sheets or even from mobile phone. Keeping track where they are looking is quite a tough task for the teachers. There is no web-based meeting platform is available to track the face movement with timer which can help teacher and company officials to track the activity and attentiveness of their students and employees during classes, online viva and meetings. In computer vision, extensive research has been conducted on facial detection, employing the Convolutional Neural Network (CNN) framework. One particular study achieved an accuracy of 87% using this approach. The research employed Support Vector Machine (SVM) for face detection before face recognition to address uncontrolled factors like facial expressions and lighting conditions, demonstrating better results with CNN than traditional methods (Yuan, 2017). The research covered various aspects of face recognition and orientation. The proposed model achieved an impressive 97% accuracy (Xia, 2017). (Chen, 2018) improved face detection using Haar features and DNN-based facial landmark detection. (Wang, 2020) introduced an algorithm with 84.6% PCK and 83.7% CDR accuracy. (Zhang, 2019) achieved high accuracy in a multi-task framework. (Gupta, 2017) used a camera network approach for accurate analysis. This study examines Gradient and Coordinate Descent methods for Unconstrained Optimization, evaluating efficiency via experiments with different step sizes and comparing their performance in minimizing loss functions, (Bari, 2020). (Kumar, 2018) achieved 90% accuracy in face orientation detection. (William, 2019) attained remarkable accuracy with FaceNet-based recognition (99.375% on Essex faces94, 77.67% on faces96). The efficiency of centrally symmetric local binary patterns for real-time face recognition was explored, providing faster speed but slightly inferior recognition properties. (Sandoval, 2019) developed real-time multi-face recognition using deep learning, while (Paggio, 2018) proposed multimodal head movement identification. (Merrouche, 2017) achieved efficient eye movement classification with omnidirectional vision and ASL eye tracker, while (Tanaka, 2022) presented a novel user interface paradigm using electrical muscle stimulation to control head position, with a 4.5-point improvement in F-measure using the Feature Inflation-Deflation module for head-movement dynamics learning in CNNs, showcasing its potential for nonverbal behaviour detection (Takeda, 2021)

3. Methodology

3.1. Conceptual Framework

The researchers adopted the Design Science Research Methodology (DSRM) due to its compatibility with their research requisites,

covering problem definition, objective setting, artefact design, solution development, evaluation, and findings communication. DSRM, as highlighted by (Peffers, 2014) and (Teixeira, 2019) aims to generate novel solutions and address issues, aligning well with their research approach.

3.2. Data Collection Method

In order to comprehensively analyze and organize existing literature on facial movement recognition, the researchers employed a systematic literature review (SLR) methodology. Conducting a systematic literature review is essential for staying updated with the latest research in this field and ensuring the collection and organization of current data. The researchers conducted a thorough and systematic study to categorize, select, and compile relevant literature. The primary objective was to generate a periodic report of findings that would facilitate the smooth progression of the research. The Researchers of this paper generated a search string using synonyms of keywords to find out most recent research papers and article from digital library. The search string is: "Face" OR "Facial" OR "head" AND "Orientation" OR "Movement" OR "Pose" AND "Recognition" or "Detection". From the search result from digital libraries, the researchers only selected the most recent study (2012- 2022) for literature review. The researchers selected papers related to their research purpose based on abstracts. They conducted manual searches and checked references for additional relevant articles. Their web page design used basic HTML and CSS, incorporating MediaPipe Face Mesh to estimate 468 3D facial landmarks in real-time and the JavaScript library "Three.js" to calculate Euler rotation angles for understanding human face movements in various directions.

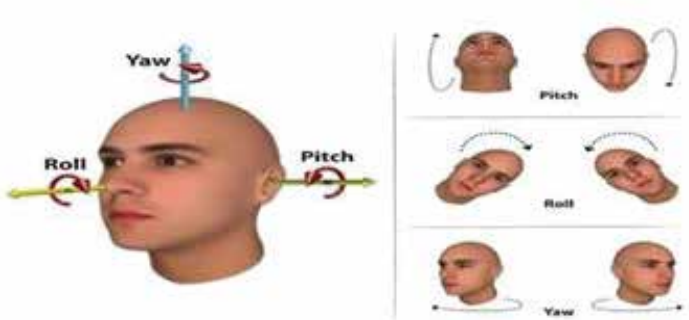

Fig. 1. Human face movement (Arcoverde Neto et al., 2014)

The geometry formula used in Three.js to calculate the Euler angle: m is a rotation matrix.

$$m = \begin{matrix} m11 & m12 & m1 \\ m21 & m22 & m23 \\ m31 & m32 & m33 \end{matrix}$$

$$\theta y = \text{asin}\,(m13),$$

$$\theta x = atan2(-m23, m33),$$

$$\theta z = atan2(-m12, m11)$$ ("Three.js/Euler.js at master mrdoob/three.js," 2022)

The minimum face detection confidence 0.3 and minimum face land mark tracking confidence 0.1 was selected after long and paired observation for face and facial landmark detection. For orientation detection after long and paired observation, researchers of this paper decided to set Yaw (Y axis rotation), θy <-15 (in degree) for right, and $\theta y >$ 15 (in degree) for left side detection. Pitch (X axis Rotation), θx < -20 (in degree) for up, and $\theta x >$ 15 (in degree) for down side detection was also selected. The proposed solution was not affected by canvas size or seating position and relied solely on the rotational angle. Adequate lighting was crucial for face detection, and the recommended face-to-camera distance was 2 to 4 ft. The researchers evaluated the solution in a Chrome web browser, comparing output data with actual data to determine its accuracy.

4. Result and Analysis

4.1. Solution Description

The researchers proposed a web-based face orientation solution using a pre-trained TensorFlow JS model (Facemesh) to detect 468 3D facial landmarks and calculate Euler's rotational angle. The solution estimated the face direction from the rotational angle and was tested under various seating positions, camera-to-face distances, and lighting conditions. It produced a result with 95% forward, 90% left, 87% right, 91% up, and 83% down detection accuracy from 2 ft. distance, different seating position, different window size

and minimum face detecting lighting condition. From 4 ft. distance, different seating position, different window size and minimum face detecting lighting condition, the proposed solution produced 88% forward, 87% left, 83% right, 86% up and 75% down detection accuracy. The proposed solution failed to detect the face orientation from distance more than 4 ft. as the face and facial land mark detection is quite difficult from such distance. The proposed solution fails to detect face orientation when the nose is not visible since the rotation calculation relies on the nose position. However, if the face is detectable and the rotation is calculable, the solution shows 95% accurate time in seconds for left, right, up, down, and forward movements.

4.2. Impact on Environment

The proposed face orientation recognition solution can detect the facial movement in real time from maximum 4 ft. distance with average 86.5% accuracy. This solution can be used in real time virtual meeting, virtual class or even in virtual examination to reduce the tendency of misuse of virtual technology like following unfair means during examination time, careless in online class, careless in meeting. The proposed solution offers a monitoring system in virtual platform. If the solution is properly deployed on virtual platform, then the misuse of virtual meeting, virtual class and virtual examination will be reduced at significant rate because of the monitoring system and the virtual platform will be more reliable for organizations and educational institute.

4.3. Lifecycle Analysis

The researchers of this paper started the project with problem definition. They did a vast searching on internet for information related to the problem and to get the idea of solution. Then observed the ways and studies different articles and gathered relevant information. Then based on the problem and relevant information researchers selected a research methodology which was DSRM. Before developing the solution, researchers gather knowledge about different face and facial landmarks detection machine learning model and selected Facemesh (TensorFlow JS) pretrained model as it provides the highest number of 3D facial landmarks. Then, Solution development process started and researchers tested the developed solution and observed the output and adjusted the solution for best output. Then started the result analysis task and compared the output result with the actual result.

4.4. Solution Verification

The output of the solution was compared with the actual data to verify and get the accuracy of the solution. Researchers took 100 sample each side varying distance, lighting condition, seating position and window size. The results are shown in Table 1 and 2.

Side	Actual	Solution Output	Accuracy
Forward	100 times	95 times	95%
Right	100 times	87 times	87%
Left	100 times	90 times	90%
Up	100 times	91 times	91%
Down	100 times	83 times	83%

Table 1: Breakdown of the analysis of the result from 2ft. Distance, different seating position, different window size and minimum face detection lighting condition

Side	Actual	Solution Output	Accuracy
Forward	100 times	88 times	88%
Right	100 times	83 times	83%
Left	100 times	87 times	87%
Up	100 times	86 times	86%
Down	100 times	75 times	75%

Table 2: Breakdown of the analysis of the result from 4ft. Distance, different seating position, different window size and minimum face detection lighting condition

The proposed solution achieved an average accuracy of 89.2% from 2 ft. distance (d = 2) and 83.8% from 4 ft. distance (d = 4). Overall, it achieved 86.5% accuracy (Avg = (89.2 + 83.8) / 2) from a maximum 4 ft. distance (d_max = 4) between the camera and face with variations of other variables.

Conclusion

Face orientation recognition is always a critical problem to solve using machine learning approaches because of its mechanism. This paper comes forward with a web-based face orientation recognition solution with overall 86.5% accuracy from maximum 4 ft. distance between human face and Webcam. No solution is perfect likewise, this proposed solution also has some limitations. The proposed solution disables to recognize the face orientation if the nose position is not detectable and if the distance between face and camera is more than 4 ft. The researcher of this paper will study the human face orientation mechanism in more details and will try to fix the limitations of the proposed solution.

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DQE006

ENHANCING ACADEMIC INTEGRITY: A MULTI-MODEL DEEP LEARNING APPROACH FOR RELIABLE TEST SUPERVISION AND DISHONESTY DETECTION

-Afroza Nahar, Rubina Reya, Md. Sohan, Rifat Rudro

Abstract:
Academic evaluations hold substantial importance within global educational establishments, constituting a dependable avenue for gauging students' proficiencies and competencies. However, the widespread occurrence of academic dishonesty presents an extensive hurdle to the credibility and reliability of these appraisal processes. To tackle this issue, we propose a deep learning model that has been particularly designed to ensure dependable test supervision. This system utilizes computer vision, audio analysis, and deep reinforcement learning approaches is to provide educational institutions with a viable and sustainable alternative. This computational model has been devised to enhance computing efficiency and scalability. Successful implementation of such a model will increase the accuracy of identifying academic misconduct by evaluating many cheating indications at once.

Keywords: Test supervision, dishonesty detection, deep learning, audio analysis, computational model.

1. Introduction

Cheating during examinations is a recurring concern within educational institutions, undermining assessment integrity and equity (Yang et al. 2018). The traditional manual invigilation is error-prone and time-consuming. In response, a multimodal deep learning architecture has been proposed in this article that efficiently identifies academic dishonesty in exams. This study introduces a pioneering deep learning paradigm, incorporating multimodal techniques, advanced features, deep reinforcement learning, and privacy-preserving methods, to tackle the pressing issue of academic exam cheating. The primary goal is to enhance an automated system that fosters fair and secure exam conditions, academic integrity, and cheating prevention. Anchored in deep reinforcement learning, the model's adaptability ensures consistent identification of evolving cheating behaviors, ensuring long-term effectiveness. Through the integration of computer vision, audio analysis, and deep reinforcement learning, the model enhances accuracy, adaptability, and confidentiality in cheating detection. This approach overcomes current limitations by simultaneously gathering and analyzing diverse data, encompassing lip movement analysis, eye tracking, location estimation, gesture recognition, and audio processing. The model's integration of deep reinforcement learning ensures ongoing refinement through real-world input, enabling the discovery and understanding of evolving cheating patterns. Another focal point of this model is privacy preservation which is achieved via on-device processing and local feature extraction techniques. These measures confine sensitive data within the exam environment, mitigating data breach risks.

This model offers the potential to significantly reduce reliance on human invigilation, providing educational institutions with an efficient and sustainable solution to diminish exam cheating and allows the educators to focus on other crucial educational aspects. This will help to elevate the academic standards, and nurturing integrity within educational institutions.

2. Literature Review

Mahmood et al. (2022) presented an intelligent test monitoring system that utilizes deep learning algorithms to identify suspected exam behavior. The system incorporated computer vision and multi-modal biometrics including 3D face recognition, eye tracking, and voice recognition, to enable automatic monitoring and authentication for both offline and online exams. The deep learning algorithms had been learned from extensive datasets and had made accurate predictions, thereby enhancing the accuracy and efficiency of the system. As a result, real-world exam testing had been necessary to assess the efficacy and dependability of the system.

Tao Xu et al. (2021) had investigated the SSD core identification method in intelligent visual surveillance of examination rooms. Their objective had been to address the limitations of conventional monitoring technologies, which had relied on human intervention and security cameras. The proposed cheating detection program, which had utilized SSD as the core, had facilitated real-time invigilation, thereby reduced labor costs, and enhanced objectivity in the monitoring process. Upon comparing the suggested technique with existing algorithms, the study had demonstrated exceptional detection performance, achieving an average accuracy of 79.8% and a detection frame rate of 46. To improve the detection algorithm's practicality, there had been a need for deeper integration of deep learning into real-world problem-solving scenarios.

Manit Malhotra et al. (2021) addressed using computer vision technologies in automated invigilation systems to identify test cheating. Haar-like features and You Only Look Once (YOLOv3) algorithms were used to recognize objects in video input from closed-circuit television (CCTV) cameras. The system's benefits were faster video processing, less dependence on human supervisors, increased accuracy and objectivity in flagging suspicious behaviors, and examination integrity.

Chang Liu et al. (2020) had developed a spatio-temporal method for detecting anomalous conduct in an examination scenario. The program had employed atomic recognition techniques to differentiate between one-person and multi-person aberrant behaviors, such as hand lifting, arm reaching, turning, and sitting abnormally. The algorithm had been capable of real-time detection of aberrant activities, showing promise in enhancing test management. Educational institutions and colleges that aimed to ensure test integrity had recognized its potential.

J. Nishchal et al. (2020) used posture detection, facial recognition, and mood analysis to identify test cheating automatically. This method eliminated human mistakes, enabled real-time cheating detection, reduced invigilator dependency, and provided an unbiased detection process without personal biases. The technology used video capture to evaluate body language, do face matching to validate identities, and examine facial emotions to provide detailed cheating reports. Suspicious activity notified invigilators immediately.

3.Methodology

3.1.Proposed Model Architecture

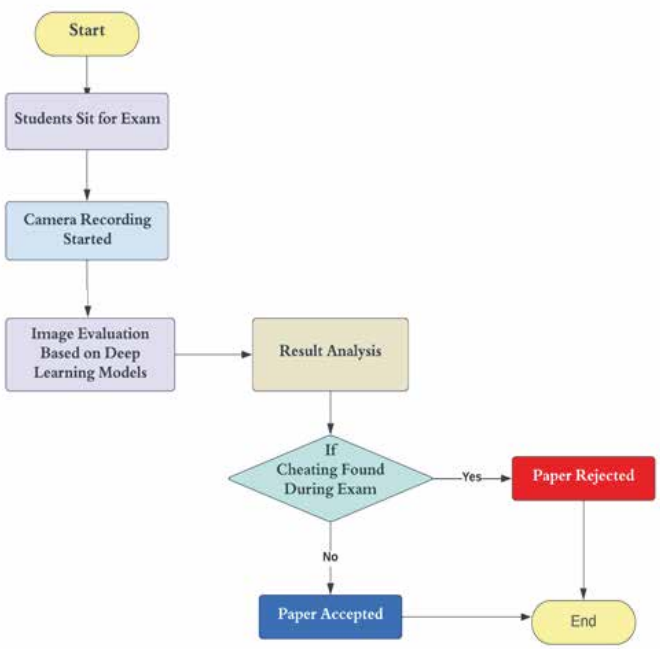

Figure 1: Flowchart of the Proposed Model

The operational flowchart, as illustrated in figure 1, provides an easy-to-understand overview of the extensive process contained within the proposed model architecture. The figure illustrates the sequential sequence of actions encompassed by the system. Significantly, it indicates that captured camera images undergo assessment through deep learning algorithms and process the result based on deep learning model selection. The IoT device integrates multiple specialized sensors into a unified system, which actively collects real-time data on various parameters such as eye pupil movements, body motions, lip gestures, and interactions with objects. By utilizing sophisticated algorithms, the gathered data is efficiently analyzed and examined to detect irregular patterns or behaviors that suggest possible instances of academic misconduct during examinations. These signals function as stimuli for competent proctors or administrators to promptly respond, so upholding the integrity of the examination setting.

In order to maintain the model's long-term effectiveness, a perpetual feedback loop and frequent system modifications are utilized, hence refining its performance. The model architecture, as seen in figure 2, comprises multiple layers for the processing, analysis, and decision-making of data. The utilization of this architectural framework enhances the system's capacity to accurately identify

subtle instances of cheating. The cheating detection system functions by analyzing minute alterations in eye pupil movements, fluctuations in body posture, lip movements, and occurrences of item interaction. In the event that suspicious behaviors are identified, a specifically designated camera is engaged, utilizing several filming modes to capture a range of viewpoints inside the surrounding area. The objective of this technique is to uphold the standards of digital surveillance in educational environments by employing integrated data analysis from many sources. This comprehensive strategy intends to effectively detect instances of academic dishonesty.

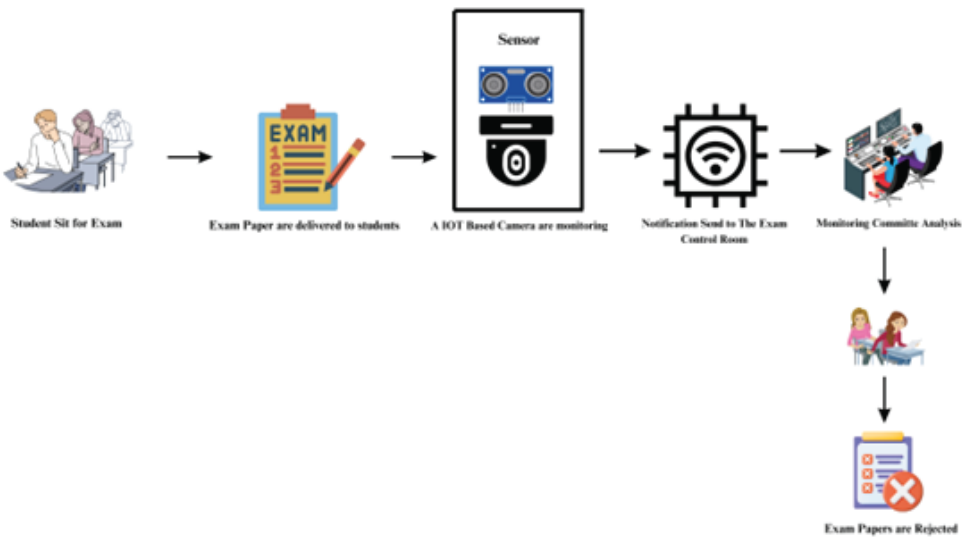

Figure 2: Architecture of the Proposed Model

3.2. Sensor Working Process

Illustrated in figure 3, the Sensor Working Process diagram, these advanced sensors collectively contribute to a robust surveillance mechanism. Infrared (IR) Pupil monitoring Sensors are crucial for monitoring ocular movements. These advanced sensors detect pupil motility and dilation using infrared light reflections from the examinee's pupil. This operational paradigm works in varied brightness conditions. IR Pupil Tracking Sensors can detect and prevent exam fraud because of its non-intrusiveness and real-time observation.

Depth sensors, especially those using time-of-flight or structured light technologies, are important in somatic kinetics. In real-time monitoring under varied illumination circumstances, these sensors estimate distance precisely. Depth sensors are excellent in non-intrusive tri-dimensional delineation of bodily motions due to their operational range of 90–110 degrees and 90–70 degrees. This operational acumen improves test hall surveillance, preventing academic dishonesty.

The LipSense Sensor detects labial gesticulation and analyses perioral dynamics in real time during examinations. The LipSense Sensor analyses lip dynamics per second using high-resolution data. The sensor's real-time monitoring and modest design make it a reliable method for detecting incriminating lip movements during examinations. Deep learning models enhance the LipSense Sensor's ability to recognize and analyse labial dynamics.

The PassSense 180° Detection System uses depth sensors to handle item displacement. This combination of sensors, based on their precise distance measurement and three-dimensional analysis, creates an effective environment for tracking and monitoring object dynamics over 180 degrees. The PassSense 180° Detection System's real-time surveillance and extensive territorial coverage enhance the ability to detect potential scholastic misconduct, preserving the examination environment's integrity and credibility.

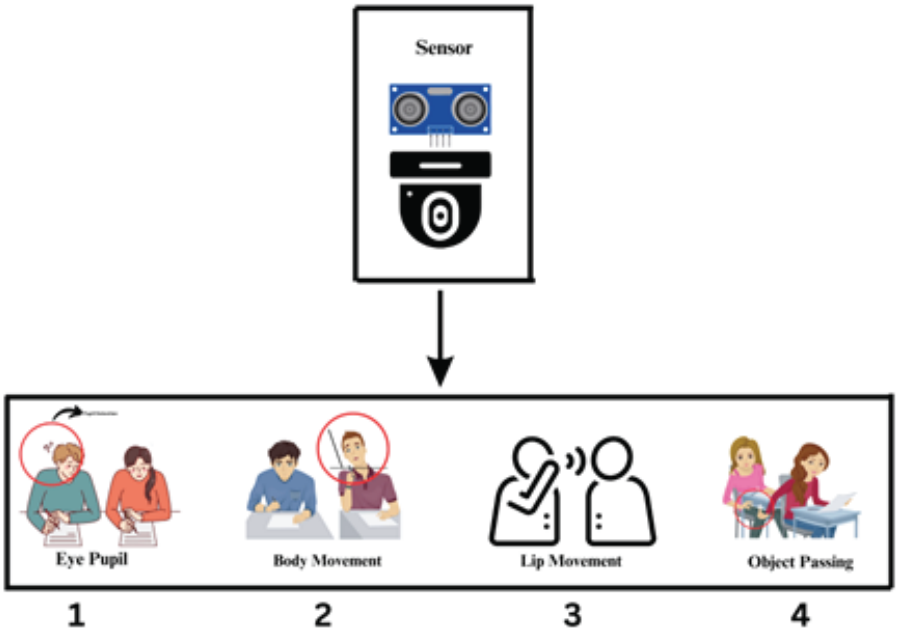

Figure 3: Working Process of sensor.

3.2 Model Selection

3.3.1 Deep Learning Models

Deep learning models are important because they automatically learn features, process, and analyze large datasets, capture intricate correlations via non-linear transformations, and have an end-to-end learning approach. These systems are useful for image recognition, natural language processing, and multi-object tracking because they can acquire hierarchical representations, generalize novel data, and facilitate transfer learning. This has transformed various areas since these models are as efficient and accurate as humans.

• Convolutional Neural Networks (CNNs): CNNs are ideal for image-based tasks like pupil detection and tracking. CNNs can track pupil movements in real time by learning hierarchical features from sensor-captured infrared pictures. Our proposed intelligent exam supervision system relies on Convolutional Neural Networks (CNNs). CNNs are ideal for image-based tasks like detecting and tracking eye pupils by processing IR Pupil Tracking Sensor infrared images. This allows real-time pupil monitoring during exams. In figure 4, CNNs also scan Depth Sense depth photos to learn relevant spatial features and detect specific body movements inside test hall angle ranges. Additionally, the LipSense Sensor's lip movement data undergoes processing by CNNs, enabling the extraction of spatial features and patterns in lip movements, leading to the detection of lip gestures or expressions. The suggested approach uses CNNs to identify and monitor suspicious activity during exams, improving the system's effectiveness and accuracy.

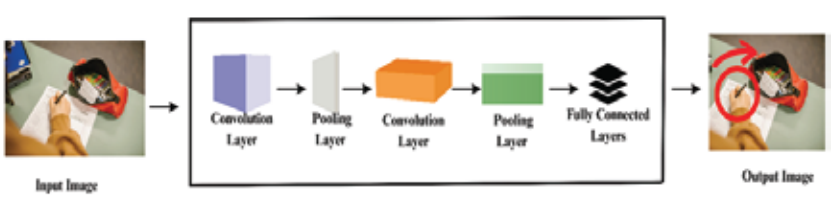

Figure 4: Working Process of CNN

• **Recurrent Neural Networks (RNNs):** It excels in capturing temporal changes and dependencies, making them ideal for monitoring pupil movements, body motions, lip gestures, and object passing during exams. By processing sequential data from infrared and depth sensors, RNNs detect suspicious behavior patterns and abnormalities, bolstering cheating detection. Their recurrent nature enables understanding of sequential linkages, enhancing real-time monitoring, and ensuring exam integrity. In this study, we leverage Recurrent Neural Networks (RNNs) to advance the monitoring of exam scenarios. In figure 5, RNNs perform temporal changes and dependencies, which are essential for tracking pupil movements, body motions, lip gestures, and item passing during exams. RNNs discover suspicious behavior patterns and irregularities by analyzing consecutive infrared and depth sensor data, improving cheating detection techniques. RNNs can understand complex sequential links due to their recurrence, enhancing real-time monitoring and exam integrity and fairness.

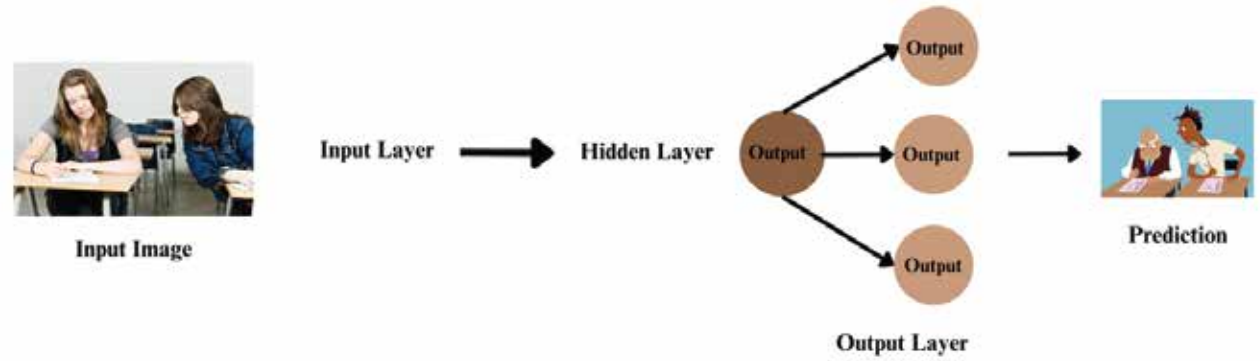

Figure 5: Working Process of RNN

In the proposed architecture, LSTMs, a form of RNN, may detect long-term dependencies in time series data. Memory cells with forget, input, and output gates regulate information flow in LSTMs. These methods allow LSTMs to selectively preserve relevant information over extended time steps while filtering out irrelevant data, making them successful at keeping essential temporal correlations. In natural language processing, speech recognition, and time series prediction, understanding long-term relationships is essential for accurate and robust modeling. The model may capture long-term dependencies in time series data using LSTMs to better comprehend eye pupil behavior temporal patterns.

• Multi Object Tracking Algorithm: In this study, we employ multi-object tracking algorithms in conjunction with depth sensor data to enhance exam hall monitoring. These algorithms adeptly recognize and track multiple objects across sequential frames, linking their identities and estimating trajectories. The process involves initial object detection using YOLO followed by feature extraction to capture appearance and motion characteristics. In figure 6, the B-box extraction procedure involves the extraction of the input video. Subsequently, the extracted video is compared to other relevant or comparable video pictures, resulting in a similarity score. The Hungarian algorithm is used create bipartite graphs composed of similarity pictures. It enables the tracking of objects across frames by matching appearance, motion, or proximity. The multi-object tracking approach efficiently handles occlusions and manages object trajectories through track updates, predictions, and object re-identification. Utilizing depth sensor data, our study utilizes these multi-object tracking methods to monitor various items within a 180-degree field of view, enhancing cheating detection.

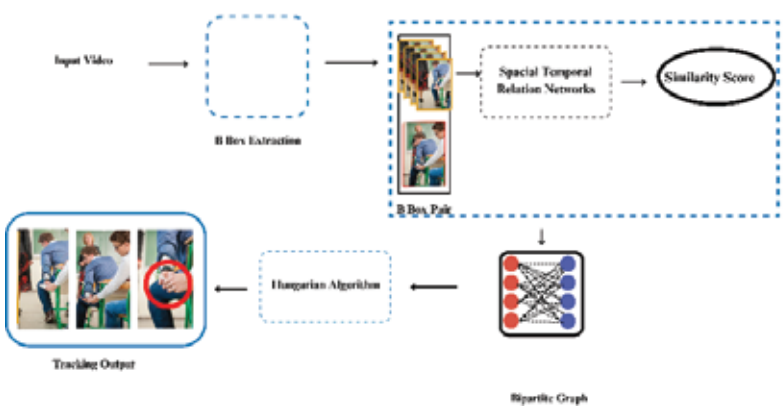

Figure 6: Multi Object Tracking system

4. Result Analysis

The proposed deep learning model for exam supervision offers several important advantages, including better cheating detection through a strong multimodal approach, adaptability through advanced deep reinforcement learning techniques. By combining technologies such as computer vision, audio analysis, and deep reinforcement learning, the model excels at finding and analyzing multiple signs of cheating at once, making it more accurate and capable of catching subtle cheating behaviors. Its ability to adapt and learn new cheating methods quickly sets it apart.

Successful implementation requires addressing many issues. The factors included in this list consist of the complexity of the model's architecture, the guarantee of data privacy and security, comprehensive real-world testing, the management of noise and false

positives, the adaptation to developing cheating patterns, the ability to function effectively in diverse exam situations, and the resolution of ethical problems. To address these challenges, it is essential to implement continuous improvement strategies and optimize resource use. Modularity, privacy, real-world validation, attention mechanisms, deep reinforcement learning, diversified training, flexibility, ethics, and resource efficiency are the model's strengths. These characteristics provide ethical, accurate, and confidential cheating detection.

Compared to previous models, our approach stands out due to its multimodal integration, real-world validation, adaptability, and privacy protection. Rigorous testing makes it reliable across different exam scenarios. The model's deep reinforcement learning enhances its flexibility, while privacy safeguards and attention mechanisms improve accuracy. Optimized resource use sets it apart and establishes a new standard for test management systems.

5. Conclusion

The deep learning framework, proposed in this article, for exam proctoring offers a comprehensive and inventive remedy to the longstanding issue of academic dishonesty during examinations. Employing a multimodal paradigm that integrates computer vision, auditory analysis, and deep reinforcement learning methodologies, our model exhibits a sharp sensitivity to identify fraudulent activities. Through deep learning, our model can continually evolve and learn, thus empowering it to uncover nascent and evolving cheating stratagems. This endows the model with a remarkable flexibility and responsiveness towards emerging deceptive tactics.

In this model, we ensure data privacy and ethics by utilizing privacy-preserving techniques like on-device processing and local feature extraction. These safeguard sensitive data, enhancing the model's ethical credibility and inspiring trust among stakeholders. This distinctive trait renders it a pragmatic and cost-efficient solution for educational institutions aiming to adopt an automated, sophisticated exam proctoring system.

By establishing an equitable and transparent exam process, fostering academic integrity, and expediting supervision, our deep learning model not only tackles plagiarism challenges but also empowers educators to focus on other crucial exam administration aspects. This model has the potential to transform exam supervision, enhance academic benchmarks, and cultivate a culture of integrity within educational setups.

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DQE007

INTRODUCING AN EFFICIENT APPROACH FOR REAL-TIME ONLINE LEARNING ENGAGEMENT DETECTION

-Parthib Banik, Abu Molla, Md. Sohan

Abstract
E-learning's worldwide accessibility and flexibility have made it popular. Navigating the realm of student engagement in e-learning environments can be challenging. This is because these platforms are virtual, making it difficult for teachers to assess student engagement. Many methods and technologies have been offered to solve this problem and establish student participation in online learning. This paper proposes a novel, cost-effective model for real-time student engagement monitoring and assessment utilizing web cams. The proposed approach begins by employing a Haar Cascade Face Model to accurately identify and locate the learner's face and eyes. Building upon this foundation, the system further employs Gaze Gesture analysis to precisely pinpoint the center of the eye sockets. Validation using a large dataset of real-world videos distinguishes this technique. This unique technique eliminates model training, simplifying implementation. This approach addresses the challenge of monitoring and evaluating student engagement in e-learning with a solution that is both affordable and highly effective. This strategy opens doors for a richer understanding of learner interactions, eventually enhancing the effectiveness of online educational experiences. It does this by using the possibilities of off-the-shelf web cams and cutting-edge analytical approaches.

Keywords: E-learning, cost-effective, Gaze Gesture, affordable, cutting edge.

1. Introduction

In today's rapidly evolving digital landscape, the accessibility of information across the globe is virtually instantaneous. This has paved the way for the proliferation of online learning, a phenomenon that offers educational experiences comparable to traditional university courses. However, this paradigm shift comes with its own set of challenges, particularly in maintaining a high level of engagement among online learners. The absence of direct physical interaction with instructors and peers can lead to diminished focus and lower educational outcomes.

In response, innovative solutions have emerged to enhance e-learner engagement. Among these, a strategy harnesses web cameras to observe learners' behaviors during online sessions. These technologies proficiently analyze facial cues, eye movements, posture, and surroundings. Such insights yield valuable data for refining online education's efficacy.
A significant advancement is the utilization of Haar cascade classifiers, a machine learning tool for object detection. This technique excels in recognizing features like faces and eyes by scrutinizing pixel patterns. By discerning these patterns, the algorithm locates key facial components and gauges the learner's gaze direction.

Furthermore, the paper introduces an innovative methodology that combines the power of Haar cascade classifiers with gaze detection techniques. This hybrid approach provides a comprehensive evaluation of the learner's engagement throughout an online session. The methodology employs a multi-step process, beginning with the detection of facial presence and the precise localization of facial landmarks. Subsequent preprocessing stages enhance image quality, enabling accurate tracking of eye movements.

The culmination of this approach involves the assessment of the learner's level of focus and attentiveness. By comparing eye movement patterns with predefined benchmarks, the system can gauge the learner's engagement with a high degree of accuracy. This holistic model goes beyond traditional methods by considering multiple factors and measures to determine engagement levels.

In essence, this paper presents an intricate yet practical solution to the challenges of online learner engagement. By harnessing the capabilities of Haar cascade classifiers and gaze detection techniques, the proposed methodology offers a promising avenue to enhance the quality of online education. As future research advances, refinements to the model and its implementation are anticipated, paving the way for more effective and accessible online learning experiences.

2. Literature Review

Student engagement is a crucial factor in both traditional and online learning environments. The challenge lies in effectively assessing and enhancing engagement in various educational settings. This literature review aims to analyze recent research efforts that have contributed to understanding and measuring student engagement in real and virtual classrooms. By examining the proposed models, their methodologies, outcomes, and limitations, we can gain insights into the diverse strategies employed to address this complex issue.

Understanding student engagement has been explored by multiple authors in diverse educational contexts. One notable study employed a VGG16 model to assess engagement in real classrooms, achieving 90% accuracy. Ikram et al. (2023) analyzed engagement's correlation with time and gender. Bhardwaj et al. (2021), (Khosravi et al., 2022) and (Yadav et al., 2023) introduced a dual approach, combining Haar Cascade facial detection and Convolutional Neural Networks for emotion analysis. This innovative method captured both visual cues and emotional dimensions. Automatic engagement measurement was pursued in a study linking engagement with 'flow'. Utilizing a Long Short-Term Memory network, they classified engagement levels across different learning modalities (Chen, 2012). In e-learning, facial recognition was employed to study attention levels among various learning strategy groups, revealing a positive correlation between attention and learning improvement (De Carolis et al., 2018) (Ohara et al., 2021). For MOOCs, a privacy-conscious method named "Gestsatten" tracked visual gestures to gauge attention, aligning with cognitive test results (Jakhetiya et al., 2017). Responding to edge computing growth, a cost-effective approach utilizing Convolutional Neural Networks offered real-time engagement assessment (Jepson et al., 2003).

A work holistically combined visual cues and emotional dimensions, yielding unprecedented insights into emotional engagement (Bhardwaj et al., 2021). Whereas VGG16-based research showcased engagement dynamics influenced by time and gender (Khosravi et al., 2022). "Gestsatten" innovatively gauged attention with privacy considerations, promising improved feedback mechanisms (Jakhetiya et al., 2017). Another work emphasized attention's significance, underscoring the foundational role of focused attention in learning (De Carolis et al., 2018) (Ohara et al., 2021). A model linked engagement with 'flow', utilizing advanced techniques to classify engagement across learning modalities (Chen, 2012) (Yang et al., 2020) (Yadav et al., 2023). An approach responded to remote learning needs, providing real-time engagement assessment via Convolutional Neural Networks (Jepson et al., 2003). This collective body of work enriches the understanding of student engagement across various educational settings, offering insights into factors like emotions, attention, and learning modalities (Jepson et al., 2003).

Within this panorama of research, a multitude of models and methodologies have been proposed to ascertain student engagement. The innovative approach of the paper, rooted in a sophisticated VGG16 model, exemplifies the fusion of machine learning and educational contexts (Khosravi et al., 2022) (Yadav et al., 2023). Whereas algorithmic exploration encapsulated the integration of facial recognition, emotion detection, and Convolutional Neural Networks, signifying a bold stride towards understanding engagement within the intricate realm of emotions (Bhardwaj et al., 2021) (Wang et al., 2020). A study introduced a comprehensive model that embraced the intricate dynamics of engagement, correlated it with 'flow', and wielded advanced machine learning techniques for real-time assessment (Chen, 2012). Focusing on attention assessment brought facial recognition technology to the forefront, revealing its potential to redefine engagement evaluation by tapping into the foundational aspects of learning (De Carolis et al., 2018) (Kar et al., 2020) (Ohara et al., 2021). Amid the evolving landscape of online education, pioneered a methodological paradigm shift with "Gestsatten", which tracks visual gestures and focus regions for precise attention measurement (Jakhetiya et al., 2017). On the other hand, a work bridged the gap between remote and traditional learning by harnessing Convolutional Neural Networks to deliver efficient real-time engagement evaluation (Jepson et al., 2003) (Yang et al., 2020). While these studies have significantly contributed to understanding and measuring student engagement, limitations persist. The reliance on specific technological setups and the challenge of adapting models across diverse contexts present limitations. Additionally, further exploration is needed to understand the long-term impact of these engagement assessment methods on overall learning outcomes.

The literature review delves into recent research endeavors that have enhanced the comprehension of student engagement assessment in both traditional and virtual classrooms. By examining proposed models, methodologies, outcomes, and limitations, we glean insights into the multifaceted strategies employed to tackle this vital aspect of education.

3. Proposed Method

Presenting a multi-step approach for detecting facial features and assessing student attentiveness using computer vision techniques. Utilizing Haar cascades for real-time face and eye detection, followed by Dlib's facial landmarks prediction to accurately locate key facial points. The system calculates blinking ratios based on the eye landmarks to identify blinking patterns indicative of attentiveness. Additionally, gaze detection is performed by analyzing the relative positions of pupils within the eyes. This approach leverages the OpenCV and Dlib libraries for efficient feature extraction. The methodology involves real-time processing of webcam input and is designed to estimate attentiveness levels, categorizing them as "Attentive," "Less Attentive," or "Neutral." The proposed methodology offers a novel way to assess student engagement through computer vision techniques.

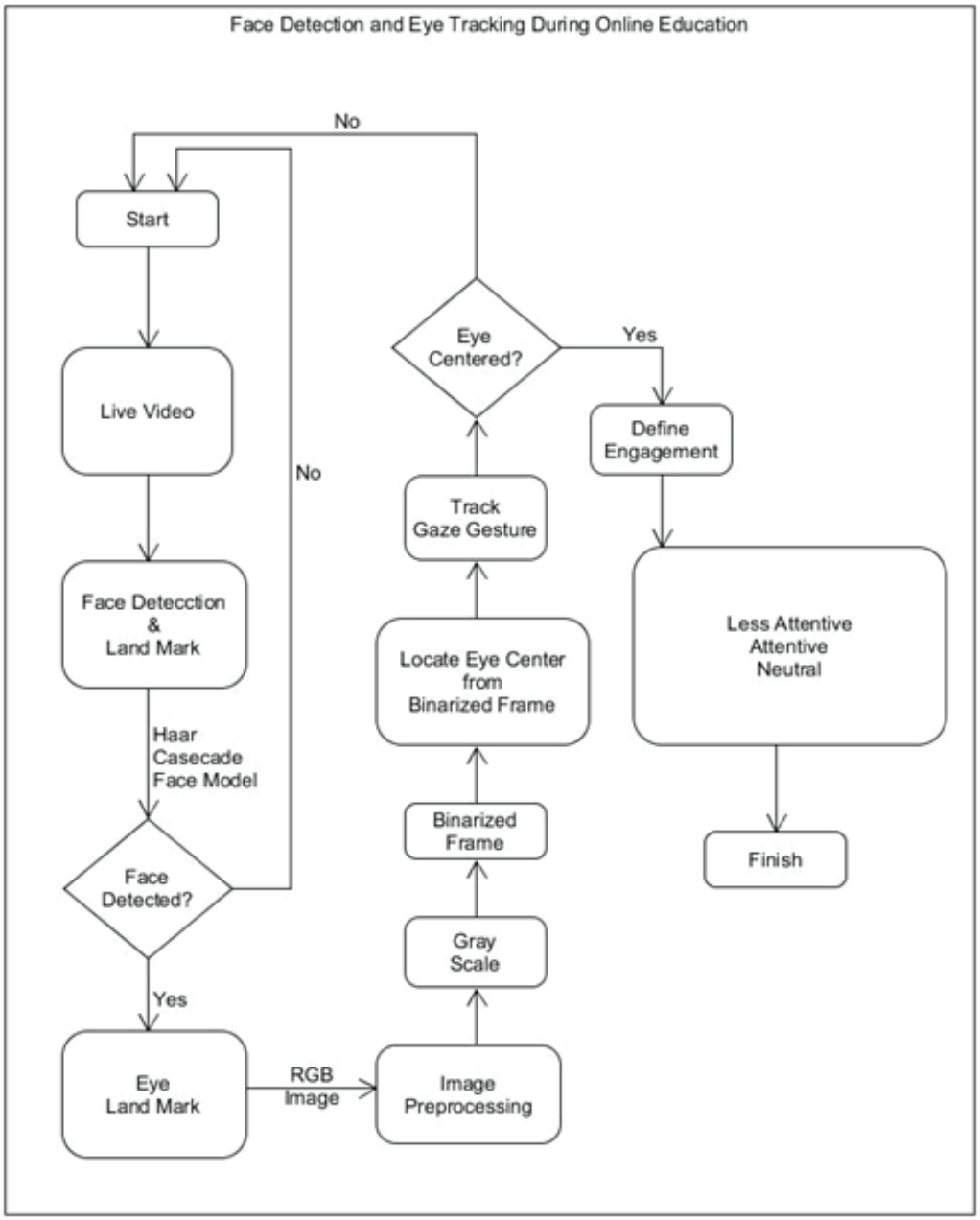

Figure 1: Proposed Model

3.1 Dataset

The experimental data for evaluating the proposed methodology was collected using a webcam to capture live video streams. The dataset comprises real-time video sequences of participants in different scenarios, mimicking classroom or learning environments. These video sequences were obtained during the execution of the implemented code, ensuring that the collected data is reflective of the system's performance in real-world scenarios.

The dataset includes instances of varying attentiveness levels, encompassing scenarios of high attention, partial attention, and lower attentiveness. It accounts for diverse facial orientations, poses, and expressions, mirroring the natural variations encountered during remote learning settings. The use of a real-time video feed ensures that the dataset encapsulates dynamic changes in facial features and attentiveness patterns.

3.2 Pre-processing

The pre-processing stage involves converting the captured video frames to grayscale for efficient processing. Subsequently, the Haar cascades are employed for face detection (figure 3.2.1 – 3.2.2), followed by Dlib's facial landmarks prediction for accurate identification of crucial facial landmarks.

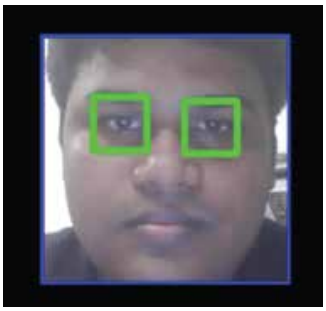

Figure 2: Face and Eye Detection without Background

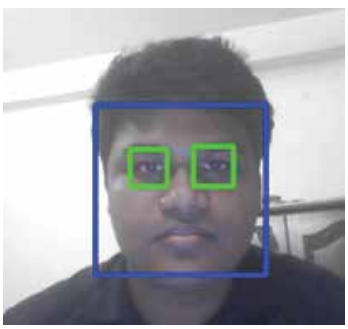

Figure 3: Face and Eye Detection with Background

3.3 Model Introduction

3.3.1 Haar Cascade-Based Face Detection

The proposed attentiveness estimation model integrates Haar cascade-based face detection to identify participants' faces within captured video frames. Haar cascades are utilized as a reliable method (figure 3) for rapid face localization, allowing the model to efficiently recognize and isolate facial regions. This initial step enables subsequent analyses to focus on relevant facial features, facilitating accurate feature extraction.

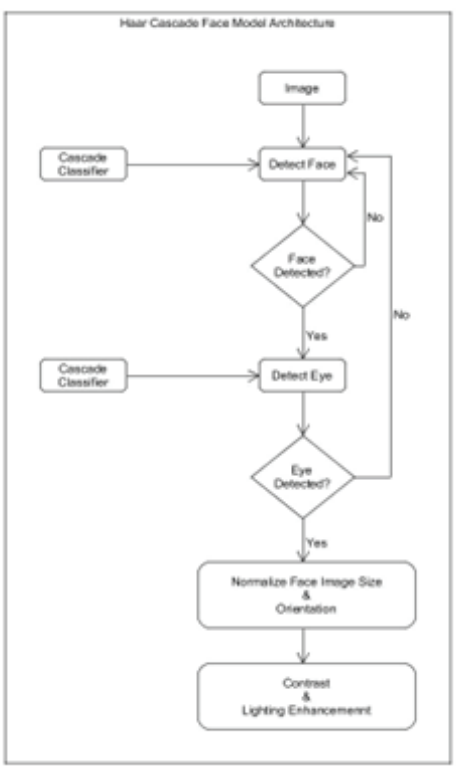

Figure 4: Haar Cascade Face Model Architecture

3.3.2 Dlib's Facial Landmarks Predictor

In conjunction with Haar cascade-based face detection, the model incorporates Dlib's facial landmarks predictor to precisely locate key facial landmarks within the detected face regions. This predictor identifies critical points such as eye corners, enabling detailed insights into facial characteristics. By leveraging these landmarks, the model calculates essential metrics such as the blinking ratio and gaze ratio, which are indicative of participants' attentiveness during online learning sessions.

3.3.3 Gaze Detection

Furthermore, the model conducts gaze detection to assess participants' visual focus during online learning. By evaluating the positions of pupils within the eyes' regions, the model determines participants' gaze orientations, categorizing them as "Left," "Center," or "Right." This information contributes to a comprehensive understanding of participants' attentiveness and aids in identifying focal points of interest.

4. Results and Discussions

In this section, we present the results of our novel approach for monitoring and assessing attentiveness during online learning sessions. Our methodology leverages computer vision techniques, facial detection, and landmark prediction to comprehensively analyze e-learner engagement. We implemented and tested our approach on real-time webcam data, and the following subsections detail the outcomes of each component.

4.1 Face Detection and Landmark Prediction

Our system effectively detects faces using the Haar cascade classifier. The captured video frames are processed to identify faces, and the Dlib facial landmarks predictor is employed to precisely locate critical facial features (Figure 5). This enables us to track eye movements and assess changes in facial expressions.

Figure 5: Face Detection with Landmark

4.2 Blinking Ratio Analysis

By analyzing eye movement patterns, we calculated the blinking ratio for each e-learner. The average blinking ratio was determined by considering both the right and left eye aspect ratios (Figure 7 & Figure 8). This analysis provided insights into the frequency of blinking, which is indicative of attentiveness and engagement levels

```
while True:
    Read frame from camera
    Convert frame to grayscale

    Detect faces using face detection model
    for each detected face:
        Detect facial landmarks using predictor
        Calculate left eye and right eye aspect ratios
        Calculate average blinking ratio
```

Figure 6: Pseudocode for Blinking Ratio Analysis

Figure 7: Blinking Ratio from Right

Figure 8: Blinking Ratio from Left

Figure 9: Blinking Ratio from Center

4.3 Gaze Detection

Our system further investigated gaze direction by analyzing the left eye region (Figure 11). Preprocessing techniques were applied to enhance the accuracy of gaze estimation (Figure 10). The gaze ratio was calculated based on the position of the eye within its region (Figure 12 & Figure 13). This measure offers valuable information about the direction of focus and the e-learner's interaction with the learning material.

```
while True:
    Read frame from camera
    Convert frame to grayscale

    Detect faces using face detection model
    for each detected face:
        Detect facial landmarks using predictor
        Extract left eye region
        Apply preprocessing to left eye region
        Calculate gaze ratio based on eye region
```

Figure 10: Pseudocode for Gaze Detection

Figure 11: Threshold Image of Left Eye

Figure 12: Gaze Detection of Left Eye Region

Figure 13: Gaze Detection of Right Eye Region

4.4 Comprehensive Attentiveness Estimation

Combining the results from blinking ratio analysis and gaze detection, our system comprehensively estimated the attentiveness of e-learners. By considering both eye movement patterns and gaze direction, we devised a sophisticated model (Figure 14) that categorized attentiveness into levels such as "Attentive," "Neutral," and "Less Attentive." This multifaceted approach ensures a more accurate and nuanced assessment of e-learner engagement.

```
while True:
    Read frame from camera
    Convert frame to grayscale

    Detect faces using face detection model
    for each detected face:
        Detect facial landmarks using predictor
        Calculate blinking ratio
        Calculate gaze ratio
        Analyze duration of different gaze directions
        Determine overall attentiveness level based on ratios and duration
```

Figure 14: Pseudocode for Comprehensive Attentiveness Estimation

The proposed methodology was able to effectively detect faces, track eye movements, estimate blinking ratios, and determine gaze directions. The comprehensive attentiveness estimation demonstrated promising results in categorizing e-learner engagement accurately.

5. Conclusion

In conclusion, this research addresses the challenge of online education by proposing an innovative methodology to monitor e-learner attentiveness. Leveraging computer vision techniques, this approach integrates facial detection, eye movement analysis, blinking ratio computation, and gaze detection, providing comprehensive engagement estimates. Promising experimental results demonstrate accurate attentiveness detection among online learners. Our approach has the potential to revolutionize online learning, offering real-time insights for educators and platforms to enhance learner outcomes. Our work contributes to developing effective tools in education's evolving landscape. While our methodology makes significant progress, opportunities for enhancement remain. Future work could refine preprocessing for lighting and camera variations. In summary, our approach, which leverages facial detection, landmark prediction, blinking ratio analysis, and gaze detection, offers a sophisticated solution for monitoring e-learner engagement. The promising results suggest its potential to enrich online learning experiences and provide valuable insights to educators.

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TLT002

EVALUATION OF THE COMPLIANCE OF BNQF STANDARDS AT THE UNIVERSITIES: A CASE OF BANGLADESH

-Joy Barua, Md. Shawan Uddin

ABSTRACT:

Purpose: The prime objective of this research paper is to evaluate the compliances and understandings of the BNQF standards to improve quality at the universities in Bangladesh.

Methods: This study employs interpretive paradigm and inductive reasoning adopting in-depth interviews with 30 teachers, students, and staffs of 8 public universities in Bangladesh using purposive sampling technique. Qualitative methods were used because interviewees can express their views in a candid way, with a primary focus on the desired themes. Documents review and secondary data also supplemented.

Findings: This study explores significance of an interactive learning environment, the need of active student participation, appropriate facilities, an up-to-date curriculum, student-centered teaching techniques, and effective assessment mechanisms, effective governance, research based culture alignment with industry needs, facilities, and infrastructure needed comprehensive improvements to the quality of higher education in Bangladesh.

Implications: By taking these consequences into account, institutions may aim to create an interactive learning environment that improves student experiences and prepares them for success. This study significantly contributes to ensuring the quality at the universities in Bangladesh.

Originality: This study examines the respondents' perspectives, observations, and knowledge of the study, which are scholarly constrained focusing on desired themes.

Limitation: This research has emphasized on small sample size focusing on rich descriptions and detailed narratives rather than statistical generalizations. These constraints limit the generalizability, validity, and comprehensiveness of the discussion's conclusions and suggestions.

Keywords: Quality Education(QE), Bangladesh National Qualification Framework (BNQF), Good Governance, Universities

1. Introduction

Quality education is regarded as one of the most significant variables predicting ongoing economic and social growth in developing countries around the globe (Huq, Huque & Banik, 2021). The provision of high-quality higher education is dependent on a structure that establishes national classifications of degrees and levels of education based on learning outcomes and specifies a minimal academic burden split into modules. National Qualification Frameworks (NQF) have emerged as a new worldwide phenomenon. Several countries utilize them as reform and communication tools to share a shared vision of mobility, transitions, and acknowledgement of all types of learning. In the last five years, the acceptance of NQFs has exploded and approximately 100 nations are currently adopting, developing, or contemplating NQFs, as well as participating in regional qualifications frameworks. Most nations' policy goals include increasing skill levels, restructuring education and training systems, and enhancing qualification systems (Allais, 2010). The purpose of NQFs is to simplify the formal requirements in credentials, making them clearer and more transparent, and so making it simpler for youngsters to handle transitions (Singh, 2017).

A national standards framework for higher education institutions like university is critical for sustaining the country's higher education system and contributing to sustainable growth and quality assurance in higher education. The Bangladesh National Qualifications Framework (BNQF) for Higher Education is a tool for developing, categorizing, and recognizing skills, knowledge, and competences along a scale of agreed-upon levels (BNQF, 2021). This framework is primarily applicable to all higher education institutions- general, technical and madrasah. The Framework establishes national classifications of credentials and learning levels based on educational objectives, as well as minimum academic loads and terminology. While quality improvement is one of the most essential aspects of higher education institutions, it is also critical to understand the significance of benchmarking as a method of continuously improving and remaining competitive. Universities throughout the world embrace the notion of benchmarking and create transformative methodologies and practices for educational change (Tasopoulou & Tsiotras, 2017).

According to UNESCO (2013), "quality assurance is a systematic process of assessing and verifying inputs, outputs, and outcomes against standardized benchmarks of quality with the goals of maintaining and improving quality, ensuring greater accountability, and facilitating standardization across academic programs, institutions, and systems."

Quality education allows students to develop all of their qualities and talents in order to reach their fullest potential as individuals and members of society. Quality education, then, entails investigating what desired improvements the educational institution want to see in each student (Dill, 2007). Establishing high expectations and assisting students in meeting them. The quality of higher education is a critical aspect in every country's prosperity and development. In accordance with the World Declaration on Higher

Education for the Twenty-First Century, quality in higher education is a multifaceted concept that should encompass all of its functions and activities, such as teaching and academic programs, research and scholarship, staffing, students, buildings, facilities, equipment, community services, and the academic environment. Higher education quality assurance and certification are critical to ensuring the quality of education in Bangladeshi universities (SINGH, 2013).

This study aims to explore evaluation of the compliance of BNQF Standards at the Universities to improve quality in Bangladesh, with a focus on the challenges and opportunities in implementing those standards at the universities. By examining the understanding with BNQF standards at universities that have already implemented, this study seeks to identify the impact of the BNQF standards and evaluate the understanding with the standards at the universities in Bangladesh to implement those standards effectively for quality assurance. Ultimately, this study expectedly contributes to the ongoing standards implementation to improve the quality of higher education in Bangladesh. It is very important for any country to ensure quality education at the universities since university students are the ones who will take part in the process of building a country. The higher education providers in Bangladesh need to be complied with the international standards so that the universities students get the higher mobility across the globe. However, in Bangladesh, BNQF is founded to assure quality education especially at the universities in Bangladesh. Moreover, BNQF is created to offer a uniform framework for the recognition and validation of educational and training qualifications in Bangladesh. Higher education in the Bangladesh is presently experiencing considerable challenges in integrating a large number of teachers in the implementation of BNQF, creating outcome-based education, and strengthening teachers' professional competence and competency in teaching-learning and assessment. While implementing a national qualifications framework has many advantages, there are several challenges that may affect BNQF evaluation in Bangladesh (Young, 2009). These are some examples of potential issues: limited awareness, resource constraints, inadequate alignment quality assurance, recognition and accreditation, trade-off between accuracy and efficiency, training difficulties, complexity of implementation, limited applicability. There arise some concerns like:

- how effectively understood of BNQF standards framework at the universities?
- how the frameworks were implemented?
- what changed as implementation progressed?
- what, looking back, was achieved after being evaluated?

1.1 Objectives of the Study

The general objective of this study is to evaluate the compliances of BNQF standards to improve quality at the universities in Bangladesh.

The specific objectives of this study were:

a) to investigate the implementation process and understandings of the Standards at universities
b) to evaluate the effectiveness of the implementation of the Standards at universities
c)to explore changed as implementation progress achieved after being evaluated

2. Literature review

Conventional national frameworks for quality assurance from the outside differed from nation to nation but typically followed three modal forms: The European model of centralized quality assurance control by state educational ministries, the US model of decentralized quality assurance combining limited state control with market competition, and the British model where the state essentially ceded responsibility for quality assurance to self-accrediting universities (Dill, 2007). A qualifications framework is a tool for developing and categorizing qualifications based on a set of criteria for degrees of learning attained. This collection of criteria might be implicit in the qualifications descriptors or explicit in the form of a set of level descriptors (Oecd, 2007). Frameworks' scope may include all learning accomplishments and paths, or it may be limited to a specific sector, such as primary education, adult education and training, or a vocational field. Yet, all qualifications frameworks provide a foundation for enhancing the quality, accessibility, connections, and public or labor market acknowledgment of qualifications within a country or worldwide.

The Bangladesh Accreditation Council implements the Bangladesh National Qualifications Framework (BNQF) for Higher Education, a statutory independent organization formed by the Bangladesh Accreditation Council Act, 2017 and responsible for the Framework's governance and management (BNQF, 2021). The Framework promotes standards conferred by an accredited higher education institution and outlines the knowledge, abilities, competences, and values that a graduate of this school would have possessed. The Framework essentially draws together many best practices from existing credentials in Bangladesh and throughout the world. It intends to improve the quality of higher education degrees in Bangladesh and to unify differences in instruction among higher education institutions. The Framework was created during the last phase of the Higher Education Quality Enhancement Project (HEQEP), which was supported by the World Bank and the Government of Bangladesh. The National Assembly had already enacted the Bangladesh Accreditation Council Act at the time. Creating a quality assurance (QA) culture necessitates paying close attention to Quality Assurance Standards.
The QA Areas/Standards significant for Bangladesh are:

1. Governance;
2. Leadership, Responsibility and Autonomy;
3. Institutional Integrity and Transparency;
4. Curriculum;
5. Teaching Learning & Assessment;
6. Student Admission & Support Services;
7. Faculty & Professional Staff;
8. Facilities & Resources;
9. Research & Scholarly Activities; and
10. Monitoring, Evaluation & Continual Improvement

The beginnings of an outcomes-based approach to credentials and curriculum may be traced back to the 1960s in the United States, when it was used in attempts to test teacher competency in response to political demands as school education came under public scrutiny (Allais, 2010). Originally, the NVQ (National Vocational Qualification) framework was intended to include all existing vocational credentials, but what developed was a new set of outcomes-based qualifications that supplemented and replaced certain previous qualifications. NQFs were created in numerous Asia-Pacific nations beginning about 2005, mainly for vocational education. Following the adoption of the European Qualifications Framework (EQF) by the European Union in 2008, there has been a dramatic increase in the number of European countries developing qualifications frameworks; according to Cedefop (2009b) all European Union countries are now signaling that they will develop comprehensive NQFs (Bjornevol & Grm Pevec, 2011). A qualification, such as a degree, diploma, or certificate, has traditionally been seen as a mark or evidence of persistent study for a specified amount of time in a specified field. Nonetheless, during the course of the twentieth century, credentials grew in importance, resulting in the intensive effort today observed around the world in the construction of qualifications frameworks. Several of these frameworks were foreshadowed by UNESCO treaties or declarations (for example, the Lisbon convention and Bologna Process in Europe, and the Arusha declaration in Africa), which sought to guarantee that governments recognized degrees and part qualifications throughout various areas (Allais, 2010). Quality assurance arose as a distinct regulatory focus in the higher education sector in the late nineteenth century, with the establishment of the first accreditation agencies in the United States (US) (Brown, 2004). In the United Kingdom, the notable break with traditional oversight mechanisms occurred with the publication in 1991 of the Government White Paper, Higher Education: A New Framework, which recommended not only the removal of the binary division between universities and institutes (enabling the latter to assume a university title), but also the development of a new quality assurance organization (Higher Educational Quality Council – HEQC).

The combined effects of globalization and massification have fundamentally disrupted the traditional relationship between the state and institutions, motivating policymakers to explore new ways to ensure academic quality in higher education (Malik, 2002). First, the worldwide demand for qualified human capital prompted revisions in many nations' degree frameworks as politicians sought international recognition of the credentials conferred by their country's higher education institutions. Second, the rapid expansion of higher education systems has provided incentives for the proliferation of private institutions, along with cross-border franchise and virtual universities, posing novel challenges to national external quality assurance systems, particularly those based on central control of public institutions. Third, the competitive forces triggered by globalization and massification have forced universities of higher education to become more adaptable to rapidly changing labor markets and student program interests. Governance refers to the structures, relationships, and procedures that are used to create, execute, and evaluate higher education policies at both the national and institutional levels. Governance is a complex web that includes the legislative framework, institutional characteristics and how they relate to the overall system, how money is allocated to institutions and how individuals are accountable for how it is spent, as well as less formal structures and relationships that steer and influence behavior (Hénard & Mitterle, 2010). The term ethics is widely used to refer to "ethics as well as behavioral standards that distinguish between what is good, bad, right, and wrong" (Henderson, 1982). According to the researcher, ethical difficulties in student conduct include breaching regulations, violating implicit norms or expectations, acting inappropriately in the classroom or examination hall, and disrupting teaching and learning, all

of which necessitated instructor action. The sample respondents were students who had been learning for at least one year. Other universities were not investigated due to time and budget restrictions. Several difficulties were faced by the researchers when collecting questionnaires provided to the students during the study. Many students, even after engaging in unethical behavior, refused to confess it when filling out the questionnaire. However, the answers they offer are deemed to be honest and genuine. It would be preferable if the causes of the pupils' unethical behavior could be recognized (Jahan, 2021).

A research article on qualifications frameworks in the Asia-Pacific Economic Cooperation (APEC) region provides the following recommendations regarding how qualifications frameworks might help:
"A qualifications framework is an instrument for classifying qualifications according to a set of criteria for levels of learning outcomes. Considerable benefits are expected of national qualification frameworks (NQFs). If backed by a good system of quality assurance, they can support the development of workers' skills, facilitate educational and labor market mobility, and help improve the access of individuals to higher and different levels of education and training over their lives (Allais, 2010). Education and training providers and authorities are able to design more consistent and linked qualifications when descriptors of qualifications are developed within NQFs. Employers benefit in their recruitment and training of staff when they can understand and have confidence in qualifications. The international recognition of an economy's qualifications can be enhanced by the transparency of qualifications to which an NQF can contribute (APEC Human Resources Development Working Group, 2009, p. 1).

3. Methodology

The objectives of this study are accomplished by using a combination of methodological approaches. The compliances of the universities to adhere to the quality assurance and BNQF requirements will be assessed using both qualitative and quantitative methodologies. The relevant respondents who are directly or indirectly connected to the quality assurance and national qualification procedures will be interviewed in-depth utilizing semi-structured questionnaires as part of the qualitative investigation's data collection process. The proposed research will also include a few focus group sessions and document reviews. Nonetheless, this study will distribute survey questionnaires to the relevant informants, who are primarily from the university's stakeholders and concerned officials of the quality assurance and BNQF in order to obtain quantitative data. This sampling of this study will be convenient and purposeful in design. Yet, the availability of funding facilities also has a role. A rigorous data analysis approach will be used to interpret the study's qualitative component through thematic analysis. Moreover, structural equation modeling will be used to assess the quantitative portion of the study using sophisticated statistical techniques such partial least squares (PLS).

4. Data Collection and Data Analysis Procedure

The Compliance of BNQF Standards at the Universities are a subject to understand it's nature and application of those standards at the universities. The evaluation and exploration of its application and effectiveness in the universities require an in-depth understanding through qualitative approach. As discussed earlier and for the interpretative paradigm, this research applied face to face in-depth interview using semi-structure questionnaires to explore the issues of compliances of those standards and evaluation as well as it's impacts at the universities in Bangladesh. The study took 30 in-depth interviews from several public universities. To be specific, this study took 1 in-depth interview of the former Vice-Chancellor, 6 in-depth interviews of IQAC Directors, 4 in-depth interviews of Academic leaders (Deans), 3 in-depth interviews of Department Chairman, 6 interviews of Teachers, 4 interviews of university Administrative Staffs and 6 interviews of university Students from several Public universities. The following table-1 shows the profile of the respondents.

Demographic Profile of the Respondents

Sl. No.	Respondents Code	Gender	Age (Years)	Designation	Institution	Experience (Years)	Education	Interview Date
1	FVC1	M	58	Professor	KU	30	PhD	09.04.23; 4PM
2	IQAC1	M	52	Professor	JnU	33	PhD	17.03.23; 10PM
3	IQAC2	M	50	Professor	RU	24	PhD	19.03.23; 2PM
4	IQAC3	M	47	Professor	SUST	19	PhD	22.03.23; 10PM
5	IQAC4	M	53	Professor	KU	21	PhD	25.03.23; 10AM
6	IQAC5	M	45	Professor	RU	20	PhD	25.03.23; 2PM
7	IQAC6	M	56	Professor	RU	35	PhD	16.03.23; 10AM
8	D1	M	57	Professor	RU	28	PhD	14.05.23; 2PM
9	D2	M	48	Professor	RU	24	PhD	15.05.23; 2PM
10	D3	M	57	Professor	HSTU	24	MBA; PGD	11.03.23; 3PM
11	D4	M	52	Professor	RU	25	PhD	16.05.23; 3PM
12	CH1	M	53	Professor	RU	26	PhD	28.03.23; 5PM
13	CH2	M	54	Professor	RU	24	PhD	11.03.23; 12PM
14	CH3	M	52	Professor	RU	33	PhD	14.05.23; 3PM
15	T1	M	51	Professor	JU	23	PhD	17.03.23; 9PM
16	T2	M	55	Professor	RU	32	PhD	18.03.23; 10PM
17	T3	F	48	Professor	RU	28	PhD	10.03.23; 4PM
18	T4	M	55	Professor	CU	37	PhD	15.03.23; 10PM
19	T5	F	47	Professor	DU	28	PhD	15.03.23; 8PM
20	T6	M	48	Professor	RU	30	PhD	23.03.23; 4PM
21	SF1	M	58	Register	RU	45	MA	07.05.23; 12PM
22	SF2	M	55	Deputy Register	RU	26	MA	07.05.23; 2PM
23	SF3	F	42	Section Officer	RU	18	MSS	08.05.23; 10AM
24	SF4	M	45	Section Officer	RU	17	MA	08.05.23; 12PM
25	ST1	M	25	Student	RU	6	MBA	08.05.23; 3PM
26	ST2	F	24	Student	RU	4	BBA	08.05.23; 5PM
27	ST3	F	25	Student	RU	6	MA	09.05.23; 10AM
28	ST4	M	24	Student	RU	5	BSc	09.05.23; 11AM
29	ST5	F	26	Student	RU	6	MSc	09.05.23; 2PM
30	ST6	M	25	Student	RU	6	MSS	09.05.23; 4PM

Note: FVC: Former Vice-Chancellor; IQAC: Institute of Quality Assurance Cell; D: Dean (Academic Leader); CH: Chairman; T: Teacher; SF: Staff; ST: Student

4.1 Data Analysis

The interview protocols were described to the respondents before any interview to take place and upon the consent of the respondents, the researchers started to record the entire interview session using mobile phone's voice recorder. However, note taking was also adopted where voice recording was not allowed. Each face-to-face interview took 35 to 45 minutes to complete a session.

When the interviews were finished, the researchers immediately began listening to the voice recordings and transcribing the raw data. To complete all of the interviews, transcribing is a time-consuming and exhausting task. The raw interview data was finally carefully coded into individual words or phrases. The coded information is then organized and subcategorized based on its qualities. Subcategories are then sorted into distinct categories. The study's topics are drawn from all of the categories. The following figure 1 shows the chronological sequence of data analysis process of the interviews.

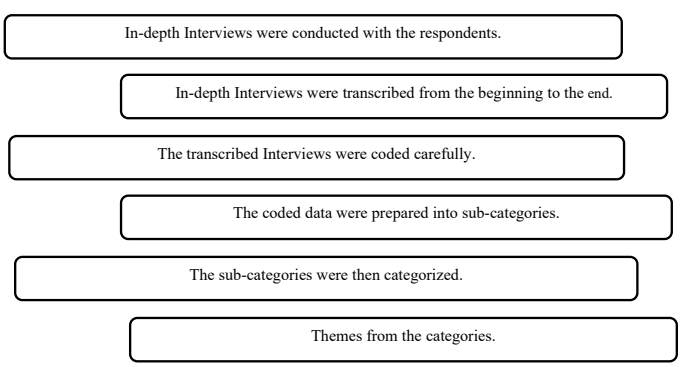

Figure 1: Chronology of Interview data analysis/ thematic data analysis. Source: Authors

After following the process of data analysis carefully, this study obtained four unique themes that reflect the objective of the study. The themes are presented in the table 2.

Table 2: The Themes

Number	Themes
Theme: 1	Academic Context
Theme: 2	Intellectual Community Culture
Theme: 3	Training and Learning Center
Theme: 4	Good Governance
Theme: 5	Modern Technological and Infrastructure Facilities
Theme: 6	Ethical Context

Source: Authors

5. Discussions and Findings

Quality assurance in universities is still in its early stages. With the passage of the Bangladesh Accreditation Council Act in 2017, significant progress has been achieved in pushing the quality assurance agenda in universities (Rahman et. al, 2019). Several institutions also implemented internal quality assurance mechanisms and performed self-evaluations based on feedback from students, teachers, and employers. Outcomes-based qualifications are seen as a way of driving curriculum reform, changing the management and delivery of education and training systems, and changing the processes and bases for awarding qualifications, thereby improving quality in universities.

Theme 1: Academic Context

Academic activities, interests, and disciplines are those associated with formal education and academic research (Rahman et. al, 2019). It includes many areas of learning, teaching, research, and knowledge dissemination at institutions of learning such as schools, colleges, and universities. Academic institutions also act as forums for intellectual exchange and collaboration. Scholars frequently participate in discussions, conferences, and joint initiatives with peers and specialists in their subjects. These encounters promote the exchange of ideas, viewpoints, and research discoveries, so building a lively academic community. Academic institutions also give tools and assistance for studying and research. Scholars can access relevant material, perform experiments, and gather information using libraries, labs, internet databases, and other resources. Furthermore, academic organizations frequently provide grants, scholarships, and fellowships to encourage research and enable academics to pursue their academic objectives.

An interactive class is one in which students actively participate and engage with the topic, the lecturer, and their peers. Discussions, group activities, hands-on exercises, and real-time feedback are all part of the engagement. Students are encouraged to ask questions, discuss their perspectives, work with others, and solve issues in an interactive class (Silverthorn, 2006). Observation made by experts and faculty members of public university:

"The teacher enhances student involvement and knowledge by integrating interactive teaching methods, technology, and multimedia resources. Interactive courses can be held in-person or online, and they can make use of platforms and tools that enable real-time communication and collaboration."
Respondent Code: IQAC4; Gender: M; Age: 53; Designation: professor; Institution: KU; Experience: 21; Education: PhD; Interview Date: 25.03.23; 10AM

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM
Respondent Code: CH3; Gender: M; Age: 52; Designation: professor; Institution: RU; Experience: 33; Education: PhD; Interview Date: 14.05.23; 3PM
Respondent Code: T3; Gender: F; Age: 48; Designation: professor; Institution: RU; Experience: 28; Education: PhD; Interview Date: 10.03.23; 4PM

In order to become the class interactive, Class size should be reduced. In this regard, an IQAC director commented:

"Student-teacher ratios are often high in universities. The optimum ratio should be 1:30. The delivery of lectures is hampered without suitable classroom facilities, such as speakers and multimedia, making teaching and learning less effective."

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Implementing modern practices with updated curriculum in teaching, learning, and assessment by implementing active learning in the classroom and a system for student feedback, student's assessment and evaluation as well as including higher-order cognitive skills and soft skills development in the curricula and using a learning management system for measuring student learning outcomes (Ali, Medhekar & Rattanawiboonsom, 2017). In this regards, some expert, academic leaders and faculty members Stated:
"Curriculum should be developed and updated with expert viewpoint. Students require an updated curriculum in order to acquire a relevant and complete education that prepares them for the changing demands of the modern world. An updated curriculum considers advances in knowledge, technology, and societal changes, providing students with the skills and information they need to excel in their personal and professional life. It bridges the gap between academic learning and practical application by encouraging critical thinking, problem-solving, creativity, and flexibility."

Respondent Code: IQAC3; Gender: M; Age: 47; Designation: professor; Institution: SUST; Experience: 19; Education: PhD; Interview Date: 22.03.23; 10PM

Respondent Code: D
2; Gender: M; Age: 48; Designation: professor; Institution: RU; Experience: 24; Education: PhD; Interview Date: 15.05.23; 3PM

Respondent Code: T1; Gender: M; Age: 51; Designation: professor; Institution: JU; Experience: 23; Education: PhD; Interview Date: 17.03.23; 9PM

Respondent Code: T4; Gender: M; Age: 55; Designation: professor; Institution: CU; Experience: 37; Education: PhD; Interview Date: 15.03.23; 10PM

The traditional and inflexible approach to teaching, learning, and evaluation methods, Teaching and Learning Pedagogy, inhibit successful student learning. Classroom education mostly emphasizes rote learning, non-creativity, and student passivity, which impedes the development of higher-order critical thinking and soft skills (Alam, 2020). Regarding this, an IQAC director commented:
"Universities work hard to establish an interactive and inclusive learning atmosphere that encourages analytical thinking, creativity, and in-depth knowledge. To stimulate active involvement and knowledge development, lectures, debates, group work, and experiential activities are frequently used following the BNQF framework."
Respondent Code: IQAC2; Gender: M; Age: 50; Designation: professor; Institution: RU; Experience: 24; Education: PhD; Interview Date: 19.03.23; 2PM

Also regarding this issue, a former Vice-Chancellor commented:

"A student-centered approach is at the heart of university teaching and learning practice. Faculties try to create accessible and engaging educational environments by taking into account students' various cultures, passions and learning styles. They promote active involvement, collaborative learning, and knowledge application in real-world scenarios."

Respondent Code: FVC1; Gender: M; Age: 58; Designation: professor; Institution: KU; Experience: 30; Education: PhD; Interview Date: 09.04.23; 4PM

Learning is mostly assessed through written tests, with minimal opportunity for learners to get feedback other than traditional grades. Some institutions have taken proactive initiatives to develop active learning approaches, which have been linked to greater levels of student satisfaction with teaching-learning. Inadequate and conventional teaching and learning facilities offer a substantial barrier to providing effective education. Observations made by experts and academic leaders stated:
"Universities try to develop students' analytical and critical thought, research skills, and habits of lifelong learning following the BNQF framework. Assignments, projects, and continuous assessment exams are intended to stretch students, foster autonomous investigation, and enhance knowledge application in real-world scenarios. When students have little or no access to raw materials and lab facilities, the quality of practical learning suffers, particularly in science, technology, engineering, and mathematics education."

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Respondent Code: IQAC6; Gender: M; Age: 56; Designation: professor; Institution: RU; Experience: 35; Education: PhD; Interview Date: 16.03.23; 10AM

Respondent Code: D1; Gender: M; Age: 57; Designation: professor; Institution: RU; Experience: 28; Education: PhD; Interview Date: 14.05.23; 2PM

Respondent Code: D3; Gender: M; Age: 57; Designation: professor; Institution: HSTU; Experience: 24; Education: MBA; PGD; Interview Date: 11.03.23; 3PM

Furthermore, access to high-quality Internet connectivity and digital resources is limited. Even if these resources are well-provided, digital literacy among instructors and students remains low, resulting in limited use of digital facilities in teaching and learning.

Theme 2: Intellectual Community Culture

A research-based culture creates a culture of inquiry, creativity, and critical thinking. It focuses a premium on knowledge acquisition, evidence-based decision-making, and lifelong learning. This culture fosters cooperation, open communication, and idea exchange, allowing for the production of fresh insights and discoveries (Cheetham, 2007). By solving complicated issues with evidence-based answers, it fosters intellectual growth, propels breakthroughs in numerous sectors, and contributes to social progress. However, the proportion of research grants in public financing for universities has remained stable, at considerably below 1%. Research facilities, such as modern labs, equipment, and digital facilities, remain insufficient, making it difficult for academics to conduct and generate high-quality research. (Rahman et. al, 2019). In this regards, IQAC expert and faculty members commented:

"University research has been badly underfunded, impacting their ability to do knowledge work despite the fact that universities have a large number of professors with advanced degrees and research expertise."

Respondent Code: IQAC2; Gender: M; Age: 50; Designation: professor; Institution: RU; Experience: 24; Education: PhD; Interview Date: 19.03.23; 2PM

Respondent Code: IQAC4; Gender: M; Age: 53; Designation: professor; Institution: KU; Experience: 21; Education: PhD; Interview Date: 25.03.23; 10AM

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Respondent Code: CH1; Gender: M; Age: 53; Designation: professor; Institution: RU; Experience: 26; Education: PhD; Interview Date: 28.03.23; 5PM

Respondent Code: T1; Gender: M; Age: 51; Designation: professor; Institution: JU; Experience: 23; Education: PhD; Interview Date: 17.03.23; 9PM

Respondent Code: T2; Gender: M; Age: 55; Designation: professor; Institution: RU; Experience: 32; Education: PhD; Interview Date: 18.03.23; 10PM

Respondent Code: T4; Gender: M; Age: 55; Designation: professor; Institution: CU; Experience: 37; Education: PhD; Interview Date: 15.03.23; 10PM

Respondent Code: SF1; Gender: M; Age: 58; Designation: Register; Institution: RU; Experience: 45; Education: MA; Interview Date: 07.05.23; 12PM

There is a significant pool of Bangladeshi academics with PhDs, many of whom were trained overseas and are primarily concentrated in major public universities, indicating that Bangladesh has untapped research potential. In academia, research is extremely important. Scholars do research in order to develop new information, enhance current knowledge, and advance their particular subjects. This includes developing research questions, devising experiments, collecting and analyzing data, and publishing or presenting findings in academic publications or at conferences (Elton & Laurillard, 1979). Regarding this issue, some IQAC expert and faculties commented:

"Universities place a high priority on the construction of research centers, institutes, and labs that provide cutting-edge facilities and technology. They also urge faculty members to participate in research initiatives, seek external financing, and publish their findings in peer-reviewed publications. They actively encourage student engagement in research by providing undergraduate and graduate students with opportunity to engage in research initiatives, internships, and support from mentors."

Respondent Code: IQAC4; Gender: M; Age: 53; Designation: professor; Institution: KU; Experience: 21; Education: PhD; Interview Date: 25.03.23; 10AM

Respondent Code: T2; Gender: M; Age: 55; Designation: professor; Institution: RU; Experience: 32; Education: PhD; Interview Date: 18.03.23; 10PM

Respondent Code: SF2; Gender: M; Age: 55; Designation: Deputy Register; Institution: RU; Experience: 26; Education: MA; Interview Date: 07.05.23;2PM

Critical Thinking and systematic innovative work conducted to grow the store of information, including understanding of mankind, culture, and society, and the use of this knowledge to design new applications (Cheetham, 2007). In this regards, an IQAC director and a faculty member who have pursue degree in foreign and have huge experience, commented:

"University students' critical thinking skills are developed through a variety of academic activities such as research assignments, essay writing, group debates, and problem-solving exercises. By stimulating intellectual curiosity and questioning existing assumptions, university education frequently develops an environment that encourages critical thinking. Students are encouraged to participate in discussions, challenge authority, and investigate novel solutions to society issues."

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Respondent Code: T4; Gender: M; Age: 55; Designation: professor; Institution: CU; Experience: 37; Education: PhD; Interview Date: 15.03.23; 10PM

Theme 3: Training and Learning Center

The university's Training and Learning Center provides significant tools and support for students, teachers, and staff looking to improve their skills and knowledge. It provides a variety of training programs, workshops, and seminars to assist individuals in their professional and academic development. The dean's office at the school or college nominates faculty members to teach the certificate program's core course. They are paid a small stipend and take part in a training session to learn how to do so (Gunersel & Etienne, 2014).

The training and learning center promotes a collaborative and interactive learning atmosphere in which individuals may participate in hands-on activities, get practical experience, and learn new skills. It provides a resourceful atmosphere for students to improve their abilities, learn new things, and develop their talents (Raqib, 2019). The center strives to enable students to achieve in their academic endeavors and prepare them for the difficulties of the professional world through a varied range of workshops, seminars, and training programs. The center, with its skilled teachers and resources, provides a supportive and interactive learning environment that fosters cooperation, critical thinking, and creativity. In this issue, most of the expert, academic leaders and faculties commented: "Undoubtedly, there is no training and learning center for university teacher. For that reason, they are unable to enhance pedagogical skills, promote effective teaching methods, or keep educators up to date on the newest trends and advancements in their particular professions."

Respondent Code: FVC1; Gender: M; Age: 58; Designation: professor; Institution: KU; Experience: 30; Education: PhD; Interview Date: 09.04.23; 4PM

Respondent Code: IQAC2; Gender: M; Age: 50; Designation: professor; Institution: RU; Experience: 24; Education: PhD; Interview Date: 19.03.23; 2PM

Respondent Code: IQAC4; Gender: M; Age: 53; Designation: professor; Institution: KU; Experience: 21; Education: PhD; Interview Date: 25.03.23; 10AM

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Respondent Code: D3; Gender: M; Age: 57; Designation: professor; Institution: HSTU; Experience: 24; Education: MBA; PGD; Interview Date: 11.03.23; 3PM

Respondent Code: CH2; Gender: M; Age: 54; Designation: professor; Institution: RU; Experience: 24; Education: PhD; Interview Date: 11.03.23; 12PM

Respondent Code: CH3; Gender: M; Age: 52; Designation: professor; Institution: RU; Experience: 33; Education: PhD; Interview Date: 14.05.23; 3PM

Respondent Code: T1; Gender: M; Age: 51; Designation: professor; Institution: JU; Experience: 23; Education: PhD; Interview Date: 17.03.23; 9PM

Respondent Code: T3; Gender: F; Age: 48; Designation: professor; Institution: RU; Experience: 28; Education: PhD; Interview Date: 10.03.23; 4PM

Respondent Code: T4; Gender: M; Age: 55; Designation: professor; Institution: CU; Experience: 37; Education: PhD; Interview Date: 15.03.23; 10PM

Expert teachers in universities possess a high level of knowledge and mastery in their respective fields. These teachers have extensive academic and professional experience, enabling them to provide valuable insights and practical applications. Their expertise also extends to designing curriculum, conducting research, and mentoring students, fostering a supportive learning environment. Through their passion for teaching and commitment to student success, expert teachers in universities play a pivotal role in shaping the minds of future generations. Observation made by an IQAC director stated:
"Qualified teachers are few, and there are little possibilities for professional growth. Teacher vacancies are common in universities particularly in district towns and rural regions."
Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM
For public universities, the government should use a central teacher recruiting and training procedure that can take up to two years, and turnovers during this period worsen the vacancy problem.

Theme 4: Good Governance

University education's legislative backbone and coordinating mechanism are fractured. The three subsectors are governed by different legal frameworks, which provide governance structures, duties, and obligations for the various institutions. The enormous number of organizations, complicated governance structure, and weak managerial ability make effective administration and coordination at the central and institutional levels difficult. Good governance is a vital foundation of a well-functioning society and is critical to a nation's progress, stability, and prosperity. It covers the concepts and methods in the governance process that promote openness, accountability, participation, efficiency, and the rule of law (Alam, 2020). Transparency is an important component of successful governance since it allows the public access to information and decision-making processes. Transparent governance enables citizens to hold their leaders responsible and builds trust in public institutions. It aids in the prevention of corruption because politicians and institutions are more inclined to act properly when their activities are scrutinized by the public (Rahman et. al, 2019). Regarding this issue, a former Vice-Chancellor and some IQAC expert commented:

"Poor transparency and insufficient accountability systems are to blame for numerous abnormalities bad practices in the universities, such as teacher recruitment, student enrolment, and student assessments. In the absence of effective accountability systems, governmental constraints constrain institutions' ability to respond to human resource demands and academic program modifications."

Respondent Code: FVC1; Gender: M; Age: 58; Designation: professor; Institution: KU; Experience: 30; Education: PhD; Interview Date: 09.04.23; 4PM

Respondent Code: IQAC3; Gender: M; Age: 47; Designation: professor; Institution: SUST; Experience: 19; Education: PhD; Interview Date: 22.03.23; 10PM

Respondent Code: IQAC4; Gender: M; Age: 53; Designation: professor; Institution: KU; Experience: 21; Education: PhD; Interview Date: 25.03.23; 10AM

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Accountability is yet another critical component of successful government. It means that people in positions of authority must account for their acts and decisions. Effective measures should be in place to hold public officials accountable for their actions and to guarantee that they operate in the best interests of the people they represent. This may be accomplished by establishing independent judicial systems, strong anti-corruption laws, and monitoring agencies (Rahman et. al, 2019). Observation made by a former Vice-Chancellor commented:

"Public university teachers get so much freedom and autonomy to conduct their daily work. Furthermore, the highly politicized climate in universities frequently leads to student and staff protests and disruptions that disrupt the academic schedule."

Respondent Code: FVC1; Gender: M; Age: 58; Designation: professor; Institution: KU; Experience: 30; Education: PhD; Interview Date: 09.04.23; 4PM

Governance efficiency ensures that resources are used effectively and services are delivered efficiently. This includes reducing bureaucratic processes, encouraging digital transformation, and putting in place strong systems for managing public finances. Efficient governance optimizes service delivery and maximizes the effect of public resources, resulting in better outcomes for residents (Kooli, 2019).

Theme 5: Modern Technological and Infrastructure Facilities

Universities have huge lack of modern technology and infrastructure facilities. Computer laboratories, high-speed internet access, digital libraries, smart classrooms, and campus-wide Wi-Fi coverage are among them. These facilities provide students with access to the use of cutting-edge research, collaboration, and learning tools and resources (Bariu, 2020). To establish a suitable and engaging learning environment, colleges also invest in contemporary infrastructure such as well-designed lecture halls, research centers, sports facilities, and student housing. These amenities improve the whole educational experience, foster innovation and creativity, and prepare students for the digital age's needs. In this matter, some IQAC experts Commented:

"The government should increase fund and may propose particular incentives for modern technological and infrastructure facilities in order to improve quality in education and collaboration with foreign universities through blended online learning. Increasing investments in teaching and learning, as well as ICT facilities, potentially through government support, private-sector collaborations and fundraising and outreach campaigns. It is also a most important task to focus on this issue. University authority should prioritize on computer laboratories, high-speed internet access, digital libraries, smart classrooms, and campus-wide Wi-Fi coverage are among them"

Respondent Code: IQAC1; Gender: M; Age: 52; Designation: professor; Institution: JnU; Experience: 33; Education: PhD; Interview Date: 17.03.23; 10PM

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Respondent Code: IQAC6; Gender: M; Age: 56; Designation: professor; Institution: RU; Experience: 35; Education: PhD; Interview Date: 16.03.23; 10AM

Respondent Code: T2; Gender: M; Age: 55; Designation: professor; Institution: RU; Experience: 32; Education: PhD; Interview Date: 18.03.23; 10PM

Respondent Code: T3; Gender: F; Age: 48; Designation: professor; Institution: RU; Experience: 28; Education: PhD; Interview Date: 10.03.23; 4PM

There is a huge lack of modern technological facilities, such as modern and smart library facilities, better Wi-Fi facilities, and others modern equipment for practical work in lab and a greater lack of proper monitoring of previously established labs (Walmiki & Ramakrishnegowda, 2009).

Theme 6: Ethical Context

In the academic efforts, teachers and students should follow the highest ethical standards. They must be honest, trustworthy, and fair in every aspect of teaching and learning. Teachers should establish a supportive environment that respects each student's rights and dignity. Students should be taught to take ownership of their own learning and to respect their professors, peers, and the educational process as a whole. When doing research or grading assignments, they encourage academic honesty, avoid plagiarism, and follow ethical rules. Overall, a university instructor serves as a role model, regularly displaying ethical behavior and respecting educational and professional principles (Jahan, 2021). University faculties and staffs promote their students' well-being and academic success, creating an inclusive and friendly learning atmosphere. They preserve confidentiality and professionalism while ensuring that all students receive equal treatment and opportunity.

"Teachers in universities have a primary responsibility to uphold and exemplify ethical behavior in all of their relationships with students, colleagues, and the academic community. They aspire to establish a secure and collaborative learning atmosphere that promotes intellectual development, analytical thinking,and academic independence while providing equitable opportunity to all students. Each course teacher should make a conscious and intentional effort to create a climate of ethics that will limit the occurrence of unethical behavior among his or her students."

Respondent Code: IQAC1; Gender: M; Age: 52; Designation: professor; Institution: JnU; Experience: 33; Education: PhD; Interview Date: 17.03.23; 10PM

Respondent Code: IQAC6; Gender: M; Age: 56; Designation: professor; Institution: RU; Experience: 35; Education: PhD; Interview Date: 16.03.23; 10AM

Respondent Code: D3; Gender: M; Age: 57; Designation: professor; Institution: HSTU; Experience: 24; Education: MBA; PGD; Interview Date: 11.03.23; 3PM

Respondent Code: T2; Gender: M; Age: 55; Designation: professor; Institution: RU; Experience: 32; Education: PhD; Interview Date: 18.03.23; 10PM
Respondent Code: ST1; Gender: M; Age: 25; Designation: Student; Institution: RU; Experience: 6; Education: MBA; Interview Date: 08.05.23;3PM

Ethical instructors uphold confidentiality, protect pupils' privacy and personal information, and prevent all forms of discrimination and harassment. They encourage learners to pursue knowledge with integrity and provide help to resolve ethical quandaries by promoting honesty, intellectual honesty, and integrity in academia (Baumgarten, 1982). They exhibit a dedication to ongoing professional development by remaining up to date on research and best practices in their area, as well as maintaining an open and engaging discourse with students. It is also the university's ethical responsibility to take the necessary steps, such as active proctoring in the examination hall, motivating students toward ethical activities, setting creative questions, and so on, to prevent students from cheating, plagiarism, misbehavior, and other forms of unethical behavior.

"Teachers recruitment and selection process should be fair to find the best specialized faculties to improve quality in universities. Here, every stakeholder should follow roles, policies and code of conduct strictly. Teachers should be regular at his or her routine work, such as regular present in classroom, gathering up to date knowledge for providing lecture, concern regarding regular students' assessment."

Respondent Code: IQAC5; Gender: M; Age: 45; Designation: professor; Institution: RU; Experience: 20; Education: PhD; Interview Date:25.03.23; 2PM

Respondent Code: D1; Gender: M; Age: 57; Designation: professor; Institution: RU; Experience: 28; Education: PhD; Interview Date: 14.05.23; 2PM

Respondent Code: CH3; Gender: M; Age: 52; Designation: professor; Institution: RU; Experience: 33; Education: PhD; Interview Date: 14.05.23; 3PM

Respondent Code: T2; Gender: M; Age: 55; Designation: professor; Institution: RU; Experience: 32; Education: PhD; Interview Date: 18.03.23; 10PM

Respondent Code: SF2; Gender: M; Age: 55; Designation: Deputy Register; Institution: RU; Experience: 26; Education: MA; Interview Date: 07.05.23;2PM

Respondent Code: ST3; Gender: F; Age: 25; Designation: Student; Institution: RU; Experience: 6; Education: MA; Interview Date: 09.05.23;10AM

Discussion

The discussion emphasizes the significance of having an interactive learning environment in universities. It promotes active student engagement, appropriate classroom facilities, a current curriculum, student-centered teaching methods, and effective evaluation systems. Large class numbers, outdated teaching techniques, and restricted access to resources are all issues that must be addressed. Educational institutions may improve the quality of education and increase student engagement and learning by encouraging active participation, providing suitable facilities, modernizing the curriculum, using student-centered approaches, and enhancing evaluation systems. The efforts should also be made to address issues such as a lack of resources and a lack of digital literacy among teachers and students.

In universities, a research-based culture fosters inquiry, creativity, and critical thinking. It encourages information acquisition, rational decision-making, and lifelong learning, which leads to new ideas and discoveries. Underfunding, on the other hand, impedes high-quality research, restricting professors' contributions. Universities should prioritize research infrastructure, promote faculty engagement, and involve students through internship and mentorship programs to solve issue. Critical thinking skills are fostered through activities such as research assignments and problem solving, which encourage students to challenge assumptions and investigate novel alternatives. To summarize, a research-based culture and critical thinking are crucial for intellectual growth and social advancement, and they necessitate proper financing, resources, as well as encouragement for faculty and student research.

The lack of a training and learning center for university professors makes it difficult for them to enhance their pedagogical abilities, implement effective teaching techniques, and stay updated in their areas of expertise. This absence precludes them from giving students with useful insights and practical applications. Furthermore, a lack of trained teachers and restricted professional development opportunities exacerbates the situation, particularly in rural regions. The establishment of a training and learning center would allow institutions to address these issues by empowering professors to improve their teaching abilities and create a conducive learning environment.

In university education, the fragmented legislative backbone and broken governance structures hinder efficient administration and

cooperation. To overcome these issues, transparency, accountability, as well as effectiveness in governance must be prioritized. Transparency is especially important at universities to prevent anomalies and malpractices in areas such as teacher recruitment, student enrolment, and assessments. Universities must put in place safeguards to guarantee that administrators and staff work in the best interests of students and the general public. This might include independent judicial systems, anti-corruption legislation, and monitoring organizations. Transparency fosters trust while holding leaders responsible. Accountability ensures that activities be taken responsibly, while efficiency maximizes resource usage. By concentrating on these areas, universities may build successful governance, resulting in educational advancement, stability, and prosperity.

In universities, a lack of current technological and infrastructure facilities has a significant impact on the quality of education and student experiences. Key issues include a lack of computer laboratories, sluggish internet connectivity, limited digital library, and insufficient supervision of existing labs. Universities should emphasize expenditures in contemporary infrastructure such as well-equipped computer laboratories, high-speed internet access, digital library services, smart classrooms, and campus Wi-Fi coverage in order to improve the current situation. Upgrading lecture halls, research centers, sports facilities, and residence halls each contribute to provide a well-rounded educational experience. Universities can improve the learning environment, stimulate creativity and cooperation, and prepare students for the needs of the digital age by addressing these infrastructural gaps. Increased financing, government incentives, private-sector collaborations, and proactive maintenance measures will be critical to meeting these targets.

Academic ethics are critical for promoting a healthy and inclusive learning environment. Teachers should act as ethical role models in their relationships with learners, exhibiting honesty, integrity, and justice. Teachers must emphasize honesty, discourage plagiarism, and ensure students grasp ethical principles in order to maintain academic integrity. Respecting confidentiality and privacy, supporting inclusion, and continuing professional growth are all essential components of ethical behavior. Universities must also uphold an ethical standard by preventing unethical behaviors and ensuring fair recruiting processes. Overall, emphasizing ethics in teaching and learning is critical for developing responsible and engaged learners who positively contribute to society.

6. Implications

This study's implications include increased student involvement and motivation, which leads to greater academic achievement. Improved educational quality as a result of student-centered teaching approaches and current curriculum. Students' critical thinking abilities are being developed, as is their intellectual curiosity and originality. A research-based culture promotes research and innovation. Making an inclusive and varied learning environment that values multiple points of view. Transparency, accountability, and effectiveness have improved good governance and administration. Technology and infrastructural advancements to accommodate current learning demands. By taking these consequences into account, institutions may aim to create an interactive learning environment that improves student experiences and prepares them for success.

7. Limitations

The study's limitations include a lack of specific contextual information, a lack of empirical evidence to support the claims made, an incomplete coverage of the challenges faced in creating an interactive learning environment, an overemphasis on infrastructure-related issues, a lack of alternative perspectives, and a narrow focus on universities without taking into account the broader educational landscape. These constraints limit the generalizability, validity, and comprehensiveness of the discussion's conclusions and suggestions. Researchers can provide a more thorough and nuanced assessment of the elements impacting quality by fusing qualitative insights with more extensive quantitative data.

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DQE009

WHY IS THE QUALIFICATION RATE OF MASTER'S THESIS LOWER IN SUBORDINATE UNIVERSITIES?——THE ROLE OF GOVERNMENT IN QUALITY ASSURANCE OF HIGHER EDUCATION

-Chi Zhang, Jiani Chen, Xiaoyu Fan

Abstract

Promoting the supply of high standard higher education is a necessary foundation for building an innovative country. Chinese local governments play four roles in ensuring the quality of higher education, namely the leader of policy implementation, the promoter of information construction, the manager of quality evaluation, and the inspector of educational achievements. Various higher education institutions selectively gather corresponding human, financial, and material inputs in the above four aspects to improve the quality of talent cultivation. Based on 40 institutions in Shanghai samples from graduate institutions among different levels. The study found that affiliated universities invest more resources and are good at using support policies to cultivate top-notch talents compared to ordinary universities, while ordinary universities attach relatively more importance to implementing training standards and inspection management; In terms of graduate thesis, which is an important indicator reflecting the quality of education, the qualification rate of subordinate universities in the past five years is lower than that of provincial universities and research institutions. In addition to strategic selection motivation, the problem of interdisciplinary thesis sampling and subsequent appeal mechanisms, government sampling strategies, and the strength of feedback processing are all important reasons for the inverted relationship between school level and paper quality.

Keywords: Quality assurance; government role, dissertation appraising

1 Introduction

With the development of China's higher education, the quality of education in universities has attracted growing widespread external scrutiny. Quality in education lies in multifaceted areas include cultivate talents, development of human beings, value for money and so on. In China, the transformation of economic structure, the development of the people themselves and the construction of a modern metropolis give higher expectations for the good quality of higher education. How the Chinese government, who dominates education governance, to play its role in quality assurance both directly as well as indirectly is a major problem that must be solved.

2 The Role of Government in Quality Assurance of Higher Education

Observing the development track of higher education quality assurance policies over the past 42 years since opening up strategy, we can find that the quality assurance system nowadays is the result of gradual improvement and adjustment of value change. China's higher education and its quality assurance are government-led. Under the macro guidance of the central government and the positive actions of local governments, higher education has developed rapidly.

Based on the analysis of the government's education policies and related re- search, this paper argues that "the role of the Chinese government in the quality assurance of higher education" could be divided into four aspects, the government's policy guidance, the construction of an information monitoring platform, the relevant authorization assessment and sampling appraising of postgraduate thesis.

2.1 Policy Maker

The Chinese government has emphasized the role of education quality assurance in the "Outline of the National Medium and Long-Term Education Reform and Development Plan (2010-2020)" and the "Implementation Measures for the Examination and Evaluation of Undergraduate Teaching Work in Ordinary Universities". The development strategy adopted by the China government is that "promoting overall development by key construction", for example, "211 project", "985 project" and "double first-class construction" which are mainly focus on high-level university construction, have ensured the quality of China's top universities and disciplines in a large extent. In recent years, in order to overcome the drawback of "identity solidification" caused by the traditional key university construction policy, the "double first-class" construction project is a new attempt to bring competition mechanism (Liu and Li, 2019).

2.2 Information Promoter

As a promoter of information technology, China government has mainly done two things. one is that, it built a national data platform for monitoring the quality of higher education, which could make use of the internet and big data technology to form a quality monitoring network system covering the whole process and field of higher education automatically, establishing an early warning mechanism for the quality of education (Wang and Qiao, 2016). The other is the information disclose which require

universities to publish annual quality reports, promoting universities to conduct annual self-assessment and present evidence of quality at both undergraduate and graduate level (Shu and Liao, 2015).

2.3 Evaluation Administrator

In order to ensure the quality of the educations provide to students and the value of their credentials abound, the Ministry of Education has promoted qualified assessment, level assessment and audit assessment to evaluate undergraduate education successively. From level assessment to audit assessment, which enforce internal quality assurance system in terms of evaluation emphasis, shows the exploration of the theory and practice of quality assurance tool of China governments. (Liu and Li, 2019)

For postgraduate education quality assurance, the government mainly focuses on degree authorization assessment and qualified assessment (He, 2018; Shu and Liao, 2015; Wang and Qiao, 2014).

Besides assessment and evaluation, there is also professional accreditation which usually managed by social organizations. The higher education professional accreditation provides a docking platform for the mutual recognition of academic qualifications among universities internationally (Liu and Li, 2019).

2.4 Learning Outcome Examiner

As far as postgraduate education is concerned, the quality of dissertation is undoubtedly one of the most important measurement indexes of its education quality. It is not the result of a single course or research, but the complex outcome of the whole graduate program which include interactions between tutors and students, shows the achievement of the goals of a graduate program.

In order to ensure the quality of postgraduate dissertations, the Academic Degrees office of the State Council and the Ministry of Education have clearly proposed to carry out appraising work on doctoral and master dissertations. In order to standardize the sampling appraising work, the "Sampling Appraising Method for Doctoral and Master's Degree Thesis" has been promulgated. According to the provisions of the "Sampling Appraising Method" and the actual situation in the region, all provinces (autonomous regions and municipalities) have respectively formulated sampling methods or detailed implementation rules for master's degree theses in their own provinces and regions. (Gao et al., 2017; Wang and Tang, 2017)

This will fundamentally give university administrators, graduate supervisors and graduate students a strong deterrent, which not only help universities to focus on outcome based education and inner quality assurance system, but strengthen the awareness of supervisors and graduate students on the standardization of dissertations and academic quality as well. (Cao Lei et al., 2016)

Among the four roles of government quality assurance, the role of dissertation appraiser has received less attention, thus, this paper will focus on the sampling thesis practice of Shanghai over the past five years.

3 Shanghai Master Thesis Sampling Plan

According to the provisions of the sampling method, the sampling of dissertations shall be carried out every years coping the doctoral and master dissertations of the previous academic year. The sampling proportion shall be about 10% for doctoral theses and 5% for master theses. The Ministry of Education is responsible for the sampling of doctoral theses national wide, while the provincial government is responsible for the master's theses. Establishing sampling system which cover all graduate institutions, encourage them pay more attention to the construction of quality assurance system for one of the important outcomes of graduate program——theses.

The sampling plan of Shanghai has been implemented by Shanghai Education Evaluation Institution, a semi-government authorized organization. On the premise of justice, dissertations appraise procedure is combined with random sampling and key sampling. In general, dissertation in each university or institution would be sampled in a random way exclude the following situations:

(1) If one's dissertation was identified as "problematic dissertations" in last year's national sampling inspection, then all the master's dissertations of this year guided by his/her tutors would be sampled.
(2) If one or more dissertations in the previous year were found to be "suspected of academic misconduct", then all the master's dissertations in this year guided by their tutors were checked.
(3) If a tutor has five or more theses in five years that have been found as "problematic dissertations", thus all master's dissertations guided this year would be selected.
(4) All confidential master's theses would be check within one year after decryption.
(5) If the institutions were found to have one or more "problematic dissertation", their sampling intensity shall be increased.
(6) New master degree awarding units within three years from the first authorization of the degree, whose sampling intensity would also increase.
(7) If the number of graduate students instructed by one tutor in one year exceeded 10 and above, then the sampling inspection will

be intensified (at least one of his/her students would participate in the sampling inspection).

Due to the rigid sampling method and the different situations of each university, there may be deficiencies in the implementation process, which leads to various problems in the sampling process and makes it less effectively.

This paper will focus on the analysis of the "unqualified rate" of the sampling inspection of master's theses in Shanghai's universities in the past five years, and make a detailed analysis in combination with the expert comments on unqualified degree theses, so as to find out the problems existing in the sampling inspection of theses.

4 Results of Shanghai Sampling Plan

Sample characteristics: Among the samples, there are 9 specialized research institutions, accounting for 22.5%; 21 provincial universities, accounting for 52.5%; 10 subordinate universities, accounting for 27.5%. According to the majority disciplines in universities, we divide them into five categories, 6 economics and law related, 8 comprehensive, 18 technology, 2 normal education, and 6 others include art, agronomy, linguistics, sports and medical science. (see table 1 below) In addition, we also label the 40 universities with "211", "985", "double 1st", ordinary and so on. For example, there are 4 subordinate universities in Shanghai are labeled as "211", "985", "double 1st", which means they are top university in China who receive higher grant from government than others, correspondingly receive more expectation on their talent training. There are 5 "211" but not "985" nor "double 1st" universities with 1 in provincial level and 4 in subordinate; 20 ordinary universities with 18 ones in provincial level. (see table 2 below)

Table 1: Unqualified Rate Distribution among different disciplines

Administrative level	Econ and law	Comprehensive	Technology	Normal education	others	Total
Research institution	0 0%	0 0%	9 0%	0 0%	0 0%	9 0%
Provincial universities	4 1.08%	4 0.30%	7 0.76%	1 1.50%	5 3.42%	21 1.40%
Subordinate universities	2 3.10%	4 2.13%	2 2.20%	1 3%	1 2.10%	10 2.42%
Total	6 1.75%	8 1.21%	18 0.54%	2 2.25%	6 3.20%	40 1.34%

Note: %means Unqualified Rate ;others include art, agronomy, linguistics, sports and medical science

Table 2: Unqualified Rate Distribution among different university levels

Administrative level	"211"	"985"/ "211"/ "double 1st"	ordinary	research	Total
Research institution	0 0%	0 0%	0 0%	9 0%	9 0%
Provincial universities	1 1.20%	0 0%	18 1.57%	2 0%	21 1.40%

In table 1, longitudinal comparison shows that the research institutions have the best sampling effect (sampling unqualified rate is 0). The second is provincial universities (the unqualified rate is 1.40%). Subordinate universities have the worst sampling effect with highest unqualified rate (2.42%), which indicates that the higher administrative level the universities belong to, the higher the unqualified rate in the theses sampling result. In other words, the unqualified rate of subordinate universities is higher than the average (1.34%).

Horizontal comparison shows that, technology universities have the best sampling results (0.54%), lowest unqualified rate at all. Comprehensive universities have the second lowest unqualified rate (1.21%), of which provincial comprehensive universities are the best (0.3%), far lower than subordinate comprehensive universities (2.13%). Similarly, provincial universities (1.08%) performed much better than subordinate universities (3.10%) in Economics and law universities (1.75%). Normal universities followed closely (2.25%), and provincial normal universities (1.50%) were also better than subordinate universities (3%).

In table 2, longitudinal comparison in the total column has the same data with table 1 indicating subordinate universities have the highest unqualified rate. In addition, within one category, where ever it is labeled as "211" or ordinary, subordinate universities have higher unqualified rate than provincial universities.

Horizontal comparison shows that, research institutions have lowest unqualified rate (0%); ordinary universities have the second lowest unqualified rate (1.6%). The universities labeled as "985", "211" and "double 1st" have the highest unqualified rate (2.88%) among all type of universities. Among subordinate level, ordinary universities have lower unqualified rate (1.85%) than "211" universities' (2.25%). This verifies the positive correspondence between administrative level and unqualified rate once again.

5 Analysis

From the evaluation result, first, the unqualified rate of the master's thesis in subordinate universities is relatively high. Second, the unqualified rate of the thesis in science and technology colleges is relatively low. Compared with hard disciplines such as science and technology, evaluation of soft disciplines are more complex and diverse, which is easily influenced by personal values. There are controversies and it is difficult to reach consensus on the identification criteria of knowledge creativity (Gao, 2018). However, it is a bit unexpected that the subordinate universities have relatively higher unqualified rate. From the perspective of the government's role in quality assurance, the main reasons are as follows:

First, the unqualified rate in the random inspection report of the paper cannot be completely determined as unqualified due to the lack of follow-up appeal and correction links. It should be "objectionable papers". Subordinate universities are generally large in scale, with more cross-disciplines and unique research fields, and may result in a higher objection rate. Second, the high unqualified rate is caused by the government's risk control nonrandom sampling behavior. In order to save resources, the government adopts the method of key sampling for high-risk schools and tutors which may cause a higher unqualified rate in the key sampling schools. Third, he unqualified rate may have no important influence in universities, causing them pay little attention to it. Subordinate universities may devote more resources to training outstanding and top-notch talents.

5.1 Is unqualified rate real?

Due to the imperfect follow-up appeal channels of the problematic thesis, the problematic thesis should not be directly identified unqualified. It is very common to have academic disputes in the process of research, which may play an important role in promoting the diversity and depth of academic research. What is important in academic disputes is how to ensure the objective evaluation of graduate dissertations by experts, whether the research is totally denied or affirmed and encouraged to continue the research? It is that the sampling inspection of graduate degree theses is carried out one year after should be taken in mind, in the time gap, there would be change of the solutions stated in the students' dissertations. How to resolve the dispute? The "sampling method" and the Shanghai municipal government's sampling plan are not mentioned. The existence of these problems will bring great challenges to the implementation of the sampling inspection of dissertations. Therefore, academic disputes solutions of the sampling inspection plan should be emphasized.

Subordinate universities are generally large in scale, with many cross-disciplines, which have increased the complexity of sampling work. The different historical evolution of each university has resulted in its special academic research characteristics and emphases. For example, universities in different regions may form their own characteristic research fields in some disciplines according to the characteristics of their regions. Different experts under the same first-level discipline may not know all the research frontiers and hot issues in the sub-disciplines. Different experts under the same sub-disciplines, due to their different research angles, may also lead to greater differences in the evaluation results of dissertations. For example, regional economics, some professors may focus on deduction research of economic theoretical models, while others focus on comprehensive and regional research of heterogeneous regions in geography. Similarly, due to different research emphases, different evaluation results may be given to the quality of the same dissertation.

One of the solutions is to set up an institution to handle academic disputes in the sampling process, allowing the authors and tutors of "problematic dissertations" to review the evaluation results. At the same time, the evaluation institution entrusted by the government needs to refine the evaluation expert information base and strengthen the administration of evaluation expert information. Of course, this will lead to higher government budget, which should be considered.

5.2 Relationship between unqualified rate and education quality

Shanghai's risk-control sampling plan increased sampling efforts on students tutored by "problematic degree papers" student tutors. This means that thesis with high quality risks will receive more inspections, while papers without quality risks will receive fewer inspections. The purpose of the risk control method is to help schools to find out the loopholes in the quality assurance system in a more targeted way. Meanwhile, it also reduces the unnecessary assessment burden and makes the limited educational resources full use to social benefits.

5.3 How to draw attention to unqualified rate?

The results of the thesis sampling inspection are only made public to a certain extent, which may not play an incentive punishment role to education institutions (Cao et al., 2016). The quality of education is reflected in many aspects. Subordinate universities may devote more energy in "cultivating excellent talents", such as applying for "double-first-class" construction and "top-notch talents" education, etc., concentrating superior resources to train top-notch talents. The post-graduate education of Tongji University has clearly defined the goal of "cultivating high-level and top-notch innovative talents suitable for the new era" (Huang and Wang,

2019). Subordinate universities believe that "first-class" scientific research results rather than "mediocre" is an important manifestation of the connotative development of first-class universities and also an important indicator that distinguishes them from ordinary universities. First-class results are reflected in quality. Solution to this problem may include expanding the publicity of sampling opinions and the processing of results, which may give the universities an outside pressure to find and solve the unqualified rate problem and improve the internal quality assurance system.

6 Conclusion

This paper first give a map of China government role in education quality assurance, contain the government's policy guidance, the construction of an information monitoring platform, the relevant authorization assessment, and sampling of postgraduate thesis. After analyzing data from shanghai thesis sampling plan in the recent five year, it mainly explain the paradoxical finding from the data that why subordinate universities have higher unqualified rate in thesis sampling inspection than normal universities in the view of government role. The reason may lie in three aspects include lake of follow-up appeal channels to complex academic disputes, government's risk control nonrandom sampling behavior, and low publicity of the sampling result abetting university to neglect.

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DQE012

QUALITY ASSURANCE EXPERIENCE: AN EVIDENCE FROM KANDAHAR UNIVERSITY AFGHANISTAN

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ABSTRACT
This article discusses the experiences of Kandahar University (KDRU) with establishing a quality audit and quality improvement culture and raising campus community knowledge. As well as coordinating internal and external review procedure based on the National Quality Assurance Framework. An explanatory approach was used. Findings reveal that formal procedures are made to guarantee that Quality Assurance is implemented effectively in response to the Ministry of Higher Education's Quality Assurance and Accreditation framework. The involvement of external examiners, the mobility of academics, the engagement of professionals, and the awarding of research grants had a continuing impact on the sharing of knowledge and the preservation of high academic standards. KDRU conducts two types of assessment internal and external assessment, for the internal assessment the responsible bodies are the vice-chancellor, quality assurance department (QAD), and faculties deans. For the external audit, MoHE has the authority to assess the overall quality by External Peer Reviewers (EPRs') .
Nevertheless, QA implementation positively affects the quality, however, presents certain challenges in our experience. Thus, besides the opportunities for quality improvements, additional efforts and international assistant are required to ensure a more dependable, knowledgeable, and committed team, and to ensure a better strategy for further quality improvements of the QA standards. The findings provide insights to APQN members and policymakers on the quality assessment interventions that need to be taken into the improvements of the institutional quality audit systems and QA standards. The contribution is made to link KDRU's audit process and QA standards with the APQN member institutions.
Keywords: Quality assurance, National QA framework, Kandahar University, Internal and External audits, Challenges and Opportunities.

1. INTRODUCTION
Recently, higher education quality assurance (QA) is a complicated task on a global scale(Welch & Wahidyar, 2020). Therefore, there has been major competitions in the higher education QA process. The processes that ensure academic standards, or the level of academic success reached by higher education graduates, are maintained and enhanced are referred to as quality assurance in higher education (Dill, 2007). As universities become more accountable to the government, employers, and graduates for providing quality education. "Until university management, university quality agencies, and academic staff in universities draw on mutually agreed understandings of this contested concept – academic quality – academics will continue to resist quality processes, treating them as games to be played and systems to be fed" (Anderson, 2006). Kandahar University has only two decades of QA implementation experience. Fortunately, in 2018 this university was awarded as a nationally Accredited university in Afghanistan. KDRU applied several techniques to guarantee the caliber of its academic programs and adapts the higher education QA framework for regulation and governing the management and function of the university. QA implementation presents certain difficulties, in our experience. The Ministry of higher education established a national Quality Assurance and accreditation framework that focuses on the quality of academic programs. This framework has been offered in terms of the 11 main and 49 sub-standards. The QA department of Kandahar University implements the framework with the structure and process of higher education. A continuous assessment of External Peer Reviewers such as accreditation, validation, and audit has proven that an effective and continuous quality improvement is in progress. This paper analyzes the experience of Kandahar University in preparing all ten faculties for quality assurance exercise. In addition, this manuscript will also explore the challenges, opportunities, and review processes as have been perceived via the KDRU's university community. It can be concluded that the designed approach based on QA by the Ministry of higher education Afghanistan for Public Higher Education Institutions served for providing evidence that the University of Kandahar has a soundly grounded approach to the assurance of quality and standards. On the other hand, it leads to a 'culture of compliance' whereby methods endorsed by the audit team become those used by the lecturers. Thus, in general, it raises the issue that quality assurance assessment both internal and external can lead to quality improvements.

2. KANDAHAR UNIVERSITY AND QUALITY ASSURANCE CULTURE

keeping the top position among the universities in the southern part of Afghanistan. The University of Kandahar is vital to the delivery of high-quality higher education in the area. KDRU is continuously devoted to improving its quality management system, which includes all the institution's basic tasks, such as instruction, learning, research, consultation activities, and supplementary services. The adoption of an innovative quality management system was unavoidable, Kandahar University has acknowledged, because of external demands that were manifesting themselves through the more competitive education market. Public confidence can be promoted that the quality of the higher education is being safeguarded and improved, it was necessary to support educational procedures and administration with a better and more reliable quality assurance system,
These efforts took place via the following procedures:

i. The University of Kandahar Quality Management Department has been in place since 2010, incorporating all KDRU's core processes, including teaching and learning, research and consultative activities, and their supporting services. The certification of accreditation bestowed to KDRU in 2018, confirms that KDRU has implemented a university-wide quality management system based on the national framework of QA – MoHE requirements.

ii. Kandahar University implements Quality Assurance Framework designed by the Ministry of Higher Education (MoHE) in compliance with the Quality Assurance and Accreditation Directorate (QAAD) framework. This is the standard and organized way of QA implementation in KDRU. This framework increases community confidence in achieving goals and maintaining high standards of higher education, MoHE strives to develop a high-quality, uniform higher education system in the nation that is renowned both locally and internationally (MoHE, 2023). Eleven faculties including Economics, Journalism, Law and Politics, Education, Public Administration, Shariah Law, Medicine, Engineering, Computer Science, and Information Technology and faculty of Education had undergone external quality assessment by appointed assessors from the Quality Assurance and Accreditation Directorate (QAAD), Ministry of Higher Education, Afghanistan.

2.1 Quality Assurance Internal and External Assessment: KDRU Experience

As noted earlier, KDRU implements quality assurance measures to guarantee and improve the quality of all academic programs provided by each faculty. The following three elements are a part of the quality assurance process. Such as: 1) To assess internal quality, 2) To assess external quality, and 3) To judge that the quality of the program is assessed.

2.2 Internal Quality Assessment in KDRU

There are several external quality evaluation methods. The environment is distinguished by a rich diversity in the German higher education system (Hartwig, 2003). The subject matter of this paper will be to give an outline of the different systems and practices of quality assessment and control in KDRU. Internal assessment of quality is a form of self-assessment that each faculty is accountable for. The assessment of all relative aspects is mostly based on the relevant staff's assessments by vice-chancellor and head of the quality assurance. The university vision, mission, the department's purpose, and strategic goas, as well as the learning outcomes of the programs are under examination, which serve as the foundation of a valid self-assessment process. The gathering, presentation, and analysis of pertinent course data are essential components of self-assessment. The self- assessment process specifically includes gathering and modifying data on teachers and their educational programs, recognizing strengths, problem areas, possibilities, and engaging in strategic planning to make sure that strengths and issue-solving opportunities are sustained. Lastly, for additional quality enhancement, QA committees have been established by KDRU leadership to produce the database and the self-study analysis in mentioned faculties.

The self-assessment report covers the following 11 main and 49 sub-standards created by MoHE, (QAAD, 2023).
1. Mission and Strategy
2. Contribution to Society
3. Governance, Leadership, and Administration
4. Financial Resources and Management
5. Academic Program Review
6. Research
7. Faculty Members and Staff
8. Student Experience
9. Quality Assurance and Enhancement
10. Library and Information Resources
11. Teaching, IT, and other resources

Each standard has been divided into several sub-criteria including inputs and performance or management indicators. Each criterion is defined by relative performance or performance indicators. Basic standards and quality development standards. Core standards are higher education standards that a program must meet.
Quality development standards refer to best practices in higher education that institutions should consider. Experience has shown

that nothing is more important than member self-assessment to the success of a program evaluation. In the first evaluation, members of the Department of Quality Assurance, University of Quality Assurance Management assist faculty members in creating effective self-study reports. Both documents should be reflective, analytical, self-critical, and evaluative rather than descriptive.
Teachers who have submitted ineffective self-study reports were asked to rewrite their self-study reports. Ineffective databases and self-study reports are overloaded with data presented rather Than analyzed, defensive, or self-justifying and not intended to improve quality, checklist is made formally or mechanically as if not to demonstrate it, members of the program are sensitive to it and reflect it.

We do not consult other members of the program. Effective self-report and self-learning reports improve quality and make external reviewers' report is more useful for the further improvements in KDRU.

2.3 Self-assessment Report Analysis and Preparation
An institution's internal quality assurance processes play a crucial role, as the quality of the programs offered depends, among other things, on curriculum design, teaching and learning methods, the institution, financial and human resources the opportunity to implement Outcome Base Education (OBE) and Student-Centered Learning (SCL) techniques. All of these are covered in the above 11 areas included in the institution's self-assessment report.

In the process of preparing a self-assessment report for each faculty and university level, the university establishes a committee chaired by the vice-chancellor, head of the quality assurance department, and elected faculty members. On the faculty level, the Dean appoints the most appropriate and knowledgeable quality assurance committee (QA) member, responsible for preparing self-assessment report on faculty level. Similar, on the institution level the head of QAD is responsible for analyzing and preparing the reports. Coordinators should be familiar with the above 11 standards outlined in the "Guidelines for Quality Assurance and Accreditation Frameworks for Public and Private Universities in Afghanistan" published by the Quality Assurance and Accreditation Directorate (QAAD), Ministry of Higher Education.
The self-assessment report on university and faculty level ensures that:

1. All 11 standards and 49 sub-standards must be answered sufficiently, reliably as well as evidence are necessary to be available for each standard.
2. Data accuracy and consistency are maintained in all sections of the reports.
3. Records is required to be prepared for the self-assessment report's sections and subsections to officially sent to QAAD.
4. Finally, before the submission of the reports, if necessary, the corresponding members both on university and faculty level have the responsibility to improve the reports.

Additional academic and non-academic assistants were appointed to collect data and necessary information and to assist with clerical work in order to reduce the burden on staff involved in the preparation of the self-assessment report. Student feedback on faculty services and infrastructure was collected through customer satisfaction surveys. This provided input for continuous quality improvement and self-learning analysis, on faculty and university level.

Regular meetings and workshops were held during the development of the self-assessment report to monitor progress and to evaluate additional input and feedback. The completed document was edited for accuracy, and data consistency. Additionally, cross-checking was a must task for minimizing any adverse effects on faculty that may arise from the data collected and the information provided.
The prepared self-assessment reports (SARs) of each faculty were then submitted to the relative Dean or Vice Dean for review and then presented at a final workshop attended by staff and students. After that, the reports were submitted to KDRU's Quality Assurance Department and Quality Assurance Committee (QAC) for completeness review. Later, comments and suggestions for further improvements by the QAC were suggested to the Faculty Council for consideration. Finally, a self-assessment report on university level was submitted to the Directorate General for Quality Assurance, Ministry of Higher Education (see Figure 1).

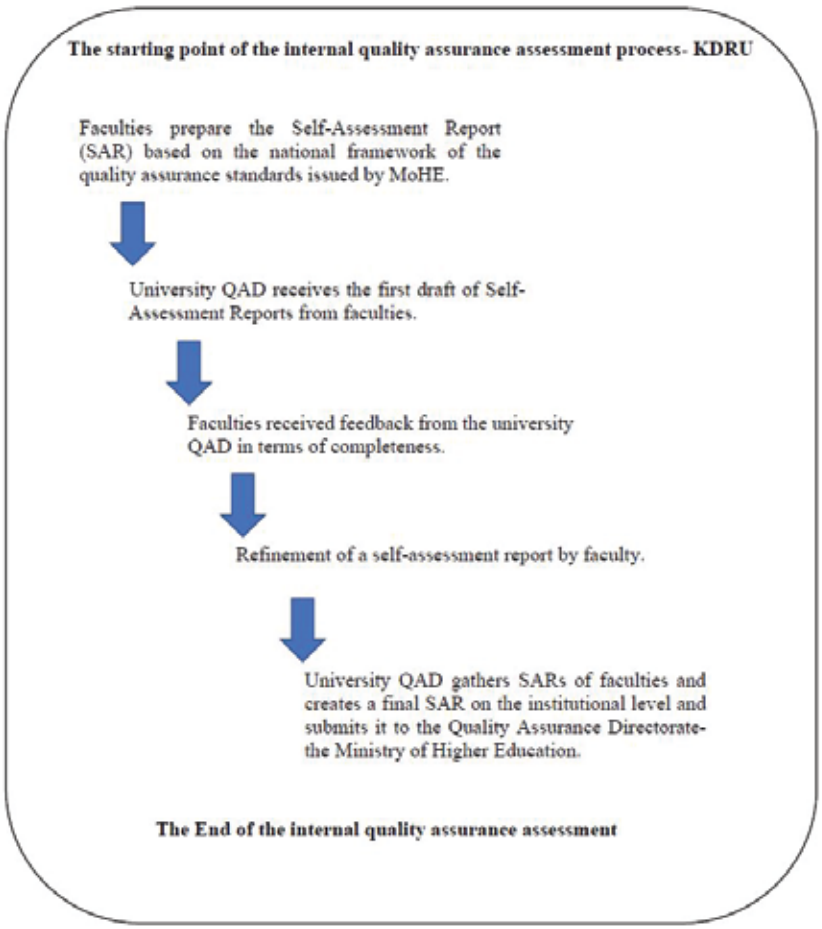

Figure 1: KDRU's internal audit assessment process

2.4 External Peer Review (EPR) or External Quality Assessment: KDRU

External quality assessments must always include external reviewers. An effective quality assurance process involves one or more of its external auditors reporting on-site visits. External quality assessments or peer reviews serve to validate information obtained from the internal assessment process. In addition, this assessment also supports institutions to improve their standards and improve quality. Figure 2 shows the external evaluation process at KDRU. With peer-reviewed evaluations through EPRs' panel visits, the process begins and ends with the institution's continuous improvement program. External quality assurance begins with a self-assessment or self-study report within the institution. This report is more than just an evaluation, it includes how to proceed with the quality improvement plan proposed by the educational institution. The assessment panel's considerations and recommendations are based on the institution's own quality improvement plan. External peer reviewers use a specific rubric system for judging the university's quality status and use this rubric for future continuous improvement plan.

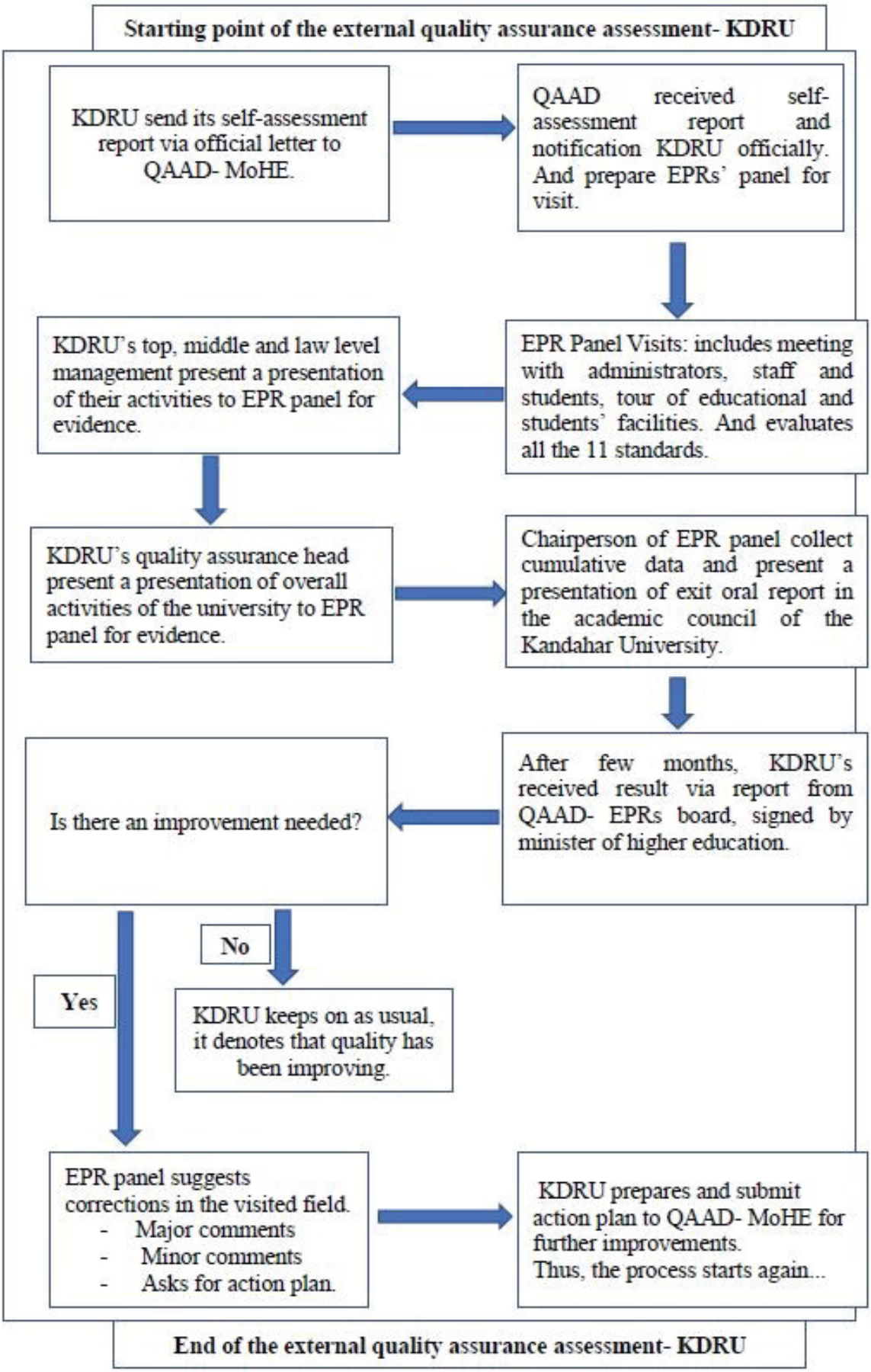

Figure 2: External Quality Assurance Assessment Procedures - KDRU.

2.5 Institutional Preparation for Panel Visit

As university sends official letter to MoHE for external reviews. Top management and faculty members must take several steps.

a) To appoint a contact person, preferably the head of the Quality Assurance Department (QAD), to act as a coordinator and central link between the facilities and the quality assurance assessment team. The head of the QAD delivers a presentation to top management, middle management, lower management, and the other responsible bodies who are members of the university academic council. Also, held a steering committee to brief matters related to the visit, such as opening and closing ceremonies, means of transportation and preparation for presenting the data.

b) To provide additional documentation and information or evidence to substantiate the validity of the facts and figures contained in the self-study report. These supporting documents must be organized systematically for all eleven and domains standards and kept in the QAD office for reviewers.

c) To prepare PowerPoint slides summarizing the content of all 11 standards in the report for presentation by the Dean during a briefing on the institution's program.

d) To select student representatives for each grade level and balance in terms of academic ability. In addition to select students with their role in formal discussions with the evaluation committee. Student representatives should be informed of the purpose of the external visit.

The EPRs will ask and hear students' opinion in the following issues, therefore, each student must be aware of the following issues.

- program quality and appropriateness.
- personal and academic advice or consultation
- medical and financial assistance
- The role of students in providing feedback on institution policies and services. Students are also required to guide review boards when visiting teaching and learning facilities such as libraries, auditoriums, and laboratories.

e) To select academic staff representatives to balance them based on the senior and junior course coordinators and explain their roles during informal discussions with the review committee. Delegates must be informed of the purpose of the external visit. To seek your opinion on:

- Employee development (staff professional development)
- Staff Promotions.
- Adequacy of faculty facilities.
- Understanding institutional goals and role in faculty leadership
- Academic staffs', students' and stakeholders' awareness in curriculum designing and implementation.

f) To inform other responsible centers of the University that provide following facilities for students for the visit, Such as: Information Technology center, Main library, Job or career center, Counseling department, Student health clinic, Sports center, Emergency exit…

g) Quality assurance department of KDRU invites the top management of the Kandahar University. Such as, the Chancellor of the university, Vice Chancellor for Academic and Research Affairs, Vice Chancellor for Student Affairs and Alumni, and Vice Chancellor for financial affairs. In addition, get involved with the head of library, Information technology and research center to meet with the Review Panel to discuss.

- Faculty recruitment process, promotion, training, and development opportunities
- Management and governance
- Authority, Responsibility and Financial Allocation.

The visit of the external peer reviewer was expected to end within a week. The schedule was tight and included many discussions and interviews with administrative staff, academic staff, and students regarding the eleven standards above. At the end of the quality assurance process, QAD must make decisions about program quality and corrective actions. Ensuring quality improvement is important. Action mechanisms should be in place to decide who will implement the recommendations of EPR's recommendations, on what schedule.

2.6 Issues and Challenges: Some Pertinent Questions

There are several issues and challenges associated with QAAD's main standards and forty-nine sub-standards. Only a few academic and non-academic employees found the educational quality assessment and quality check requirements cumbersome and burdensome. Despite the several workshops, seminars, and steering committees for the introduction, implementation, and importance of the mentioned main and sub-standard. However, little has been done to experimentally prove that these requirements have a positive effect on the quality of higher education.

The following concerns are the queries among the some KDRU staff:

1) Should universities be evaluated and ranked?

2) Is quality assurance generally synonymous with quality improvement?

3) Does external assessment encourage academics and students to continually?
4) What do your employees think about quality assurance practices?
5) Develop better ways to facilitate and assess meaningful learning rather than QA.
6) Rather, does it lead to a "culture of compliance" where the assessment methods recommended by the assessment team are used by faculty and students? Data collection was performed through analysis of documents, observations during on-site panel visits, and information at meetings. The documents included a faculty self-assessment report, a review report from the QAAD review board, and the results of field visits.

2.7 Perceptions of Staff Members

1- Opportunities
Quality assurance as a system of power appears to offer both oppressive and creative possibilities (Morley, 2005). It is noted that most staff members have a positive perception of the QA review processes in the following areas:

1) In KDRU, a culture of self-assessment has developed because of the external evaluation process. The review helped KDRU become even more self-aware of their actions, and the institutions improved the public and student understanding of their educational initiatives.

2) Program reviews introduce quality practice at faculty and program levels, and quality is considered an integral part of the teaching and learning process.

3) The Quality Assurance Review provided universities with an opportunity to examine the quality status of their undergraduate programs. Most staff agree that a QA review is an effective appraisal for quality checks and quality improvement.

4) Gaps in existing integrated and available programs are found during program evaluations.

5) QA provided a platform to influence the culture of the peer review system at KDRU.

6) Implementing program reviews helped lecturers in creating scholarly interaction with experts beyond the KDRU environment. The process has cultivated professionalism and collegiality among staff in the university, Such as: the University of Leicester, UK. And University of Potsdam, Germany.

7) The process improves programs to point out the strong and weak points and areas for improvement.

8) Program reviews promote program self-awareness because they include critical self-evaluation by program groups.

9) The internal self-assessment report became the basis for further improvement and creation.

10) QA is the improvement process.

11) Since all KDRU's staff must critically evaluate themselves during a program review, this process fosters program self-knowledge.

12) Program evaluations' findings aid us in enhancing the quality of our academic departments.

13) An internal self-assessment report formed the basis for a continuous improvement process.

2- Challenges During Internal and External Review - KDEU
KDRU converts it challenges to opportunities. Every organization brings some challenges with itself. Among them, Africa's quality assurance systems face significant financial and human resource constraints. An annual budget of at least USD 450,000 is normally needed to operate a national quality assurance agency, and qualified personnel are also needed. Additionally, until the capacity might be improved to enable a more official national QA agency in the long run, "self-assessment" for each institution could be required (Materu, 2007).
Similarly, the following challenges were noted during the program review in KDRU:

• Some officials used the review process as an opportunity to denigrate, and some openly expressed their dissatisfaction with the university to the review board at the expense of the program.
Few academic staff tend to be defensive because of the program's stringent review standards, which prevents them from being open and honest about the quality of service they provide.

• Some misinterpreted the results of the program review as a source of information supporting program rationalization and redistribution.
• Some see program review results as a tool to mobilize the hidden intentions of process initiators.
• Reviews of quality assurance programs have proven beneficial but can be a burden for some employees.
• Some have used the review process to pursue personal goals.

3. THE ISSUE OF RATING AND RANKING

KDRU's faculties and staff agree that evaluation is desirable as an evaluation result. However, there are concerns that it may be used to rank universities and the lower ranking may affect employees' jobs and positions. As universities vary widely, therefore rating is a motivational factor in large higher education systems on national and international levels. This scale assists higher education institutions to plan, not necessarily whether institutions are world-class or below average.

The Directorate of Quality Assurance and Accreditation governed by the Ministry of Higher Education, Afghanistan justifies the evaluation as a necessary element of the quality assurance system. To the knowledge of the authors, no quality assurance ratings have been challenged or challenged by KDRU or any other institution. This suggests that the relevant discussion should be how to use the rate assigned by QAAD for continuous improvement, not whether to do the evaluation.

4. DO QUALITY AUDITS LEAD TO A 'CULTURE OF COMPLIANCE'?

Studies have proven that quality audits improve the quality of teaching and learning. Thus, according to Paraska (2013), the main duty of an organization's leadership and stakeholders are its direction, quality, and oversight. Organizations create plans that outline the steps they will take to accomplish certain objectives to advance, stay viable within a select constituency, be competitive in their market, attract investors, or be appealing to customers. Although these "plans" have several names, "strategic plans" is the most common one.

However, certain academicians and students sometimes feel disempowered by external quality assurance. Researchers, teachers, and students in universities should be given a chance to comply with intrinsic standards of excellence rather than with those imposed from outside. A general objection regarding the quality audit is that it can promote a 'culture of compliance' in the university. Similar findings demonstrate that the demands on teaching staff to respond to external monitoring can adversely affect efforts to enhance the student learning experience(Harvey & Knight, 1996). However, KDRU staff is committed to ignoring the above claim and respect and well come to internal and external quality assurance assessments.

5. QUALITY ASSURANCE EQUATEs TO QUALITY IMPROVEMENTS?

The official authorities of KDRU adhere to establishing procedures and strive to maintain established standards, therefore, KDRU has greatly improved its quality assurance procedures. According to Newton (2000), quality assurance is an effective system for improving university quality assurance processes. In today's quality assurance system, quality is defined and monitored from outside the university. The only concern is that the danger is that this does not necessarily improve the quality of student learning. Generally, quantity is evaluated rather than quality. Especially in classrooms, reviewers usually look at the number of graduates, the performance of graduates, the teacher-student ratio, and the student-computer ratio. In research, the main concerns are the number of peer-reviewed journal articles and the amount of research funding. This determines the type of assessment used by the university. There is a risk that those responsible bodies within the university will avoid responsibility for defining and ensuring the quality of the assessment. Thus, the top management at MoHE and University level need to have regular internal and external quality assessments, in order to detect weaknesses in program assessment and detect those who avoid responsibilities for QA implementation.

6. CONCLUSION

Kandahar University has only two decades of QA implementation experience. Fortunately, in 2018 this university was awarded as a nationally Accredited university in Afghanistan. KDRU applied several techniques to guarantee the caliber of its academic programs and adapts the higher education QA framework for regulation and governing the management and function of the university. QA implementation presents certain difficulties, in our experience. The Ministry of higher education established a national Quality Assurance and accreditation framework that focuses on the quality of academic programs. This framework has been offered in terms of the 11 main and 49 sub-standards.

Despite the challenges encountered, quality assurance at the University of Kandahar incorporates both internal and external assessments. It is indisputable that the senior leadership is committed to a quality management system. KDRU personnel have actively participated in the process of implementing QA. An investigation on the effects of quality assurance procedures on teaching and learning at KDRU is advised to be conducted. The institution is committed to consistently and effectively executing the national framework of the quality assurance process. In addition, KDRU visions to participate actively with national, regional and global quality assurance networks.

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DQE010

ANALYSIS OF HIGH QUALITY EDUCATION EVALUATION PROJECTS --TAKING THE NEW ROUND OF UNDERGRADUATE EDUCATION AND TEACHING AUDIT IN SHANGHAI AS AN EXAMPLE

-Dr. Le FANG

Abstract:
Audit has been the important component of China's education evaluation system since 2011. The new round of undergraduate education and teaching audit in Shanghai for the year of 2021-2025 has conducted many innovations and explorations in evaluation concepts, principles, mechanisms, standards, methods, and results application, reflecting the characteristics of high-quality education evaluation and presenting us with a typical case of high-quality evaluation. This has important reference value to understand and construct high-quality evaluation projects.
Keywords: high-quality evaluation, Shanghai, undergraduate education and teaching, audit

1. Project Introduction

Audit is an important component of the "Five in One" education evaluation system established in China since 2011, which includes self-evaluation of HEIs, institutional evaluation composed of audit and eligibility evaluation, programme evaluation and accreditation, international evaluation, and regular monitoring of basic teaching status data. The audit emphasizes that HEIs shall "make measurement based on their own standards", focuses on the degree that the HEI-running orientation and talent cultivation objectives meet the national and regional economic and social development demands, the guarantee degree of teachers and teaching resources, the validity of teaching and operation of quality assurance system, as well as the satisfaction degree of students and employers[1]. Its aim is to guide HEIs to establish self-discipline mechanisms, strengthen self-improvement, and enhance the level of quality [2].

The first round of the audit was carried out from 2013 to 2018, and achieved significant effects. These include: promotion of undergraduate teaching reform in HEIs, implementation of the separation of management, HEI-running and evaluation with the participation of multiple subjects, improvement of the national data platform for monitoring the regular quality of HEIs, great progress in the evaluation and training system[3]. However, at the same time, there are also many shortcomings in the first round of audit, such as the "soft, weak, and fragmented" implementation of moral education and talent cultivation, the insufficient clarity in the HEI's own criteria, and insufficient rigidity in the application of the evaluation results.[4] In February 2021, the Ministry of Education issued the "Implementation Plan for the Audit of Undergraduate Education and Teaching in Ordinary Higher Education Institutions (2021-2025)", which made overall arrangements and institutional arrangements for the new round of audit of undergraduate education and teaching in China. The new round of audit plan is a continuation, improvement, and upgrade of the previous round of audit. Based on the plan of the Ministry of Education, Shanghai has supplemented and improved the audit plan for the local HEIs in accordance with the local situations.

2. Characteristics of High Quality Evaluation

High quality education evaluation is the new development of education evaluation under the inherent requirements of the high quality education system. It firmly grasps the fundamental task and standards of fostering morality and cultivating people, takes quality and contribution as the guidance, and systematically designs and comprehensively deepens the vision of building an education powerhouse, adheres to problem-oriented approach, and strives to improve the scientific effectiveness of educational evaluation[5]. The new round of audit has made many innovations and explorations in evaluation concepts, principles, mechanisms, standards, methods, and results, reflecting the characteristics of high-quality education evaluation.

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2.1 Evaluation Concept

Compared to the concept of high-quality evaluation, the main manifestations of the new round of audit are as follows:

2.1.1 Adhere to people-oriented approach

The new round of audit focuses on the independent choice of participating HEIs, such as the selection of evaluation types, indicator module combinations, and various regular norms, and negotiate with the expert group for self-evaluation guidance work. At the same time, the new round of audit fully respects the professional discretion of experts, only stipulating the evaluation procedure and workload that the expert group should complete. For example, the number of experts attending classes, reviewing course papers, and graduation thesis (design) is determined by the experts based on the needs of the evaluation work and the information technology conditions of the HEI. In addition, for the tasks beyond the campus evaluation plan, if the participating HEIs need, the expert group leader can make arrangement at their discretion.

2.1.2 Persist in focusing on the process

The new round of audit focuses on whether the HEIs have advocated what should be advocated, done what was advocated, been effective in what was done, and improved for what was ineffective. From both qualitative and quantitative perspectives, it provides a comprehensive understanding of the development status and educational and teaching work of the participating HEIs, especially the achievement of talent cultivation effectiveness and goals of the participating HEIs, the comprehensive evaluation of the suitability of the educational positioning and talent cultivation goals with the needs of national and regional economic and social development, the guarantee of teachers and teaching resource conditions, the effectiveness of the operation of the teaching and quality assurance system, and the satisfaction of students and employers of the graduates from the HEI. The new round of audit is not about rating HEIs as "good, medium, or poor", but rather through expert online and campus visit, as well as collective "consultations" within and outside the HEI, to be good both as "doctors" and "coaches", helping HEIs find true highlights and existing problems, and serving the high-quality development of the HEI.

2.1.3 Adhere to support development

The new round of audit adheres to the principle of "promoting development, reform, management and strength through evaluation". It not only ensures responsibility to the country and keeps the bottom line, but also reflects serving the HEI. During the entire evaluation process, participating HEIs, evaluation experts, and evaluation agencies formed a quality community, focusing on how to assure and build the quality of undergraduate education and teaching in HEIs. On the one hand, they identify the bottleneck issues that affect and constrain the reform and development of HEIs, and on the other hand, they discovered the highlights and characteristics of the HEIs' undergraduate education and teaching reform, highlighting the "baton" role of evaluation and targeting the high-quality development of HEIs.

2.2 Evaluation principles

The specific principles are as follows:

2.2.1 Persist in fostering morality and cultivating people. The audit is based on the effectiveness of fostering morality and cultivating people, strengthens the audit of the HEI's education direction, education process, student development, quality assurance system, and other aspects, and guides HEIs to build a "full participation in talent cultivation, full process talent cultivation, and all-round talent cultivation" pattern.

2.2.2 Persist in promoting reform.The audit closely follows the main line of undergraduate education and teaching reform, strengthens the student center, output orientation, continuous improvement in order to lead the reform with the evaluation, strive to achieve talent cultivation goals, and achieve high-quality development.

2.2.3 Adhere to classification guidance. To meet the diverse development needs of higher education, based on the orientation, cultivation objectives, educational and teaching levels, and quality assurance system construction of different levels and types of HEIs, classified and precise evaluations are implemented to guide and motivate the development of various strengths and characteristics of HEIs.

2.2.4 Adhere to problem-oriented approach. The audit will result a list of issues in the end with the bottom line requirements for undergraduate talent cultivation, propose improvement and development suggestions, strengthen the use of evaluation results and supervision and review with the long-term mechanism for continuous improvement in HEI.

2.2.5 Adhere to innovation in method. By comprehensively utilizing modern information technology such as the internet, big data, and artificial intelligence, it is aimed to deeply mine regular monitoring data and adopt methods such as combining online and campus visit, qualitative and quantitative analysis, and both explicit observation and covert investigation to effectively reduce the burden on HEIs and improve work efficiency.

2.2.6 Implement the principal responsibility. The HEIs are the main subject of education, respecting the awareness of the principal of education, exploring consultative evaluation in areas such as expert recommendation, self-evaluation, and indicator module selection, guiding HEIs to self-evaluate and self-improve, better stimulating HIEs to use evaluation results to improve their work for development.

2.3 Evaluation mechanism

The new round of audit has a sound evaluation mechanism to guide and constrain work procedures and technical norms, as well as the connection and operation between all parties involved in educational evaluation activities, in order to ensure the efficient and orderly operation of evaluation work, and fully play the role of evaluation to promote development and strength. Specifically manifested in the following aspects:

2.3.1 Collaborative governance mechanism

The new round of audit will implement a system of responsibility division and collaborative cooperation between ministerial and provincial level. The Ministry of Education is responsible for formulating audit policies, overall planning, coordinating, guiding and supervising the audit work of various HEIs in the country. The Education Quality Evaluation Agency of the Ministry of Education specifically organizes the implementation of the audit work for HEIs affiliated with central departments and the first type of audit work for the local HEIs. Shanghai Municipal Education Commission is responsible for formulating local audit implementation plans and overall plans, and submitting them to the Ministry of Education for record. The Shanghai Education Evaluation Institute is specifically responsible for the second type of audit of local HEIs, and recommending HEIs to participate in the first type of audit work by the Ministry of Education. Education Quality Evaluation Agency of the Ministry of Education will provide guidance for the implementation of the second type of audit pilot in the local area, and it has also constructed a nationally shared undergraduate education and teaching evaluation system, and an open and shared evaluation expert database.

2.3.2 Organizational Implementation Mechanism

The new round of audit strictly follows procedural, technical, and quality standards in the steps of design, implementation, summary, and meta evaluation, and clarifies the operational procedures of each link in the evaluation process, the effective order of coordination between each step of the evaluation activity, and the coordination among personnel. The Education Quality Evaluation Agency of the Ministry of Education has compiled the " Guidelines for the Audit ", a practical manual suitable for evaluation participants such as participating HEIs and evaluation experts. Shanghai Education Evaluation Institute has also formulated the "Guidelines for the Audit of Undergraduate Education and Teaching in Shanghai Municipal HEIs (2021-2025)" in conjunction with the audit plan of Shanghai with the fefinement and improvement in the relevant local characteristic practices, such as conducting expert guidance for the self-evaluation, selecting education and teaching demonstration cases, and evaluating the "self-evaluation report". Shanghai Education Evaluation Institute has provided targeted specialized training to evaluation experts and participating HEIs in Shanghai.

2.3.3 Result application mechanism

The new round of audit focuses on effective feedback and application of evaluation results, rectification of participating HEIs, and supervision and review, thus forming a closed-loop education evaluation process and effectively playing the functions of motivation, supervision, and improvement in education evaluation. The new round of audit takes the rectification situation of the previous round of evaluation as the threshold condition for application acceptance. The participating HEIs have to complete rectification work within two years based on the list of issues, and accept the random supervision and review. For HEIs that break the bottom line of educational norms and conditions, accountability measures such as interviewing HEI leaders will be taken. Through the selection of educational and teaching demonstration cases, the highlights and advantages of participating HEIs in educational and teaching reform will be identified, and publicity and promotion will be conducted to motivate and guide other teachers to participate in educational and teaching reform.

2.4 Evaluation criteria

The new round of audit will firmly adhere to the fundamental standard and value orientation of the effectiveness for fostering morality and cultivating talent, and evaluate whether all educational activities are reasonable, whether educational methods are scientific, and whether educational achievements are effective. There are clear requirements in undergraduate status, cultivation process, teaching staff, student development, and other audit indicators for fostering morality and cultivating talents. The new round of audit provides classified evaluation standards with "two categories and four types" of evaluation plans based on the orientation of HEIs, objectives of cultivation, and development stage characteristics. HEIs can also independently choose the module combination of evaluation indicators, select multiple data norms as reference, and customize evaluation standards for HEIs to guide their respective strengths and characteristics in development.

2.5 Evaluation method

The new round of audit focuses on the scientific effectiveness of educational evaluation, integrating high-quality educational evaluation concepts and principles in evaluation methods, effectively implementing and integrating outcome evaluation, process evaluation, value-added evaluation and comprehensive evaluation.

Improve the outcome evaluation. The new round of audit adheres to classification guidance combining qualitative and quantitative

evaluation to promote the connotation evaluation of HEIs, avoiding solely evaluating the level of education and teaching based on explicit indicators of the HEI. It strengthens the evaluation of the actual achievements, abilities, and contributions of teachers to the cultivation of undergraduate talents instead of the number of teachers. It also strengthens the evaluation of students' learning effectiveness, focuses on what they have learned, and enhances their learning experience and sense of gain.

Strengthen process evaluation. The new round of audit process comprehensively evaluates the dynamic process of higher education and teaching, diagnoses and analyzes its advantages and disadvantages, and provides timely feedback to promote improvement. It fully utilizes normalized and procedural data such as undergraduate teaching status data reports, undergraduate teaching quality reports, and survey reports of students, teachers, graduates, and employers. The online evaluation and random undercover visits are used to better conduct procedural and normalized investigation and evidence collection. The factual reports, a list of issues, and demonstration cases would help HEIs find their highlights and existing problems, and serving their high-quality development.

Explore value-added evaluation. The new round of audit focuses on the changes in the education and teaching status of participating HEIs, including the adjustment of majors and the changes in the enrollment scale of majors. By comparing the data in the "Undergraduate Teaching Status Data Analysis Report", "Undergraduate Employment Quality Analysis Report", "Undergraduate Teaching Quality Report", and related supporting materials, the focus is on the development and changes of the HEIs. Verification on relevant indicators with significant data changes will determine whether the information is a highlight, deficiency, or data distortion of the participating HEIs. At the same time, the new round of audit focuses on the individual differences of HEIs, and comprehensively analyzes the particularity and characteristics of the participating HEIs in the specific region and economic development stage, and theri impact on the HEI's development and talent cultivation work.Sound comprehensive evaluation. The title of the new round of audit has changed from the previous evaluation of undergraduate teaching work into undergraduate education and teaching evaluation, highlighting the organic combination of education and teaching, and taking a more comprehensive view of undergraduate talent cultivation. It conducts a flexible classification method with "two categories and four types" evaluation schemes and different indicator modules for HEIs to choose independently, and adopts methods such as online and campus visit, combining observation and undercover visits. Not only does it strengthen the accountability and supervision by identifying the problems and shortcomings of the HEI with a list of issues, but it also emphasize the leadership and motivation by selecting educational and teaching demonstration cases. Multiple subjects have participated the audit as a quality community, including the participating HEIs, evaluation experts, and evaluation agencies and representatives from industries and enterprises.

2.6 Evaluation tools

The new round of audit innovates evaluation tools comprehensively through the modern information technology such as the big data from the "Self-Evaluation Report" of HEIs, the "Undergraduate Teaching Quality Report" and higher education quality monitoring platforms, as well as questionnaire survey data for students, teachers, graduates, and employers. It is easy to identify problems, focus on key points, and effectively reduce the evaluation burden on experts and participating HEIs. By conducting online interviews, spot checks on test papers and theses, as well as attending and observing classes, targeted assessments are conducted on campus to accurately analyze and identify issues. The identified problems will be thoroughly analyzed and investigated to ensure the scientific and objective nature of the evaluation.

In summary, the new round of audit fully embodies the connotation and essence of high-quality evaluation, presenting us with a typical case of high-quality evaluation.

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DQE011

PREDICTING ACCREDITATION RANKINGS BASED ON MONITORED ITEMS: A STUDY OF UNDERGRADUATE STUDY PROGRAMS IN INDONESIA

-Muchlas, Samani; Aceng, Hasani; Sofia, Hartati; Pratiwi, Retnaningdyah; Ekohariadi

Abstract

In order to uphold the quality of higher education institutions, the Indonesian Ministry of Education, Culture, Research, and Technology shall establish a quality assurance system for higher education. To evaluate and uphold the quality of accredited study programs, the Indonesian Accreditation Council for Education (ACE) monitors them a year after the issuance of the accreditation certificate. This study aims at proposing a model based on linear regression to predict accreditation rankings of undergraduate study programs in Indonesia based on monitored items. The data were obtained from 951 study program accredited by ACE and published by Higher Education Data (PDDikti). The findings show that there are eleven out of eighty-five items that are highly significant in predicting the study program accreditation rankings, with a reliability score of 0.80 and 0.96 respectively. Thus, the eleven monitored items are indicated to be a good model performance as their scatter index score is 5.55%. The study recommends ACE to accredit educational study programs by only utilizing monitored items. In addition, the same model may be developed for the accreditation of master's, doctorate, and teacher certification programs.

1. Introduction

In order to uphold the quality of higher education institutions, Law Number 12 of 2012 concerning higher education in Article 51 paragraph (2) stipulates that the Indonesian government shall establish a quality assurance system for higher education. Furthermore, Article 53 (b) states that the external quality assurance system is conducted through accreditation. In Article 55 paragraph (5), it is mentioned that independent accreditation councils carry out the accreditation of study programs. Hence, these independent accreditation agencies are integral to the higher education quality assurance system.

The independent accreditation council is an institution founded either by the government or an independent stakeholder from communities, acknowledged by the government based on the recommendations of the national higher education accreditation body (Article 55, Paragraph 5 of Law No. 12/2012). According to the Minister of Research, Technology, and Higher Education Decree No. 497, dated August 2, 2019, the approval was granted for the recognition of the Accreditation Council for Education (ACE). Consequently, ACE is authorized to undertake the accreditation of educational study programs at public and private higher education institutions.

The aspects within the accreditation instrument developed by ACE encompass four dimensions as follows:
1.Quality of leadership and governance performance: integrity of vision and mission, leadership, administrative structure, resource management systems, strategic partnerships, and internal quality assurance systems.

2.Input quality: human resources (faculty members and non-academic staff), students, curriculum, infrastructure, financial aspects (finance and fund);
3.Process quality: learning process, research, service-learning, and academic ambiance; and

4.Quality and productivity of outcomes and achievements: graduate quality, products.

The first three aspects are lecturer's workload, and they become essential accreditation elements (Rodriguez, 2013). The remaining four aspects serve as the reference in developing the accreditation instrument for education study programs. These four elements are further divided into nine criteria, namely: (1) vision, mission, and objectives; (2) governance structure; (3) students; (4) human resources; (5) finance and infrastructure; (6) education; (7) research; (8) service-learning; and (9) outcomes and achievements of higher education three pillars (BAN PT, 2019).

The program accreditation process begins with the study program/ its management unit preparing a self-evaluation report. The report is based on the official accreditation instrument for the program issued by ACE. The program/ management unit may incorporate elements for evaluation per the program's specific needs and the respective higher education institution. The study program then uploads all relevant documents (completed accreditation instruments and required documents) following ACE's stipulations. The accreditation model employed by ACE for program evaluation is based on the following standards: leadership and governance performance, input, process, and outcome productivity.

2. Method

Each indicator item within the study program accreditation instrument employs a quantitative assessment using a scoring range from 1 to 4. A score of 1 represents the lowest rating, progressively improving with the enhanced quality of the assessed indicator items, ultimately achieving a maximum score of 4. A comprehensive assessment of each item, including criteria, elements, indicators, weights, and scoring points, can be found in Book 4, encompassing the Study Program Evaluation Guide and Matrix. The total number of assessed indicator items in the Undergraduate Program Accreditation Instrument is 85. The following status indicates the outcomes of study program accreditation: Accredited or does not meet Ranking Requirements. Study programs granted accredited status are classified as Excellent, Very Good, or Good. The accreditation status and the corresponding accredited rating are determined through the Accreditation Score, conducted by the appointed assessors.

No.	Accreditation Score	Status	Ranking
1	AS ≥ 361	Accredited	Excellent
2	301 ≤ AS< 361		Very Good
3	200 ≤AS< 301		Good
4	AS < 200	Does not meet Ranking Requirements	-

Table 1 Accreditation Score & Ranking

As shown in Table 1, the outcomes of study program accreditation are delineated by either an accredited status (AS ≥ 200) or a status of inability to meet the rating prerequisites (AS < 200). Study programs that attain accredited status are categorized as excellent (AS ≥ 361), very good (301 ≤ AS < 361), or good (200 ≤ AS < 301). To evaluate and uphold the quality of accredited study programs, ACE monitors them at least a year after issuing the accreditation certificate. The monitoring employs eleven selected items, as shown in Table 2. based on Higher Education Data (PDDikti).

No	Criteria	Element	Monitoring Indicator	Reference
2	Students	Study Program Input Quality	The ratio between prospective students who register and those who are accepted and meet the capacity requirements	Point 22 ACE Indicator
3	Lecturers	The academic qualifications of the Tenured Lecturers in the Study Program	The study program maintains an adequate number of Tenured Lecturers at the Study Program, possessing master's or doctoral academic qualifications relevant to the core courses offered within the study program.	Point 26 ACE Indicator
4		Tenured lecturer's academic position	The study program has ample Tenured Lecturers holding the functional positions of Professor and Associate Professor.	Point 27 ACE Indicator
5		Tenured Lecturers at the Study Program: Student	The ratio of the number of students to the Tenured Lecturers in the Study Program	Point 29 Ace Indicator
6	Education (process)	Student satisfaction with lecturer teaching performance	Student satisfaction with lecturer teaching performance	Point 59 ACE Indicator
7	Research Project Productivity	Lecturer research productivity	Tenured lecturers at the Study Program conduct a relevant research project at least once a year with university/ independent funds, either from domestic or overseas.	Point 64 of ACE Indicator
8	Service-learning projects	Service-learning project productivity	Tenured lecturers at the study program conduct a service-learning project relevant to the field of study program at least once a year with university/ independent funds, either from domestic or overseas.	Point 67 ACE Indicator

No	Criteria	Element	Monitoring Indicator	Reference
9	Outputs and Achievements of Higher Education Three Pillars (teaching, research, and service-learning)	Academic and Non-Academic Student Achievement	Students in the study program have academic and non-academic achievements at international (NI), national (NN), or local/ region (NW) levels.	Point 71 ACE Indicator
10		Learning Achievement	Students have learning achievements during the monitoring process	Point 74 ACE Indicator
12		Tenured Lecturers at the Study Program and Student Scientific Article Citations	Scientific articles (research projects, service-learning projects, or ideas) from tenured lecturers and students in the study program and cited by others in the last three years.	Point 80 ACE Indicator
14		Tenured Lecturer's and Student's Products or Services at the Study Program with Intellectual Property Rights and Patent	Tenured lecturer's and student's products or services (research projects, service-learning projects, or concepts) at the study program with intellectual property rights and patents.	Point 82 ACE Indicator

Table 2 Monitored items

The data were obtained from 951 study programs. The model proposed was derived from linear regression, whereas to measure the model's accuracy, a scatter index was employed.

3. Results and Discussion

3.1 Reliability

The reliability of a test refers to the consistency of individual ratings obtained from the test results being taken more than once. In other words, a test is reliable if it consistently produces the same rating or is close to the same on repeated implementations. The reliability level of the instrument is represented by Cronbach's alpha (Shultz et al., 2014), with σitem2 as the variance of each item and σx2 as the variance of the test scores.,

$$\alpha = \frac{k}{k-1}\left(\frac{\sum \sigma^2_{item}}{\sigma^2_x}\right)$$

The result of the reliability of the original instrument is 0.96. The result of the reliability of monitoring items is 0.80. Alpha values were described as high (0.73-0.95) (Taber, 2018).

3.2 Regression Model

Regression model obtained:
Model Y = 165.45 + 5.22 X

Variable Y refers to the total score of the first 85 items, whereas variable X is the total score of monitored items. Figure 1. illustrates a scatter plot.

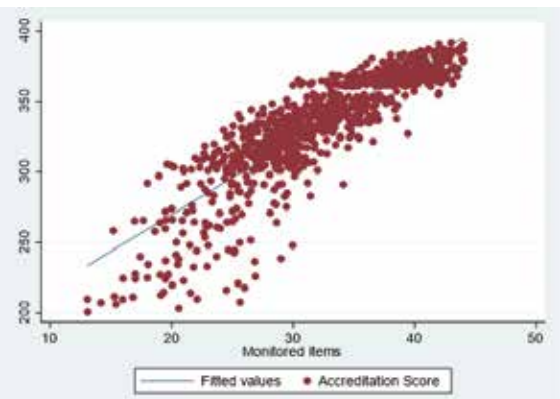

Figure 1. Scatter Plot

3.3. Ranking based on Accreditation Scores of On-site Assessment and Predictions

The descriptive statistics of accreditation scores of on-site assessment and prediction are shown in Table 3.

Variable	Obs	Mean	Std. dev.	Min	Max
Real Assessment Score	951	334.2391	37.96975	200.8	391.69
Predicted Assessment Score	951	334.1597	33.1084	233.6	395.13

Table 3 Descriptive statistics of accreditation scores of on-site assessment and prediction

The accreditation ranking at ACE consists of three categories: Good, Very Good, Excellent, with each has an accreditation score (AS) 200 ≤AS< 301; 301 ≤ AS< 361, and AS ≥ 361. The accreditation ranking from original and prediction on-site assessment data is illustrated in Table 3.

Type of On-site Accreditation	Good	Very Good	Excellent
Original on-site assessment	124 study programs	505 study programs	322 study programs
Prediction on-site assessment	157 study programs	555 study programs	239 study programs

Table 4. On-site and prediction accreditation ranking for 951 study programs across

The accreditation ranking obtained from the original and prediction on-site assessment is illustrated in Figures 2 and 3.

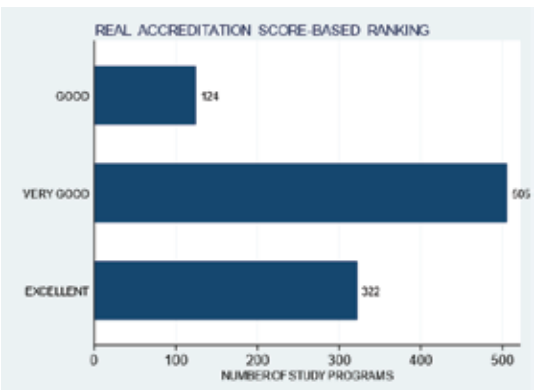

Figure 3. Ranking prediction on-site assessment

Figure 2 Ranking prediction on-site assessment

The study program ranking can be observed from three viewpoints: stable, surge, and fall from original and prediction on-site assessments. To illustrate, if a study program gains an original on-site assessment of 350 (Very Good) and a predicted on-site assessment of 370 (Excellent), then the study program accreditation experiences a surge. Figure 4. shows the proportions of the ranking fluctuation of 951 study programs. 4.9% of study programs show an increase in accreditation ranking. The dominant proportion of 77.9% have a stable ranking, whereas 17.1% of study programs have a decreasing ranking.

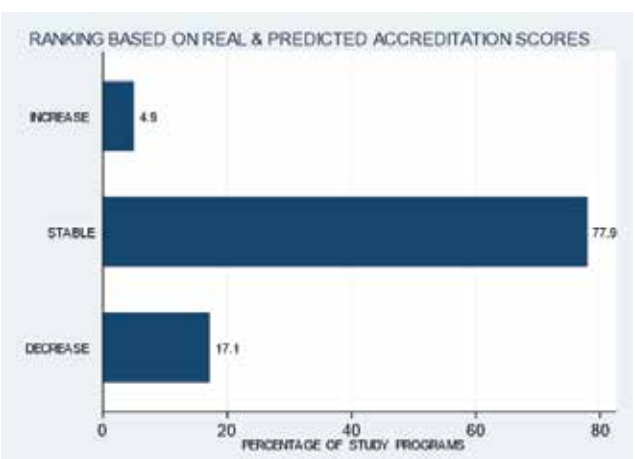

Figure 4 Ranking based on original and prediction on-site assessment

3.4 Scatter Index

The scatter index is calculated by dividing root-mean-square error (RMSE) (Rogers et al. 2012; Akpinar et al. 2012) with the mean of the observations.

$$\text{Scatter index (SI)} = \frac{RMSE}{\bar{X}} x100\% = \frac{18.55}{334.23} x100\% = 5.55\%$$

The Scatter index (SI) is a normalized measure of error, often reported as a percent. Lower values of the SI are an indication of better model performance. If SI < 10% is a good model, SI<5% is a very good model.

Conclusion

Undergraduate study program's accreditation ranking prediction is utilized by linear regression with 11 monitored items as the X variable, whereas Accreditation Score (AS) is the Y variable. The monitored items are highly significant in predicting the study program accreditation ranking with as most likely accurate as using the complete 85 items. Regarding reliability, the complete items account for 0.96, whereas the monitored items' is 0.80. The monitored items are indicated to be a good model performance as their scatter index score is 5.55%. The study recommends ACE to accredit educational study programs by only utilizing monitored items whose data are taken from Higher Education Data (PDDikti). In addition, the same model may be developed for the accreditation of master's, doctorate, and teacher certification programs.

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A STUDY ON THE PRACTICE OF PROFESSIONAL EVALUATION IN LOCAL UNIVERSITIES IN SHANGHAI: A QUALITATIVE ANALYSIS BASED ON THE PRACTICE OF PROFESSIONAL EVALUATION IN UNIVERSITIES

-Zhang Lingfei

Abstract

Higher education evaluation is an effective means of monitoring and ensuring the quality of higher education. In China, higher education evaluation has formed a three-level evaluation system that goes hand in hand with school education level evaluation, professional education level evaluation (professional evaluation), and curriculum/laboratory level evaluation. As the central link, professional evaluation has received much attention in recent years. Professional evaluation is an important measure to strengthen the conscious awareness of quality assurance in universities and build a long-term mechanism for ensuring teaching quality.The study of professional evaluation practice mode is a summary of the experience of professional evaluation practice activities in universities, an analysis and integration of various professional evaluation methods, and has practical significance for improving professional evaluation in universities. This study is based on the professional evaluation practices of 7 universities in Shanghai. It analyzes and interprets the professional evaluation practice mode of Shanghai universities from five dimensions: the nature of professional evaluation, the subject of professional evaluation, the object of professional evaluation, the form of professional evaluation, and the results of professional evaluation. It is hoped to inspire and draw inspiration from the professional evaluation practices of universities.In the field of academic research, although the attention of the academic community to professional evaluation has been increasing year by year, the number of related research results is limited. Existing research mainly focuses on the following areas:

Firstly, the practice and problem exploration of professional evaluation, including the common practices and experience summary of professional evaluation in universities, such as Feng Jun's exploration and practice of professional evaluation in local universities; Case studies on professional evaluation in some domestic and foreign universities.Secondly, research on the professional evaluation indicator system, such as Wang Qinghui's research on the reliability and validity of the undergraduate professional evaluation indicator system.Thirdly, research on the effectiveness of professional evaluation in educational and teaching practice, such as research on cultivating the autonomous learning ability of local university students in the context of professional evaluation.[1]Professional evaluation in China has developed for many years, with both experience and problems. Nowadays, professional evaluation practice is in full swing, and there is an urgent need to sort out and summarize the practical experience of professional evaluation in universities. The practical model of university professional evaluation is a summary of the experience of university professional evaluation practice, which is an organic integration of various dimensions of professional evaluation and has reference significance for university professional evaluation practice. At present, there is very little research on the practical mode of professional evaluation, and some studies, although involved, are only sporadic descriptions and not systematic; Some are summaries of practical experience from a certain province (or university), and generally lack strong guidance. This study summarizes the professional evaluation practices of some provinces, cities, and universities in China, analyzes the practical models of professional evaluation from different dimensions, and provides alternative and reference practical models for professional evaluation in universities.

Research objects

Professional evaluation reports and implementation plans from 7 universities in Shanghai for research

Research methods

This study mainly uses text analysis methods to select Research objects to analyze and evaluate models and evaluate benefits.

The practical model of professional evaluation in local universities in Shanghai will be analyzed from three dimensions: the transformation of professional evaluation objectives and the evaluation subjects, the transformation of professional evaluation forms, and the results of professional evaluation.

The transformation of professional evaluation objectives and the evaluation subjects

The purpose of conducting professional evaluations in local universities in Shanghai is to assess and diagnose the current development status of their respective majors, and there is no other way; But there are other purposes, generally used as self-testing and preparation for the review and evaluation of undergraduate teaching work. Among the 7 universities studied, 7 universities prepared for audit and evaluation.

Among them, 6 indicators incorporate professional certification concepts to prepare for the review and evaluation of undergraduate teaching work.

Audit evaluation is a comprehensive examination of education and teaching for local universities. The major is the smallest unit of education in each university and also the foothold for reflecting the effectiveness of education and teaching. Therefore, local universities in Shanghai want to use the opportunity of professional evaluation to evaluate, analyze, and improve the effectiveness of education and teaching at the professional level.

From top to bottom, audit evaluation and professional evaluation have formed an organic combination, promoting the quality management departments of universities to independently promote professional evaluation and actively accept third-party supervision and evaluation.As an example, Jiangsu Province is the first in China to explore the scientific connection between various undergraduate professional evaluations (certifications), undergraduate teaching work review and evaluation, graduation project (thesis) sampling and evaluation, etc., integrating and promoting each other. The evaluation results are mutually confirmed and used to improve efficiency, reduce the impact on participating schools, and effectively improve the overall effectiveness of evaluations.

For example, the sampling and evaluation work for the 2018 undergraduate graduation project (thesis) has been coordinated and synchronized with the undergraduate professional evaluation, and the results are mutually referenced and confirmed. Key spot checks will be conducted on majors that have been assessed as "suspended" or "failed" in the comprehensive evaluation of undergraduate majors, as well as newly established majors that have been assessed as "rectified within a specified period of time". For example, at the appropriate time, try to allow majors that have passed evaluations such as engineering education certification, teacher training certification, and engineering management assessment to be exempt from participating in the comprehensive undergraduate professional evaluation.[2]Since 2022, Shanghai Education Evaluation Institute, as a third-party professional evaluation institution, has conducted professional evaluations on 98 majors in 7 universities, covering the fields of science, engineering, agriculture, and medicine, benefiting nearly 5000 students.The review and evaluation have formed a strong promoting effect, promoting the reform of higher education and teaching to focus on students, sink towards majors, and focus on education as the core.

As a result,Among the 7 universities, except for one that has completed professional evaluations for all majors, the remaining 6 have initiated the next round of professional evaluation plans with the aim of completing professional evaluations before the start of the review and evaluation cycle and making improvements.

The transformation of professional evaluation forms

The form of professional evaluation refers to the method used by universities to analyze and evaluate the evaluation objects (content) when organizing professional evaluations, mainly including the use of evaluation methods and the evaluation methods of evaluation experts. At present, there are mainly three forms: "professional evaluation platform", "expert admission", and "professional evaluation platform+expert admission".

The "professional evaluation platform" mainly uses the "Internet plus" thinking, organically combines the Internet and professional evaluation, and uses the data network platform to completely online the submission, review, publicity, expert review, and result analysis of evaluation materials, realizing the effective docking of professional evaluation processes. In this form of professional evaluation, experts do not enter the school and conduct online evaluation of professional materials anytime and anywhere through the audit account opened by the school; The professional competence of experts ensures the quality of evaluation. However, precisely because experts do not enter the school and lack an intuitive understanding of the current development status of the school and profession, the evaluation results may be too objective and even distorted. Nanjing University of Technology currently adopts the evaluation form of a "professional evaluation platform" to avoid various arrangements for welcoming experts to the university.

The "expert enrollment" maximizes the role of experts. Experts enter universities and comprehensively assess the development and construction of their majors through various methods such as data review, observation, lectures, visits, and interviews. However, due to the concentration of enrollment time and heavy workload, experts generally face a huge workload; In addition, the daily life, accommodation, and transportation of experts during their school years require the school to arrange a dedicated person to be responsible, and the experts' in-depth investigation into the college will also have a certain impact on their daily work. The form of "expert enrollment" is highly favored by universities, and 17 universities such as Renmin University of China adopt this approach.

The "professional evaluation platform+expert admission" combines the first two forms, achieving an organic unity of objective evaluation and subjective evaluation. Experts can evaluate the basic situation of their profession through the platform and conduct focused admission inspections, making up for the shortcomings of a single evaluation form,but their specific practices are different. The former has a school level professional evaluation platform, while the latter two rely on a provincial-level professional evaluation platform. In order to reduce workload, many universities are actively exploring the seamless integration of professional evaluation data platforms and university teaching basic state data collection platforms, or placing them on a larger capacity data platform to achieve data sharing and extraction.

Taking professional evaluation as an opportunity to promote the upgrading and transformation of informatization in universities, providing an efficient and convenient system platform for future professional evaluation, which is also one of the achievements of professional evaluation.

The results of professional evaluation

Organizing professional evaluation is to exert the supervision and guidance function of evaluation, promote the reasonable positioning of majors, guide the development of professional characteristics, and improve the quality of professional education by introducing an evaluation competition mechanism.

The results of professional evaluations in other universities are mostly presented in a "qualitative" form, with the first being to divide them into four levels: A, B, C, and D; The second type is to qualitatively classify majors as excellent, good, qualified, and unqualified; The third type is a conclusive evaluation of whether a major has passed the professional evaluation, such as passing, conditional passing, and not passing. For majors that perform poorly in professional evaluations, decisions will be made to adjust, suspend enrollment, or withdraw based on the situation. For example, Wuhan University adjusted, merged, or suspended enrollment for five of the undergraduate majors that were evaluated as C in 2015 19. Notice on Conducting a Special Evaluation for C Results in 2015 [3] Undergraduate Majors with Class For example, Liaoning Daily has reported on the professional evaluation results of Liaoning Province from 2013 to 2016 for three consecutive years; Or directly publish it on the school's homepage; Some universities have selective disclosure and only showcase outstanding majors to society. Introducing competition and elimination mechanisms, and disclosing professional evaluation results to the public, is a manifestation of the confidence of universities in running schools, and also demonstrates the courage and determination of universities and majors to forge ahead. In the long run, it is conducive to building a good mechanism for the development of professional ecology. In fact, university majors are not in the ivory tower, and it is better to identify problems and self correct them as soon as possible rather than being eliminated by society.

The professional evaluation of local universities in Shanghai places more emphasis on the application of results. Professional evaluation work is a process that guides universities to optimize their professional structure, strengthen connotation, refine characteristics, and continuously improve the level of professional construction and talent cultivation quality. At present, provincial-level and school-level evaluations mostly use performance-based results based evaluations, with a focus on static status quo evaluations and a lack of dynamic developmental evaluations. The role of continuous improvement in professional construction is not significant. Although professional evaluation can help various majors establish talent cultivation goals and models, improve the quality of teaching resources, and ignore the long-term and developmental characteristics of improving undergraduate teaching quality, Shanghai Education Evaluation Institute adopts a model of full participation by the president and the director of the Academic Affairs Office. After the evaluation is completed, the expert group leader and the school leaders have a conversation and communication, The evaluation results and opinions are immediately fed back to the level of the school leadership. The school leadership responds to the problem to the expert group leader, and both the expert group leader and the school leadership communicate to propose feasible solutions.

Summary and Outlook

Professional evaluation is the pulse and diagnosis of professional development level, and is one of the most effective evaluation methods to ensure students' learning effectiveness. This study summarizes and analyzes the practical models of professional evaluation, hoping to provide inspiration and reference for universities to carry out professional evaluation.

Firstly, promote effective collaboration and integration of professional evaluation, audit evaluation, and professional certification. Professional evaluation and professional certification are two different types of evaluation methods. Professional evaluation is an important means to assess the current situation of a profession, strengthen its characteristics, and promote the construction of professional connotations; Professional certification plays an important role in enhancing professional authority and demonstrating professional strength. The new round of audit and evaluation plan closely aligns with the shortcomings of the previous round of audit and evaluation, and optimizes and improves the requirements of undergraduate education in the new era, responding to the hot and difficult issues that the government, society, and universities are concerned about. Therefore, from top to bottom, promote the simultaneous and organic integration of professional evaluation and professional certification, divide professional dynamics into different evaluation tracks, and continuously improve the professional evaluation system in universities.

Secondly, under the formation of a collaborative and integrated mechanism, promote a linkage mechanism between third-party evaluation institutions, university entities, and professional autonomy. Universities are the practical and responsible subjects of professional evaluation, and by evaluating majors, they promote the establishment of effective mechanisms for sustainable development of majors; The profession is not only the object of evaluation, but also the essence of evaluation. In addition, there are many types of majors in universities with significant differences, so the autonomy of the profession is particularly important. Professional evaluation is also an effective way to condense professional characteristics and create a professional brand. The implementation of professional evaluation should fully coordinate the relationship between the government, universities, and majors, each performing their respective duties, cooperating from top to bottom, and constructing a linkage mechanism for professional evaluation.

Thirdly, universities of different types and sizes may have vastly different choices in their development paths and should not be generalized. The practical model of professional evaluation in Shanghai's universities is an analysis and summary of the 7 universities surveyed, and does not provide a comprehensive practice of professional evaluation; Moreover, as professional evaluation in China gradually moves towards institutionalization and standardization, the practical model of professional evaluation will also keep up with the times and innovate. Therefore, in terms of evaluation plans and indicators, we should strive to achieve one school one plan and one school one indicator, reflecting the concept of classified evaluation and encouraging and supporting characteristic development.

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THE PURSUIT OF QUALITY ASSURANCE OF HIGHER EDUCATION WITHOUT BOUNDARY: A CASE STUDY OF APQN'S STRIVING FOR ITS ULTIMATE GOAL FOR 20 YEARS

-Jianxin Zhang

Abstract:
Founded in 2003 in Hongkong, China, the Asia-Pacific Quality Network (APQN) enters its 20th anniversary in 2023. In the past 20 years, APQN has been continuously striving for its ultimate goal of "Dissolving Boundaries for a Quality Region", which has been shared and carried on by all APQN members, no matter what kind of difficulties it met. Focusing on the ultimate goal, the present paper tries to describe what APQN has done on the long march of "Quality Region without Boundary"in 2 aspects: (1) APQN's 20-year historical development for a Quality Region; (2) the signal achievements for a Quality Region, which include the following 6 points: (1) Serving the huge QA cohort without boundary; (2) Cooperating with QA organizations without boundary; (3) Focusing on QA themes without boundary at 19 AACs ; (4) Conducting over 50 QA projects without boundary; (5) Implementing 14 QA actions without boundary under the COVID; and (6)Publishing over 50 QA periodicals, books/ tools anthologies without boundary. "Quality Region without Boundary" represents not merely a beguiling ideal, but a provable reality and compelling evidence for the potential of quality assurance in education for the whole globe, especially for the Asia-Pacific Region.

Key words: the Asia-Pacific Quality Network (APQN); dissolving boundaries; quality region; quality assurance

Preface

On a sunny day 20 years ago (January 18, 2003) in Hong Kong, China, a small core group of quality assurance (QA) persons such as Peter Cheung of HKCAA, David Woodhouse of AUQA, VS Prasad of NAAC, et al had a meeting, with a common wish for excellence in quality of higher education in the Asia-Pacific Region... and here the Asia-Pacific Quality Network (APQN) came into being!

On the moment of the founding of APQN, the value and the ultimate goal of APQN was made as "Dissolving Boundaries for a Quality Region" . Since then, no matter what kind of difficulties APQN met, the common value has been shared by all APQN members. The pivot of the ultimate goal is on the integration of the cultures of the 53 countries/territories in the Asia-Pacific Region with over half of the world's population. And the shared-value has be carried on for the past 20 years. In order to mark the 20th Anniversary of APQN, this paper focuses on the following aspects: (1) APQN 20-year development history for a Quality Region; (2) APQN's five signal achievement for a Quality Region.

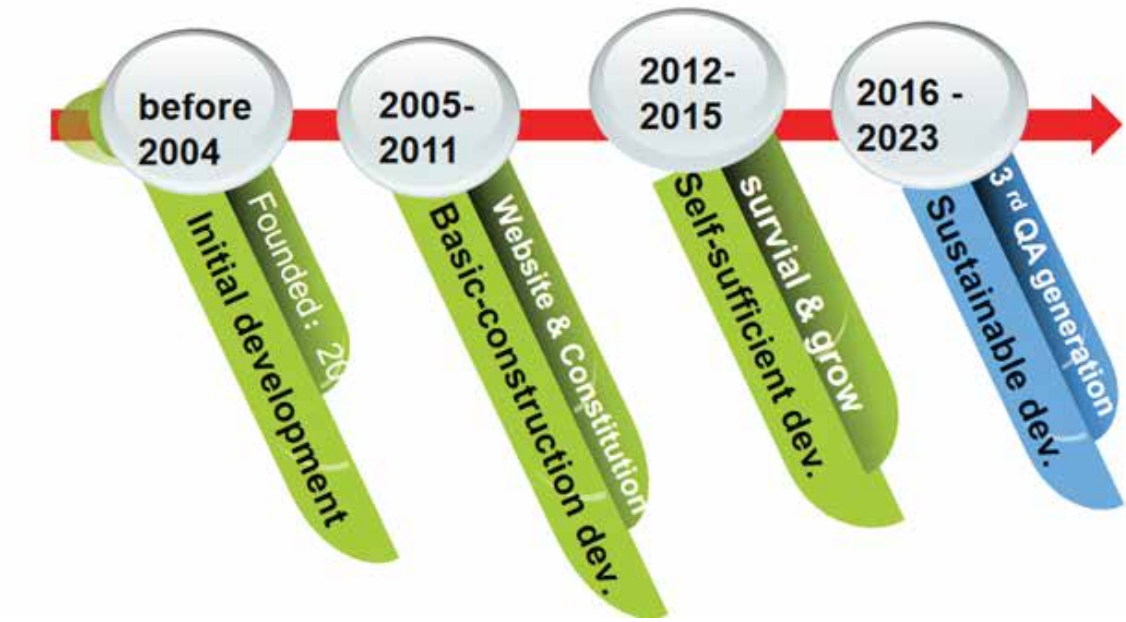
I. APQN's 20-year historical development of "Dissolving Boundaries for a Quality Region"

Looking back upon APQN's historical development to celebrate APQN 20-year anniversary, we can see the future for the great cause of quality assurance is so bright. Demand for good quality of teaching and learning, sustainable student development, life-long learning, good services from HEIs in this quality era continues to grow. APQN is just at the forefront to build new, dynamic QA systems for the Asia-Pacific Region.

1.1 Four stages of APQN historical development

In the past 20 years, APQN has gong through 4 development stages (Jianxin Zhang, 2023): (1)Before 2004, it is initiative development stage focusing on APQN goal, mission, vision, etc. (2) from 2005-2011, it is basic-construction development stage, focusing on website, constitution, etc.; (3) from 2012-2015, it is self-sufficient development stage, focusing on APQN survival and growth because of the cease of funding; (4) from 2016 -2023, it is self -sustainable development stage, focusing on the ideal of fourth generation of quality assurance (Fig.1). From 2023, APQN enters its new development stage, facing the the era of information era and internationalization of quality assurance.

Fig. 1: APQN historical development stage



Since 2003, APQN has been focusing on higher education QA, Striving for the mission of "To enhance the quality of higher education in Asia and the Pacific region through strengthening the work of quality assurance agencies and extending the cooperation between them" (APQN, 2019), to carry out borderless international cooperation within the Asia-Pacific Region.

1.2 APQN five spiritual legacies

In the past 20 years, under the leadership of former presidents: Mr. Peter PT Cheung, Ms. Concepcion Pijano, Dr. Antony Stella, Dr. Jaganath Patil, and Prof./Dr. Jianxin Zhang, APQN has achieved remarkable results. The 20 years of efforts of all APQN people have contributed the following 5 spirit legacies (Fig.2)(APQN, 2019)

1. The Spirit of Dedication. Dedication is the passion and love for the cause of education quality bonded by the affection and friendship among the members. In the call of this spirit, APQN people and the Board Directors fulfill their duties in their respective positions in their home countries while completing APQN work as a dedicated cause without compensation.

2. The Spirit of Sharing. Sharing means selflessness, generosity and a global perspective that reflects the conduct and morality of APQN. APQN is an organization of shared information, experiences, theories, and practices in quality assurance. APQN people have been working hard to create an atmosphere of mutual trust, win-win cooperation and sharing culture.

3. The Spirit of Serving. Serving means that APQN people should satisfy the requirements of higher education in the changing information age, answer the calls for excellent quality by the stakeholders, both external QA and internal QA and the whole society, meet their needs and fulfill the duties entrusted. Being a APQN members and Board director is not a privilege, but an increased responsibility for service. To serve QA wholeheartedly, satisfy the needs of the excellent quality in HEIs.

4. The Spirit of Innovation. It is to improve and create new methods and new paths based on the needs of APQN members and the limited financial and human resources. APQN people consider APQN as their own careers, do everything possible to contribute in their areas of expertise, and constantly improve creative function of APQN.

5. The Spirit of Sustainable Development. Sustainable development is to meet the present needs of the members and qua;ity assurance without compromising future needs. It contains three key concepts: (1) diversity – to understand and accept the distinctiveness of all countries/regions of the Asia-Pacific Region; (2) equality – to make sure all members enjoy the same rights as prescribed in "APQN Constitution"; and (3) harmony – to promote harmonious relationship among APQN members, other international organizations and stakeholders in the QA field.

Fig. 2: APQN 5 spirit legacies

These five spirits are the spiritual legacy of APQN over the past 20 years. The current APQN Board directors, together with 268 members in the APQN big family, pledge to inherit and carry on APQN's spiritual legacy-Dedication, Sharing, Serving, Innovation and Sustainable development, with a meticulous attitude towards the great cause of excellent education aiming to a future of a " Quality Region".

II. APQN's signal achievements of "Dissolving Boundaries for a Quality Region"

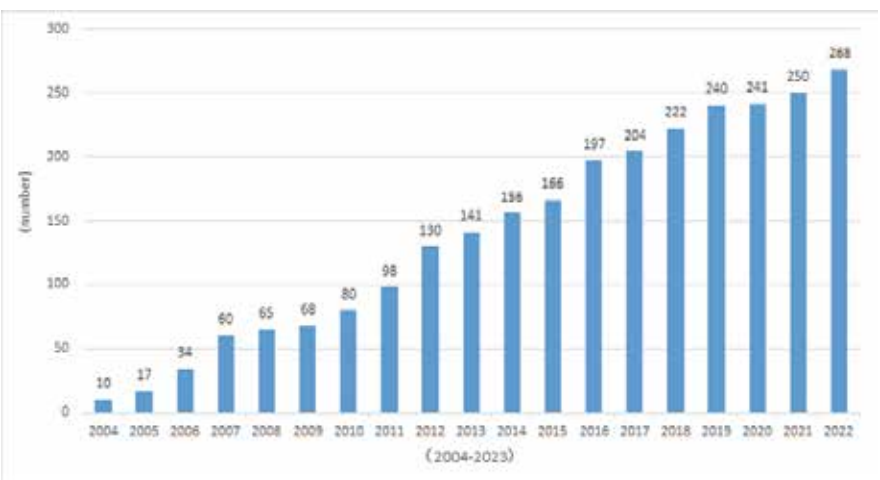
Borders are geographic boundaries of political entities or legal jurisdictions. Boundaries separate but also connect with one other. "The world is flat" said Thomas Friedman in his international best-selling book. In this fast-changing era, with an increasing appetite for education, and with increasing mobility of students and providers to meet that need, every country has to face up to global competition, global COVID, climate change, higher education internationalization (HEI), and all the impact brought by globalization. Globalization is a fact. You can't stop it; it has already happened; it is here to stay. Entering this new quality and global stage, APQN clearly realize that "dissolve boundaries for a quality region" is a must.

2.1 Serving the huge QA cohort without boundary

All APQN conferences, global summits, quality awards, capacity buildings, QA projects, measurements and actions have provided a broader platform for information exchange and networking opportunities for all the members to reach the goal of "Dissolving Boundaries for a Quality Region".

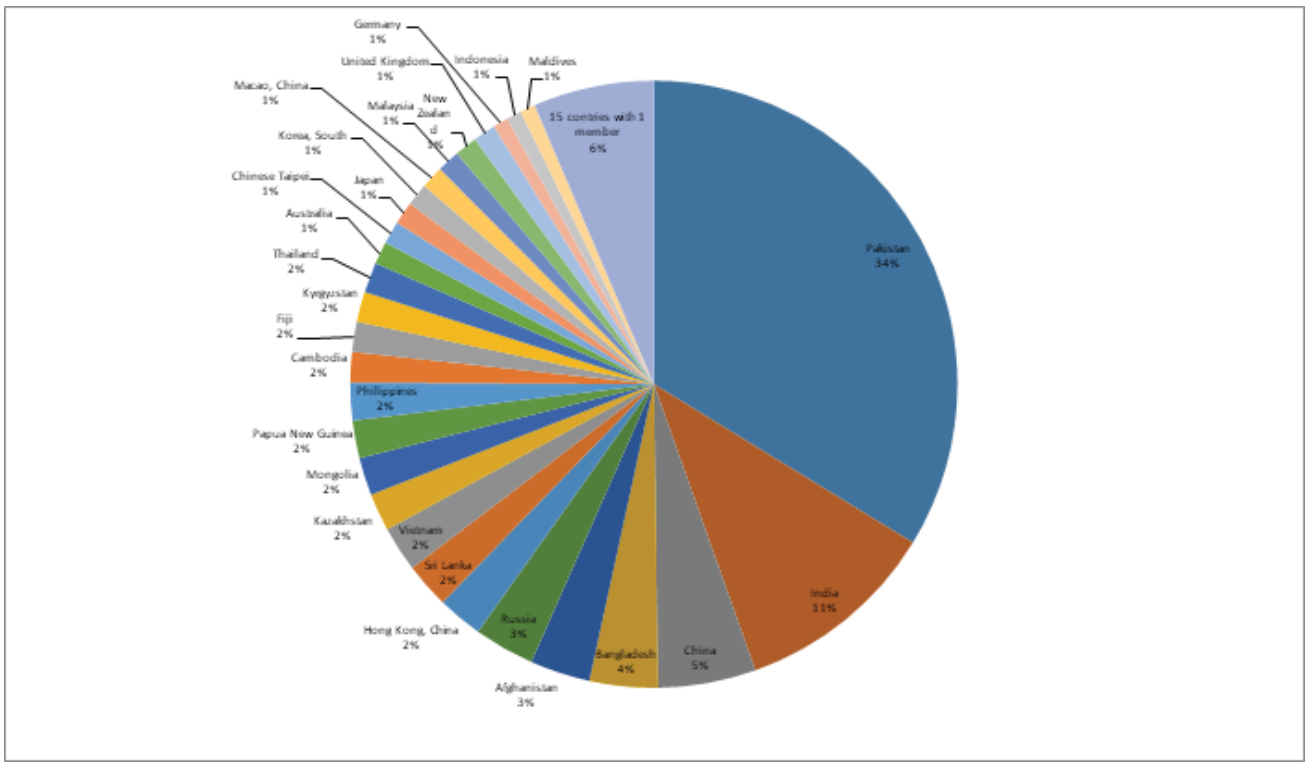
As of June, 2023, APQN has 268 members from 47 countries/ territories (Fig. 3) (APQN, 2023). Among them, there are five categories: full members, intermediate members, associate members, institutional members and individual members. Almost all APQN members have been encouraged to adopt more robust mechanisms for continuous quality enhancement, more rigorous self-evaluation, increased transparency, and a better understanding of the notion of quality and best practices.

Fig.3: The growing number of APQN Members (as of June, 2023)



The region covered by APQN is "Asia-Pacific Region", including all Pacific island countries and territories, New Zealand, Australia, Papua New Guinea; all island and mainland nations and territories of Asia, including Russia, Afghanistan and Iran, but excluding the other central Asian "stans". (APQN, 2006).There are 53 countries/territories identified across the the Asia-Pacific Region. APQN 268 members are from 47 countries/territories, respectively from Afghanistan, Bangladesh, China, India, Kazakhstan, Mongolia, Pakistan, Papua New Guinea, Philippines, Russia, Sri Lanka, Vietnam and others. Among them Pakistan has the largest number of institutional members(Fig.4).

Fig. 4: The countries/territories of APQN members



3.2 Cooperating with QA organizations without boundary

APQN has established close relationship with international networks/organizations and national professional associates in quality higher education. APQN has many partners including Asia Development Bank (ADB), ANQAHE (Arab Network for Quality Assurance in Higher Education), APEC (Asia-Pacific Economic Cooperation), AQAN (ASEAN Quality Assurance Network), ASEAN (Association of Southeast Asian Nations), AUN (ASEAN University Network), CHEA/CIQG (Council for Higher Education Accreditation/ International Quality Group), European Commission (EC), ECA (Economic Commission for Africa), ENQA (European Association for Quality Assurance in Higher Education), INQAAHE (International Network for Quality Assurance Agencies in Higher Education), Japan International Cooperation Agency (JICA), Japan Bank for International Cooperation (JBIC), South East Asian Ministers of Education Organization (SEAMEO),UNESCO Paris (global), UNESCO Bangkok (regional), World Bank and others.

One good example is MPU-APQN International Conference on Quality. Macao Polytechnic University (MPU) and APQN have been jointly organizing international conferences on quality of teaching and learning quality in higher education in Macao since 2015. The themes cover such topic as "The New Frontiers of Teaching and Learning Quality Assurance in Higher Education", "Innovation and Developments in Teaching and Learning Quality Assurance", "Teaching and Learning Quality Assurance in International Contexts" "Teaching and Learning Quality Assurance in the Post-Pandemic Era" and others. In the past 8 years, over 200 scholars and experts coming from countries such as the United Kingdom, Portugal, Australia, New Zealand, Japan, Sri Lanka, Fiji, India, Malaysia, the Philippines, China and others, presented their latest researches. The conferences have attracted the participation of hundreds of academics, QA experts, and higher education students in the Asia-Pacific Region. MPU-APQN International Conference has now become a vital platform to foster international exchange and collaboration in higher education QA. In order to sustain the dialogues and discussions at the conferences, 6 proceedings of the presented papers have been published.

Another good example is the global survey between APQN and the International Organization for Quality Assurance in Higher Education (INQAAHE). In November 2017, INQAAHE-APQN conducted the first global survey, whose purpose is to investigate the quality assurance of higher education inside and outside the Asia-Pacific Region through the global survey and interviews to explore its development status and trends. This cooperative study analyzes the basic situation of internal QA in the

HEIs and external QA in the QAAs from ten dimensions, including resources, systems and stakeholders. The problems were identified, and based on this, future development trends were explored. APQN published one paper entitled "Development Status and Trends of Higher Education Quality Assurance in Asia-Pacific Region: An Empirical Study Based on APQN- INQAAHE Survey"(Jianxin Zhang, Qun Guo, 2019 & 2020). In December, 2022, INQAAHE-APQN began the second global survey entitled "Trends in Quality Assurance in Tertiary Education" began, and now it is in progress.

APQN has made a positive contribution in promoting substantive QA cooperation among members from what it has done for the past 20 years. In the aspect of building QA system and leading QA standards, together with UNESCO in Bangkok, APQN co-research the QA supervision of cross-border education, and published "Assessing Quality in Higher Education" and "UNESCO-APQN Toolkit Regulating the Quality of Cross-Border Education" (UNESCO-APQN, 2006) and other standards. Acting as an aid in regulating quality assurance for countries that are involving in providing and receiving cross-border education, APQN has smoothed the road for the global cross-border higher education.

2.3 Focusing on QA themes without boundary at 19 AACs

APQN Annual Conferences (AACs) are a major events of each year and it is an opportunity for members to update themselves on the latest trends in quality assurance and liaise with their colleagues in the region. AAC coincides with the annual general meeting(AGM) once each year. AAC focuses on academic exchange, and do not involve in any political or sensitive issue of any country. The participants share their researches, experiences and good practices in QA through a significant number of submitted papers, keynote speeches, panel discussions, parallel sessions and workshops. In the past 20 years, APQN has held 19 APQN Annual Conferences (AACs) (Table 1), which have brought together over 3500 participants of all APQN members, as well as both local and international representatives.

Table 1: List of QA themes of AACs to for a Quality Region

S/N	Date	Venue	Theme
1	Aug., 2004	Melbourne, Australia	Global Initiative for Quality Assurance Capacity (GIQAC)
2	Feb., 2005	Hong Kong, China	WTO and International Trade in Education Services: The Opportunities and Challenges of Transnational Higher Education
3	Mar., 2006	Shanghai, China	Regional Mobility: Cooperation in Quality Assurance
4	Feb., 2007	Kuala Lumpur, Malaysia	Emerging Challenges, Emerging Practices: Sharing a Global Vision of Quality Assurance in Higher Education
5	Feb., 2008	Chiba, Japan	Future of Quality Assurance in Asia-Pacific: Cooperation amidst Diversity
6	Mar., 2009	Hanoi, Vietnam	Quality Assurance in Higher Education: Balancing the National Contexts and International Aspirations
7	Mar., 2010	Bangkok, Thailand	Enhancing Quality of Higher Education in the Developing World
8	Mar., 2011	Bangalore, India	Quality Assurance in Higher Education: Expectations and Achievements
9	Mar., 2012	Siem Reap Angkor, Cambodia	External Quality Assurance in the Asia-Pacific: What has changed over a decade?
10	Apr., 2013	Taipei, China	Has external QA made an impact? Looking back at the decade of quality assurance
11	Mar., 2014	Hanoi, Vietnam	Higher Education Quality Assurance in a Changing World: Envisioning the future of Asia Pacific
12	Apr., 2015	Kunming, China	Globalization and Diversification of Quality Assurance of Higher Education
13	May, 2016	Natadola, Fiji	Sustainable Development of Quality Assurance in Higher Education
14	May, 2017	Moscow, Russia	New Horizons: Dissolving Boundaries for a Quality Region
15	Mar., 2018	Nagpur, India	Capacity Building for Next- Generation Quality Assurance in Higher Education
16	Mar. 2019	Colombo, Sri Lanka	Quality Assurance in the Asia-Pacific Region: Insight into the Future
17	Nov.,2021	Singapore	COVID-19 Response Mechanism and Impact on Quality Assurance for Higher Education in the Asia-Pacific Region (online)
18	Nov., 2022	Singapore	Quality Assurance for Higher Education under Covid-19 Pandemic and Beyond in Asia-Pacific Region
19	Nov., 2023	Bangladesh	Innovation and Sustainable Development in Higher Education

The current 2023 AAC is going to was held in American International University-Bangladesh (AIUB), Bangladesh on November 02 - 04, 2023. Over 150 participants from over 30 countries/territories will attend it. They discuss the theme of "Innovation and Sustainable Development in Higher Education", which includes 5 sub-themes: 1) quality of transformative learning and transformative teaching 2) blended education from the perspective of 4th industrial revolution and the COVID pandemic; 3) digital quality assurance and journey to quality enhancement; 4) university-industry linkage in the background of internationalization; and 5) the 20th anniversary of APQN.

Among the above 19 themes, the most frequently used key word is "quality assurance", which takes into account the comprehensive global trend, educational reforming, practical experiences, and many other aspects. By WordCloud - a free online word cloud generator and tag cloud creator, we can see the most frequent words at the first level are: "quality", "assurance", "education" and "higher". The frequent words of the second level are "Asia", "Pacific", "Global" and "region" (Fig. 5). "Quality assurance" is one of the most crucial key words, and it's the priority among priorities to determines the main contents and directions of the international QA.

Fig.5: Word Cloud of the 19 themes of APQN academic conferences

2.4 Conducting over 50 QA projects without boundary

In the past 20 years, APQN has conducted over 50 projects on QA to "dissolve boundaries for a quality region", such as "APQN Website: Expansion/Maintenance and Database Development" (2005), "External Evaluation Review of the APQN" by Bateman and Giles Pty Ltd" (2009), "Global Initiative for Quality Assurance Capacity, GIQAC"(2007-2011), "Quality Assurance of Cross-border Higher Education, QACHE" (2013-2015), "Asia-Pacific Quality Register, APQR" (2015-present), " MPU-APQN International Conferences on Quality Assurance"(2015-present), "APQN Quality Label, APQL"(2016-present), " Global Summit on Quality Assurance" (2016-present), "INQAAHE-APQN Survey on IQA EQA Landscape"(2019-2021; 2022-present), etc.

Most of the projects have produced good results. Take "Asia-Pacific Quality Register (APQR)" as an example. The first review conducted on the Fiji Higher Education Commission in Fiji in 2015. To date, 10 QAAs have been accepted onto APQR (Table 2). Following the founding of the European Quality Assurance Register for Higher Education (EQAR), APQR became the second in the international QA networks to implement QA register.

Table 2: The list of 10 QAAs accepted onto APQR

#	Country	Name of the Quality Assurance Agencies (QAAs)	Review Time
1	Fiji	Fiji Higher Education Commission (FHEC)	2015
2	Russia	Russian Register (RR)	2017
3	Russia	National Centre for Public Accreditation (NCPA)	2017
4	Indonesia	Indonesian review Agency for Higher Education in Health (IAAHEH)	2018
5	Kazakhstan	Eurasian Centre for review and Quality Assurance in Higher Education and Health Care (ECAQA) in Kazakhstan	2019
6	Mongolia	Mongolian National Council for Education review (MNCEA)	2019
7	Kazakhstan	Independent Agency for Review and Rating (IAAR) in Kazakhstan	2019
8	Malaysia	Finance review Agency (FAA) in Malaysia	2020
9	Kyrgyz	EdNet Agency on Quality Assurance in Education(EdNet)	2022
10	Samoa	Samoa Qualifications Authority(SQA)	2023

Another good example is the "Survey of the Revision of Higher Education Quality Assurance Principles for the Asia Pacific Region (Chiba Principles)" which made of three parts:1) Internal Quality Assurance; 2) Quality Assurance Agencies; 3) Quality Assurance: a set of principles which outline the process and content of quality assurance. The purposes of "Chiba Principle" are: (1) to safeguard and promote public confidence in the quality of higher education in the region; (2) to generate reliable public information and reports about the higher education institution and professional bodies both nationally and internationally; and (3) to support and enhance the cooperation of quality assurance agencies and other key players across national borders. (APQN, 2009) . APQN played a significant role in the dissemination of the Chiba Principles.

2.5 Implementing 14 QA actions without boundary under the COVID

At the end of 2019, the COVID Pandemic attacked all the global human being in a threatening and horrible manner. It is an unprecedented scenario in the world history of education. During the COVID, APQN conducted 14 actions, including 4 surveys, interviews to 7 Board Directors, 1 online forum, 3 international online conferences, 1 face-toface international conference, 1 online-teaching standard, 3 books and other researches (Table 3).

Table 3: APQN 14 innovative actions to guarantee QA under the COVID pandemic

#	Time	14 Actions to Fight against the COVID
1	March-May, 2020	APQN global survey on the COVID impact in higher education institutions(HEIs)
2	April-June, 2020	APQN survey on the COVID impact in quality assurance agencies(QAAs)
3	June-July, 2020	Interviews with APQN Board Directors on COVID impact on HE quality
4	July 28, 2020	APQN 8th online forum entitled "Influence of COVID on higher education quality assurance: the new normal of higher education 4.0
5	July, 2020	APQN Survey on Effectiveness of On-line Teaching during the COVID pandemic
6	Nov.25-26, 2020	MPU-APQN 12th International Conference (online) on Teaching and Learning Quality Assurance in Higher Education under the Pandemic
7	June to December, 2020	Qualitative Research on Effectiveness of Online Course during the COVID-19 Pandemic
8	May 31, 2021	"APQN Standard for Online-Teaching Quality Assurance"
9	Nov. 22, 2021	MPU-APQN 13th International Conference (online) on Education Innovation and Teaching Quality Assurance in the Post-Pandemic Era
10	Nov. 25, 2021	AAC (online) on COVID Response Mechanism and Impact on Quality Assurance for Higher Education in the Asia-Pacific Region
11	June, 2022	Anthology: Selected papers of 2021 AAC (online) in Singapore under COVID Pandemic(Singapore, 2022)
12	June, 2022	Book: APQN Research on the COVID Impact on the HE Quality(China, 2022)
13	Nov., 2022	APQN face-to-face academic conference "Quality Assurance for Higher Education under COVID Pandemic & Beyond in Asia-Pacific Region"
14	June, 2023	Anthology: Selected papers of 2022 AAC on "Quality Assurance for Higher Education under COVID Pandemic & Beyond in Asia-Pacific Region" (Singapore, 2023)

No.12 mentioned above is the book entitled "APQN Research on the COVID Impact on the HE Quality in the Asia-Pacific Region". The book consists of 10 chapters in 4 parts: part I includes 3 chapters, describing the impacts of COVID outbreak; part II includes 4 chapters, narrating the uncertainty and challenges during the of COVID-19; part III includes 3 chapters, showing such the results as "APQN Standard for Online-Teaching QA"; and part IV includes 6 annexes, such as 4 surveys.(Jianxin Zhang, 2022) This book is one of the earliest publications among the research results during the COVID in the globe.

2.6 Publishing over 50 QA periodicals, books/ tools anthologies without boundary

In order to realize its goal of "Dissolving Boundaries for a Quality Region" and to spread information, knowledge, opinions, APQN has taken a wide range of methods and actions to share information, experiences, theories, and practices of quality assurance, including APQNews, APQN Annual Report, Consultant data, QA tools, journals and books.

1. APQNews. APQNews is a half-year periodical newsletter on updating APQN on developments within the Network. The contents vary according to the QA activities and projects, but the followings are the main contents: (1) key speech; (2) the board; (3) the project; (4) the cooperation; (5) member news; (6) coming-up events and others. The first issue with 16 articles was released in August, 2008. Since then, APQNews has been published two issues each year. As of July in 2023, APQN has published 27 issues, a total of over 500 articles. APQNews plays an excellent good role in communicating with APQN members.

2. Publication of AAC anthologies. In order to adhere to the spirit of sharing, since 2012 APQN Board has been published a series of academic anthologies after AACs each year. The title of the anthologies are the main theme of AAC as the same year. By July of 2023, APQN has published 8 anthologies, over 230 papers (Fig.4). APQN is the only professional network that publishes the

anthologies of their annual conferences, which reflects the results of current research and advancements in the sphere of quality assurance in education.

Table 4: The list of APQN academic anthologies

No.	AAC Year	Chief-editor	Title of the Anthology
1	2012	Jaganath Patil	External Quality Assurance in the Asia-Pacific: What has changed over a Decate?
2	2013-14	Angela Yung-Chi Hou, Jaganath Patil	Higher Education Quality Assurance in a Changing World: Envision, the Future of Asia Pacific
3	2015	Jianxin Zhang and Jaganath Patil	Perspectives on Globalization and Diversification of Quality Assurance of Higher Education
4	2016	Jaganath Patil, Malini Nair	Sustainable Development and Quality Assurance in Higher Education
5	2017	Galina Motova and others	New Horizons: Dissolving Boundaries for a Quality Region
6	2019	Barry Aw Yong and Alan Go	An Anthology of Selected Papers of 2019 APQN Annual Academic Conference in Sri Lanka
7	2021	Barry Aw Yong and Alan Go	An Anthology of Selected Papers of 2021 APQN Annual Academic Conference in Singapore
8	2022	Barry Aw Yong and Alan Go	Quality Assurance for Higher Education under Covid-19 Pandemic and Beyond in the Asia-Pacific Region

3. APQN Annual Report. Each year APQN holds the Annual General Meeting (AGM) and reports what has happened in one year to its members . Therefore, APQN Annual Report is annually published. The contents consist of 4 parts: (1) the network; (2) activities and projects; (3) reports by the board directors; and (4) financial audit reports. As of December of 2022, 18 volumes of "APQN Annual Report" have been released to all the members as well as the relevant QA organizations; at the same time it is uploaded to the APQN website fro free download. Through financial audit reports, APQN members can monitor the financial status and even provide reasonable suggestions.

4. Publications on QA. A series of QA academic works were developed in different kinds of QA activities and cooperation. Among them, the following QA capacity-building tools have made great influences: (1) "UNESCO-APQN Toolkit: Regulating the Quality of Cross-Border Education"; (2) "Cross-Border HE: Road towards Capacity Building"; (3) "Assessing Quality in HE: Information Package for Reviewers"; (4) Academic journal Higher Education Evaluation and Development (HEED) and others. Among them, "UNESCO-APQN Toolkit" is one good example of APQN cooperated with UNESCO. The Toolkit is intended to act as an aid in regulating quality assurance for countries that are involved in providing and receiving cross-border education. It discusses a range of key issues and some approaches that have been used to address them, tending to focus on government and policy makers (UNESCO-APQN, 2008).

In order to realize APQN's ultimate goal, in 2018 APQN released "The Asia-Pacific Quality Label for Internationalization of Higher Education" and reviewed Symbiosis International (Deemed University) (SIU), India. The purposes are mainly concentrated on three aspects: (1) to establish the criteria and standardization of quality assurance of internationalization in HE; (2) to promote both incoming and outgoing international mobility of students, degree, credit, programs, staff, projects and others international flow at HEIs in the Asia-Pacific Region, even the whole globe; and (3) to promote internationalization at home concerning campus, curriculum, teaching and learning, join-programme, intercultural and international competences and learning outcomes in the local country. (Jianxin Zhang, 2019). Besides, in 2000, the COVID-19 Pandemic has brought great challenges to traditional teaching, online teaching has gradually become the "new normal". However, online-teaching quality is not very optimistic, many new problems need to be improved urgently. APQN released "APQN Standard for Online-Teaching Quality Assurance" in May of 20021, whose purpose is to provide reference for the high-quality development of online teaching.(Jianxin Zhang Panpan Huang, 2022).

Conclusion

"Quality Region without Boundary" represents not merely a beguiling ideal, but a provable reality and compelling evidence for the potential of quality assurance in education for the whole globe, especially for the Asia-Pacific Region. As important as Huntington's monograph "The Clash of Civilizations", as fascinating as Friedman's "The World is Flat", APQN's pursuit for the ultimate goal didn't explain what's already happened: it tries to offer a road-map for action of quality assurance in the borderless world that has emerged. Its rationale embraces the broad QA initiatives of all the members to meet the needs of this "Quality Region", and its core objectives were met.

The 20-year efforts gave APQN the vitality of sustainable development and left the five spiritual legacy -"dedication, sharing, serving, innovation and sustainable development", which focuses towards a borderless world advanced as part of globalization theory the the Asia-Pacific Region, stepping, as it was and it is, with thousand-mile march from south to north, from west to east, from the countries/territories in Asia to those in Pacific Ocean. However, APQN also faces such challenges as finance, capacity building, efficient work and others. In order to assure sustainable development of quality assurance, in order to establish the shared values of quality education beyond borders, APQN has began its long march and will continue to strive for realizing its ultimate goal of "Dissolving Boundaries for a Quality Region".

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ESTABLISH "3C" CLASSROOM RESEARCH CULTURE AND IMPROVE THE QUALITY OF CLASSROOM TEACHING

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Abstract:
The quality of classroom teaching largely determines the quality of university personnel training. To improve the quality of classroom teaching, it is necessary to reshape the teaching and research culture of universities and strengthen the research on classroom teaching. In the traditional teaching and research activities, such as attending lectures and evaluating classes, there are many phenomena in the classroom evaluation, such as "emphasizing lectures without evaluating", "discourse hegemony and most aphasia" and "violent evaluation of classes", which seriously affect the effect of teaching and research activities on improving teachers' professional quality and teaching quality. In order to improve the quality of teaching and research activities, it is necessary to rebuild a Comprehensive, Conversational and Cooperative teaching and research culture, that is, "3C classroom research culture" so that teaching and research activities can be transformed from " classroom evaluation" to "classroom research". The establishment of "3C classroom research culture system" can enhance the humanity, professionalism and effectiveness of teaching and research activities centered on classroom teaching, which is of great significance for promoting the reconstruction of teaching and research ecosystem in colleges and universities.

Keywords: classroom research culture; comprehend; dialogue; cooperate

Talent cultivation is one of the three major functions of a university, and it is also the most basic and important function of a university, also it is the fundamental reason why a university becomes a university. The main position of talent training lies in the classroom, and the quality of classroom teaching largely determines the quality of talent training in universities. In order to improve the quality of classroom teaching, it is necessary to reverse the value orientation of "scientific research first" prevailing in universities, return to classroom teaching, reshape the teaching and research culture of universities, and strengthen the research on classroom teaching.

1. The status quo and problems of "teaching and research culture" in universities

First of all, in the current classroom teaching research activities in universities, the phenomenon of "emphasizing lectures without evaluating" is widespread. In order to improve the quality of teaching, many universities stipulate that teachers must complete a certain number of lecture--attendance each semester, but most teachers take part in the lectures with a passive attitude. When the lectures are finished, the tasks assigned by the school will be completed. As for the following part of class evaluation, it is dispensable. Even if this part is conducted, it is often a "rambling class evaluation". This is a common phenomenon in university teaching and research activities, which seriously affects the full realization of the value of classroom teaching and teaching -- research activities.

Secondly, in the current classroom teaching research activities, there is still a widespread phenomenon of "discourse hegemony and most aphasia". In the classroom evaluation after the lecture, leaders and experts from related disciplines often take the lead in speaking. These leaders and experts often master the "discourse hegemony", and they often set the tone for the evaluation of a lesson. However, most teachers are in an absolutely weak position in teaching and research activities, and they are in a "habitual silence state" for a long time, which leads to "most aphasia phenomenon" in teaching and research activities. The phenomenon of "discourse hegemony and most aphasia" in teaching and research activities violates the basic principles of democracy and equality, seriously dampens the enthusiasm of most teachers to participate in teaching and research activities, and also inhibits the development of group wisdom in teaching and research activities.

Thirdly, in the current classroom teaching research activities, there is still a widespread phenomenon of "violent class evaluation". Such a class evaluation site is more like a trial site, and the teacher is like a prisoner, waiting for the trial of all the teachers attending the class. In this process, the teacher is very disadvantaged, especially when the teacher is a young teacher with junior qualifications. Such "violent class evaluation" is a great blow to the teachers. Teachers with poor psychology may be devastated, and teachers with strong psychology will also leave a shadow, which will adversely affect the growth of all teachers in the teaching and research group and cause great damage to the teaching and research atmosphere of the school.
Therefore, it is urgent to deepen the reform of university classroom, improve the quality of teaching and research activities centered on classroom teaching, and build an active and healthy " classroom research culture".

2. The Transformation of University Teaching and Research Culture: From " Classroom evaluation" to "Classroom Research"

Leo Spitzer once said, "The change of words is the change of culture and soul". From " classroom evaluation" to "classroom research", on the surface, there is only one word difference, but in fact, it is necessary to complete a new teaching and research culture and a new teaching and research ecology. The so-called " classroom evaluation" is to draw conclusions and make judgments on the quality of the class. There must be an object to be evaluated in class evaluation, and there is a division between the subject and the object of the classroom evaluation, which will inevitably lead to the binary opposition between subject and object. "Classroom research" is beyond " classroom evaluation", and this concept originated from Japan at the earliest. The so-called 'classroom research' means that the subject chooses the angle he is good at to study the class according to his own experience, feelings and needs, and according to various theories he has mastered. During the seminar, participants need to provide each other with teaching information, collect and feel the classroom information together, and conduct dialogue and reflection on issues of common concern on the basis of full information, so as to improve classroom teaching and promote teachers' professional development. " [1](Li Yi,2010,p.161-165)

There are at least three essential differences between classroom evaluation and classroom research.

First of all, the position is different. The classroom evaluation adopts a "top-down" position. In the process of classroom evaluation, classroom evaluators often take modern education and teaching concepts as yardsticks to cut and measure colorful teaching practice activities. Although it is a " classroom evaluation", it is very easy to fall into the evaluation of the lecturer. The classroom research adopts a "bottom-up" position, and the participants do not study the classroom from the standpoint of theory and listeners, but from the standpoint of teachers and students. The object of classroom research can only be "class" but not "person". Classroom research fundamentally changes the weak position of the lecturer, establishes the equal status of all participants, and thus fundamentally eliminates the difference between the appraiser and the appraisee in class evaluation.

Second, the purpose is different. The focus of classroom evaluation is to evaluate the quality of the class, so the lecturer focuses on showing his teaching strengths; The main goal of the classroom research is "improvement and development", so the lecturers are not afraid of problems, and we should even encourage the lecturers to expose the problems actively in order to get help and seek development. The seminar points to all participants in the activity, and the purpose of the seminar is to help everyone progress and grow. "The purpose of the classroom research is not limited to teaching evaluation, let alone teacher evaluation, but to explore specific curriculum teaching problems with the help of teachers' individual reflection and the dialogue of teachers' professional community, and its ultimate goal is to improve classroom teaching and realize teachers' professional growth". [2](Li Yi,2010,p.161-165)

Again, the way is different. Classroom evaluation is a kind of one-way comment. In the whole process of classroom evaluation, teachers usually have few opportunities to speak and argue. And the classroom research is a multi-directional interaction. Classroom research" emphasizes examining, reflecting and improving yourself with the classroom as a platform. Classroom is an ordinary Classroom. It pursues to criticize and reflect on these behaviors and the ideas behind them. It emphasizes the inner values and educational assumptions through behavior, makes tacit knowledge explicit through deep excavation, and helps teachers understand educational assumptions and update educational concepts through deep dialogue. "[3](Chen Dawei and Yu Huijuan, 2006, p.29-31)

3. Establish a Comprehensive, Conversational and Cooperative "3C Classroom Research Culture"

What kind of research culture do we need to establish? Based on the opinions of many domestic researchers, the author proposes to establish a "Comprehensive, Conversational and Cooperative" classroom research culture. In order to facilitate memory, the initials of these three words are taken, and this classroom research culture is called "3C classroom research culture" for short.

3.1 The establishment of "Comprehensive" classroom research culture

Mr. Yin Ding once put forward an important point: understanding is the way of human existence. [4] (Yin Ding,1988,p.100-102)To establish an "comprehensive" classroom research culture means that all the participants in the seminar should be able to put themselves in the others' shoes, abandon the conceptual and modular evaluation criteria, and make a rational and objective evaluation of classroom teaching with temperature and emotion at the same time.

First of all, we should understand teachers. "When talking about the existing problems in classroom evaluation, it is best to take" consideration first "as the principle. Of course, the observing and evaluating class that advocates understanding does not mean that you can't ask questions, but you want to ask evidence-based and targeted questions. [5] (Cui Yunkuo,2007,p.38-41)Gardner's theory of multiple intelligences tells us that different teachers have different superior intelligences, and each teacher will have his own shortcomings. In the course of research, the audience needs to put themselves in the others' shoes, deeply observe the real situation of the teachers, and understand the problems, puzzles and difficulties encountered by the teachers in the classroom. "The people-oriented principle requires the evaluator to say the right words in the right way, not just the right words, but to fully consider

the psychological feelings and acceptance of the evaluators". [6](Chen Jian, 2013,p.22-24)
Secondly, we should understand the teaching materials. Textbooks are the carrier of knowledge and an important basis for exchanges and discussions in teaching and research activities. Teachers who observe classes need to make full preparations in advance, carefully study the corresponding reference materials, make independent teaching design in advance, prepare the difficulties and problems they find in the teaching design process in advance, and then enter the classroom with problems to observe classes. Studying teaching materials and related materials, and making personalized deep thinking around related materials to achieve a deep understanding of related topics are the basic premise to ensure the effectiveness of follow-up class observation and research activities.

Thirdly, we should understand the classroom. Modern phenomenological theory advocates that we should face the fact itself. In order to deeply understand the classroom, all the participants must "face the classroom and enter the classroom". After entering the classroom, you should devote yourself to the classroom and let your pulse beat with the rhythm of the classroom. The teacher teaching evaluation system of San Francisco United Campus in California requires that the evidence of teacher evaluation must include five aspects: first, what to see about the behavior of students and teachers; second, how do students and teachers do what they should do; third, what did the students and teachers say; fourth, the number of times teachers do things; last, how long do teachers spend on different activities? [7] (Chen Jian, 2013,p.22-24)Only by observing the class around the above five aspects can teachers really enter the class and gain something in the process of observing the class.

Classroom research is a complete professional activity. Only by establishing a professional teaching research system can participants really approach teachers, understand teaching materials and integrate into the classroom, making it possible to realize a real understanding of teachers, teaching materials and classrooms, and then construct an "comprehensive" classroom research culture.

3.2 The establishment of a "Conversational" classroom research culture

Palmer, a famous American educator, once pointed out that the growth of any industry depends on the sharing of experience and dialogue among its participants. The community of colleagues is rich in resources needed for the growth of teachers. [8] (Palmer,2005) To establish a "conversational" classroom research culture is to oppose the phenomenon of "discourse hegemony" and avoid the phenomenon of "most aphasia" in the research process, thus forming a research culture of interactive communication among multiple subjects.

First of all, learning to listen is the premise of establishing a "conversational" classroom research culture. Because classroom teaching is greatly influenced by the situation and there are many uncertain factors in the classroom, it is difficult for teachers to show all their teaching designs and teaching ideas in the classroom. However, due to the limitations of their own ability, experience and perspective, teachers often hold conceptual and modular evaluation standards, and enter the classroom with preconceived ideas or even prejudices, which will inevitably lead to the omission and distortion of a lot of information in the process of observing classes, and the quantitative and decomposed evaluation standards themselves have natural defects. Therefore, "the appraisee should be given an opportunity to speak before the classroom evaluation, mainly to introduce the design idea, the degree of coincidence between the actual teaching effect and the expected effect, and also to allow the appraisee to defend his teaching behavior during the classroom evaluation process". [9](Chen Jian, 2013,p.22-24)

Secondly, two-way construction is the essence of establishing a "conversational" classroom research culture. We need to establish the mentality that everyone is a learner in the process of classroom research. There are no leaders or experts here, and everyone participates in the conversation is an equal participant. In the classroom research, we need to establish a reasonable dialogue mechanism so that all participants have something to say . The evaluators constantly revise their educational and teaching concepts and reconstruct their practical knowledge about teaching through the classroom research, and the evaluators also revise their concepts and understandings through continuous collision and communication with others during the classroom research. Finally, with classroom research as the platform and multi-interactive conversation as the main way to study courses, the two-way construction of educational and teaching concepts between the evaluator and the evaluated is realized.

Thirdly, the transformation of the classroom research mode is the key to establish a "conversational" classroom research culture. First, increasing the time proportion of the research session in the whole teaching and research activities is the basic premise of establishing a conversational research culture. Teaching and research activities should take collective research as the main form of activities, and classroom teaching and class observation only provide a topic and introduction for research. Therefore, in the distribution of time, it is necessary to increase the proportion of collective research courses, so that the time of collective research courses is several times that of teachers' teaching. Second, change the conversation mode in the research and establish the conversation mode of "evaluation-response". We need to change the way of conversation in the course of research. When all the audience evaluate the classroom teaching of the lecturer, we need to increase the link of the lecturer's response and explanation to others' evaluation, and establish the conversation mode of "evaluation-response".

3.3 The establishment of "Cooperative" classroom research culture

For a long time, teachers' working methods have been in an isolated and closed state. Each teacher basically faces specific educational situations and problems alone, and the whole education and teaching process is basically self-sufficient. This conservative and closed teaching and research culture has seriously hindered the professional development of teachers. Thomas.G once pointed out that an important shift of teachers' professional development thought is to shift the focus of attention from "professional individualism" to "learning community", in which teachers nourish their teaching knowledge and practical wisdom by participating in cooperative practice. [10] (Thomas G et al, 1998, p.21-32) Therefore, to establish a "cooperative" research culture is to establish a win-win relationship between the observers and the lecturers, and to build a "learning community" as the center, and gather the collective wisdom and strength to face and overcome the difficulties and problems in education and teaching, so as to better promote the professional development of teachers.

First of all, it is professional guidance that stimulates the "endogenous motivation" of teachers' professional development. In order to realize the professional guidance of the teaching and research group to all teachers, it is necessary to improve the teaching and research group appropriately, weaken its "administrative value orientation" and strengthen its "academic value orientation" appropriately. Influenced by the traditional concept of teachers' professional development, there is an important practical problem in teachers' professional development in China: emphasizing "external indoctrination" and neglecting "internal construction". These single indoctrination training methods ignore the subjectivity of teachers' independent development and teachers' independent understanding and meaning construction of knowledge. [11] (Wang Jinghua and Li Lingling, 2013,p.39-42) Teachers' endogenous development needs and motivation are the basic premise for teachers to participate in cooperative research.

Secondly, being subject-driven will establish the "connecting link" of teachers' cooperative research. Teachers must have a connecting link to carry out cooperative research, and the topic will undoubtedly become the most important medium to connect teachers and promote cooperation. If there is no clear research topic in teaching and research activities, it is easy for teachers to make teaching and research activities "hollow" and "formal". Under the general topic, there is still a need for division of labor and cooperation within the learning community, and the big topic should be disassembled into small topics one by one so as to ensure that everyone will finally enter the scene of class observation and research with the topic. Only by fully stimulating the enthusiasm of all teachers in the teaching and research group to engage in education and teaching research and taking subject research as the connecting link can we truly form a joint force and form a positive development trend of "promoting teaching with teaching research and supporting teaching research with teaching".

Thirdly, the way of results-oriented can improve the "transformation efficiency" of teachers' teaching and research achievements. Teaching and research activities must be results-oriented, respect the labor achievements of all teachers, try every means to turn the collective wisdom in teaching and research activities into research results, and must present the research results in a certain way to form a teaching and research culture of "research must have results". All teachers should have a strong "product awareness", pay attention to the collection and arrangement of materials in teaching and research activities, and finally develop the results of teaching and research activities into valuable and personalized products. Only by constantly creating high-quality educational and scientific research achievements in the learning community can we continuously form a "positive feedback effect" within the community and inspire everyone to participate in all teaching and research activities in the community with a more positive and enthusiastic attitude.

In conclusion, with the aim of improving the quality and effectiveness of teaching and research activities, it is urgent for universities to rebuild a Comprehensive, Conversational and Cooperative "3C culture system" so that teaching and research activities can be transformed from " classroom evaluation" to " classroom research". Understanding is the premise, dialogue is the key and cooperation is the way to establish "3C classroom research culture", which together constitute a "3C classroom research culture system" based on understanding, emphasizing dialogue and pointing to cooperation. The establishment of "3C classroom research culture system" can improve the humanity, professionalism and effectiveness of teaching and research activities centered on classroom teaching, provide cultural nourishment and institutional guarantee for teachers' professional development, and is of great significance to promoting the development of university teaching and research ecosystem in a positive and healthy direction.

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Hua Jijun, a physics teacher at the No.8 Middle School in Kunming, Yunnan Province, China, is studying for a doctorate at Yunnan Normal University. I have been teaching for 17 years, with outstanding teaching ability and excellent teaching results, and won awards in various teaching competitions at all levels, and was rated as "the leader of physics discipline". I have outstanding scientific research ability, many papers published in core journals. I love the cause of public welfare education, and establish social welfare organizations such as "Everyone's Forum" and "Hongyi Family Education Reading Club".

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THE IMPACT OF CHATGPT ON MODERN EDUCATION: BENEFICIAL OR DETRIMENTAL?

-Md. Sohan, Syma Chaity, Rifat Rudro and Sajid Faisal

Abstract:
In recent times, the use of artificial intelligence (AI) has been more influential in altering diverse industries, including the field of education. One of the important advancements in the domain of AI-driven education belongs to ChatGPT, a robust language model developed specifically to enhance the flow of natural language conversations. The primary objective of the research is to analyze the impact of ChatGPT in the field of education. A survey was performed to gather the perspectives of learners as well as educators. This study investigates the many effects of ChatGPT on the field of education, including its various uses, advantages, difficulties, and future possibilities. This study also investigates the influence of ChatGPT on educational achievements and student involvement, with particular attention given to its capacity to accommodate individual learning requirements, promote critical thinking, and improve problem-solving abilities. It is revealed that students' productivity in educational tasks was shown to be boosted by utilizing ChatGPT, while plagiarism was found. Thus, it is determined that there is no bias in the choice to include ChatGPT in the educational system.

Keywords: Artificial Intelligence, ChatGPT, survey, education, productivity.

1. Introduction

In recent years, the domain of artificial intelligence has witnessed notable advancements, resulting in the emergence of groundbreaking technologies like Open AI's ChatGPT. ChatGPT is an artificial intelligence chatbot that employs natural language processing techniques to generate conversational discussion that closely resembles human interaction. The language model possesses the capability to generate responses to inquiries and produce diverse forms of written material, encompassing articles, social media postings, essays, code, and emails. OpenAI, a prominent AI research organization, successfully developed and introduced ChatGPT in November 2022. In 2015, a consortium of entrepreneurs and researchers, including prominent figures such as Elon Musk and Sam Altman, established the organization. ChatGPT operates by leveraging its Generative Pre-trained Transformer, which employs specialized algorithms to identify patterns throughout sequences of data. The ChatGPT system employs the GPT-3 language model, which is a neural network-based machine learning model representing the third iteration of the Generative Pre-trained Transformer. The transformer algorithm utilizes a substantial volume of data in order to generate a coherent and informed reply. ChatGPT leverages deep learning, which is a specific branch of machine learning, in order to generate text that closely resembles human language. This is achieved by employing transformer neural networks. The transformer model utilizes its training data to generate predictions of text, encompassing the subsequent word, sentence, or paragraph, by leveraging the inherent patterns and sequences present in the data. The training process commences with the utilization of general data, followed by the further incorporation of more customized data that is specifically relevant to a particular activity. ChatGPT conducted training using online textual data in order to acquire proficiency in human language. Subsequently, transcripts were utilized to facilitate the acquisition of fundamental conversational skills. The significant impact of AI on various industries, including education, has been brought about by the rapid progress of technology and the increasing interconnection of the worldwide landscape. Throughout the evolution of educational technology, numerous technological developments have been conceptualized as possibilities for the transformation or expiration of traditional education in its present state. The outcome has often been attributed to a fervent and somewhat irrational adoration for technology (Rudolph et al., 2023). Since the onset of the 20th century, several media platforms including film, radio, television, computers, the Internet, mobile technologies, social media, and virtual, augmented, mixed, and extended reality have been recognized as having the capacity to significantly transform the educational system. Therefore, people must evaluate and contemplate the advantages and disadvantages of these new technologies (Qadir et al., 2022). Concerns have been voiced in the past about how Google will affect the way people think, read, and remember (Parslow et al., 2011). Another educational tool is the Massive Open Online Course, which garnered significant attention at the beginning of 2010, but subsequently saw its performance decline due to its business models and strategies. These concerns also apply to ChatGPT, as it possesses both numerous opportunities and significant risks. Moreover, ChatGPT can be utilized in a variety of ways as an educational technology, including as tutors, language models, and research and teaching assistants. Numerous studies on the application of AI in education, such as chatbots (Wollny et al., 2021), programming support (Rahman et al., 2021), language models (Rahman et al., 2021), and NLP tools (Litman et al, 2016), have been conducted. However, ChatGPT was only recently introduced and is also a relatively new educational technology (Rahman et al., 2023).

2. Methodology

A survey was conducted among those who have direct involvement in the field of education. The survey primarily involves several categories of students and academics as participants. The estimated population size of the survey is 151. Due to the constraints of time, we are unable to gather a substantial number of responses. Among the participants, 3.3% are under the age category below 18 years, while 95.4% are within the age range of 18-30 years. The remaining participants are over the age of 30. Most survey participants were university undergraduate students, with a particular emphasis on those studying in the field of engineering. Initially, a questionnaire was prepared and afterwards sent to the participants through Google Form. There were questions about ChatGPT's effectiveness and potential effects on education in the Appendix. The responses were analyzed, and a graphical representation was created to facilitate the examination of the survey results.

3. Result and Discussion

This section will provide a detailed discussion of the survey results. It is important that we start this conversation by taking the respondents' demographic information into consideration. Contributions from 93.4% of students, 4.6% of academics, and 2% of people with varying professional backgrounds are also included in the data pool. When it comes to the primary functions of ChatGPT, most respondents use it for homework or assignment assistance (57.6%) and concept clarification (54.3%). In addition, the results of the survey indicate that 38.4% of respondents use ChatGPT weekly, 31.1% use it daily, and 22.5% use it occasionally. In recent days of educational activities, the researchers and teachers are taking a considerate amount of assistance from ChatGPT. A notable amount of guidance and directives are being taken to construct literature reviews and summary of any concept. It can also be observed that the information and structure of the documents generated through ChatGPT is relatively convincing (İpek et al., 2023). The system is sometimes reliable in terms of assignments, projects, and tasks by the students. To be added, young children are becoming reliant towards the system as it gives these individuals an easily accessible and less complex medium to learn.

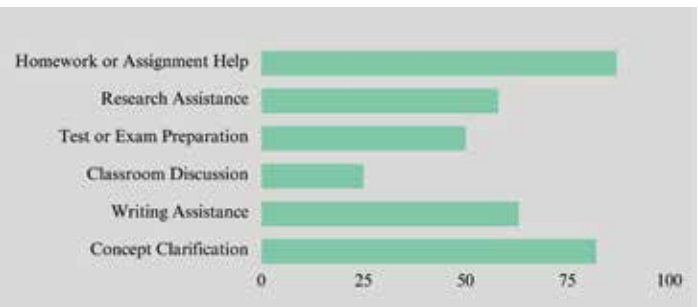

Figure 1: Primary function of ChatGPT

Ethical concerns regarding the incorporation of ChatGPT into the sphere of education are prevalent in Figure 2. It reveals that nearly half of respondents (47%) are concerned about the possibility of plagiarism, highlighting the need for proactive measures to prevent the misuse of this technology. In addition, 39.1% of respondents are concerned that ChatGPT could produce biased information, highlighting the need to eliminate the inherent biases in AI models.

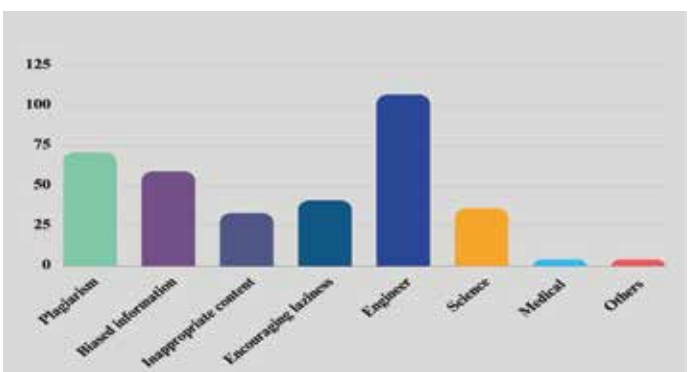

Figure 1: Ethical concern on different education groups

One of the most advantageous sides is that as the system is being trained every time gradually, the level of accuracy for the information generated through the system is being reliable. Hence the dependency on educational activities is increasing day by day. Despite the system being eventually accurate, sometimes the redundancy and complex description can be found in various cases (Lo et al., 2023). The educators and instructors of technological subjects and courses are relatively satisfied by its mathematical and

analytical performance. According to (Surameery et al., 2023) ChatGPT is not there to compete rather it can be used with other debugging toolkits to produce more reliable and efficient debugging experiences for programmers. Therefore, the concern of accuracy and performance in the education sectors and institutions are decreasing rapidly. In terms of reliability in educational tasks, approximately 40.4% of participants express that ChatGPT provides a leinl of accuracy and reliability. Around 30.5% of participants hold a neutral stance on this matter, while 25.2% express concerns that ChatGPT may generate very accurate content. The remaining participants indicate that ChatGPT may produce somewhat inaccurate content.

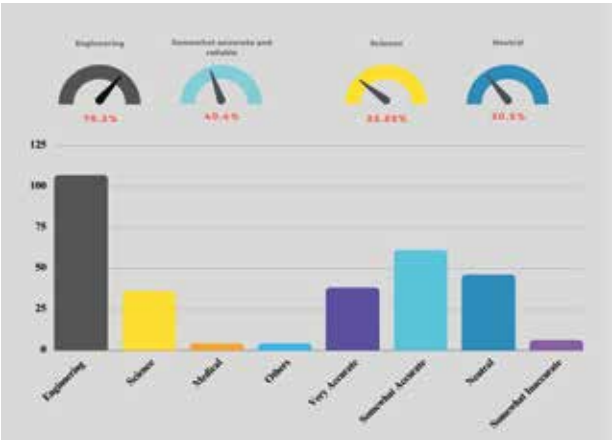

Figure 3: Accuracy reliability in different education groups

Addressing the question of incorporating ChatGPT into formal educational curriculum, the survey responses reveal a complex picture. 11.3% of respondents strongly support such integration, while 27.8% indicate moderate agreement. Considerably 26.5% of respondents maintain a neutral stance on the issue. In contrast, approximately 27.8% of respondents express disagreement, indicating a degree of skepticism.

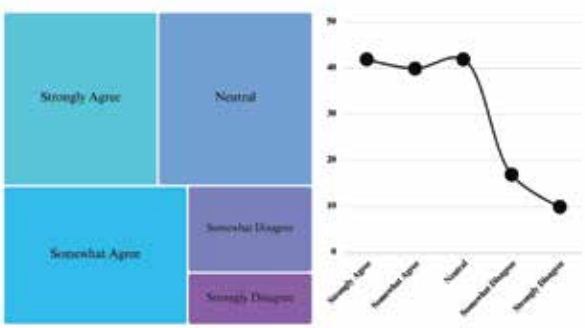

Figure 4: Integration of ChatGPT on formal education

In final analysis, the results of the survey with 151 people show how complicated and diverse ChatGPT is as an educational tool. Even though it is widely known and used to help explain complicated ideas and make tasks easier, there are still ethical concerns about copying, bias, and the chance of academic laziness. There are numerous different opinions about putting ChatGPT into official educational environments. There is strong support, reasonable agreement, neutrality, and clear doubt. Particularly, academic voices that warn that it might make it tougher for human beings to learn on their own add complexity and show how important it is to use AI tools in education in a smart and responsible way. To deal with these different points of view in a good way, we need more serious study and careful thought.

4. Conclusion

A survey was conducted to investigate the impact of ChatGPT on the field of education, with a particular focus on its implications for students and academics. It has been observed that a substantial number of students use ChatGPT as a tool for various academic purposes, such as completing assignments, preparing for exams, clarifying concepts, and composing essays. Moreover, academics have used it for the purpose of conducting research and facilitating discussions in the classroom. Numerous students also express their viewpoint that ChatGPT enhances their comprehension of complicated subjects, while acknowledging some limits. Sometimes, the provision of inaccurate data may arise due to an inability to comprehend the contextual complexities. Most participants express that ChatGPT offers responses that are challenging to comprehend accurately. PhD holders assert that

ChatGPT is incapable of providing autonomous learning. Finally, it is important to note that ChatGPT has been shown to contribute to a reduction in student motivation and productivity. Hence, it is not advisable to include it in the scope of official schooling. It is advisable for students to prioritize their academic pursuits rather than relying excessively on ChatGPT. The tool might serve as an aid to support educational endeavors.

5. Appendix

The survey questions are attached below.

Age *
- Below 18
- 18-30
- Above 30

Education Level *
- Below SSC
- SSC
- HSC
- Undergraduate
- Post-graduate
- PhD
- Above PhD

Eduaction Field *
- Arts
- Science
- Engineering
- Medicine
- Law
- Others

In what educational contexts have you used ChatGPT? *
- Homework or assignment help
- Research assistance
- Test or exam preparation
- Classroom discussions
- Writing assistance
- Concept clarification

How frequently do you use ChatGPT for educational purposes? *
- Daily
- Weekly
- Monthly
- Rarely
- Never

Have you found ChatGPT's responses to be accurate and reliable for educational tasks? *
- Very accurate and reliable
- Somewhat accurate and reliable
- Neutral
- Somewhat inaccurate and unreliable
- Very inaccurate and unreliable

What is your current role? *
- Student
- Academician
- Others

To what extent has ChatGPT increased your productivity in educational activities? *
- Greatly increased
- Moderately increased
- No significant change
- Slightly decreased
- Significantly decreased

Have you encountered any ethical concerns or issues while using ChatGPT for educational purposes? *
- Plagiarism
- Biased information
- Inappropriate content
- Encouraging laziness

Have you encountered any limitations or challenges when using ChatGPT for educational purposes? *
- Inaccurate information
- Difficulty in understanding questions
- Limited subject knowledge
- Lack of context understanding

Has ChatGPT helped you better understand complex topics or concepts in your studies? *
- Yes, significantly
- Yes, to some extent
- No, not really
- I'm not sure

Do you believe ChatGPT should be integrated into formal education curriculum? *
- Strongly agree
- Somewhat agree
- Neutral
- Somewhat disagree
- Strongly disagree

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4IR: NEEDS FOR VITALIZING EDUCATION CURRICULUM IN BANGLADESH

Theme: Innovation and Sustainable Development in Higher Education
Sub-theme: Blended Education from the perspective of 4IR

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Abstract:
The aim of this paper is to highlight the need for introduction of education programme on Fourth Industrial Revolution (4IR) in higher education curriculum in Bangladesh. This basic premise is that the key to deal with Artificial Intelligence (AI). Robotics, Automation, Blockchain, Big Data, Data analytics, Cloud Computing, Quantum Computing, Biotechnology, Nanotechnology, Communication and network signals and Natural language processing etc. begin with the awareness of the problems at tertiary level education. With adequate background knowledge and skills, the universities should be able to organize and prepare their curriculum in using of machine learning technology. Besides, teaching-learning on science and technology would be interesting and more appropriate for the nation. The paper also highlights up skilling of the large unskilled and skilled workforce giving utmost emphasis on vocational and technology based education systems. To this end, the universities can be instructed to take necessary steps for producing qualified graduates through introducing demand-based, goal oriented programmes together with increasing industry academia collaboration to meet the challenges of 4IR formulating a realistic education plan to achieve the Vision 2041 of Bangladesh.

1. Introduction:

The first industrial revolution took place in 1784 with the invention of the steam engine. 1760-1850, brought about a radical change in production, replacing manual or animal-powered systems with steam engines.
When electricity was discovered in 1870, the world became enlightened and entered the second revolution. The second Industrial Revolution saw the advancement of electrical power and technology.
The third industrial revolution was the digital revolution. It was expanded by the invention of digital electronics/Internet in 1969. The spread of information technology using science has basically brought the world into the hands of people. In this revolution, human civilization got supersonic speed due to the combination of internet, nuclear power and technology.
Fourth Industrial Revolution (4IR) combines biomass with technology. According to educationist and researchers, civilization will be controlled by Artificial Intelligence (AI). Robotics, Automation, Blockchain, Big Data, Data analytics and Cognitive Computing, Cloud Computing, 5G, Quantum Computing, Biotechnology and Nanotechnology, Communication and network signals and Natural language processing. These are at the heart of 4IR. In this revolution, the speed and spread of technology have a greater impact on employment.
Experts predict that by 2025, about 20 percent of people in the world will be connected to the internet with their clothes or glasses as a foretaste of the 4IR. There will be mobile phones that can be placed on people's bodies, 90% of people will use smart phones, 10% of cars in America will be driverless, 30 percent of corporate audits will be done by Robots. Even a Director on the company's board will be an Artificial Intelligence Robot. Many more such incredible inventions and discoveries will rock the world.
The charm of 4IR is, it is expanding faster than the other three industrial revolutions but empowering human beings equally. In near future, machine will be the best labour force in almost all the manufacturing industries.

2. Digital Bangladesh to keep pace with the change in 4IR

The Government of Bangladesh has adopted a long-term development plan called Vision-2041 to transform the country into a developed and prosperous nation. There are two aims at its base: 1) By 2041 Bangladesh will be a developed country where per capita income will be more than 12,500 US Dollars, and 2) Bangladesh will be a golden country completely free from hunger and poverty. To achieve these aims, changes need to be made in the sectors of education, agriculture, industry, business, health, transport and communication and their performance policies.

By last couple of years, the implementation of `Digital Bangladesh' has been developed Information and Communication Technology (ICT) infrastructure all over the country. Government is trying to strengthen its economic base in the era of 'Knowledge Economy' by utilizing the large population through the IT revolution. The five-year plan (2018-2023) for the National AI strategy has been accepted by the government. New employment is being created; administrative infrastructure is changing with the field of e-governance. Digital transformation is growing in ICT industries. A big market for e-commerce sector is also being created in the country.
To review the existing scenario, it can create an appropriate platform to kick-off 4IR in Bangladesh. Still then, we find many gaps remains in education policy implementation of optimum technological development. The country with a human resource of 63.5 million, is growing at a rate of 2.2% per year. 2 million new workers entering into the labour force market each year (UGC Report, 2021). Our graduate employment rate is 38.6%, a clear indication of a skill mismatch between the skills required for jobs. Though the UGC has taken initiatives to incorporate new topics in education curriculum to face the challenges of 4IR but those are almost absent at the University level. A sporadic attempt on science and technological topics were made to introduce in few institutions without effective plan and thought. The integration of IT has also been introduced in various levels but still remains as a theoretical subject. Consequently, it is difficult to achieve effective result for the nation also. Bangladesh needs to develop market-driven skills. As a result, collaboration between industry academia is

inevitable to keep pace with the change in ICTs and the 4IR.

3. Higher Education Curriculum and its Challenges

Every revolutionary change brings in new norms and value patterns. The process of adaptation of technology creates both positive and negative psychological impacts in our lives. Many jobs may be lost in the next 10 years, and new fields of work will certainly be added. At the case of RMG, currently, more than 4 million people are employed in the garment sector in Bangladesh, the largest export sector of the country. Countries with labor-dependent economies like, Bangladesh will be in danger. These are more observed in developing countries because of their traditional nature of lifestyles. In many cases, it is difficult to change themselves and adjust to the emerged new realities.

Lack of proper infrastructure, institutional research support, and policy planning between university academia are the underlying factors that contribute to such absence of university academia relationship. ICT expert and Member of UGC, Professor Dr. Md. Sazzad Hossin, commented in his Message, 'Mujib 100 Idea Contest'(2021), "The best possible utilization of university resources remains almost unutilized in Bangladesh, because of the absence of an 'Innovative Educational Ecosystem (IEE)' and allowing the linking of industry and academia. Several areas have been identified in such as, absence of a physical `Innovation Hub' at the universities, lack of necessary mentoring and guidance support, absence of startup platform, lack of conducive environment for entrepreneurship etc..

Our universities are not well equipped with appropriate research, teaching and learning methods and tools that could enables realization of the huge potential. As a result, graduates mostly have lack of skills to live in the era of 4IR with proper dignity and dynamism. The looming technology talent gap is one of the challenges associated with 4IR development.

The core of 4IR is the convergence, which in this case consists of taking advantage of industry and academia linkage".

4. How to Overcome:

Industry Academia Collaboration: The existing collaborative relations among the higher education institutes and the industries have to be strengthened in coming days. This will help the tertiary level education institutes know the needs of industries and redesign their academic curricula in line with their demands.

Polytechnic institutes: The quality and efficiency of engineering education should also be increased in Polytechnic institutes located in different regions of the country. Emphasis should be placed on vocational and technology based systems beyond traditional education (Hamid, 2019).

Cyber security systems: Cyber security systems should be created to strengthen the country's economic base and provide cyber security to the financial sector. This will require thousands of ICT and cyber security personnel, managers, tech leader and IT decision-maker. We need to consider Cyber security a priority as an experienced IT professional (Hamid, 2019).

Introducing the skill based teaching and learning: 4IR would require more skilled workers and professionals for specially at the RMG sector in Bangladesh. Besides, lack of soft and hard skills among graduates is highly documented. Leadership, presentation, communication, time management, problem-solving, maintain the discipline, etiquettes, team building, team work, critical thinking etc. are important soft skills and computer literacy, technical knowledge, subject-specific experience, language proficiency, business skills etc. for job sectors. These skills need to incorporate in our existing education curriculum immediately.

English language proficiency: Attention should also be paid to English language proficiency for our students. As an international language, English language skills are very important to face 4IR.

Providing the training: Teachers should be made competent through training. Hands on training for graduates and others in specific technologies can be a regular part of the university institutions.

5. Conclusion:

The world is now at the doorstep of the 4IR. The industrialized countries of the world have started their preparation few years ago. Bangladesh is also rising with a number of breakthrough initiatives. The 4IR is changing every spectrum of human life. The future economic progress of our country largely depends on the producing of skilled manpower through proper education and training.

4IR uses machines to produce things and signaled the end of the sole dependence on human labour. Therefore, our human resource needs to cope with the technology. Of course, new types of jobs will emerge with higher productivity and higher pay.

At this stage, university curriculum of Bangladesh needs to be more enrich with the technological skills of 4IR such as, AI, Robotics, Block chain, Machine Learning, Quantum Computing, Big Data and other emerging technologies etc. To achieve the Sustainable Development Goals (SDGs 2030) and implement Vision 2041, we do not have any alternative to materializing the huge potentials of 4IR. These skills can be achieved by developing an Innovative Entrepreneurial Educational Ecosystem (IEEE), which will contribute to building linkages between industry and academia.

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TLT008

TRANSFORMATIVE EDUCATION: QA SOLUTION FOR CROSS-BORDER EDUCATION

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Abstract
This article explores the potential of cross-border academic consortia in advancing the Eurasian Economic Union's (EAEU) economic integration goals in alignment with principles of transformative education and quality assurance.. It examines the convergence of QA frameworks, such as the European Standards and Guidelines (ESG) and Asia-Pacific Quality Network (APQN), with transformative education principles. The article highlights the role of consortia in cultivating student-centeredness, cultural commonalities, and innovation, thereby aligning with EAEU's strategic objectives and internationally recognized QA benchmarks. The proposed methodological foundations for accrediting cross-border degree programmes leverage transformative education to foster holistic progress while ensuring educational quality.

Key words: EAEU, cross-border education, transformative education, quality assurance, ESG, APQN, student-centeredness, innovation, research-driven education.

1. Introduction

The strategic directions delineated for advancing Eurasian economic integration until 2025, authorized by the Supreme Eurasian Economic Council in Decision No. 12 on December 11, 2020 – "Strategy-2025" – have engendered adaptable mechanisms to propel the economic advancement of EAEU member states (Belarus, Kazakhstan, Russia, Armenia, Kyrgyzstan). These mechanisms encompass the establishment of a robust managerial framework for collaborative ventures and financial underpinnings, alongside concerted efforts to invigorate collective research endeavors as outlined in Clauses 6, 7, and 8 (Decision of the Supreme Eurasian Economic Council dated December 11, 2020. No. 12 "On the Strategic Directions for the Development of the Eurasian economic integration until 2025", 2020).
Within this context, the establishment of international academic consortia emerges as a promising avenue to realize multifaceted "Strategy-2025" objectives. This perspective emphasizes the creation of mechanisms to facilitate joint infrastructure projects, investments, and scientific-technological consortiums. The prevalence of consortium-building practices underscores their relevance and underscores the need for mechanisms resonating with stakeholders at institutional, national, and EAEU levels.
Therefore, the establishment of international academic consortia is pivotal in advancing EAEU economic integration. Considering that meticulous orchestration of innovative, transnational, research-driven consortium initiatives foster holistic progress for the whole community, it is very important to formulate the fundamentals that the used for establishing such organization. In this article, we would like to see how much it is possible for such institutions to be guided by transformative education as well as the approaches and mechanisms of QA in reference to cross-border education (Decision of the Supreme Eurasian Economic Council dated December 11, 2020. No. 12 "On the Strategic Directions for the Development of the Eurasian economic integration until 2025", 2020).

2. Materials and Methods

To provide adaptable mechanisms to foster economic development among EAEU member states outlined in "Strategy-2025," it is important to establish international academic consortia, which is not only characterized by innovative, transnational, research-oriented, and globally benchmarked attributes, but also holds the promise of advancing cross-border education. As it is indicated in the Guidelines for Quality Provision in Cross-border Higher Education "cross-border higher education includes higher education that takes place in situations where the teacher, student, programme, institution/provider or course materials cross national jurisdictional borders." (OECD, 2005).

Based on this definition, as assume that any forms of cross-border education also refers to Joint and double degree programmes. Thus, The European Approach for Quality Assurance of Joint Programmes defines a 'joint programme' as 'an integrated curriculum coordinated and offered jointly by different higher education institutions from EHEA countries and leading to double/multiple degrees or a joint degree'.

(The European Approach for Quality Assurance of Joint Programmes, 2015). Considering that 'Jointness' of a programme refers to the extent to which the programme has been developed jointly by all partners, it includes curriculum, quality assurance, marketing, selection and admissions, management, quality assurance, exam regulations, funding and other aspects of cross-border cooperation in the area of education (Becker, 2020).

Although a cross-border educational initiatives offers numerous benefits, it is important to navigate the challenges in regulatory, curricular, administrative, and cultural dimensions as it is essential for its successful implementation. As it is indicated in Tertiary Education Quality and Standards Agency, Transnational education toolkit, successful delivery of such programmes is usually supported by "a rigorous onboarding program, overseen by the institution, that covers every aspect of training and delivery." (Young, 2022).

Various research projects supported by EHEA, such as REDEEM project considered the top reasons for students to enroll in a joint programme and developed guidelines offering helpful checklists and recommendations. Thus, they suggest:

•develop a joint vision of the joint programme (REDEEM, 2017),
•match different curricula into one joint programme (REDEEM, 2017),
•structure the study plan (REDEEM, 2017),
•agree teaching methods in joint programmes (REDEEM, 2017).

The Erasmus Mundus Handbook of Excellence Master programmes (Burquel & Blakemore, 2012).) offers good practices on developing a comprehensive course vision for a joint programme. When crafting a comprehensive course vision, key considerations also include defining the joint program's unique selling proposition, consortium type, and academic content. Further steps involve refining the program's rationale, establishing mobility paths, and devising a sustainability strategy. A shared vision encompassing both academic and administrative cultures is crucial, alongside a robust employability strategy for candidates. Additionally, clear agreements on examination processes, transparency, and maximizing degree recognition contribute to a well-rounded course vision.

The solution to various challenges of cross-border education can be found in the principles of transformative education. Transformative theory is an educational approach that seeks to induce profound shifts in students' beliefs, attitudes, and behaviors, fostering critical thinking and personal growth. This method extends beyond imparting information, promoting self-reflection and a broader worldview. It thrives in inclusive environments, encouraging active learning, critical reflection, and addressing social justice concerns (Mezirow, 2000). Similarly, transformative learning is a process of cognitive and emotional transformation within individuals, driven by challenging experiences that prompt reevaluation of perspectives.

In the context of cross-border education, transformative teaching and learning hold particular significance. The challenges inherent in cross-border education, like regulatory differences and language barriers, demand innovative solutions. Transformative teaching's emphasis on critical reflection and inclusive environments can assist in addressing these issues. Likewise, transformative learning's focus on questioning existing beliefs aligns with the process of navigating cultural disparities in cross-border education. By applying transformative teaching principles, educators can bridge gaps in joint degree programs by creating supportive, adaptable learning environments. Simultaneously, transformative learning empowers students to navigate cross-border education challenges by fostering openness and adaptability to diverse perspectives.

The fundamental definitions of cross border education formulated above and the links between cross-border education and transformative teaching and learning determine the sequence of steps for further research. The establishment of quality assurance systems has become a necessity, not only for monitoring quality in higher education delivered within countries, but also for engaging in delivery of higher education internationally. Therefore, there has been an impressive rise in the number of quality assurance and accreditation bodies for higher education in the past two decades. However, as The Guidelines for Quality Provision in Cross-border Higher Education (UNESCO, 2005) states, existing national quality assurance capacity often focuses exclusively on domestic delivery by domestic institutions without considering the mechanisms and principles the transformative education that allows building bridges in cross-border education by creating supportive, diverse, inclusive and adaptable learning environments.

Therefore, the development of methodological foundations and mechanisms for accreditation of degree programmes recognized across EAEU member countries for the purposes of innovative scientific and educational structures shall cover the mechanisms of transformative education. These foundations and mechanisms shall be rooted within national frameworks for quality assurance, accreditation, and the recognition of qualifications, but at the same time address the challenges of cross-border provision.

3. Results

One of the solutions is to apply the transformative learning and teaching to the frameworks used by the QA Agencies such ENQA Standards and guidelines for quality assurance in the European Higher Education Area (ESG), Higher Education Quality Assurance

Principles for the Asia Pacific Region (APQN) and the APQN Quality Label for Regional and International Accreditation of Internationalization. The employment of these two models as a possible QA basis is closely linked with the establishment of international consortia among universities within the EAEU member states as they combine the territorial align of the national QA system to one of these frameworks.
ESG establish the framework for both internal and external quality assurance. It is designed to be universally applicable to all higher education institutions, regardless of location or mode of delivery. Even though ESG do not explicitly focus on the concepts of transformative teaching and learning, some elements within the ESG framework can indirectly reflect the principles of transformative teaching and learning. Thus, the ESG emphasize a student-centered approach to quality assurance, which aligns with the principles of transformative teaching and learning. Transformative teaching encourages educators to engage students actively in their learning process, fostering critical thinking, self-reflection, and personal growth. Similarly, the ESG emphasize involving students in quality assurance processes, encouraging their active participation and engagement in shaping their educational experiences (ENQA, 2015).

Transformative teaching and learning are often centered around the achievement of meaningful learning outcomes that go beyond the acquisition of knowledge. The ESG emphasize the importance of clearly defined learning outcomes that reflect the competences and skills students are expected to develop (ENQA, 2015).

Just as transformative teaching empowers students to be active participants in their learning, the ESG advocate for the involvement of students in various stages of quality assurance processes, including the design and evaluation of programs. This recognition of students as stakeholders aligns with the transformative approach, as it promotes their agency and voice in shaping their educational journey (ENQA, 2015).

The ESG emphasize the importance of ensuring that quality assurance processes are inclusive and sensitive to the diversity of student backgrounds and needs. This resonates with the principles of transformative teaching and learning, which encourage educators to create inclusive learning environments that honor diverse perspectives and experiences (ENQA, 2015).
Transformative teaching and learning promote continuous growth and improvement. Similarly, the ESG emphasize the cyclical nature of quality assurance, encouraging institutions to engage in ongoing self-assessment, reflection, and enhancement of their programs and practices (ENQA, 2015).

Analyzing the common parameters between transformative teaching principles and Higher Education Quality Assurance Principles for the Asia Pacific Region reveals a significant alignment in their goals and aspirations. The drive for quality assurance principles in the Asia-Pacific Region stems from the globalization of higher education, necessitating the demonstration and assurance of quality and standards. This alignment resonates with the transformative learning approach, as both prioritize assurance and the quality of educational systems. Collaborative regional guidelines, like the INQAAHE Good Practice Guidelines, UNESCO/OECD Guidelines, and ENQA's Standards and Guidelines, parallel transformative principles (APQN, 2008). With a dynamic region fostering international students and quality education, the aim is to enhance mutual trust, cooperation, transparency, and accountability through common quality assurance principles.
In alignment with transformative education's emphasis on stakeholder engagement, the principles emphasize collaboration among key stakeholders. The implementation of these principles encourages transparency in reporting, accountability, and quality improvement. The framework's structural alignment with transformative ideals supports both internal and external quality assurance processes, reinforcing the connection (Noordergraaf-Eelens, 2021).

The final instrument which is worth considering in the light of principles of transformative teaching and learning through comprehensive QA criteria is the APQN Quality Label for the Regional and International Accreditation of Internationalization (The 8th Version, March 31, 2018). It emphasizes the integration of cross-border education and internationalization strategies within degree programmes, which inherently involves exposure to diverse perspectives, cultures, and ideas (APQN, 2018). This aligns with the transformative approach that seeks to broaden students' horizons and challenge their existing perspectives.

The criteria for the Quality Label requires degree programmes to demonstrate the incorporation of various learning opportunities, such as international study or research experiences, collaborative projects with students from other countries, and engagement with global challenges (APQN, 2018). These experiences encourage students to step out of their comfort zones, fostering personal growth and a deeper understanding of the interconnected world, which are central tenets of transformative learning.

The Quality Label also prioritizes the development of students' intercultural competence, communication skills, and adaptability. These competencies align with the transformative approach, as they equip students with the abilities needed to navigate diverse environments, engage in constructive dialogue, and effectively address complex global challenges. (APQN, 2018)

Therefore, the APQN Quality Label for Regional and International Accreditation of Internationalization captures the essence of transformative teaching and learning by emphasizing experiential learning, intercultural competence, and the integration of global perspectives. This accreditation framework ensures that cross-border degree programmes create opportunities for students to undergo personal and intellectual transformations, preparing them to be active and informed global citizens in an interconnected world.

4. Discussion

Discussing the results presented in this article, internal and external QA provides plays a crucial role in managing cross-border education taking place during the whole lifespan of the educational institution. Based on the research presentedin the previous parts, it seems reasonable to define the general aspects that Quality Assurance Agency (QAA), conducting accreditation for cross-border degree programmes shall take into account while considering transformative teaching and learning principles involves a comprehensive and holistic approach.

To approach the accreditation process, it seems reasonable to regard cultural commonalities and QA adaptation. Consortium universities should leverage the cultural affinities shared among member states. The similarities in educational values and approaches across Russian, Armenian, and Belarusian institutions facilitate the assimilation of QA mechanisms rooted in ESG principles. Likewise, Kazakhstan and Kyrgyzstan, given their geographical proximity and cultural congruence, can harness the APQN's QA perspectives to fortify their collaborative efforts. By aligning QA practices with cultural contexts, consortium universities can ensure that educational outcomes remain relevant and meaningful.

Embracing the student-centered approach central to transformative education, consortium universities can transcend national boundaries. With participants hailing from different member states, these institutions can diversify perspectives and enrich the academic experience. Moreover, the adoption of QA practices that reflect the APQR and ESG guidelines ensures that this expansion is rooted in quality assurance, maintaining educational integrity even as activities extend into new geographical regions.

Innovation serves as the cornerstone of both transformative education and modern QA frameworks. Consortium universities, driven by their commitment to excellence, can pioneer innovative educational practices, organizational structures, and research methodologies. This not only propels the member states towards their collective economic goals but also aligns closely with the innovation-centric objectives stipulated in "Strategy-2025."

5. Conclusions

In conclusion, consortium universities represent a promising mechanism for harmonizing the aspirations of the EAEU member states with transformative education philosophies and QA principles. The philosophy of transformative education resonates harmoniously with the fundamental principles of QA in higher education, which required thorough approach to building up the methodological and QA approaching in building consortium University. By embracing a student-centered approach, accommodating cultural similarities, and integrating innovation into their educational practices, these institutions stand poised to realize the strategic priorities outlined in "Strategy-2025" while adhering to globally recognized QA benchmarks. By incorporating the principles of student-centeredness, innovation, and research-driven educational approaches, consortium universities built up within cross-border cooperation, can redefine traditional pedagogical paradigms. This alignment bridges the gap between the strategic priorities outlined in "Strategy-2025" and internationally recognized QA frameworks.

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TLT009

THE JOURNEY TOWARDS QUALITY ENHANCEMENT THROUGH QUALITY ASSURANCE- A CASE STUDY ON AIUB

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Abstract:
Quality assurance in higher education is a critical aspect of ensuring that institutions provide quality education and maintain academic standards through managing a variety of mechanisms and organizations. Bangladesh has made some great efforts in recent years to increase the quality of higher education to reach international standards. AIUB has become the pioneer of QA, by establishing the first Quality Assurance Center and undergoing the first international accreditation for its academic programs in Bangladesh and has benchmarked its quality by continuously practicing numerous QA activities. AIUB upholds the Quality Assurance process by focusing on continuous improvement in Higher Education through accreditation and assessment, ensuring quality in all learning and operations aspects.
The SPQA Division of the University Grants Commission of Bangladesh (UGC) plays a pivotal role in maintaining and improving the quality of higher education institutions. In addition to the UGC, other Quality Assurance Agencies like the Bangladesh Accreditation Council (BAC) have already developed guidelines and standards which cover various aspects of higher education, including the National Qualification Framework (BNQF), curriculum development, teaching methods, assessment, international collaboration, and research. While progress has been achieved, more effort is required to address the challenges and ensure that all higher education institutions consistently provide quality education from both Institutional and Government Levels.

1. Introduction

The quality search is an endless undertaking. It takes a lifetime to find excellence. In the process, quality becomes elusive and challenging to find and achieve. In light of the many characteristics or criteria applied in diverse situations, time horizons, and the purposes of its application and appraisal, it also generates some subjective notions. Quality assurance in education is a critical aspect of the higher education system in Bangladesh. Ensuring and maintaining the quality of education is essential for the country's development and for producing skilled and knowledgeable graduates.
The University Grants Commission (UGC) of Bangladesh plays a central role in overseeing and regulating higher education institutions in the country. It sets quality standards, guidelines, and regulations for universities and colleges. The Bangladesh Accreditation Council (BAC) is a regulatory and quality assurance authority responsible for accrediting higher education institutions in Bangladesh. It plays a crucial role in assessing and ensuring the quality of education provided by the higher education institutions (HEIs) in Bangladesh. There are also some professional bodies providing professional accreditation.
While there have been significant efforts to improve education quality assurance in Bangladesh, challenges remain, including ensuring uniform standards across diverse institutions, addressing resource constraints, and adapting to the changing educational landscape. Ongoing commitment to quality assurance and continuous improvement is essential to meet the evolving needs of the higher education sector in Bangladesh.

2. Initiation of QA Activities by UGC through HEQEP

Higher Education Quality Enhancement Project (HEQEP) is a project aimed at improving the quality of higher education in Bangladesh. HEQEP was a Bangladesh government project with support from the World Bank, under the Ministry of Education, and implemented through the University Grants Commission to further develop and improve Higher Education in Bangladesh. HEQEP was officially launched in Bangladesh in December 2008 and continued till December 2018. The major activities of the Higher Education Quality Enhancement Project (HEQEP) are:

- Academic Innovation Fund (AIF) for upgrading teaching-learning facilities, conducting self-assessments, implementing research projects and activities for university-wide development
- Development of the Higher Education Management Information System (HEMIS)
- Professional development opportunities for UGC and university faculty and staff

- Establishment of BdREN for improved connectivity
- Establishment of UGC Digital Library for the provision of e-resources
- Enactment of the Bangladesh Accreditation Act
- Establishment of IQACs at universities

HEQEP has been instrumental in bringing about significant improvements in the higher education sector in Bangladesh. It has helped institutions upgrade their facilities, promote research, and enhance the overall quality of education.

3. Establishment of SPQA Division of UGC

In 2015, with a mission to improve the nation's higher education system to the world's best level of consistency and to guarantee the quality of higher education, a division named Strategic Planning, Quality Assurance, and Right to Information was established in UGC. Therefore, as a result of the Commission's inter-divisional organizational structural adjustments, from 2016 the Division has been conducting its operations as the Strategic Planning and Quality Assurance Division. Currently, the Division has two sub-divisions to carry out its activities: strategic planning and quality assurance.

The Strategic Planning Sub-division in Bangladesh is responsible for formulating and implementing strategic plans for higher education, collaborating with government, universities, and international institutions to improve performance, develop skills, and establish an innovative education ecosystem. The Quality Assurance Sub-division guides universities in setting up Institutional Quality Assurance Cells (IQAC) for quality education, implementing self-assessment systems, and promoting professional skills development. (2023)

4. Initiation of Bangladesh Accreditation Council (BAC)

The Bangladesh Accreditation Council Act, 2017 created the Bangladesh Accreditation Council (BAC). In March 2017, the Bangladeshi Jatiyo Shangsad (Parliament) enacted the Bangladesh Accreditation Council Act, 2017. In June 2019, the Chairman and four full-time Council members have been appointed. The Bangladesh Accreditation Council (BAC) is tasked with promoting and ensuring quality assurance in higher education in Bangladesh. It implements the national qualifications framework (NQF) and accredits academic programs and institutions. The BAC sets quality standards at the academic program and institution levels and collaborates with regional and international quality assurance agencies for international recognition. Improving the quality of higher education is essential for Bangladesh's sustainable socioeconomic development and laying the foundation for globalization.

BAC looks after promoting quality assurance and accreditation standards in higher education institutions, providing guidance, consultation, and training. Also, BAC's major activities include accrediting higher education institutions, issuing certificates, organizing training, promoting accreditation, initiating international recognition, implementing NQF, and performing other accreditation-related functions. (2023)

5. Preparation of Bangladesh National Qualification Framework (BNQF)

The Bangladesh National Qualifications Framework (BNQF) consolidates education into a unified system, promoting lifelong learning and enhanced employability through adaptable qualifications, recognition of prior learning (RPL), and credit transfer mechanisms. (Poutiainen, 2021) The University Grants Commission has established the Bangladesh Accreditation Council's national qualifications framework for higher education, providing valuable insights and upholding international standards within Bangladesh's education system. (Abdullah, 2023)

The BNQF introduces Outcome-Based Education (OBE) for post-higher secondary qualifications, integrating knowledge, content, and skills, enhancing accessibility, connectivity, and recognition in the educational system. Another noteworthy aspect is that the BNQF explicitly highlights the need to give special attention to various quality assurance (QA) domains in order to foster a culture of QA. These QA domains encompass a wide spectrum, including (i) Governance; (ii) Leadership; (iii) Responsibility and Autonomy; (iv) Institutional Integrity and Transparency; (v) Curriculum Development; (vi) Teaching, Learning, and Assessment; (vii) Student Admission and Support Services; (viii) Faculty and Professional Staff; (ix) Facilities and Resources; (x) Research and Scholarly Activities; and (xi) Monitoring, Evaluation, and Continuous Improvement. Furthermore, there is an opportunity to expand the scope of QA measurements. This could encompass aspects such as Program Educational Objectives and Outcomes, the Transfer of Credit and Recognition of Prior Learning, as well as Collaboration with Industry. (Hassan, 2022)

6. The Case of the American International University-Bangladesh towards Quality Assurance – A Breakthrough

A Quality Assurance system with a clear structure and a collection of relevant tools has been in practice at AIUB since the establishment of the University. The institution was able to create a framework and instruments for QA that would complement current procedures of government, local and international quality assurance, and accrediting agencies.

The beginning of QA activities formally started in 2007 when the Asia Pacific Quality Network (APQN) jointly hosted a conference at Sonargaon Hotel in Dhaka, Bangladesh on quality assurance, attended by heads of private universities and representatives of 11 South East Asian countries with experience of program accreditation. The following year, the International Association of Universities (IAU) granted funds to AIUB to participate in a pilot project on Leadership Development for Higher Education

Reform (LEADHER). The project provided opportunities for the university's senior officials and the chair of the UGC to visit organizations in the Philippines like the Philippines Accrediting Association of Schools, Colleges and Universities (PAASCU) and Adamson University that are actively engaged in accreditation. (Villanueva & Haque, 2013)

In 2008, to carry out the task and the many activities it will entail in the quality assurance and accreditation process, the university established the AIUB Quality Assurance Center (AQAC) comprised of faculty and staff from different departments of the university. The university decided to have its academic programs accredited through PAASCU. Different activities were undertaken by the management for the first academic program international accreditation in Bangladesh. includes building staff awareness and understanding of the importance of quality assurance and accreditation. The process began in earnest with a preliminary visit from external assessors to formally assess the Faculty of Business Administration, following an intensive internal assessment. After three years of rigid process, the university was granted full accreditation for its MBA/EMBA Programs. Later, other academic programs underwent an international accreditation process with PAASCU. Besides international accreditation, the Engineering and Architecture programs were accredited by local bodies, the Institution of Engineers, Bangladesh (IAB) and the Institute of Architecture, Bangladesh (IEB), respectively. (Lamagna et al., 2017)

While maintaining the accreditation status of its academic programs, AIUB's leadership decided to submit its management operation system to certification under the International Organization for Standardization (ISO) 9001:2008 standards. Again after a rigorous process, AIUB Management System achieved ISO 9001:2008 Certification by SGS-UKAS in 2014.

The Government of Bangladesh understood the importance of Quality Assurance in Education and to ensure the sustainability of QA they initiated a project named Higher Education Quality Enhancement Project (HEQEP) through the University Grants Commission of Bangladesh (UGC) and the Ministry of Education funded by the World Bank. In 2015, Under this HEQEP project, the Government made it compulsory to establish a cell named "Institutional Quality Assurance Cell (IQAC)" in every university in Bangladesh. Since AIUB had a fully functioning cell from 2008, the AQAC was transformed into AIUB-IQAC in January 2015 and continued till June 2018 under the project. Nine program entities conducted self-assessments, external peer reviews and prepared improvement plans as part of the project, over a period of three years. Since July 2018, AIUB-IQAC has become a regular part of the University.

AIUB has completed a research project on internal quality assurance (IQA) of higher education with the International Institute for Educational Planning (IIEP), UNESCO. The major objective is to document innovative and effective IQA systems, to study their effects, and to identify the factors that condition their effectiveness. A book on the different case studies was published by UNESCO-IIEP in 2017. To internationalize education, AIUB has worked with the International Association of Universities (IAU) on a project named Internationalization Strategy Advisory Service [ISAS]. This project became a platform bringing together institutional leaders and key officials to further expound and convey their perspectives and experiences on the internationalization issues and concerns and to continue bringing about change in the values and knowledge as universities continue to explore and implement the tenets of internationalization.

The commitment of AIUB Management for assuring and maintaining quality education is too strong to break. As a result, AIUB was awarded the "Asia Pacific Quality Network (APQN)'s Best/Model Internal QA Award" for the year 2016. This was not only an honor for AIUB but for the whole academia in Bangladesh. This is an award to institutional members who have committed to quality assurance mechanisms and quality culture building. (Lamagna et al., 2020)

AIUB has achieved membership in various organizations for quality assurance and accreditation activities such as Asia Pacific Quality Network (APQN), Council for Higher Education Accreditation – CHEA International Quality Group (CHEA-CIQG), Magna Charta Univeritatum, Association to Advance Collegiate Schools of Business (AACSB), Accreditation Council for Business Schools and Programs (ACBSP), Times Higher Education (THE) and many others. AIUB is QS-Asia, THE-Impact, WURI, and SCIMAGO Ranked University. In World Universities with Real Impact (WURI) 2023 Ranking, AIUB ranked top in the Fourth Industrial Revaluation category among all the participating universities from Bangladesh and 17th in the world. AIUB is also ranked top among all the participating universities from Bangladesh and ranked 73rd in the World for SDG 8: Decent work and economic growth of the Times Higher Education (THE) Impact Ranking 2023. AIUB is looking forward to going further in International Accreditation, Rankings, Projects, and Accreditation under the Bangladesh Accreditation Council (BAC).

7. Present Scenario

Bangladesh has experienced significant growth in its higher education sector, with the establishment of numerous public and private universities and colleges across the country. This expansion has increased access to higher education for a growing number of students. According to the University Grants Commission of Bangladesh (UGC), currently, there are 54 Public Universities, 112 Private Universities, and 03 International Universities doing the noble and significant task of providing Higher Education in Bangladesh. As the educational landscape of Bangladesh is becoming competitive and evolving in new dimensions, the UGC is

keeping pace by monitoring and evaluating all the universities through a regular and extensive reporting process. With hand to hand with UGC, BAC has started working on a rigorous accreditation process for higher education institutions, institutional quality Assurance, continuous improvement of the accredited institutions through feedback and recommendations, International Recognition by aligning with international quality assurance standards, capacity building by providing training and workshops to institutions and promoting innovative teaching and research practices in higher education.

The Board of Accreditation for Engineering and Technical Education (BAETE) is a significant regulatory body in Bangladesh responsible for accrediting engineering and technical education programs offered by various institutions in the country. BAETE plays a pivotal role in ensuring that engineering and technical education in Bangladesh meets international standards and maintains high quality. Also, The Institute of Architects Bangladesh (IAB) is a professional organization dedicated to promoting the architectural profession and the quality of architectural practices in Bangladesh. It serves as the primary governing body for architects in the country, and its mission is to advance the field of architecture through education, research, advocacy, and collaboration.
By releasing the importance of Medical Education and taking it to the next level, the Government of Bangladesh has announced to establish a Medical University in each division of Bangladesh. Moreover, in 2018, "The Strategic Plan for Higher Education in Bangladesh: 2018-2030" was prepared by UGC by emphasizing six areas: Vision, Mission, and Direction; Governance; Quality; Future Funding; Research, and ICT and has provided a detailed and phase-wise implementation plan. The plan aimprograms andonalize the Bangladesh Accreditation Act 2017, create a Higher Education Commission, increase government funding, establish a world-class flagship university, improve management of National and Bangladesh Open Universities, ensure merit-based faculty recruitment, enhancing financial management, introducing scholarship programs, and creating an ICT strategy for each HEI.

8. Conclusion

Quality assurance in academic programs and academic institutions has become a national concern and primarily the educational institutions to enable them to respond to the emerging challenges taking place in our society. The initiative and interest in having the quality assurance process, academic programs accredited, and eventually the entire university system are inherent and emanate from within the university. Compliance with the mandated policy of the government through the Ministry of Education, University Grants Commission, Bangladesh Accreditation Council, and other bodies is very important. It is necessary that the objectives and benefits derived from the process should be made very clear, acceptable to the entire academic community, endorsed by the top management of the university, and the willingness of the management to face the challenge. These are the conditions that the American International University-Bangladesh (AIUB) adhered to and acknowledged without reservation for quality assurance and accreditation.

The IQACs established under HEQEP through the University Grants Commission (UGC) have been instrumental in creating a culture of quality in higher education institutions in Bangladesh. They have helped institutions identify and address areas for improvement, enhance teaching and research quality, and ultimately contribute to the overall development of the education sector in the country. Bangladesh Accreditation Council (BAC) started activities to contribute significantly to the improvement of universities in Bangladesh by ensuring quality, promoting excellence in education, and enhancing the international recognition and competitiveness of Bangladeshi higher education institutions through Accreditation. Bangladesh National Qualifications Framework (BNQF) is an essential component of the country's efforts to promote education, skills development, and human capital development. It contributes to national development by improving the quality of education and training, aligning qualifications with labor market needs, and promoting inclusivity and mobility. These efforts collectively contribute to economic growth and the overall well-being of the population, as education is not only a requirement for a nation, a quality education is the right of the citizens.

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TRANSFORMATIVE EDUCATION: QA SOLUTION FOR CROSS-BORDER EDUCATION

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Abstract
Higher education sector in Bangladesh is facing significant challenges with respect to global immersion in the 21st century education. Academics and students are struggling with inadequate resources, lack of professional development training, innovative teaching and learning tools, technology, research, opportunities for interactive learning, creativity and quality assurance in assessment. Application of Agile, scrum tools in education could be effective in creating a student-focused learning ambience fostering collaboration and active learning. This study presents the results of Scrum application in both graduate and undergraduate level courses in civil engineering field in Bangladesh to demonstrate the efficacy of the approach. Scrum framework was applied and weekly submissions of content statements, velocity charts, burn up charts etc were assessed. Student engagement was evident through their deliverables, pace tracking, >50% - 100% completion frequency and submission of status. Student feedback revealed >70% acceptance level while transformation was visible through enhanced communication, better accountability, collaboration, increased participation, responsiveness etc. By embracing Agile in education, Bangladesh can create a more dynamic and relevant teaching and learning environment preparing students for the rapidly changing world. Apart from contextual application, scaling across and beyond the classrooms is necessary to increase the frequency of exposure to the innovative teaching and learning methods.

1.Introduction

1.1 Background

Higher education in Bangladesh has grown significantly in terms of enrolment, diversity, and accessibility, but it still faces many problems that affect its quality, relevance and impact. Inadequate budgetary support from the Government on education and non-existence of good governance continue to hamper the implementation (Chowdhury et al., 2020). Globalization, technology, and information access have enabled student mobility for higher education, but also caused a brain drain and affected Bangladesh's economy and education quality (Rahman & Khan, 2007). The quality of teaching is poor in some institutions, due to a lack of qualified teachers, inadequate resources, and outdated teaching methods. There is a lack of professional development opportunities for teachers to update their knowledge and skills on 21st-century pedagogy, assessment, curriculum, technology, and research. There is also a lack of incentives and recognition for the teachers who adopt innovative and effective teaching practices (Chowdhury et al., 2020, Monem and Baniamin, 2010).

There is also a lack of quality assurance and accreditation mechanisms to ensure that the standards of education are maintained (Monem and Benjamin, 2010). The curriculum and pedagogy are not aligned with the needs of the labour market and society, resulting in a mismatch between the skills and competencies of the graduates and the demands of the employers and stakeholders (Ehsan, 2021) as they are mostly based on rote learning, memorization, and examination-oriented approaches. There is a lack of formative and summative assessment tools and methods that can capture the students' higher-order thinking skills, such as critical thinking, problem solving, decision making, creativity, and metacognition (Chowdhury et al, 2020). There is a lack of student-centred learning environments that can cater to the diverse needs, interests, abilities, backgrounds, and aspirations of the students.

Innovative and effective teaching and learning approaches such as Agile teaching and learning methodology, collaborative learning can significantly improve the quality and relevance of Bangladesh's higher education in the context of 21st Century Education. Agile framework encompasses solving problems and completing tasks in increments through self-organized and cross-functional teams (agilemanifesto.org) while Scrum is the most widely used tool for agile application as a project management methodology originated in early 1990's (Schwaber and Sutherland, 2020). Group collaboration is a process of working together with others to achieve a common goal, encompassing communication, coordination, cooperation, and conflict resolution (Johnson & Johnson, 1999). Flipped learning, or "flipping the classroom," is an approach that reverses the traditional order of instruction, requiring students to access online materials before class and engage in active learning activities during class (Hwang et al, 2015; Uddin et al 2019).

These pedagogical approaches have been demonstrated to offer numerous benefits for higher education, such as increased student engagement, motivation, autonomy, creativity, problem-solving skills, critical thinking skills, self-regulation skills, and academic performance (Chen et al., 2018; Hwang et al., 2015; Lo et al., 2017; Prince, 2004). Additionally, those assist students in developing the competencies and attitudes necessary for the future workforce, including collaboration, communication, innovation, adaptability, resilience, and lifelong learning (Binkley et al., 2012; World Economic Forum, 2016). The introduction of Agile methodologies in the education system of Bangladesh can bring about significant positive changes by making teaching and learning more relevant to the needs of students. Agile methodologies can reshape the assessment process by focusing on continuous evaluation rather than relying solely on high-stakes exams through formative assessments, portfolios, and project-based evaluations providing more comprehensive view of students' skills and knowledge (Condon et al. 2016; Nellums, 2021).
With such promising scope and opportunities of Agile in education, this study aims to demonstrate the application of Scrum in both undergraduate and graduate courses of civil engineering field in Bangladesh to bring out the efficacy and further potential of such initiative addressing the existing challenges and gaps in the education system.

1.2 Motivation for Scrum in Higher Education

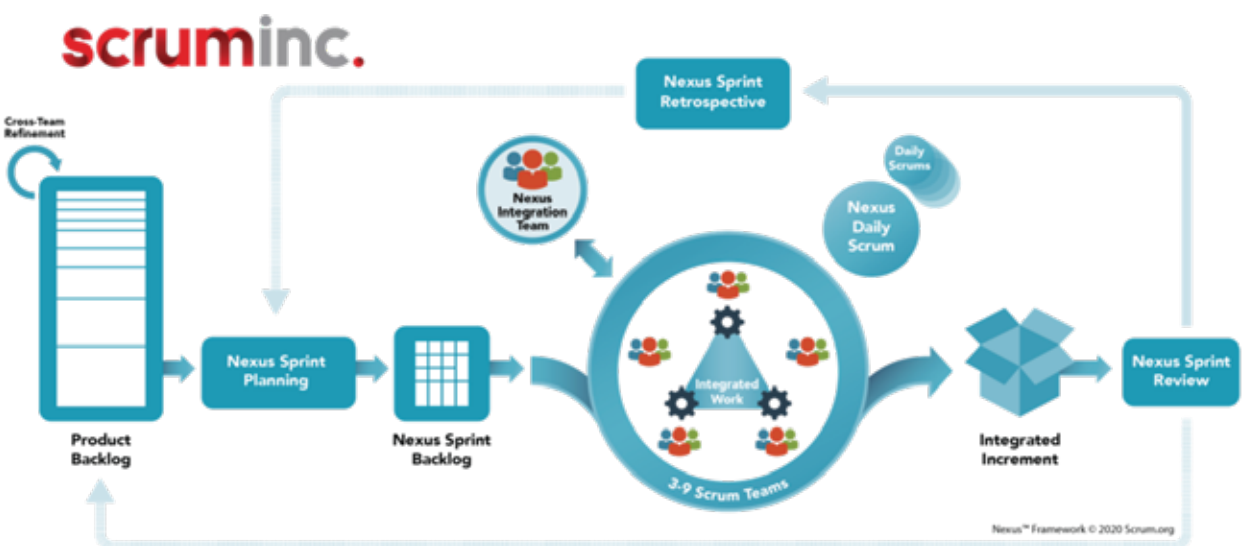
With the growing needs in preparing the students better for future struggles, Agile in education presents itself as an attractive application. Agile in Education essentially embraces the components and the elements of the Scrum framework emphasizing collaborative and active learning mainly(agileineducationus.com). Scrum is one of the widely used tools for implementation of Agile framework consisting of three roles (Schwaber and Sutherland, 2020): Product owner, communicating and fixing the goal of the team, Scrum Master, facilitating the team in achieving the goal and the Development Team, delivering the output within the stipulated time frame.

In Bangladesh, Agile in Education and Scrum methods were conceptually introduced through the 2nd Agile in education Global Virtual Conference in the year 2021 with the theme "Transforming Education through Innovative Solutions". Experts in the fields of Agile in Education and Scrum presented the efficacy of the concepts and demonstrated how application of these methodologies could potentially tackle the academic challenges globally. This was the stepping stone towards launching Agile in Education in Bangladesh initiated by the platforms Agile in Education USA.. Since then, a few prominent academics, including Prof. Nehreen Majed, Prof. Farid Sobhani, Prof. Khawza Ahmed, and Prof. Nazmun Nahar, earned the credential of Registered Scrum Master credentials through Agile in Education USA trained by Prof. Hana Siddiquee.

2. Methods

2.1 Applied Tools and Techniques for Effective Outcomes

The framework for application of Scrum and Scrum@Scale of Scale is demonstrated in Figures 1a and 1b respectively.



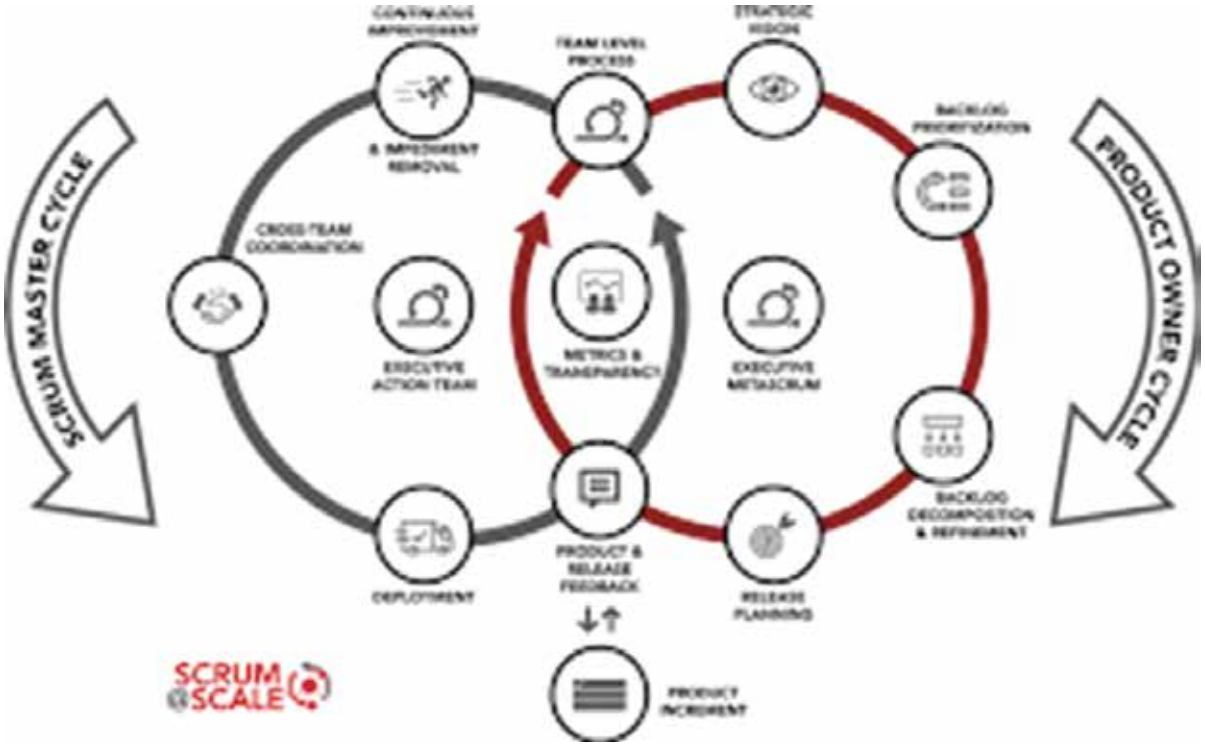


Figure 1: a) Scrum framework, Agile in Education USA (https://bd.agileineduc) ; b) The Official Scrum@Scale Guide, Scrum Inc. (https://www.scrumatscale.com/scrum-at-scale-guide/)

Since this initiative is different from project application and delivery approach with Agile, for implementation in education, the roles and elements were distributed as follows:
·Agile and Scrum Trainer and Coach: Hana Islam Siddiquee
·Product owner: The Course Instructor
·Scrum Master: The Instructor (Usually the team captain is the ideal person to play this role, however the transition to this approach requires the instructor to facilitate so that students are properly oriented to this method
·The Development Team: The Students' team

Several undergraduate and post-graduate (3-4) courses (theory/projects/thesis) were chosen to apply scrum for consecutive two semesters. Deliverables included weekly statements, velocity and burn up charts. Assessments were based on completeness and group participation in submissions. Weekly feedback were accomplished and students' feedback on the perceptions on the approach were collected via questionnaire survey on the effectiveness of the group discussion and collaboration on their preparations, course related activities, performances, attainment of learning outcome etc.

2.2 Ice Breaking

•Bringing the students on board: Transformation is always challenging while it involves the disruption of comfort zone. It was facilitated by asking the students about the problems they faced or anticipated in mastering or capturing a topic.

•Tackling the pacing: Pacing is important for the delivery of content and to expect the students to deliver their learning outcomes. Variabilities emanated from the non-homogeneity in the target group and certain steps of the Scrum framework required multiple iterations to obtain satisfactory level of implementation.

•Involving the students: Involvement in any activity requires motivation to change the mindset. With reference to application, when students were asked about the "Why" and the "What" of a project, they felt compelled to reflect their understanding on their chosen topic and the rationale behind the project.

2.3 Measurement of Progress

• Making the stories: When the students were asked to provide the stories, they were not certain what to formulate. This dilemma made them to think and come up with explanations on what they really understood and why they were studying a certain topic triggering them to formulated better statements.

Literature Review

Learner autonomy is a crucial concept in language education, as it empowers learners to take control of their own learning process. In the context of Bangladesh, where English language learning has significant importance, understanding the role and prospects of teachers in fostering learner autonomy is essential. This paper explores the findings of several studies related to teacher contributions and challenges in promoting learner autonomy in English language classrooms in Bangladesh.

Teacher perspectives on learner autonomy are essential in understanding the dynamics of language education. Many educators recognize that encouraging autonomy among students can significantly accelerate their language learning journey. They view learner autonomy as a way to fulfill the specific needs of language learners and enhance overall language proficiency. Yasmin and Sohail (2018) conducted a study that emphasized the close relationship between learner autonomy and English language learning. Teachers believed that encouraging autonomy among learners can accelerate language acquisition. According to their findings, learner autonomy fulfills the perceived needs of foreign language learning and ultimately contributes to improve target language proficiency.

Tran and Vuong (2022) highlighted elements that both facilitate and hinder students' capacity to study English independently. Teachers' viewpoints were noted as crucial factors influencing learner autonomy. The study underscored the significance of supportive learning environments, intrinsic motivation, learning preferences, and technological advancements in promoting autonomous learning.

Challenges in teacher efforts to promote learner autonomy can be multifaceted. Teachers may face resistance from students who are accustomed to more traditional instructional approaches. Balancing autonomy with the need for structured guidance can be challenging, as teachers must provide enough freedom for learners to make choices while ensuring that they stay on track. Inozu (2011) provided insights into the challenges faced by teachers in their efforts to develop learner autonomy. In a case study, it was found that the teacher's attempts to foster autonomy were disappointing for both the teacher and the learners. The teacher's methods caused discomfort and anxiety among students, negatively impacting their self-esteem. This case study illustrates the need for teachers to adopt effective strategies in promoting autonomy while ensuring a positive learning environment.

When participants acknowledged the importance of learner autonomy in English vocabulary learning, their interest and behavior did not align with this awareness (Tran, 2020). His study suggests that teacher efforts to instill learner autonomy may face resistance from students who may not fully engage with autonomous learning practices. It highlights the importance of addressing affective and behavioral aspects to encourage autonomous learning.

Enhancing English proficiency through learner autonomy empowers students to take control of their language learning journey. By encouraging self-directed learning, setting personal goals, and making independent choices about study materials and methods, learners become more engaged and motivated. Research of Melvina and Julia 2021) revealed that various variables the research model had a significant relationship. Technical, psychological, and political factors positively influenced English proficiency, while sociocultural factors did not. This underscores the importance of promoting learner autonomy to improve English language proficiency, suggesting that both teachers and students should be equipped with learner training to become more autonomous learners.

In the context of Bangladesh, where English language learning is highly valued, understanding the role and prospects of teachers in fostering learner autonomy is essential. The studies reviewed in this literature review demonstrate the importance of teacher perspectives, supportive learning environments, and effective strategies in promoting learner autonomy. Additionally, addressing challenges and resistance to autonomy among students is crucial for successful implementation. Ultimately, the cultivation of learner autonomy has the potential to accelerate language learning and improve English proficiency in the context of Bangladesh.

Methodology

As methodology, this paper follows mixed method approach including quantitative and qualitative data analysis. The study is mainly based on primary data from teachers as respondents based on their perception about learner autonomy and their obstacles while implementing the method in classrooms. In order to reach the goal, first a structured questionnaire has been administered among 50 ESL/EFL teachers. The survey questionnaire has been thoughtfully designed for two objectives. Firstly, the analysis of these questionnaire will bring forth the challenges faced by the teachers while implementing learner autonomy. Secondly, the analysis will provide a thorough survey on the teachers' knowledge about the concept of learner autonomy as well as their knowledge on generating materials for conducting learner autonomous classes. After

comprehensive analysis of these quantitative data, the personal hurdles of teachers as well as their experience in implementing learner autonomy will be systematically explored.

Due to time constraint, the second part of the survey methodology could not be conducted yet for this paper. However, the second part of the survey was the qualitative method which included in-depth interviews with EFL/ESL teachers. These interviews were designed to bring out the personal experiences, pedagogical practices, and innovative strategies employed by the teachers in learner autonomous classrooms. Focusing only on the quantitative part of the survey will give a partial view to reach the desired goal of this paper. However, interview data are being gathered to complete the research after the presentation of this partially complete paper in the conference. It is expected that the final analyzed data combining both quantitative and qualitative data will help to generate a concrete idea about the current perception of learner autonomy in Bangladeshi pedagogical context. We are assuming that in the long run, these received data will help to foster learner autonomy in Bangladeshi context by overcoming the challenges faced by teachers.

Findings and Discussion

Table 1: Teachers' Ideas and Expectations about Learner Autonomy

	Strongly Disagree %	Disagree %	Unsure %	Agree %	Strongly Agree %
1. Learner autonomy is promoted when learners are involved in making decisions about the objectives of a course.	3.2	16.7	6.5	56.7	16.7
2. Learner autonomy is promoted when learners can make choices about the topics or content of learning.	3.2	23.3	10	53.3	10
3. Autonomy is encouraged when learners have the freedom to choose classroom activities that align with learners' personally relevant goals	3.2	13.3	10	60	13.3
4. Autonomy means that learners can make choices about the methods and approaches in which they learn.	3.2	20	16.7	43.3	16.7
5. Learner autonomy is promoted when learners have the freedom to decide how their learning will be assessed.	10	50	10	30	
6. The most effective way to develop autonomy is learning outside the traditional classroom settings.	3.3	16.7	13.3	46.7	20
7. Learner autonomy means learning without the guidance of a teacher.	13.3	53.3	6.7	23.3	3.3
8. Learner autonomy entails a rejection of conventional teacher-centered teaching methods.	3.3	33.3	10	43.3	10
9. Individuals who lack autonomy tend to be less successful as language learners than their autonomous counterparts.	6.9	10.3	20.7	48.3	13.8
10. Language learners of a more advanced age tend to find it relatively simpler to cultivate self-directed learning abilities compared to their younger counterparts.	6.5	10	6.7	60	23.3
11. The proficiency of language learners does not affect their ability to develop autonomy	3.2	38.7	22.6	29	6.5
12. Confident language learners are more likely to develop autonomy than those who lack confidence.		3.2	3.2	54.8	38.7
13. Motivated language learners are more likely to develop learner				41.9	58.1

Table 1 illustrates Bangladeshi EFL teachers' ideas and expectations related to learner autonomy. Various models of learner autonomy revolve around the notion of learners' capacity and freedom to strategize, execute, monitor, and assess their own learning experiences (Littlewood, 1996; Macaro, 2008; Benson, 2001; Little, 2020). In the context of the present study, majority of the respondents agreed on the notions that learner autonomy is promoted when learners are engaged in making decisions about the objectives of a course (56.7%), about learning content (53.3%), classroom activities (60%), teaching methods and approaches (43.3%). However, the survey illuminated the respondents' reservations regarding the notion of learners' freedom in deciding how their learning will be assessed as majority (50%) disagreed on this point. While the majority of survey respondents (46.7%) endorsed the notion that fostering learner autonomy is best achieved through non-traditional learning environments outside the classroom, the majority of teachers surveyed disagreed with the idea that learner autonomy entails learning independently without teacher guidance. Different other researchers have also recognized the importance of teacher role, although not of the traditional kind, in promoting autonomous learning. Multiple research findings propose that teachers should take on roles as facilitators, advisors, and resources, rather than assuming the traditional role of classroom controllers (Benson and Voller, 1997;Weiyuyan, 2002; Rongmei Yu, 2020). Learner autonomy is reported to be closely interwined with various other aspects of learners, including high motivation, openness to communication, self-belief influencing language learning outcomes, the ability to step back and reflect critically, make informed decisions, and engage in self-directed learning (Dickinson, 1995; Ushioda, 2006; Little, 2007; Brown, 2007; Raya et al., 2020). Majority of the survey participants in this research supported the view that learner autonomy has positive correlation with learners; advanced age (60%), higher proficiency level (38.7%), self- confidence (54.8%) and high motivation (58.1% strongly agreed). However, while the majority (48.4%) of the survey participants in this study believe learner autonomy to be negatively corelated with cultural factors, Numerous scholars attributed the challenge of fostering learner independence in Asia to cultural factors. In this context, students might perceive teachers' attempts to promote learner autonomy as a disregard to their traditionally expected roles (Illés, 2012). Finally, table 1 shows that learner autonomy has significant positive correlation with one's success as a language learner. When learners believe they have the agency to make choices about how they learn English and can do so in their preferred manner, they are more inclined to cultivate a genuine passion for learning the language, as opposed to feeling obligated to do so.Click or tap here to enter text.(Dang, n.d.)

Conclusion and Recommendation

There are numerous significant areas where there are difficulties implementing learner autonomy in Bangladeshi tertiary-level EFL/ESL classes. First, there is a lack of familiarity among students with learner-oriented classrooms, prompting a review of the elementary and secondary education system to introduce this strategy sooner. Second, to encourage active engagement, it is important to overcome the shyness and performance anxiety that prevent students from engaging in independent learning. The concept of learner autonomy needs to be explained clearly and guided effectively, and it also calls for assistance in choosing the right materials and navigating autonomous learning. Motivation can be increased by encouraging students to take on responsibility through project work, and by varying the activities students participate in. As for example, through group presentations and free writing exercises the teachers can better meet their interests. Effective facilitation and lowering dependency require teacher training. Recommendations for the success of learner autonomy can be listed as follows:

1.Revision in Education System: Revising the primary and secondary education system to introduce learner autonomy at an earlier stage is crucial.

2.Student Orientation: Offer orientation programs to help students to understand the benefits and challenges of autonomous learning, reducing fear and hesitation.

3.Criteria for Material Selection: Establish criteria for students to select their own learning materials, empowering them to choose materials aligned with their interests and needs.

4.Diverse Activities: Implement various learner-centered activities to cater to individual interests, increasing motivation and engagement.

5.Teacher Training: Provide training opportunities for teachers to equip them with the skills and knowledge necessary to facilitate learner autonomy effectively.

6.Innovative and Interactive Classrooms: Foster innovative and interactive classrooms with supportive, dedicated, and approachable teachers, creating an environment conducive to autonomous learning.

In summary, challenges faced by teachers is a major concern in implementing learner autonomy in tertiary-level EFL/ESL classrooms in Bangladesh. By addressing these challenges and embracing these prospects, educators can help students to develop the critical skills of independence, motivation, and confidence essential for successful language learning.

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Appendices

1.Questionnaire (Can be provided upon request)
2.Interview questions (Can be provided upon request)

SOFT SKILL DEVELOPMENT: PERCEPTION, AWARENESS AND CHALLENGES AMONG PRIVATE UNIVERSITY STUDENTS IN BANGLADESH

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Abstract
In this modern era, due to shifts in the economy, employers are increasingly prioritizing employees with practical, hands-on skills over those with primarily theoretical or cognitive abilities. Soft skills are extremely important for students and recent graduates because they significantly impact job prospects and overall success in one's career. While the job market is getting inflated by the entrance of huge number of graduates every year, many organizations are compelled to administrate with vacancies in multiple positions due to a lack of quality graduates. This emphasizes the significance of soft skills in employability. As such, a quantitative study with 76 respondents from different private universities in Bangladesh has been conducted which sheds some light on graduate and graduating students' perceptions and awareness about soft skills. The findings indicate that the community is aware of soft skills, rates their soft skills highly, but predominantly considers communication as the only soft skill. They aspire to enhance their engagement with teachers and mentors, and the absence of such interaction leads to their reluctance to engage with others. These results have practical significance for institutions, teachers and administrators seeking to enhance higher education by facilitating soft skills development, thereby enhancing students' job prospects, and contributing to the attainment of Sustainable Development Goals.

Key words: Soft skills, cognitive abilities, awareness, communication, employability.

1. Introduction

Soft skill is one of the most used terms among employers, employees, and academicians worldwide. As time is changing rapidly, so are the responsibilities of various jobs. As such, recruiters attempt to select candidates who mostly comply with modern necessities. Through a number of diverse tests, candidates' attributes are put to the test. Hard and soft skills are required to pass the tests and stand out for a candidate to earn the desired job. Furthermore, soft skills are an absolute necessity to excel in the professional culture. Soft skills are non-technical in nature (Marin-Zapata, et al., 2022). Moreover, soft skills are mostly referred to as personality traits. Such skills are developed through practice, personality development over the years, motivation, and individual intelligence (Marin-Zapata, et al., 2022). Since soft skills are considered attributes, it is difficult to measure. However, numerous skills are included in soft skills such as communication skills, teamwork, leadership skills, problem-solving skills, and time management (Nusrat & Sultana, 2019).

The job market for graduates in Bangladesh is currently saturated. Along with the population of the country, the number of unemployed graduates is increasing significantly. It is reported that while 2.2 million youths are entering the job market each year, nearly one-third of them are graduates (Pieal & Hossain, 2023). In contrast, many organizations have 10-15% vacancies, but cannot find eligible employees (Nusrat & Sultana, 2019). Lack of soft skills is considered among many of the factors affecting the graduates' employability.

Consequently, it is essential to explore if the graduates and soon-to-be graduate students are aware of the importance of soft skills to acquire and excel in their desired job positions. In addition, assessing how the said community views soft skills is crucial. As such, the research aims at finding out the perception of students about the role and importance of soft skills, and the opportunity they get to develop and practice their soft skills. The challenges they face are also addressed in the paper.

Employability requires a set of skills, knowledge, understanding, and personal attributes that make a person more likely to choose and secure occupations that make them satisfied and successful (knight & Yorke, 2004). Soft skills play a positive role in one's employability (Weinberger, 2014). It is proven through global studies that people struggle to fulfill their job requirements in the

absence of soft skills (Tseng, et al., 2018). To ensure a job and stand out from the competitors, one has to add merits to their hard skills which are known as soft skills. To have better employability higher education students require educators who can develop students' both hard and soft skills (Qizi, 2020). Nowadays competence is not only restricted to technical skills. The synergy of knowledge, personal attitudes, and abilities, skills are generally marked as competence (Qizi, 2020). Soft skills are known as transferable skills because they are not compatible with a specific job. Such skills help students to adapt to new situations. In this dynamic economic condition, considering the complex workplace, hard skills alone are insufficient for future employees (Qizi, 2020).

The major stakeholders of higher study students who can help them pursue soft skills are universities. A study conducted in Bangladesh's perspective found a gap between the business curriculum and industry expectations from fresh business graduates (Nusrat & Sultana, 2019). To have better employability, higher education students require educators who can develop students both hard and soft skills (Qizi, 2020). Researchers suggest that students' soft skills should be pursued through their curriculum activities (Tseng, et al., 2018). Along with developing technical skills, universities should develop students' soft skills for better employability (Yao & Tuliao, 2019). In order to ensure sufficient soft skills, universities must be cautious while developing the soft skills of the students who belong in different branches. The authority also has to make sure that the skills are transferable to any situation (Qizi, 2020). Classroom-based strategies such as group work, case studies, managing projects, and class presentations can develop students' communication, negotiation, critical thinking, English proficiency, and cultural competency skills (Yao & Tuliao, 2019). Training guides usually ask for recorded presentations of students to improve communication by seeing the recorded video as presentation skills are fundamental skills that should be taught, as communication skills (Otermans, et al., 2023).

As per existing researches, the students who are entering into labor market in current days have unsatisfactory levels of soft skills which is not welcoming for both their own career and job market (Qizi, 2020). Higher education is not only suggested to develop students' soft skills but also to help students develop coping mechanisms for the turbulent market (Jackson & Wilton, 2017). As per the individual's perception modern economy requires the soft skill "learn how to learn" (Carnivale & Smith, 2013). Increasing students' awareness and motivation to learn soft skills can be challenging. Although in general it is assumed that students and graduates will initiate to develop their own employability, support from universities and employers can strengthen job readiness and employability (Yao & Tuliao, 2019).

Extra-curricular activities help to develop soft skills (Munadi, et al., 2021). Christy Lleras (Ciciora, 2009) defines. Outside the classroom, scopes are encouraged to enhance professionalism and soft skills. Some networking events and conferences are welcome to be arranged as year-end projects for the final-year students. These activities would increase the students' networking skills. These networking skills will help students to be resilient in their workplaces (Otermans, et al., 2023). According to research, soft skills include the ability to socialize, punctuality, awareness, and the ability to get along with other people (Munadi, et al., 2021). Thus, such skills one to manage emotions in the workplace which demonstrates professional behavior (Donnelly, et al., 2019). Listening to other team members feedbacks enhances the ability to take criticism positively which is why team working is important (L.Dania, et al., 2018). Students who have managerial experiences show higher levels of soft skills practices (Tseng, et al., 2018). Thus, managerial experiences motivate them to practice soft skills.

Although soft skills have drawn the attention of the researchers significantly, the students' points of views were not explored particularly in the context of Bangladesh. The thoughts of students on soft skills, their awareness, and especially what challenges they face while practicing and developing soft skills are yet to be investigated. Hence, the paper Therefore, this paper concentrates on delving into the students' own perception, awareness, and challenges with a view to contributing to the existing literature.

2. Methodology

This study restricted its sample to private university students in Bangladesh. Students were selected considering their different fields of study. Responses were collected online and in person. The students were selected using a convenience sampling method and a judgmental sampling method. The developed instrument includes 19 items. The main questions were related to the challenges of pursuing soft skills, awareness of students on soft skills, involvement of students in soft skills, and perception of the scope of learning soft skills of students. A few demographic questions were also asked. Respondents were asked to indicate to what extent they agreed that each item met their expectations on a five-point Likert scale and some on a three-point scale. The questionnaire was developed in English. Only one question was open-ended because analysis and interpretation of such a question can be complicated and subjective, a close-ended questionnaire was used to collect data from the respondents. Those who agreed to complete the survey were informed of the purpose of the study and assumed anonymity. After a quick screening of the interviewees' eligibility to complete the survey form. Half of the survey was filled online via using Google Forms and the other half was done in person. A total of 76 surveys were collected and all of them were accepted.

3. Findings and Discussion

3.1 Awareness

Soft Skills	Very Important (%)	Important (%)	Moderately important (%)	Less Important (%)	Not Important (%)
Communication	85.5	10.5	4.0	-	-
Teamwork	75	21.1	3.9	-	-
Time Management	76.3	17.1	6.6	-	-
Problem-solving and Critical Thinking	59.2	34.2	6.6	-	-
Leadership	51.3	38.2	10.5	-	-
Creativity	50	31.6	17.1	1.3	-
Interpersonal	46.1	36.8	17.1	-	-
Adaptability	39.5	43.4	15.8	1.3	-
Empathy and ability to understand others	36.8	43.5	19.7	-	-
Negotiation	30.3	42.1	22.4	3.9	1.3
Persuasion	26.3	43.4	26.3	2.7	1.3

Table 1: Respondents' awareness about soft skills for future career success

The respondents find communication skills the most important skill, with time management and teamwork skills following. None of the respondents find these three skills to be less important or not important at all. Leadership, adaptability, negotiation, and persuasion skills are recognized as less important and not important at all stages but the scale is very low. Lastly, a significant proportion of data responses fall into the "moderately important to very important" range, showing that both graduates and students consider soft skills as vital.

3.2 Self-Assessment

Soft Skills	Very Good/ Excellent (%)	Good (%)	Moderate (%)	Poor/ Weak (%)	Very Poor/ Very Weak (%)
Communication	44.7	35.5%	14.5%	5.3	-
Teamwork	53.9	32.9	11.8	1.3	-
Time Management	51.3	35.5	10.5	2.7	-
Problem-solving and Critical Thinking	38.2	43.4	17.1	1.3	-
Leadership	35.5	38.2	22.4	2.6	1.3
Creativity	34.2	46.1	15.8	2.6	1.3
Interpersonal	39.5	39.5	17.1	3.9	-
Adaptability	31.6	51.3	17.1	-	-
Empathy and ability to understand others	32.9	46.1	21.1	-	-
Negotiation	21.1	43.4	31.6	3.9	-
Persuasion	15.8	44.7	34.2	5.3	-

Table 2: Self-assessment of the respondents' soft skills

Most of the respondents regard their soft skills to be good or excellent. With teamwork being on top, time management and communication skills are the other two soft skills respondents believe in having mastery. However, the ability to negotiate and persuade is lower on the mastery scale. While many of the repondents believe to have excellence in the soft skills, most of them think that they are decent. The moderate scale has inconsequential respondents other than negotiation and persuasion skills.

3.3 Challenges

Understandably, the set of respondents has identified academic pressure, time constraints, and difficulty in managing both

Challenges	Extremely (%)	Highly (%)	Moderately (%)	Slightly (%)	Not at all (%)
Academic workload and pressure	26.3	32.9	32.9	7.9	-
Difficulty balancing Academics and Extracurricular Activities	25.0	40.8	31.6	1.3	1.3
Less participation in extracurricular activities	14.5	35.5	27.6	9.2	13.2
Quality of interactions with professors and peers	14.5	32.9	34.2	15.8	2.6
Lack of soft skills training programs or workshops	14.5	31.6	35.5	10.5	7.9
Insufficient Support and guidance from mentors or advisors	15.8	21.1	38.2	18.4	6.6
Lack of personal motivation and initiative	15.8	30.3	34.2	17.1	2.6
Family background and upbringing	17.1	19.7	35.5	17.1	10.5
Peer influence and relationships	14.5	26.3	40.8	11.8	6.6
Time constraints and difficulty in time management practices	26.3	31.6	30.3	7.9	3.9
Lack of access to resources (e.g., books, online courses, workshops)	10.5	26.3	34.2	23.7	5.3
Cultural or societal factors	18.4	34.6	28.9	14.5	6.6
Limited Opportunities for Practical Application	26.3	30.3	27.6	13.2	2.6

Table 3: Challenges faced by the respondents

academic and extracurricular activities as the main challenges. Furthermore, they say that they have limited opportunities to practice their soft skills in a practical environment. Their teachers, mentors, and advisors are thought to provide less support, direction, and opportunity for interaction.

3.4 Development Activities

Activities for development	Highly effective (%)	Effective (%)	Moderately effective (%)	Less effective (%)	Not effective (%)
Quality of classroom instruction	31.6	50.0	17.1	1.3	-
Extracurricular activities and clubs	39.5	42.1	18.4	-	-
Interaction with professors and peers	30.3	51.3	15.8	1.3	1.3
Internships or practical experience	55.3	28.9	14.5	1.3	-
Team or Group projects and Assignments	38.2	47.4	13.2	1.3	-
Personal motivation and effort	51.3	36.8	9.2	2.6	-
Active Listening	35.5	46.1	13.2	5.3	-
Goal Settings	52.6	34.2	11.8	1.3	-
Seminars and workshops	27.6	43.4	22.4	5.3	1.3
Volunteer opportunities	34.2	34.2	22.4	9.2	-
Soft-skill based courses or modules	28.9	43.4	21.1	6.6	-
Interdisciplinary collaborations	27.6	42.1	22.4	7.9	-

Table 4: Activities to develop soft-skills

The respondents indicated that gaining practical experience through internships or other means, setting goals, and putting up personal effort and motivation are the best ways to improve soft skills. They clustered extracurricular activities and clubs, and group projects and assignments in a similar region which might contribute to enhancing the soft skills. All of the methods are effective with only fractional of them being ineffective or less effective. A number of respondents have agreed that conducting seminars and

workshops, creating volunteer opportunities, incorporating soft skill-based courses, and collaborating between different disciplines might create opportunities for the students to develop their soft skills.

3.5 Discussion

Since the major challenge lies in academic workload and lack of balance between academic and extracurricular activities, they might have responded to increased classroom interactions. Mostly, they rely on their institutions to create more opportunities for them to flourish their soft skills. However, it should be appreciated that the respondents also emphasized their own efforts.

Most of the graduates and soon-to-be graduates have wished universities to develop various activities including increasing the scope of club activities, attending workshops and mentorship programs, and participating in competitions. They also desired extracurricular activities to focus on real-life problems and some role-playing activities. Some have requested to open soft skill-based courses and professional training. Surprisingly, a few graduates and soon-to-be graduates shared that they feel the development of their soft skills through research work and individual presentations. Graduates and soon-to-be graduates claimed that cultural events can make them pursue more soft skills. Also, different disciplinary initiatives can encourage graduates and soon-to-be graduates to interact with the different departments' graduates and soon-to-be graduates from where they would learn to work with more diversified student groups. On the other hand, a minor group of respondents think that learning soft skills is a waste of their time as it will not increase their grades.

Communication is a soft skill that is mostly valued by the respondents, and they rate highly themselves on it. However, the respondents have chosen activities to develop communication skills such as interaction with professors and peers, group projects, and active listening. As such, there might be a discrepancy in respondents' rating of their own skills. Such discrepancy might have appeared from the social acceptance behavior which demonstrates that a person might act to increase his acceptability and become biased. There is a correlation between awareness and rating by respondents. They have rated themselves high on the skills they perceive as important.

Along with fear and emotions, they have also talked about motivation. They are requesting seminars on motivation. The respondents also sought help from their faculty members. They expect their teachers to be more interactive. The respondents feel a gap in the student-teacher relationship which makes a student feel shy in class and ultimately it limits them to be a spoke person in the classroom.

4. Recommendation and Conclusion

Soft skills are in growing demand by employers due to their role in creating a more harmonious and socially connected work environment. Notably, a considerable number of recent and soon-to-be graduates have been candid about their sociability and emotions, which frequently mirror the sentiments of the majority. A prevalent issue among them is the apprehension related to public speaking and communication, and they aspire to overcome this fear and enhance their confidence through various activities. It is important to highlight that while effective communication and public speaking are vital components of soft skills, survey participants tend to excessively focus on these aspects, often neglecting other essential skills and the factors that either promote or hinder their development.

Many recent graduates or those on the cusp of graduation may not have a comprehensive understanding of the broader concept of soft skills, often mistakenly associating them solely with communication abilities. Therefore, there is a massive scope for the Universities to play a pivotal role in advancing students' understanding, awareness, and practical use of soft skills, while also addressing the challenges that students encounter during their efforts to cultivate these skills. Universities can infuse soft skills into students by embedding them within academic courses, motivating increased engagement in extracurricular pursuits, fostering cultural sensitivity, career counseling, establishing feedback mechanisms, and offering accolades for soft skill development, among other methods. Integrating soft skills into the university curriculum has the capacity to enhance the overall educational quality, thus rendering students more constructive assets in the job market. Moreover, academic institutions should offer faculty members training to adeptly integrate effective soft skills instruction into their teaching methods. Consequently, all these efforts can make a significant contribution to Bangladesh's progress in achieving its Sustainable Development Goals, specifically in the domain of ensuring high-quality education, promoting decent employment opportunities, and fostering economic growth.

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A STUDY ON THE EFFECTIVE USE OF TECHNOLOGY AS AN ALTERNATIVE COMMUNICATION SYSTEM DURING ALL TYPES OF CATASTROPHES: FROM A SUSTAINABLE PERSPECTIVE

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Abstract:
The COVID-19 pandemic has pushed the global population to conduct work, business, education, etc., via online technology/platforms. Therefore, this study focuses on the efficacy and efficiency of applying this technology in sustainable communication charters, particularly during the catastrophe period, particularly in the work and education sectors. Emergency Remote Teaching and Online Learning (ERTOL), Emergency Remote Official Services (EROS), Emergency Remote Meeting (ERM), Emergency Remote Government Instruction (ERGI), etc. are considered communicative charters. In this study, we understand the emphasis of this technology by comparing its effectiveness with the conventional way of communicating in the work and education sectors. We investigated and analysed the ERTOL dataset acquired from educational institutions for this research. Among the multi-dimensional aspects of this study, the main highlight is the beneficiaries and stakeholders within the realm of emergency remote activities. We conclude this study by identifying the functionality and practicality in the work and education sectors, along with the advantages and disadvantages of applying technology in multi-level fields, particularly during times of disaster.

Keywords: Emergency period; remote teaching; communication system; sustainable; multi-dimensional aspects.

1. Introduction

During any catastrophe, our standard life procedure social and community aspects are divested from the usual or general perception. Researchers revealed that community learning and development aims to develop the capacity of individuals and groups of all ages through their actions. During the catastrophe, the community development index and its details are crucial to sustain the community. Table 1 describes the fundamental parameters and indicators for the community development index (CDI) [13].

Due to the hazard of the COVID-19 pandemic, education institutions, including higher learning institutions, are facing decisions about continuing teaching and learning while keeping their faculty, staff, and students safe from a health disaster that is moving fast and not well-understood [7]. Most of the institutions have decided to terminate all theory classes, including sessional works in the labs and other academic activities, and have assigned that faculty's courses move to online platforms in order to help prevent the spread of the virus of COVID-19.

The Government has implemented the decision by the country's relevant agencies (e.g., UGC and MOE in BD). From the study, it was observed that the decision followed by all types of institutions, from higher learning to elementary, most of the offices and service-oriented organizations, public or private entities, etc. Similarly, institutions of all sizes and types are moving their classes online.

Index	Aspects		Remarks
	Indicators	Parameters	
Community Development	Key poverty sources (KPS)	1) Poverty 2) Working hours 3) Market Access 4) Expert Knowledge Access 5) Resources Access 6) Poverty Lessening 7) Electricity Access	In catastrophic situation, KPS indicators are affected.
	Democracy (D)	8) Leadership Restoration 9) Eagerness of Listening 10) Politics of Issues	These parameters play important role during pandemic.
	Attitude (A)	11) Focused on sustainability 12) Eagerness to work 13) Eagerness to Work Together 14) Determine to succeed in sustainability	The parameters help to cooperate the community development.
	Unity (U)	15) Participatory and Hands-on 16) Team work 17) Problem solvers	Unity sustains the community development.

Table 1. Describe the community index with the related indicators and parameters [13].

Online learning can improve flexibility in both teaching and learning at any time and location. However, the speed with which this transport to online instruction is expected to materialize is exceptional. Research evidence [7] shows that campus support workforces and teams are usually available to help faculty members learn about and appliance online learning; teams typically prefer a small group for the effectiveness of teaching online. Researchers [3, 7, 8] in educational technology have carefully redefined terms over time to distinguish between the highly variable design solutions developed and implemented: remote learning, distributed learning, blended learning, mobile learning, and others. Recently, scientists, technologists and professionals have been thinking about developing and improving the online platform to face the emergency period (all catastrophes) and keep all services and education infrastructure as it is, with sustainability. Thus, we must refrain from replacing education and its strategic process during catastrophes.

2. Effective education during a catastrophe

Online education, including online teaching and learning, has been studied during the COVID-19 pandemic. Myriad research studies, theories, models, standards, and evaluation criteria focus on quality online learning, teaching, and course design [7, 15]. The research identified the following variables with multiple options, each with flexible ranges and numerous options, highlighting the complexity of the design and decision-making process. Table 2 shows the variables with multiple options for further study.

No	Dimensions of Variables	Various options	Remarks
1	Modality	▪ Fully online ▪ Blended (over 50% online) ▪ Blended (25–50% online) ▪ Web-enabled Face-to-Face	During catastrophes, option 1 is handy
2	Pacing	▪ Self-paced (open entry, open exit) ▪ Class-paced ▪ Class-paced with some self-paced	It focuses on the user's perspective
3	Student-Teacher ratio	▪ < 35 to 1 ▪ 36 to 99 ▪ 100 to 999 ▪ > 1,000	The practical teaching and learning ratio are 1: <35
4	Pedagogy	▪ Expository ▪ Practice ▪ Exploratory ▪ Collaborative	The four options have effectiveness and efficiency equally
5	Role of online assessments	▪ Determine if the student is ready for new content ▪ Tell the system how to support the student (adaptive instruction) ▪ Provide students or teachers with information about learning state ▪ Input to grade ▪ Identify students at risk of failure	All options for this variable should be explained through organizing workshop/ training
6	Instructor role online	▪ Active instruction online ▪ Small presence online	The lecturer/ instructor role should be explained clearly
7	Student role online	▪ Listen or read and complete problems or answer questions ▪ Explore simulation and resources ▪ Collaborate with peers	Arrangement of the training facility for students
8	Online communication synchrony	▪ Asynchronous or synchronous ▪ Some blend of both	Find the appropriateness
9	Source of feedback	▪ Computerized process ▪ Faculty members ▪ Peers review	The source should be digitalized for efficient feedback

Table 2. Depicts the dimensions of variables and the options [7, 14]

3. Best strategy for using technology during the COVID-19 catastrophe

Table 3 describes the best online technology strategy during the catastrophe and COVID-19 epidemic. The most essential parts of the strategies are the guided principles on communication with students, organized student presentation and preservation, class attendance, and collecting assignments.

No	Elements adopted	Brief description for clear understanding
1	Communication with student	▪ Be consistent ▪ Set online virtual working hours ▪ Discussion
2	Best strategy	▪ Use threaded discussion responses ▪ Provide feedback and tutoring ▪ Create questions and prompts that require complex
3	Collecting assignment	▪ Create specific location in the Learning Management System (LMS) ▪ Alternatively, consider using Google Drive, Microsoft Teams, Microsoft Office 365 or OneDrive
4	Collecting attendance	▪ To keep track of students' participation
5	Student presentation	▪ Record presentation and send it to lecturer ▪ Create a digital poster presentation ▪ Submit presentation slides/ documents

Table 3. Describe the strategy for the using of Technology during Catastrophe [11, 12]

No	Common problems and challenges confronted	Description	Recommendation	Experienced HLI*
1	Managing time and completing all coursework	More than 90% of students stay off-campus and are challenged with other obligations at home, frequently making it difficult for them to attend the long duration of online synchronous sessions.	Provide learning resources that allow or consent to flexibility or elasticity in time management and leverage or influence the strengths of online space.	IIUM*
2	Stable internet access	55% of students are concerned with stable internet access, especially during the synchronous session. Many students access the internet using a limited mobile data plan.	A practical synchronous session should avoid duplicating what is covered elsewhere in the course, e.g., lecture notes, readings, and videos. Flipped classroom model could be a great alternative to strategize when and how long your synchronous session should be.	IIUM*
3	Lack of a quiet or private place	To study and attend online synchronous classes	Strategically use the synchronous session for consultation or share challenging problems in the course rather than for didactic purposes. Provide ample time for students to complete the coursework/ assessment.	IIUM*
4	Unclear communications or expectations	The involvement of course instructors and participation in the course	Need to provide guidelines for participation; explain to students about course routine; encourage students to ask questions via online forums, email, or groups. Make it interactive.	IIUM*
5	Feeling disconnected from lecturers/instructors and other students	Researchers emphasize the importance of instructors focusing on the social aspects of learning to encourage student online interactions and discussion, thus promoting a positive learning experience.	For example, a peer learning portfolio, discussion board, or think-pair-share approach can be used to ensure students' interactions in an online course.	IIUM*

Table 4. The challenges and problems confronted by the ERTL learners during the pandemic [11, 12].
*HLI: Higher Learning Institution; IIUM: International Islamic University Malaysia

3.1. Best practices for using technology during ERTL and ERTOL

The fundamentals of online teaching comprised (i) general preparation, (ii) lecture recording, and (iii) online class. A few precautions should be taken during the online teaching procedure, including the lecture session design (10-15 minutes lecture + discussion/ interactive activity), to justify the student's internet capability and good practice in remote learning. Before the commencement of online classes, the instructor should share the recorded lecture and tutorial questions. In an online class, students may review shared materials for 10 minutes, discuss lecture topics for 15 minutes, assign problems for 5 minutes, let students work on their skills for 10 minutes, and discuss the problem and end for 15 minutes [11].

3.2. Teaching methods and technology

Researchers are evident that in contrast to traditional teaching methods, modern teaching methods are more interactive and keep students together. It maintains the interest of students through the application of technology. The visual medium helps to understand the concept quickly and for a more extended period than reading. Modern teaching methods save teaching and learning time. Traditional blackboard explanation of content is less explanatory than a representation of videos, Microsoft white board and graphics used in modern teaching methods [12].

4. Techniques for improving Blended Education

Better computers and the hiring of specialists to aid in the implementation of blended learning are both ensured by sufficient funding. The government's primary responsibility is to uphold a policy that supports the initiative [16]. Therefore, those involved in education should provide an opportunity where teachers may learn everything, they need to know to make blended learning successful. In general, the establishment of school infrastructure is triggered by the existence of power, implementing flipped learning faster [16].

5. Conclusion

5.1. Fundamentals of online teaching

Good practice in remote learning is to have a mixture of recorded lectures, videos, and handouts that can be provided earlier and short synchronous sessions of discussion, reflection and tutorial. Record lectures and tutorial questions and share them with students a few days before the scheduled class. Know class students' internet capability and plan teaching sessions accordingly. A class should be within 1 hour and 30 minutes and divided into several segments [12], for example, a few minutes for sharing materials, live secession, class work performance, etc.

5.2. Lecture recording and online classes

Draft a script or an outline of the ideas for the lecture before recording to make the recording process easier with minimum editing. Include quizzes or questions throughout the lectures to engage students and allow them to check for understanding as they watch the video. Chunk longer lectures into smaller, separate video lectures organized by topic, idea, or skill. Students can maintain focus and retain critical information by watching video lectures lasting less than 10 minutes each.

5.3. Collecting assignment

Create a folder in LMS or set a specific location for submission of assignments. If needed, an alternative site to store class assets, consider using Google Drive, Microsoft Teams, Microsoft Office 365 or OneDrive [12].

5.4. Collecting Attendance

Collecting attendance is required to track students, i.e., to ensure all students are available or participate in the session. However, not to penalize students, i.e., for giving warning letters or barring them from taking final assessments. By giving quizzes or questions, student attendance can be collected through the submission of answers [12].

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ASSESSING THE KNOWLEDGE, PERCEPTION, AND AWARENESS OF DIGITAL LITERACY AMONG THE TEACHERS IN A PRIVATE UNIVERSITY IN BANGLADESH

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Abstract
The field of academia is passing through a profound and rapid transformation in the advancement of technology, changing social and cultural expectations and globalization. Today's world is moving toward the convergence of future and digital literacies as catalysts for transformative learning experiences. Digital literacy is inevitable to meet the demand of present challenges. Assessment of digital literacy among tertiary level educators has usually overlapped with certain preconceived thoughts and it is still unexamined. Therefore, the purpose of the current study was to look into the knowledge, perception, and awareness of digital literacy among the teachers in a private university in Bangladesh. This study has conducted on 90 faculty members of the American International University-Bangladesh (AIUB). The study employs a quantitative survey using Google Survey questionnaire. The primary indicators show AIUB faculty members hold an intermediate level of digital literacy, with room for improvement in advanced skills and innovative teaching practices. The study also highlights the educational background and professional development opportunities on faculty member's digital literacy level. The finding has practical implications on educators, administrator and policy makers seeking to enhance digital literacy among university teachers, ultimately fostering more effecting and engaging digital learning environments to ensure sustainable development.

Keywords: Professional Digital Literacy, Digital Quality Assurance, Sustainable Development, Bangladesh

1. Introduction

The Fourth Industrial Revolution has necessitated a shift in the workforce to tackle future technological challenges. Assessing professional digital literacy among university faculty is crucial, as it is essential in the global job market and is essential for embracing future economic and social drivers. (Murray & Perez, 2014). A major transformation in the academic sector happened in the last two decades due to giant innovations in information communication technology (Reddy et al., 2020).

The rapid advancement of digital technologies is significantly reshaping higher education, offering both opportunities and challenges. The COVID-19 pandemic has accelerated this shift, necessitating the integration of digital technologies and literacy for educators to adapt and achieve universal access to quality higher education, thereby fostering sustainable development.

In light of the rapid advancement in digital technology and its consequences for teaching and learning, individual teachers at the tertiary level are required to upgrade their knowledge and skill base regularly (Dashtestani, 2014). Teachers must develop their digital literacies to ensure students receive the best education. Universities can help teachers integrate technology into their teaching practices by providing ongoing professional development, access to technology and resources, and a supportive culture. This helps teachers develop the skills, knowledge, and attitudes needed for effective teaching (Gülbahar, 2008; Caena & Redecker, 2019).

Digital literacy is widely recognized as a vital and relevant skill in contemporary and highly competitive global markets. Multiple professional development programs in the USA require digital literacy especially for experienced adult learners to anticipate digital texts, tools, and technology (Hobbs & Coiro, 2019). In most universities, digital literacy is often overlooked or presumed to be sufficiently present without being evaluated, improved, or enhanced. (Coffin Murray & Pérez, 2014).

Milliner and Cote (2018) focused on the adoption and usage of a course management system (CMS) by English teachers at a Japanese university. They discovered that the teachers' level of application was shallow or undeveloped.

Digital competencies encompass information literacy, interpersonal skills, content creation, user safety, and technical issue recognition. Digital literacy among teachers is a knowledge of these skills. Although university professors often have good digital literacy, they may be less enthusiastic about using digital learning environments due to lower trust in technology advancements. Modern teachers need high-quality training to change their attitude towards digital learning environments. (Maksim Vaskov et. al 2021).
A study on the professional development of primary and lower secondary school teachers in Slovakia, examined the relevance of digital literacy as a community effort and highlighted the need for digital literacy as a collaborative endeavor as well as the importance of varied perspectives in global dialogue (Ján Záhorec et. al, 2019).
Another study on the school teachers in Zambia found that teachers have access to digital devices and have moderate to high levels of digital literacy, effectively incorporating technology into the curriculum and instruction is a challenge. The lack of alignment, the expensive expense, and the limited availability of technology are significant barriers (A. Chama , Subaveerapandiyan A, 2023).
The most notable problems in creating digital literacy for teaching and learning are the multiple and contextual conceptualizations of digital literacy, the digital divide, and the actual consideration of digital literacy as a social activity. Because digital literacy is now a transversal ability, there are clear consequences for education, such as restructuring organizations to digital conditions and viewing digital literacy as a collaborative endeavor. (Marín and Linda, 2023)

According to Mukosa and Mweemba (2019), many teachers in the African region require more fundamental digital literacy abilities and experience obstacles in effectively incorporating technology into their instruction.
Current higher education teachers have a high level of digital literacy, but their desire to employ information and communication technology in the educational process is low, owing to the fact that teachers do not accept innovations very quickly (Maksim Vaskov et. al 2021).
Digital Literacy ensures digital citizenship. The duty of teachers is to promote digital citizenship through digital literacy while the agenda of digital citizenship is to behave responsibly (Shelley, et al., 2004; Ribble, et al., 2004; Tan, 2011, Ozturk, 2021). Most institutions view digital literacy as plural, encompassing multiple elements or equipment, and usually combining technical, psychological, and interpersonal dimensions (UNESCO, 2017).

2. Digital Literacy in Bangladesh

The government of Bangladesh has sworn to create a "Digital Bangladesh" through digital generation. Nonetheless, sustainable development cannot be achieved unless the higher education process is digitalized. Our government has recognized the importance of digital literacy in education and has initiated projects and programs to promote it. Universities and educational institutions have been working to enhance digital literacy among teachers.
Telenor mobile provider Grameenphone collaborated with Microsoft in November 2009 to enhance digital literacy among rural Bangladeshis. Microsoft's Digital Literacy Curriculum is a well-established e-learning module that teaches people fundamental computer skills, assisting them in developing new social and economic opportunities for themselves, their families, and their communities.
Few scholarly literatures relevant to the digital literacy of Bangladesh could be found. To assess the digital literacy of freshmen students at a public university in Bangladesh (University of Dhaka) authors revealed that students in rural had lower levels of digital literacy than those in towns (M. Islam & S Afroze, 2018).

3. Rationale of the Study

Although there is considerable research on the digital literacy of educators in general, there has been a notable lack of empirical research specifically focused on university teachers in Bangladesh, with most studies focused on basic and secondary school students and teachers or language instructors.
There has also been little research on university teachers' openness to accept digital teaching approaches. More research is needed to better understand teachers' digital skills and professional development needs, which are critical for academic performance, economic growth, and workforce readiness in today's environment.
Therefore, the primary goal of this study is to examine the knowledge, perceptions, and awareness of teachers at the tertiary level. It also intends to identify the major challenges and expectations of teachers in order to enhance their digital abilities in order to meet the rising demands of students in the modern digital era, hence contributing to sustainable growth.

4. Methodology

To assess the knowledge, perception, and awareness of digital literacy among the university teachers we used a structured survey questionnaire and collected data online using Google Forms. The online survey was administered among the faculty members of a private university. Since the participation was voluntary a total of 90 out of 350 faculty members participated in the online survey.
The survey questionnaire consists of questions including multiple-choice, Likert-scale, and open-ended questions. The survey was distributed via email to the selected participants with a cover letter explaining the purpose of the study, ensuring anonymity and confidentiality of responses. The questionnaire is being prepared using the Digital Literacy and Competency Framework for teachers by Falloon, 2020 and the ISTE Standard for Educators, which enables conducting a precise investigation within a limited time, scope, and resources. The questionnaire survey followed the standard procedure by following ethical consent and the conflict of interest has been maintained, so the authors of this study have not taken part in the questionnaire survey session.

Descriptive statistics, including frequencies, percentages, and graphical presentations were used to summarize the responses to closed-ended questions.

5. Results and Discussion

An online self-administered survey questionnaire was distributed to understand the knowledge perception and awareness of digital literacy among the teachers in a tertiary institution. The survey results are as follows:

5.1 Demographic Information:

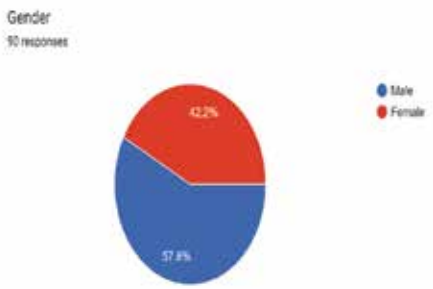


Fig 1 : Gender

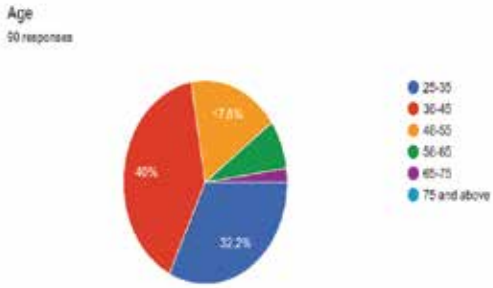


Fig 2 : Age

Fig 3: Department/Faculty

Fig 4 :Education

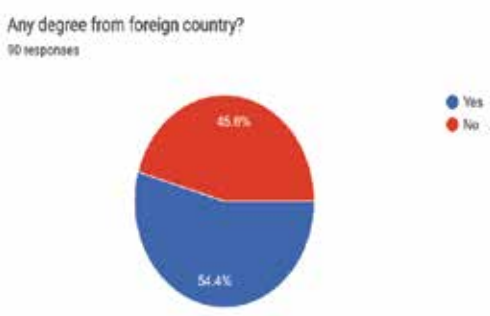


Fig 5 : Degree from abroad

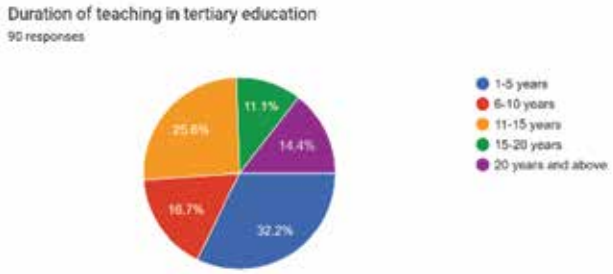


Fig 6 : Teaching Career in tertiary education

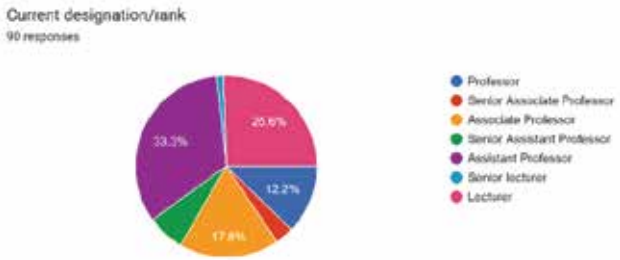


Fig 7 : Current Designation

Since it was a voluntary participation of representative sample of teachers at a private university in Bangladesh, the highest contributor (40%) of all respondents were between 36-45 years old as shown in Figure 1. However male respondents outnumbered female respondents by 57.8% to 42.2% (see Figure 2). Majority of the teachers in this portrayal belong to the Faculty of Arts and Social Sciences of the American International University- Bangladesh.

The highest education qualification of respondents has been observed as distributed between Masters (56.6%), Doctor of Philosophy (35.6%), MPhil (7.8%) and Doctor of Business Administration (1.1%). Among the respondents, most of them (54.4%) have at least one degree from a foreign university. Majority of the respondents (32.2%) duration in teaching was 1-5 years followed by 33.3% holding the Assistant Professor rank currently at the university.

5.2 Digital skills and tools - Knowledge and Awareness:

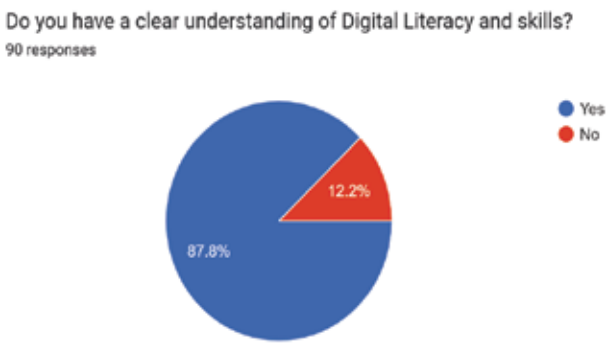


Fig 8: Understanding of Digital Literacy

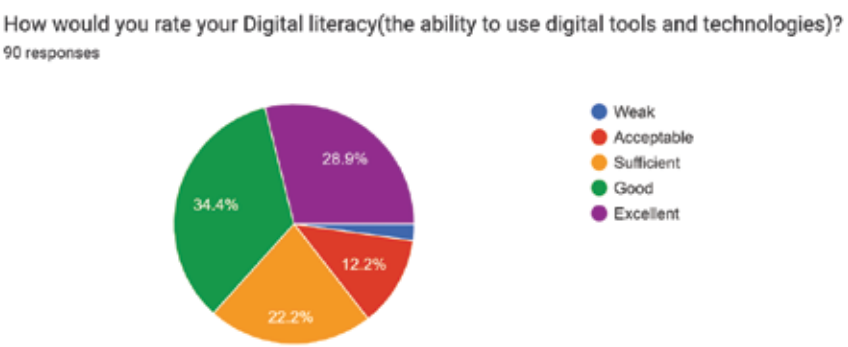


Fig 9 : Ability to use digital tools & technologies

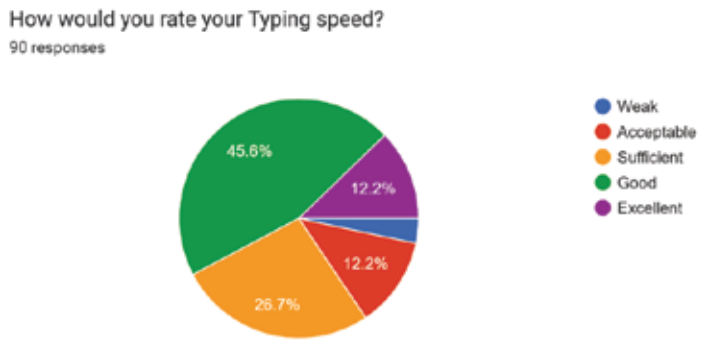


Fig 10: Typing skill

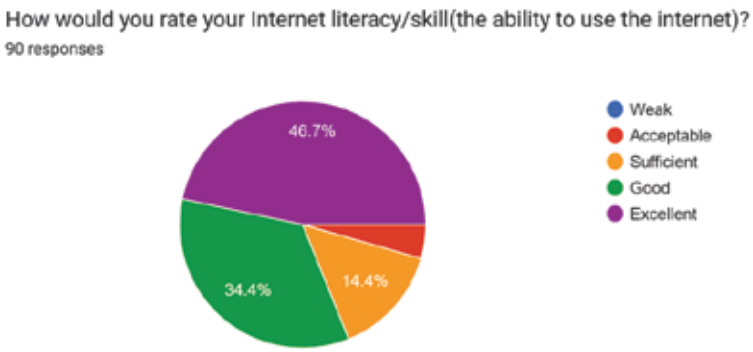


Fig 11: Internet Literacy

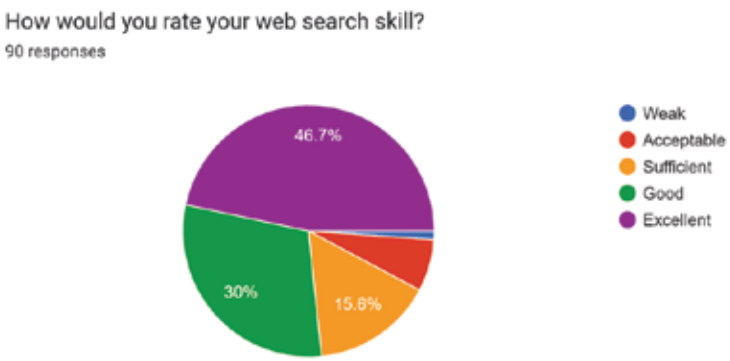


Fig 12: Web Search Skill

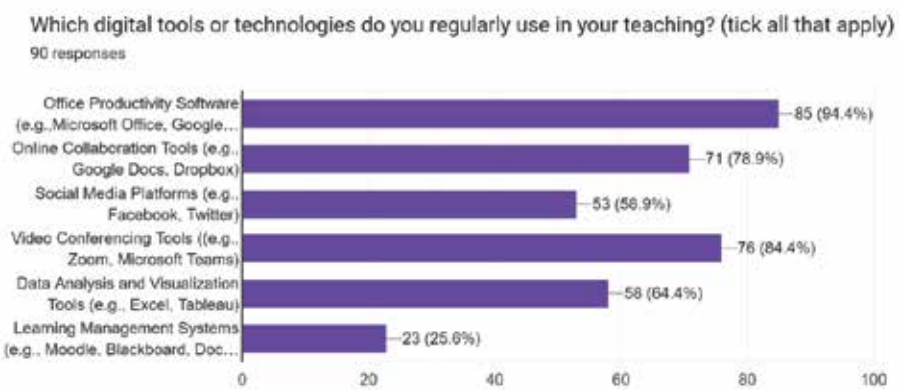


Fig 13: Digital tools and technologies used regularly in teaching

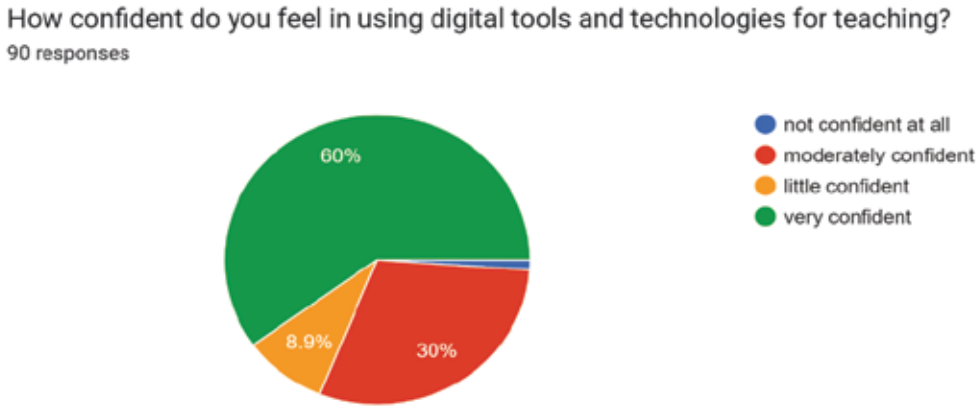


Fig 14: Self-confidence in using digital tools for teaching

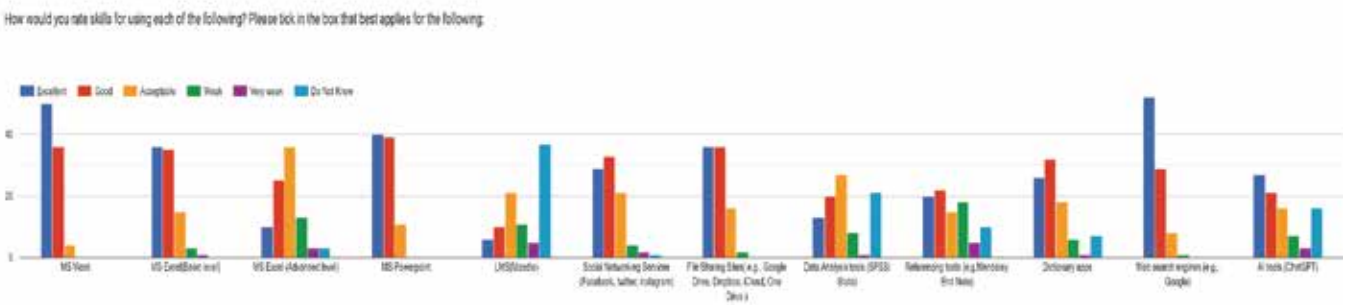


Fig 15: Ability to use different digital tools for teaching and research

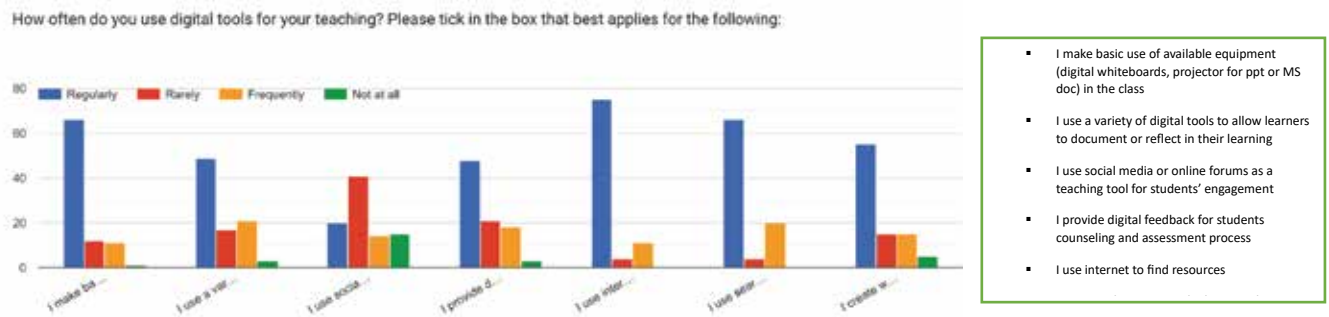


Fig 16: Frequency of using different digital tools for teaching and research

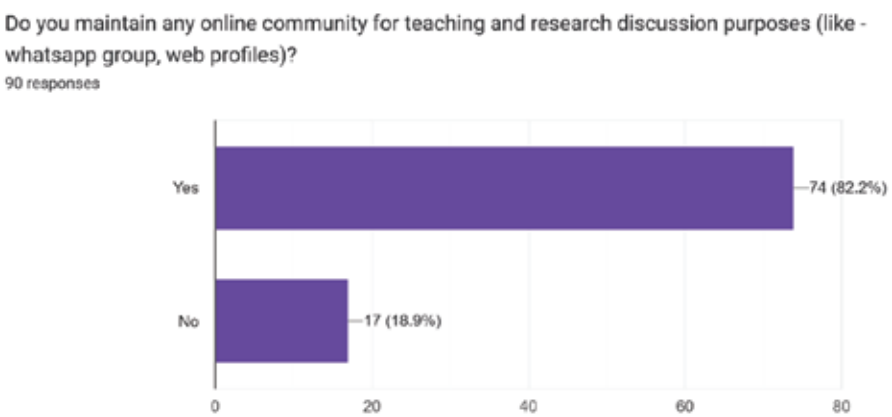
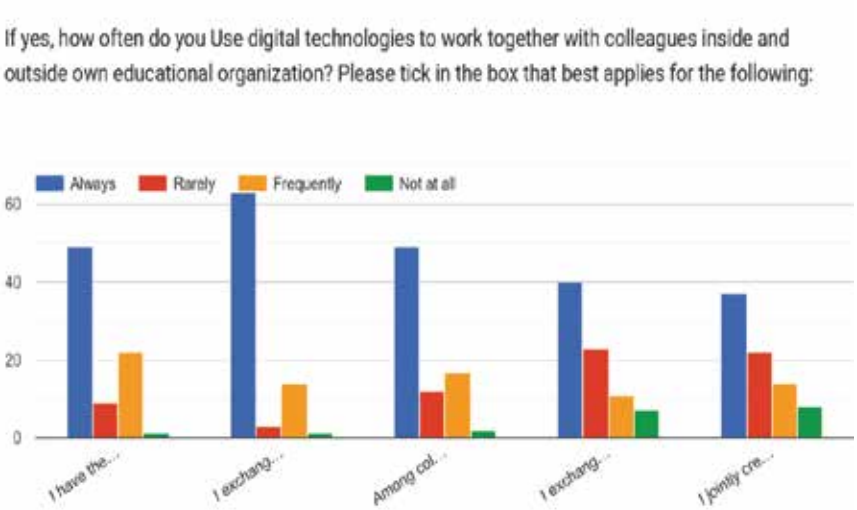


Fig 17: Maintaining online community for teaching and research



- I have the opportunity to collaborate with other teachers.
- I exchange materials with colleagues, e.g., via e-mail.
- Among colleagues, we work together in collaborative environments or use shared drives.
- I exchange ideas and materials with teachers outside my organization, e.g., in an online teacher network

Fig 18: Frequency of using digital technologies for maintaining online community

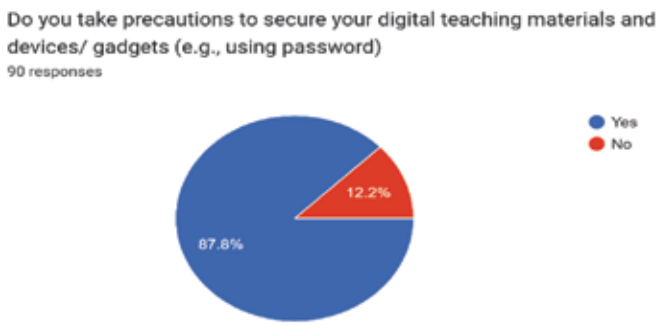


Fig 19: Precaution of secure online data

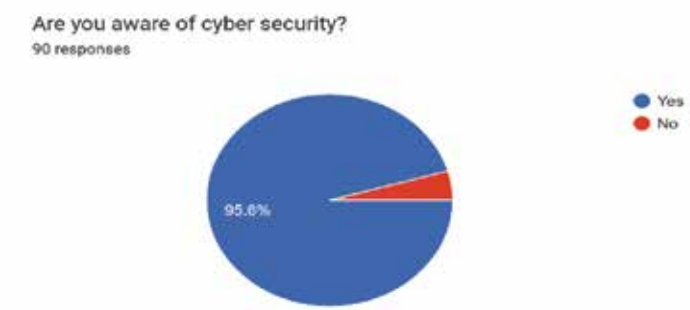


Fig 20: Awareness of cyber security

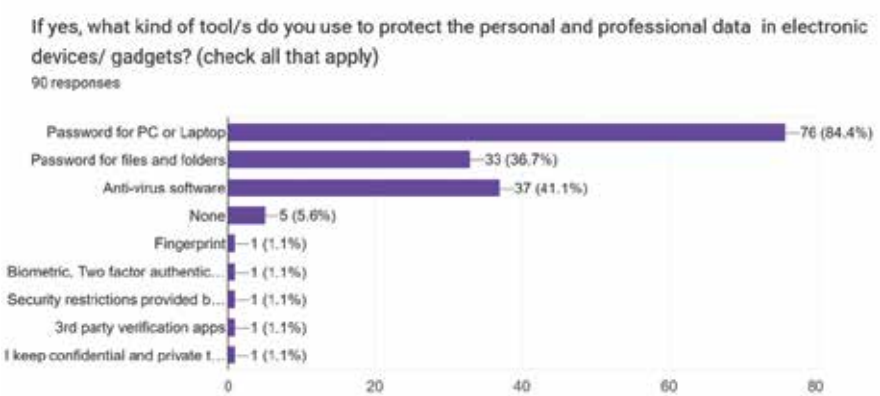


Fig 21: Tools to protect digital data

In response to the survey questions related to the self-assessment of the respondents' knowledge and perception about digital skills and tools, it has been observed that 87.8% of them think they have a clear understanding of the concept of digital literacy and skills but the majority of the responses came for the option of "Good" (34.4%) in terms of ability to use digital tools and technologies rather than "Excellent" (28.9%). The ability of skills for the respondents have been affirmed by their Internet literacy (46.7% - Excellent) and Web search skill to teaching and research (46.7%- Excellent). Although the typing speed of the respondents was mostly "Good" (45.6%) instead of "Excellent". In the context of teaching, the respondents were aware and "Very Confident" (60%) in using digital tools and technologies, however most of them observed to be using only Office productivity software like MS Office, Google workplace (94.4%) and Video Conferencing tools like Zoom, MS teams (84.4%) among other digital tools like data analysis and visualization tools, referencing tools etc. Additionally, the higher frequency of using different digital tools for teaching and research observed for using internet to find resources from various search engines in comparison of using the digital tools for learners to document or reflect their learning and providing feedback for students' counseling and assessment aspect. Among the respondents there has been an affirmation perceived in maintaining online community using digital platforms (82.2%) among teachers mainly by exchanging materials with colleagues from the same university rather than exchanging ideas and materials outside organization or collaborate with other scholars to create a research-teaching network. Lastly, in terms of protecting their online data, most of them are aware (95.6%) of cyber security and respondents, and majority of them are using passwords for PCs and laptops (84.7%), anti-virus software (41.1%), and passwords for files and folders to protect their data (36.7%).

5.3 Teachers' perception on enhancing digital literacy as professional development

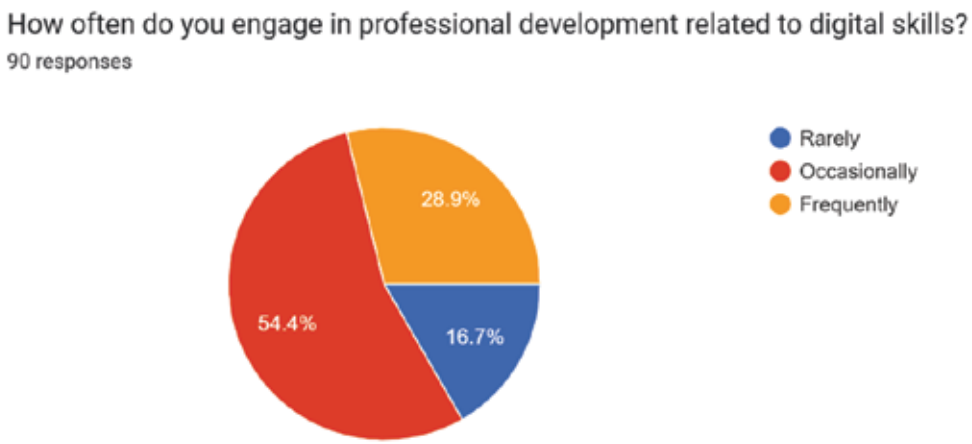


Fig 22: Rate of engagement in digital skill development programs

Fig 23: Formal training in digital teaching methods

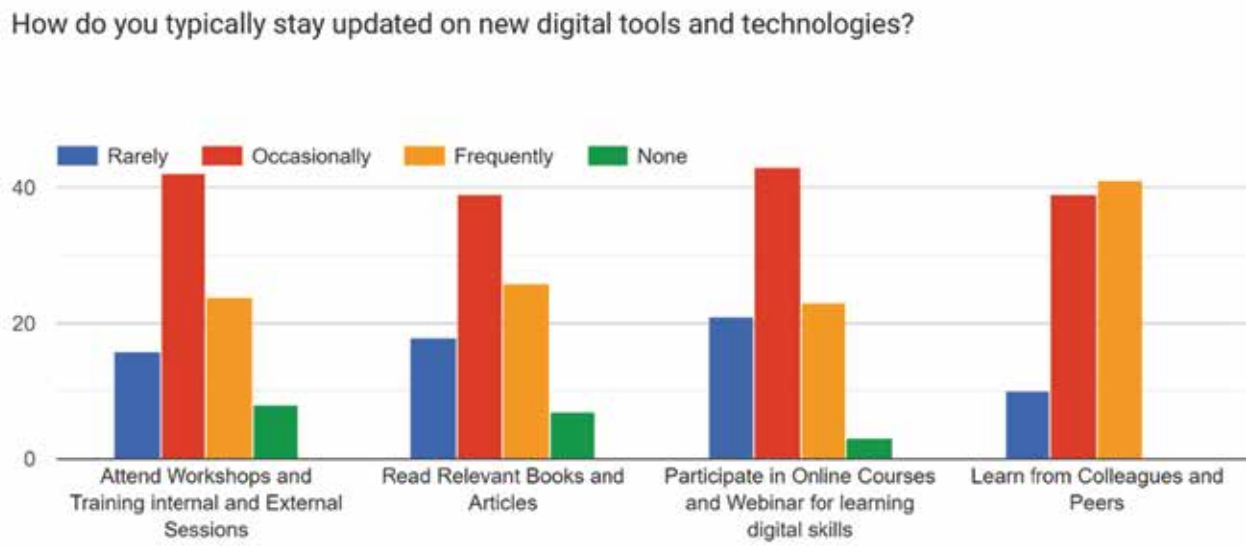


Fig 24: Ways to stay updated with digitals tools for teaching and research

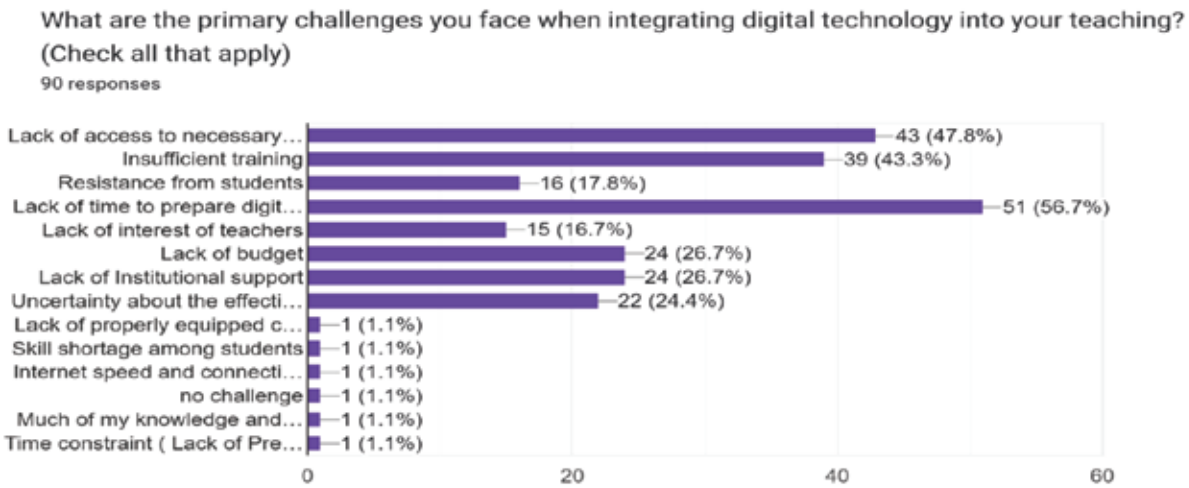


Fig 25: Primary challenges faced with digitals tools for teaching and research

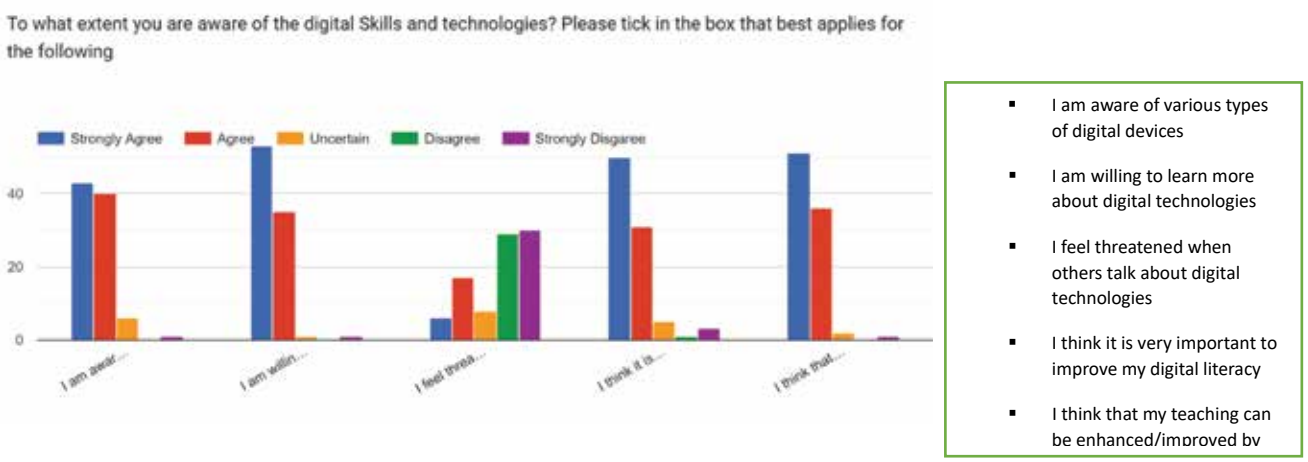


Fig 26: Awareness about the importance of digital literacy

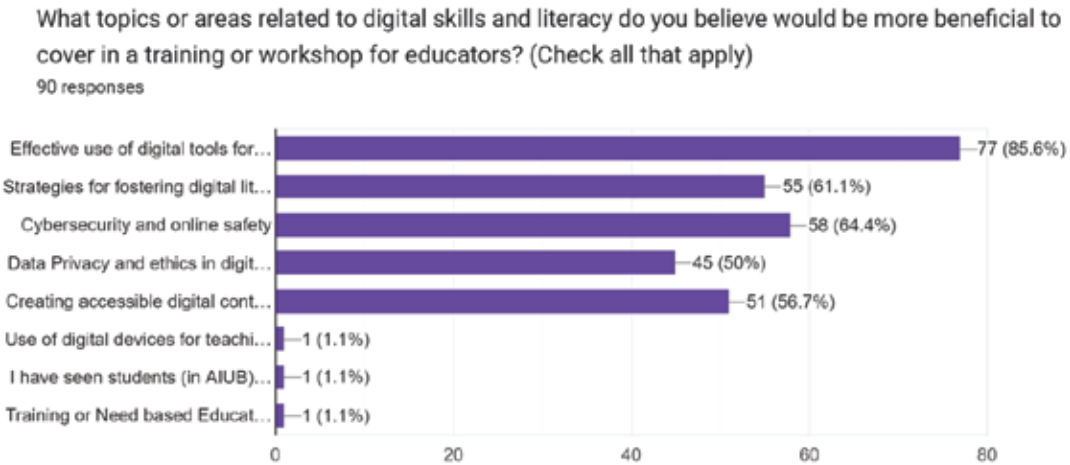


Fig 27: Training topics to develop digital skills and literacy

Fig 28: Mode of training to develop digital skills and literacy

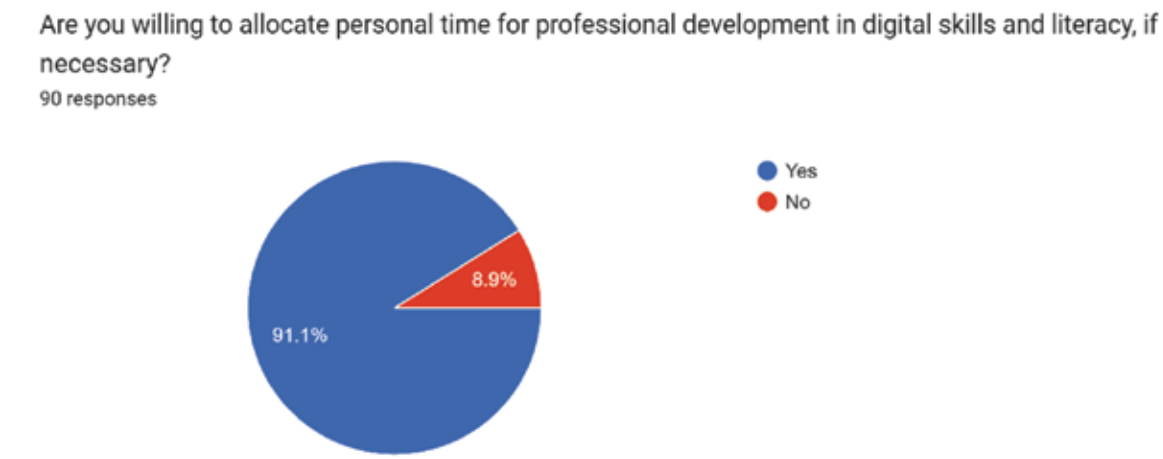


Fig 29: Willingness to allocate personal time for improving digital skills and literacy

In the case of teachers' perception on enhancing digital literacy as professional development, it has been observed that 54.4% of the respondents occasionally (once in 3-4 months) engage in professional development related to digital skills. Interestingly, majority of the respondents (61.1%) have not received any formal training in digital teaching methods or technologies previously. Respondents who have received training in digital literacy, commonly had training in the following modes either by the university(internal) or external sources:

Workshop and training on use of MS Team (by the University)
Workshop on ChatGPT, Inclusion of Artificial Intelligence in academia(external)
Certificate Course on Adobe Photoshop and Adobe Illustrator(external)
British council's and UGC's Blended Learning and CETL trainings(external)
Workshop on Cyber security(external)
TEL Sessions of University of Reading which includes the whole gamut of UMS system Blackboard, RISI Portal, Turnitin, Online marking and assessment of students' paper, and classes(external)

Tableau training – a data visualization tool, Grammarly, Mentimeter- – a online based tools for interactive presentations, survey(external)
Moodle, Padlet, Jam Board, whiteboard animation(external)
Referencing software- Padlet, Mendeley, SmartPLS (Internal and external)
Online discussion from my different groups e.g., collaborators, colleagues (Internal and external)

Apart from that it was very clear that even though majority of them have not received formal training in digital teaching methods but they occasionally do attend workshops and training, read relevant books and articles on digital literacy, participate in online courses and webinar, and learn from colleagues and peers to develop their professional skills. However, the respondents have mentioned that there are some primary challenges that create obstacle in the integration of digital technology into their teaching. Most of them have indicated lack of time to prepare digital materials (56.7%), lack of access to necessary technology resources (47.8%), insufficient training (43.3%), lack of institutional support (26.7%), and lack of budget (26.7%) are the major challenges.

At the end the respondents did strongly agree that they are willing to learn more about digital skills and technologies to improve their teaching methods, though some of them do have fear of digitalization of teaching methods as well. Teachers who have participated in the online survey have mentioned training on effective use of digital tools for online and hybrid teaching (85.6%) and creating accessible digital content for diverse learners (64.4%) could be the areas that would be beneficial for enhancement of their digital skills and literacy for quality education for sustainable development. Majority of them have mentioned that they would prefer blended form of training (combination of in-person and online) (63.3%) to enhance their digital skills. Finally, almost all participants (91.1%) voiced out that they are willing to allocate personal time for professional development in digital skills and literacy and they would like to have institutional support as well in facilitating their efforts in this arena of digital literacy development.
The participants have imparted some possible ways for the institution to facilitate the process of enhancing digital literacy for the teachers for their professional development

•By giving need-based training on digital literacy
o Mandatory sessions on digital literacy and inclusion of technology through course outlines.
o Arranging some interactive daylong/short time workshops and training in-person /online by the experts in this sector at least once in a semester based on the necessity of the teacher in different departments
o Continuous Training on data Analysis tools and referencing software for the development of the research
o Workshop on Basic AI tools

• Allotting high-quality digital tools for work
• Prompt availability of IT support if and when needed.
• Free access to online modules for digital learning.
• MoU with training providers with discounted price.
• Providing subscription for different software, creating video, via email, arranging training
• Reducing workload
• Provide necessary recourses/budget for External training on relevant topics
• Wi-Fi access in classrooms for both teachers and students
• Allocate more budget for license version of some tools

6. Conclusion

In the rapidly evolving and interconnected modern world, students are becoming more adept with digital tools through their independent exploration. Consequently, educators must possess a high level of digital literacy to meet the academic requirements of students who are already well-versed in this domain. Educators proficient in digital literacy can empower students with the necessary

skills to excel in a technology-driven job-market. Along with general literacy, digital literacy enhances competency in the modern digital economy (Chetty et al., 2018).

Digital literacy improves access to quality education by increasing access to high-quality educational resources via online platforms, open materials, and digital libraries, particularly in underprivileged areas. Furthermore, digital skills enable educators to improve teaching and learning through the use of technology. It also provides continual online learning for personal and professional development. To ensure sustainable development, digital literacy plays a crucial role in attaining SDGs by facilitating education, boosting employment and innovation, and supporting digital infrastructure development.

Digital literacy is important not only in education but also in research and innovation. University faculty members with strong digital capabilities are more able to participate in digital research, collaborate with worldwide colleagues, and pioneer solutions across several areas.

Addressing the existing challenges of the teachers in universities requires a comprehensive approach involving extensive training, the enactment of institutional policies to advance digital equity, and continuous professional development for educators.

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PEDAGOGICAL INNOVATIONS IN BUSINESS ADMINISTRATION: EVALUATING THE EFFECTIVENESS OF PROJECT-BASED LEARNING (PBL) AND FLIPPED CLASSROOMS IN BLENDED LEARNING FOR HIGHER EDUCATION IN BANGLADESH

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American International University-Bangladesh (AIUB)

Abstract
Project-Based Learning(PBL) and flipped classrooms to assess the effectiveness of blended learning for higher education in Bangladesh are excellent ways to sustain quality education, and pedagogical innovations in business administration are decisive. The primary aim of business administration in higher education institutions is to evaluate the efficacy of these novel pedagogical methods in augmenting the learning outcomes, engagement, and comprehensive educational experience of undergraduate students. The adoption of problem-based learning (PBL) and flipped classrooms is a dual approach that facilitates a thorough assessment of the many effects brought about by these pedagogical advancements. Furthermore, this dual approach has the potential to make a valuable contribution to the wider discussion around contemporary pedagogical methods. The purpose of this study is to examine the applicability and efficacy of PBL and flipped classrooms in the context of higher education in Bangladesh, specifically in the field of business administration. By combining these two approaches, the study aim to gain insights into their suitability and effectiveness within the educational landscape of Bangladesh. By providing insights, it can serve as a valuable resource for shaping educational policies and practices within the region. As Bangladesh seeks to enhance the quality of its higher education system, this approach aims to provide valuable recommendations for the adoption and adaptation of innovative teaching methods, ultimately fostering a more engaging and effective learning environment for students in Business Administration programs.

Key words
Project-Based Learning(PBL), Flipped Classrooms, Blended Learning, Effective Learning Environment

1. Introduction

Blended learning is a developing educational paradigm that has a hybrid curriculum structure, combining both online and on-campus components. The integration of online learning tools, techniques, resources, and opportunities with conventional on-campus classroom methods and approaches is observed. Campus-based classes necessitate the physical attendance of both faculty members and students, while virtual classes are conducted in a distance format. The global COVID-19 epidemic has expedited the implementation of blended learning methodologies within higher education establishments across the globe, including those in Bangladesh. This study aims to examine the significance of Project-Based Learning(PBL) and flipped classrooms within the context of blended learning in Bangladeshi Higher Educational Institutes. The experiences of private universities in Bangladesh during the 2020-21 pandemic, particularly in relation to virtual classes and the difficulties encountered during the transition to the post-pandemic period, highlight the need for a blended teaching-learning approach (Talukdar et al., 2022) . However, the post-pandemic paradigm appears to necessitate a triple-system of classes.
The rapid implementation of blended learning in response to the COVID-19 epidemic has posed a range of challenges and opportunities for higher education institutions. One of the issues faced in the realm of education is the imperative task of guaranteeing equitable access to essential technological resources and internet connectivity for all students, hence enabling their active engagement in online learning (Ahmadi and Sultani, 2023). Blended learning programs are a recent development in higher education institutions in Bangladesh. Faculty members are required to invest additional time in implementing these programs since they need to create both in-class materials and online resources(Chowdhury, 2020). The advantages of blended learning, such as project-based learning and flipped classrooms, may, however, outweigh the drawbacks.

Nevertheless, blended learning also offers institutions the chance to reconsider their instructional methods and integrate novel technologies and pedagogical strategies, such as project-based learning and flipped classrooms.

2. The Rational of blended learning on student engagement and learning outcomes of PBL and flipped classrooms

According to Dhawan (2020), blended learning methodologies has yielded favorable results in terms of student engagement and learning outcomes amidst the COVID-19 epidemic (Dhawan, 2020). Through the integration of traditional classroom lectures and technological tools, students are afforded the opportunity to engage with course content, as well as collaborate with fellow students and instructors, in both physical and virtual settings. The presence of flexibility in educational settings has the potential to enhance student engagement and motivation, ultimately resulting in improved learning outcomes through PBL and flipped classrooms.

The 4th Industrial Revolution is distinguished by the incorporation of sophisticated technology, such as artificial intelligence (AI), into several sectors, including the field of education. The incorporation of artificial intelligence (AI)-driven platforms in conjunction with flipped classroom instructional methods has the potential to augment the efficacy of blended learning(Li, Peng and others, 2022). Artificial intelligence (AI)-enabled machines have the potential to enhance and streamline routine learning activities, resulting in increased speed and efficiency. Additionally, the use of flipped classrooms can offer students enhanced access to course materials and foster greater collaboration among peers.

3. The effectiveness of blended learning in addressing the digital divide in education

Blended learning possesses the capacity to mitigate the digital gap in the realm of education by affording students the opportunity to avail themselves of course materials and resources via online platforms. Nevertheless, it is imperative to acknowledge the potential drawback that may arise from the exclusion of students who lack the essential technological resources and internet connectivity(Ahmadi and Sultani, 2023). It has been observed that prominent private universities of Bangladesh have access to essential technological resources and comprehensive support systems, thereby enabling all students to actively engage in blended learning. According to Chowdhury (2020), blended learning offers students increased autonomy in choosing a learning style that aligns with their specific needs. Through the utilization of technology to individualize the learning experience, educators can circumvent the constraints inherent in traditional teaching methods and offer pupils a more tailored and customized form of education(Divjak et al., 2022).

PBL and Flipped Classrooms are two pedagogical methodologies that have demonstrated efficacy in augmenting learning outcomes, fostering student engagement, and improving the entire educational experience of students enrolled in Business Administration degrees.

4. The role of PBL and flipped classrooms in blended learning in Business Administration for Higher Education in Bangladesh

Problem-Based Learning (PBL) and Flipped Classrooms are pedagogical techniques that prioritize student-centered learning, emphasizing active engagement, collaborative efforts, and the development of problem-solving skills. These methodologies promote student autonomy in the learning process, hence fostering improved academic achievements and a more favorable educational encounter.

Project-based learning is a approach wherein students engage in authentic, real-world projects that align with their personal interests and objectives. PBL is strategically crafted to facilitate the cultivation of crucial cognitive abilities such as critical thinking, problem-solving, and collaboration among students. These proficiencies have significant importance within the realm of business. Research has demonstrated that PBL has a positive impact on student involvement, motivation, and academic achievement (Thompson, 2023; McMullen, 2022).

The concept of Flipped Classrooms has emerged as a prominent and progressive instructional methodology that has garnered significant attention in recent times. In a flipped classroom model, students are required to review pre-recorded lectures or study materials prior to attending class (Reimers, Schleicher, Saavedra and Tuominen, 2020). The purpose of this is to optimize class time for active learning pursuits, including but not limited to discussions, problem-solving exercises, and collaborative group work (Chowdhury, 2020). Research studies have demonstrated that the implementation of flipped classrooms has resulted in notable enhancements in student engagement, participation, and learning outcomes (Hassan 2023; McMullen, 2022).

Both Problem-Based Learning (PBL) and Flipped Classrooms are instructional methodologies that prioritize student-centered approaches, emphasizing active learning, collaboration, and problem-solving. These methodologies promote student autonomy in their learning, resulting in improved learning outcomes and a more favorable educational experience. Hence, the adoption of Problem-Based Learning (PBL) and flipped classrooms presents effective approaches to blended learning within higher education institutions in Bangladesh, specifically for business degree programs.

5. The effectiveness of Project-based Learning and Flipped Classrooms adopting in Business Courses

Blended learning refers to an instructional methodology that integrates conventional face-to-face classroom teaching with online learning components. PBL and Flipped Classrooms are two teaching approaches that can be employed in blended learning to augment the learning outcomes, engagement, and overall educational experience of undergraduate students in Business Administration programs. According to research findings, it has been demonstrated that both PBL and Flipped Classrooms have proven to be effective in blended learning settings. The following points elucidate the significance of project-based learning and flipped classrooms in the context of blended learning within Bangladeshi Higher Education Institutes for Business Students:

In a recent study, Alamri (2021), shown that the implementation of Blended Project-Based Learning (BPBL) had a positive impact on several aspects of students' educational experience(Alamri, 2021). Specifically, the study revealed that the utilization of BPBL resulted in enhanced perceptions of self-efficacy, enjoyment, usefulness, behavioral intention to use BPBL, and academic accomplishment among students. In a study conducted by Nouri (2016), it was discovered that the implementation of the flipped classroom approach resulted in increased student engagement and a heightened inclination towards active learning(Nouri, 2016).

The integration of Project-Based Learning and the Flipped Classroom model is a pedagogical strategy that has demonstrated efficacy within blended learning contexts. Chua and Islam (2021) conducted a study which revealed that the implementation of a hybrid strategy resulted in a significant enhancement in students' mathematical representation skills (Chua and Islam, 2021). Another study conducted by Kemaloglu-Er and Sahin (2022) examines the implementation of project-based learning in English language teaching at a rural school in Turkey(Kemaloglu-Er and Sahin, 2022). The study proposes that project-based learning has the potential to serve as a viable pedagogical strategy, not only within the realm of English language instruction, but also across all academic disciplines. This approach enables students to engage in authentic, real-world projects that align with their own interests and objectives.

PBL is a pedagogical approach wherein students engage in authentic, real-world projects that are aligned with their own interests and objectives (Chowdhury, 2020). This particular methodology has the potential to facilitate students' sustained involvement and intrinsic drive, hence resulting in enhanced educational achievements. According to Rahmani and Zitouni (2022), the implementation of flipped classrooms and project-based learning methodologies has been found to effectively enhance the overall quality of student learning(Rahmani and Zitouni, 2022). These pedagogies can support students in remaining motivated and engaged, which improves learning outcomes.

Some of the ways in which higher education in Bangladesh can profit from adopting project-based learning and flipped classrooms are listed below. Student engagement with course materials and peer collaboration through personalized learning (Chowdhury (2020) strategies like flipped classrooms and project-based learning can improve their academic results. Blended learning, which includes approaches like project-based learning and flipped classrooms, gives students more leeway (Chowdhury, 2020) in picking the teaching method that best meets their needs. One benefit of project-based learning and flipped classrooms is that they keep students interested and motivated, which in turn improves their academic performance(Khan and Abdou, 2021). Blended learning systems, such as project-based learning and flipped classrooms, are more accessible to students from remote areas in Bangladesh or who are unable to travel to a school due to illness (Chowdhury (2020). Students can better manage their time with flipped classrooms because they have access to course materials online before attending lectures (Karmaker, 2021). Students are encouraged to take an active role in their learning through strategies such as project-based learning and flipped classrooms (Khan and Abdou, 2021).

PBL and Flipped Classrooms are two pedagogical methodologies that have shown promise in enhancing learning outcomes inside blended learning environments for Business Administration programs. These methodologies have the potential to improve the academic achievements, level of involvement, and overall educational journey of business students of Bangladesh. The integration of Project-Based Learning and the Flipped Classroom model is an instructional strategy that will demonstrated efficacy within blended learning settings in Bangladesh Higher Educational Institutions.

In order to effectively incorporate both problem-based learning (PBL) and flipped classroom approaches into business courses, it is necessary to undertake strategic actions that will yield enhanced learning outcomes. There are several strategies that can be employed to enhance learning outcomes. These strategies encompass deliberately choosing students with diverse backgrounds, sizing groups for maximum effectiveness, instructing active listening skills, designing intricate learning activities, and establishing explicit guidelines for group activities. These strategies promote active participation with course materials and others students, fostering the development of critical thinking and problem-solving capabilities. By implementing these strategies, teachers will possess the ability to enhance learning outcomes by offering students increased opportunities for active engagement with course materials and their fellow learners.

6. Conclusion

The utilization of blended learning has emerged as a crucial pedagogical strategy within higher education establishments within the COVID-19 global health crisis. The integration of cutting-edge technology and instructional methods, such as project-based learning and flipped classrooms, has the potential to augment the efficacy of blended learning and offer students novel avenues to interact with course content and work with their peers. Nevertheless, it is imperative for educational institutions to provide equitable access to essential technologies and provide adequate assistance to enable students' engagement in blended learning. Additionally, it is crucial to ensure that these technological resources are utilized in an ethical and responsible manner. The advantages of the utilization of PBL and Flipped Classrooms within blended learning settings in Business schools in Bangladesh encompass heightened student engagement, higher learning outcomes, increased flexibility, cost-effectiveness, and enhanced teacher-student interaction. The integration of PBL and Flipped Classrooms in business courses has the potential to cultivate job skills for business students that are widely sought after in the job market. The acquisition and use of critical thinking, problem-solving, cooperation, self-directed learning, and real-world experience are crucial competencies that enable business students to secure and maintain employment in their chosen field. Blended learning offers enhanced flexibility, thereby expanding educational and training opportunities, consequently bolstering Bangladesh's job market.

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UIL002

CREATING A PERFECT STORM FOR BANGLADESHI STUDENTS ENROLLMENT ABROAD: CAUSE AND EFFECT

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Abstract
This piece of research looks into the major causes due to which despite higher tuition fee, private school enrollment is increasing in Bangladesh. Several secondary and few primary sources of data have been used as evidence of support. The paper provides relevant examples for emphasis on the subject and compares the recent trend of enrollment of USA academic institutions pertaining to local and foreign student enrollments.
The study emphasizes on the following facts:

i.Why is enrollment increasing in Bangladesh Private Schools as compared to Public Schools?

ii.Why in the USA the overall student population is showing a decreasing trend for universities while foreign students' enrollment is getting more popular.

iii.Is there an impact of choosing a Major in higher education on the return on investment (ROI).

Rationale
As more and more Private Schools are opening in Dhaka meeting the increasing demands of the parents to send their children to better schools. The question is what determines 'Better School". Is it the school environment, teaching quality, outcome of the students after graduation or just a sign of status and socioeconomic stability? This piece of research study tries to answer some of the questions raised by looking into the available data in support of them while comparing the trend in some other countries.

Literature Review
As per a working paper, we reviewed journal articles, newspaper articles and did focus group qualitative study. World Bank Group (2016) categorized Private Schools into: non-profit, profit and faith based. In the last two decades, the percentage of students in low-income countries attending private primary schools doubled, from 11 percent to 22 percent. However, according to one USAID report in 2022, 44% of students in Bangladesh who attended public schools and completed first grade were unable to read even one word. This may contribute to grade repetition, high dropout rates, limiting the creation of a knowledgeable generation. Tanjim, N (2022) states that the increasing number of GPA 5 achievers in Public Schools are often failing to compete at university admission examinations. This again raises question regarding the quality of education provided by the public schools in Bangladesh, Sarder, R.R (2022). In his analysis he compared the number of students who achieved GPA5 in their Secondary level to those achieving GPA5 in Higher secondary and found that the trends were inconsistent. He used a graphical representation, which reveals only a small portion of those achieving GPA 5 in SSC secured equal competency in HSC level.

Objective
The general objective of this paper is to bring the private and public schools of the country more competitive in terms of quality of education received and its outcome. The specific objective of this paper is to analyze the following issues:
•To derive a causal relationship between school enrolment and quality of education

•To determine which parameters parents/students prioritize for selecting educational institutions.

•To create a more competitive education system in the country and ensure quality education at an affordable rate to all.

•Moving forward, how can our institutions work proactively in increasing higher education of students in Bangladesh, not only for Bangladeshis but for international students as well?

Research methodology
The paper uses comparative data analysis from public and private schools and uses various trend analysis to illustrate the subject in concern. To quantify the quality of education in private
and public schools we have used four variables: number of SSC and equivalent degree candidates passing with GPA 5 yearly, number of students studying abroad, % of students getting employed in Bangladesh and teacher-student ratio.
-The study is prepared on available secondary information from various sources of credible survey reports, Bangladesh government

documents, published articles and primary information from private schools.
-It provides a list of graphs to show trend of enrolment and tuition fees in public and private schools of Bangladesh.
-It uses Granger Causality test to look for a causal relationship of school enrolment with the above said four variables.
- Analyzes the probable causes of change in USA admission trend "Why Americans are not going for higher education in the recent years" and its impact on Bangladeshi students going abroad.

Global student enrollment. Possible "Cause and Effect"

A decade or so ago, Americans were feeling positive about higher education. Public-opinion polls in the early 2010s all told the same story. In one survey, 86 percent of college graduates said that college had been a good investment; in another, 74 percent of young adults said a college education was "very important"; in a third, 60 percent of Americans said that colleges and universities were having a positive impact on the country.

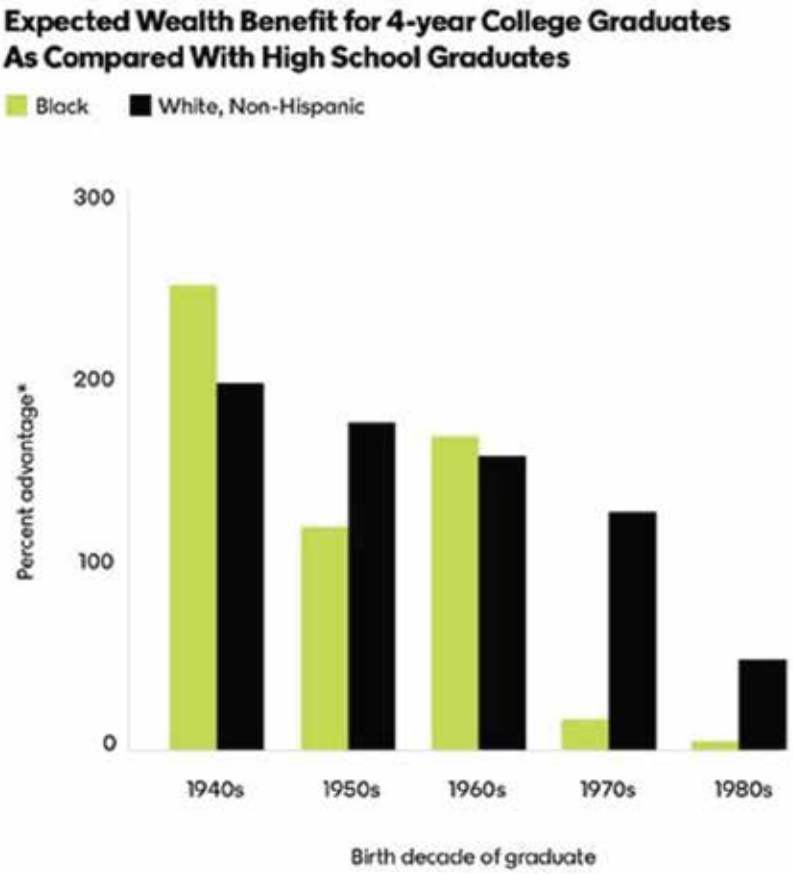
A decade later, Americans' feelings about higher education have turned sharply negative. The percentage of young adults who said that a college degree is very important fell to 41 percent from 74 percent. Only about a third of Americans now say they have a lot of confidence in higher education. Among young Americans in Generation Z, 45 percent say that a high school diploma is all you need today to "ensure financial security." And in contrast to the college-focused parents of a decade ago, now almost half of American parents say they'd prefer that their children not enroll in a four-year college.

Outside the United States, meanwhile, higher education is more popular than ever. Our global allies and competitors have spent the last couple of decades racing to raise their national levels of educational attainment. In Britain, the number of current undergraduates has risen since 2016 by 12 percent. (Over the same period, the American figure fell by 8 percent.) In Canada, 67 percent of adults between 25 and 34 are graduates of a two- or four-year college, about 15 percentage points higher than the current American attainment rate.

On average, countries in the Organization for Economic Cooperation and Development have increased their college-degree attainment rate among young adults by more than 20 percentage points since 2000. Americans have turned away from college while students in the rest of the world have been increasingly going to campus. Why? What is the likelihood that what is happening in the USA may not happen later in other parts of the world including Bangladesh? Moving forward, how can our institutions work proactively in increasing higher education of students in Bangladesh, not only for Bangladeshis but for international students?

Is Cost a Critical Factor?
When it comes to higher education worldwide, the United States is an outlier in more ways than one. In Canada and Japan, public-university tuition is now about $5,000 a year. In Italy, Spain and Israel, it's about $2,000. In France, Denmark and Germany, it's essentially zero. A few decades ago, the same thing was true in the United States; government funding covered much of the cost of public college. Now students and their families bear much of the burden, and that fact has changed what used to be a straightforward calculation about the economic value of college into a complex math problem.

In theory, today's sky-high college wage premium should mean a surge of young people onto college campuses, not the opposite. But as a measure of the true value of higher education, the college wage premium has one important limitation. It can tell you how much college graduates earn, but it doesn't take into account how much they owe — or how much they spent on college in the first place.



*In median family wealth for families headed by four-year college graduates over families headed by non-graduates. Source: Federal Reserve Board's Survey of Consumer Finances and calculations done by William R. Emmons, Ana H. Kent, and Lowell R. Ricketts for their paper, "Is College Still Worth It?"

The grading system comparison in Bangladesh and Abroad

Probably the interest towards public schools is dropping mainly due to the controversy in grading system and quality of education. Many parents and teachers themselves question the true intellect of the students passing with flying colors from national curriculum oriented public schools and colleges. In university admission tests and recruitment exams these GPA 5 holders are reportedly found to be less competitive in terms of communication, presentation and creative skill. As word of mouth goes, today's GPA5 holders are knowledgeable but lack in the know how about the application of that knowledge. On the contrary, international grading system mark students based on Knowledge, Application, Analysis and Evaluation. They follow grade threshold which is subject to modification every session. The syllabus followed in individual subject is modified every 2-3 years. There are different education boards like Edexcel, CAIE and IB. Thus, the students are judged in a broader perspective and the system is continuously monitored and updated. Also, the exam scripts across the world are boarded and sent to the head offices miles away from the students' reach. There is thus lesser possibility of any kind of grade inflation and corruption in the evaluation process. All these facts are enough to convince students manage the sum of money and enroll in an educational environment where they can practice and apply their knowledge.

Unfortunately enough, the national curriculum on the contrary seem to believe in the moto that pressure works better in creating a learned generation. Students here are more likely to accept physical punishment and abusive language from teacher and spend more number of study hours memorizing the text book lines. They believe the better is the memory, the greater is their chance to write pages in exams and secure good score. Since their childhood, the Asian curriculum-oriented school going children aim for the score, first in school exams, then in PSC (Primary School Certificate), JSC (Junior School Certificate), SSC (Secondary School Certificate) and HSC (Higher Secondary School Certificate). After all these hurdles, they compete to get admitted in reputed public university and then for BCS (Bangladesh Civil Service), knowing this as the highest level of achievement. In case one fails in following this trend, they are looked as being weaker and get enrolled in private university in Bangladesh or abroad. But here they face a completely different learning environment and they get to know for the first time that knowledge application and public speaking is prioritized more than the ability to memorize. It is to be noted here that most private universities in Bangladesh are introducing Outcome Based Curriculum and not just learning. Let's take for example the very common question asked in international university admission process "'who are you and what makes you different?". This type of write up is not in practice in the national curriculum. The NCTB curriculum doesn't help increase the language skills much. This is reflected in cases where

National curriculum teachers were found unable to write proper recommendation letters.

Quality Comparison

The tuition fee is slightly different for public and private schools. The lowest salary paid in 2023 is 27,000 and the highest salary depends on the organization format. This can range from 70000 to 90000. The reputed public schools of the city maintain an equal standard salary for their teachers to that paid in average private schools. Besides most public schools have pension schemes, fringe benefits, service quarters and attractive retirement plans for the teachers.

Yet the difference in attitude of teachers towards students is visible. This is because of the different policy of employee management. A private school teacher is constantly supervised and is answerable for his everyday activities. Name it greeting the toddlers with a good morning or counseling the adult students, the private schools following international curriculum have trained teachers in this category. The teachers are marked on their behavior with the students and any kind of physical or oral abuse can lead to sanctioning the teachers. There is a separate space for parents teachers meeting and counseling. This may be one of the biggest reasons one would be compelled to send your dearest child to a private school despite the high cost. Luxury facilities such as a wide auditorium, swimming pool, well maintained cafeteria and spacious dormitories add further value to the schools and collaborate all kinds curricular an extra-curricular activities under one roof. That makes it easy for the busy parents as they do not need to travel place for sports and music lessons. Also, the parents can be relieved as the students are constantly under observation of the known trusted teachers.

A causal relationship between school enrolment and quality of teaching and Cost in Dhaka

The diagram below shows that for a particular private school in Bangladesh, tuition fees are on the rising trend between 2018-2023.

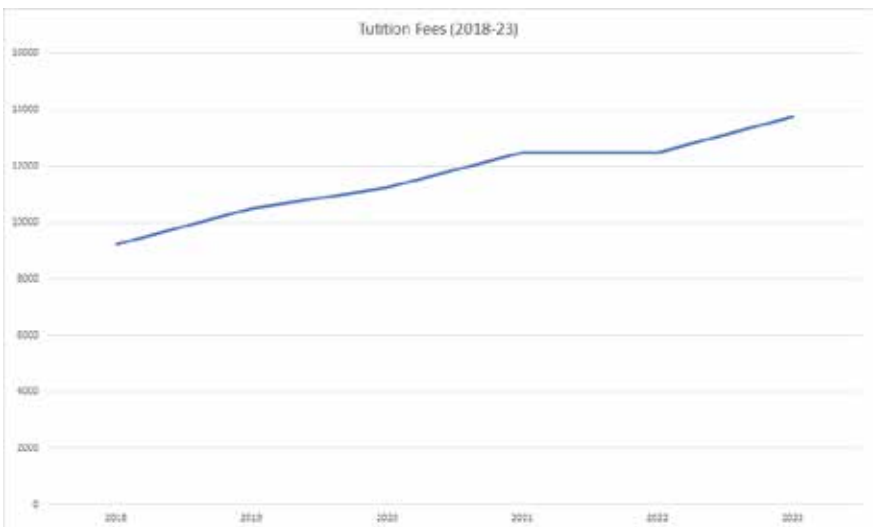


Fig1 Tuition Fees of the private school 2018-23

Fig2 Number of High School Students, Daily Star Awardees and Teacher Student Ratio (2018-23)

Figure 2 shows despite rising tuition fees, number of high school students increased over the same period. The credit could be onto the increasing level of daily star awardees and teacher student ratio.

Recommendation

Study shows 86% of international curriculum-based students applying for studying abroad were from Dhaka. This means there is a centralization of such schools and opportunities within the capital city. This is a major reason for the city private schools pocketing huge sum of money every session. Therefore, to cater the increasing demand and need of the students enrolling in Bangladesh and abroad, the following steps may be suggested:

(i) Teacher student ratio should be increased in schools and universities for better interaction. Therefore,
(ii) Small classroom size for small number of students in each class.
(iii) Teachers' training programs should be subject oriented and based on conducting class.
(iv) Teachers should also be facilitated with international trainers.

THE TRANSFORMATIVE EFFECTS OF THE COVID-19 PANDEMIC ON HIGHER EDUCATION: A FOCUS ON POSITIVE OUTCOMES

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Abstract:
The global COVID-19 pandemic has presented unprecedented challenges in various sectors worldwide, including the field of education, with widespread closures of schools, universities, and colleges. While much of the discourse has understandably focused on the adverse impacts of the pandemic, this paper highlights the positive transformations that have emerged in the education sector, benefiting both students and teachers. From the students' perspective, the pandemic ensured uninterrupted education despite the global crisis. It also played a pivotal role in addressing various mental issues of students and reducing instances of juvenile delinquency. Distance learning fostered increased interactivity, as students found themselves less inhibited in virtual settings. This paper, through data analysis and qualitative method of research, argues that the adoption of new technologies proved less complex than anticipated, offering students the comfort of learning from home without the hassles of commuting. Additionally, the regular uploading of class recordings and learning materials provided flexibility, eliminating time constraints, and enabling students to learn at their own pace. The online platform also significantly enhanced teacher-student communication, providing students with empowerment in various aspects. Teachers experienced positive effects during the pandemic as well. Many individuals engaged in higher studies and training to adapt to remote teaching methods, thus enhancing their teaching skills. The pandemic prompted a renewed focus on research activities, leading teachers to explore innovative teaching strategies and technologies. Remote learning facilitated greater flexibility in lesson delivery and broadened the reach of educational content. In conclusion, the pandemic, despite its challenges, has brought about numerous positive changes in the education sector, fostering adaptability, interactivity, and professional growth for both students and educators.

Keywords: Tertiary Education, Covid-19, Remote Learning and Educational technology

1. Introduction

The COVID-19 pandemic has brought about significant transformations in the realm of education, resulting in the reconfiguration of the methods through which students and teachers interacted within the educational framework. The educational sector saw a significant shift in its structure and operations as a result of the implementation of lockdowns and social distancing measures, leading to various issues for schools and universities. The article examines the positive impacts of the pandemic on the realm of higher education, with a specific emphasis on the perspectives and encounters of students as well as teachers.

The transition to online education, despite its initial challenges and obstacles, has presented a wide range of benefits. Prominent academic institutions, like Harvard, Yale, and MIT, have acknowledged the attractiveness of online educational platforms, leading to the extensive integration of e-learning methodologies. The aforementioned change facilitated the democratization of education, ensuring equitable access to learning opportunities for all students. Additionally, it served as a catalyst for a technological renaissance in the field of education. The incorporation of technology into the educational framework has resulted in an enhancement in digital literacy among students, hence enabling more effective and adaptable learning experiences.

The advent of online education has significantly enhanced the level of contact between students and professors. The utilization of digital technologies facilitated the provision of customized support, individualized conversations, and a significant augmentation of students' comprehension, in addition to fostering a deeper rapport between teachers and students. The pandemic brought about a transformation in teachers themselves. The individuals actively pursued possibilities for advanced education, professional development, and scholarly research, adeptly traversing the digital realm to enhance their teaching approaches. The individual's dedication to ongoing education demonstrated their capacity to persevere and adjust, resulting in a significant and enduring influence on the trajectory of the educational landscape. This paper explores the transformational impacts, shedding light on the evolution of education throughout the epidemic and the lasting beneficial consequences for both students and teachers.

2. Reflecting the Online Education through Students' Lens

2.1. Continuation of education

The COVID-19 pandemic has predominantly yielded adverse consequences on schooling, with little good effects. Although there are certain initial drawbacks to online classes, such as the financial costs and resource allocation necessary to effectively administer online requirements,

prestigious institutions like Harvard, Yale, and MIT University have demonstrated a keen interest in the advantages offered by online classrooms(Almaududi Ausat, 2022). It is widely acknowledged that online education has the potential to enhance, supplement, or maybe supplant traditional on-site education in some situations(Altmann et al., 2018). Most educational institutions were compelled to embrace e-learning as their sole option. Many educational institutions have utilized the chance of online teaching to provide classes to students in a manner that is both engaging and interactive.(Magomedov, Khaliev and Khubolov, 2020) E-learning emerged as the sole recourse to address the educational gap resulting from the discontinuation of traditional classroom instruction.

Online teaching ensures that every student has an equal opportunity to study. The notion of back benches is absent in the context of online classrooms, as all students are afforded an equitable opportunity to occupy a front row seat(Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). Online education offers a significant possibility for individuals to engage in self-directed learning. Students possess the capacity to engage in more efficient analysis of the subject matter being presented to them. The implementation of a distant learning system, commonly referred to as online learning, has been initiated by the government(Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). The implementation of an innovative technology-based system surely requires a high level of technical literacy among educational institutions, teachers, students, and even parents. This significantly expedites the nation's process of adopting instructional technologies. The utilization of technology in education aligns with the ongoing development of the Fourth Industrial Revolution, hence indicating its potential benefits during Covid -19.(Almaududi Ausat, 2022.

2.2. Digital literacy through Integration of Technology

When considering the beneficial effects of the pandemic, a notable aspect is the incorporation of technological advancements within the educational framework. The convergence of education and technologies has been a consistent trend, but the advent of the Internet has propelled this integration to new heights. While some may perceive this as a forced transfer, it was the only viable answer available at the time. Educational institutions are increasingly adopting a blended form of learning. The ongoing pandemic has prompted individuals to acquire and employ digital technologies, leading to a notable rise in digital literacy. It is strongly recommended for all students to enhance their technological proficiency.

Prior to the implementation of lockdown measures, students predominantly utilised mobile devices for leisure activities such as engaging in casual conversations, playing games, watching movies, and consuming unnecessary video content. However, their cognitive processes and dispositions have undergone a transformation in response to the prevailing circumstances. Presently, students predominantly utilize mobile devices and technology to acquire knowledge, particularly through platforms such as Zoom, Google Meet, and Google Classroom, which facilitate the delivery of lectures and educational materials. In addition, students acquire the skills necessary to upload files and submit assignments via the Google Classroom platform. Students begin viewing several online lectures related to their course in order to grasp the underlying concepts (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). The individuals exhibited increased intelligence and heightened awareness as they engaged in proactive measures to adequately prepare for online examinations. This involved conducting thorough research and diligently tackling a multitude of multiple-choice problems pertaining to each respective course. The observed phenomenon represents a significant shift in the behaviour and characteristics of students.

Additionally, college students make use of their vacation break to do online diploma courses in software such as MATLAB, C programming, R software, Java, among others (Magomedov, Khaliev and Khubolov, 2020). These courses serve to enhance their skills and knowledge, hence increasing their prospects for future employment chances. Even those who are in the process of preparing for competitive examinations are being offered the chance to access online crash courses. Postgraduate students are currently prioritizing their academic pursuits and dedicating their efforts towards preparing for various competitive tests such as the National Eligibility Test (NET), State Eligibility Test (SET), Graduate Aptitude Test (GAT), and similar assessments (Tanjimul Islam et al., 2023). In this manner, students are engaging in the appropriate use of technology, so fostering their personal growth and development. The current cohort of pupils has a greater affinity for mobile phones and laptops as compared to traditional tools such as books and pens. The acquisition of new computer skills is undoubtedly facilitated by the students' extensive use of computers or laptops for completing tasks.

2.3. Mental Health Issues

The COVID-19 pandemic has resulted in unexpected improvements in the mental well-being of students. The transition to remote learning has afforded students greater flexibility in managing their schedules, therefore facilitating the allocation of time for self-care and family engagements. The newfound freedom afforded students the opportunity to actively explore personal interests and engage in mindfulness practices, so offering a valuable relief from the frequently demanding nature of conventional classes. Additionally, the decreased academic and social demands associated with traditional face-to-face education provided students with a chance to prioritize their emotional welfare and engage in reflection. The enhanced accessibility of telehealth services and virtual counselling has contributed to the improvement of mental health assistance (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). The global health crisis has facilitated a heightened discourse surrounding psychological well-being and has contributed to the normalization of seeking assistance.

Teachers are more aware of the well-being of their students. Frequently, teachers initiate contact with their students via phone calls or messages to inquire about any challenges they may be facing and offer assistance in resolving them. The teachers further provide guidance to their students in alleviating tension, fostering relaxation, and facilitating stress management (Almaududi Ausat, 2022). This approach

fosters a strong bond between students and teachers, resulting in increased proximity and connection.

2.4. Efficient Learning through More Interactions with Teachers

Due to the shift towards online and hybrid learning during Covid -19, there has been an increased reliance on digital platforms for communication between students and teachers, surpassing traditional methods of interaction (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). This transition facilitated enhanced opportunities for students to engage in inquiry, get individualized assistance, and participate in intimate dialogues with their teachers. The improved level of engagement facilitated a deeper comprehension of the subject matter among students, hence enabling teachers to provide more effective assistance. Moreover, these exchanges fostered a heightened sense of rapport between students and teachers. The use of time management strategies by students resulted in increased efficiency and a heightened sense of motivation and accountability towards their academic tasks (Garg et al., 2020).

This positive outcome may be attributed to the provision of personalized feedback and assistance. The heightened level of engagement not only had a positive impact on students' academic achievements but also made a significant contribution to their overall well-being. The pandemic has expedited the adoption of technology to facilitate meaningful connections between teachers and students, so positively transforming the landscape of education. Online education has the advantage of unrestricted temporal and spatial boundaries, hence eliminating the constraints typically associated with traditional classroom settings (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). One advantageous aspect of online classrooms during Covid-19 is the absence of limitations on the number of students who may engage in learning simultaneously.

2.5. Availability of Class Materials

With the transition to remote learning, educational institutions have increasingly made class materials accessible through online platforms. The process of digitizing and storing textbooks, lecture notes, and assignments involved the conversion of physical materials into digital formats, which were then uploaded onto online platforms and learning management systems (Dutta and Smita, 2020). This facilitated convenient access for students to their study materials from their residences, so ensuring their ability to maintain pace with their academic tasks. The provision of online class materials has afforded students increased freedom. The ability to study at an individualized speed and revisit material as necessary proved particularly advantageous in comprehending complex subjects (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). Moreover, this transition facilitated the advancement of open educational materials, hence enhancing the accessibility and affordability of education.

The advent

of online class materials has revolutionized the field of education, since it has rendered learning more flexible and easily attainable. Less academically proficient students have the opportunity to review instructional films given by their teachers, as well as access additional videos on YouTube to enhance their understanding of the subject matter from the comfort of their own homes (Altmann et al., 2018).The use of electronic information in educational instruction enables students to conveniently access course materials at any given moment. Learning materials are readily distributed among students, and inquiries are addressed using electronic mail, short message service (SMS), and various social media platforms such as WhatsApp. Alternatively, Facebook might also be considered.

3. Seeing Online Education from A Teacher's Eye

3.1. Higher Studies and Training through Remote Learning

During the COVID-19 pandemic, teachers actively pursued more educational and training options in order to effectively navigate the evolving educational environment. In the realm of education, a multitude of programmes and products have been utilised across different educational levels to facilitate online learning. This approach enables teachers to engage in studies outside of traditional educational facilities, such as the convenience of their own residences. The individuals engaged in webinars, online courses, and virtual workshops, which facilitated their understanding of efficacious online pedagogical techniques, the creation of digital curricula, and approaches to effectively involving students in virtual educational environments (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). Educational institutions and organisations have implemented targeted training programmes to assist teachers in effectively tackling the many problems presented by the epidemic.

The dedication to continuous learning exhibited by teachers not only facilitated the acquisition of necessary competencies for effective instruction in the digital realm, but also underscored their capacity to persevere and adjust to new circumstances. The event demonstrated the unwavering commitment of teachers in the midst of unparalleled conditions and is anticipated to exert a long-lasting influence on the trajectory of education. According to a number of researches, there is a growing trend in the popularity of online education among both students and instructors (Kou and Liu, 2020). Consequently, it is imperative to recognise online education as an essential element of institutions' global strategic objectives. The acquisition of new online technologies is intricately connected to and exerts an impact on students' holistic pleasure and perceived excellence of their educational encounters (Bao, 2020).

3.2. Research Activities

Certain teachers who are obtaining a Ph.D. are afforded ample time to dedicate to their research endeavors. The individuals prioritized their efforts towards doing research and then disseminated their findings through the publication of several research articles in various esteemed national and international journals (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). Home-based researchers employ their innovative ideas to mitigate the transmission of the COVID-19 virus. Additionally, statisticians have made projections on the future trajectory of the spread of COVID-19. These projections serve as valuable tools for governments to take supplementary preventative measures and effectively

manage the issue (Bao, 2020). Medical researchers worldwide have diligently commenced efforts to develop a vaccination as expeditiously as possible during Covid-19. Emerging researchers derive new research concepts and select their topics in response to contemporary societal challenges.

3.3. Development of Skills

Teachers have the capacity to embrace new technology in order to enhance and modernize their professional skills. Efforts are made to adapt to the prevailing circumstances in order to enhance the quality of education provided to students (Kou and Liu, 2020). Therefore, in light of the ongoing epidemic, teacher during Covid-19s have adopted new instructional approaches such as using PowerPoint presentations, videos, video conferencing, and online lectures through platforms like Zoom meetings, Google Meet, and other similar apps. These instructional methods are often regarded as highly effective.

Teachers have enhanced and refined their instructional abilities by participating in webinars focused on various topics such as information and communication technology (ICT), the COVID-19 pandemic, faculty development programs (FDP) on massive open online courses (MOOCs), and new pedagogical approaches. Teachers actively engage in the acquisition of additional knowledge pertaining to their respective disciplines, as well as new pedagogical approaches and information and communication technology (ICT). In addition, teachers acquire various instructional resources such as Quizziz and Kahoot in order to enhance the engagement and appeal of quizzes for their pupils (Firdaus, Yaseen and Shubhadaramesh Joshi, 2021). Question papers are created using Google Forms in order to facilitate online examinations. In addition to their regular teaching responsibilities, teachers also engage in online refresher and orientation courses to enhance their academic credentials.

4. Conclusion:

The COVID-19 pandemic, an unprecedented worldwide crisis, resulted in an unforeseen upheaval within the domain of higher education. Although the negative consequences were unquestionable, the positive outcomes that arose from these difficulties resulted in a transformation of the educational environment in unprecedented ways. The advent of online education was first viewed with skepticism, but it has since gained significance as a means of ensuring the uninterrupted continuation of learning (Garg et al., 2020). Prominent academic institutions and universities have actively participated in the digital revolution, facilitating the democratization of education and expanding its accessibility to a wider range of individuals. The subsequent increase in digital literacy has emerged as a crucial competency for individuals, leading to a fundamental shift in our approach to acquiring knowledge and interacting with information. One unexpected advantage observed was the enhancement of pupils' emotional well-being. The utilization of online learning provided them with the opportunity to effectively manage both their academic endeavors and personal welfare, resulting in a harmonic equilibrium. The contact between students and professors grew in the digital environment, providing a more individualized and interesting learning experience (Kou and Liu, 2020). The introduction of digital forms for class materials has significantly enhanced the educational landscape, promoting flexibility and inclusivity. Furthermore, teachers themselves actively pursued avenues for professional development, demonstrating resilience and adaptation via their acquisition of proficiency in the digital technologies that characterized the emerging paradigm. In summary, the global pandemic has expedited necessary transformations within the realm of education, despite the numerous obstacles it presented. The utilization of technology has revealed its potential in promoting inclusive learning settings, enhancing mental well-being, and facilitating meaningful connections between teachers and students, so moving the field of education towards a hopeful and flexible future.

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TLT011

FOSTERING LEARNER AUTONOMY IN BANGLADESH: TEACHERS' PERSPECTIVES AND OBSTACLES IN ESL/EFL CLASSROOMS

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Abstract
This paper intends to bring out the hurdles experienced by teachers as well as gather their valuable insights regarding the integration of learner autonomy principles in tertiary level EFL classes in Bangladesh. For attaining this goal, a mixed method approach was adopted. First, a survey with structured questionnaire was administered among teachers to systematically learn about their challenges and experiences. Additionally, a qualitative interview of the tertiary level language teachers in Bangladesh was conducted to gather teachers' insights related to their personal experiences in pedagogical practices in their EFL classrooms. The teachers revealed mixed feelings towards implementing learner autonomy in Bangladeshi context as they believe it to be essential to ensure students' continuous learning but not feasible in terms of teachers' preparedness and learners' acceptance of this approach.

Keywords: Learner Autonomy, Teachers' Perspectives, Pedagogical Obstacles, English language classes in Bangladesh, ESL/EFL Classroom

1. Introduction

The landscape of education is continually evolving, driven by the quest for more effective and student-centered pedagogical approaches. In this era of educational reform, one concept that has garnered significant attention is learner autonomy. Defined as the capacity and willingness of learners to take responsibility for their own learning, learner autonomy represents a shift from traditional teacher-centered approaches towards a more learner-driven educational paradigm (Benson, 2001). Although the merits of fostering learner autonomy are well-documented in theory, its practical implementation remains a complex and context-dependent endeavor.

In Bangladesh, the prevailing teaching approach has traditionally centered on teachers rather than students, hindering the development of independent learning skills among English language learners. The scarcity of diverse materials essential for learner autonomy coupled with a lack of proper training for teachers in its implementation further exacerbate this issue. Despite some individual initiatives to introduce learner autonomy, success rates remain uncertain, often confined to smaller experimental groups. Consequently, the feasibility of implementing learner autonomy in English language classes at the tertiary level in Bangladesh remains unestablished. This paper addresses the challenges faced by ESL/EFL teachers in integrating learner autonomy, emphasizing the need to illuminate their perspectives and experiences. The focus is on understanding the hurdles and gathering insights to facilitate the adoption of student-centered teaching methodologies in the context of Bangladesh.

2. Literature Review

Learner autonomy is a crucial concept in language education, as it empowers learners to take control of their own learning process. In the context of Bangladesh, where English language learning has significant importance, understanding the role and prospects of teachers in fostering learner autonomy is essential. This paper explores the findings of several studies related to teacher contributions and challenges in promoting learner autonomy in English language classrooms in Bangladesh.

Teacher perspectives on learner autonomy are essential in understanding the dynamics of language education. Many educators recognize that encouraging autonomy among students can significantly accelerate their language learning journey. They view learner autonomy as a way to fulfill the specific needs of language learners and enhance overall language proficiency. Yasmin and Sohail (2018) conducted a study that emphasized the close relationship between learner autonomy and English language learning. Teachers believed that encouraging autonomy among learners can accelerate language acquisition. According to their findings, learner autonomy fulfills the perceived needs of foreign language learning and ultimately contributes to improve target language proficiency.

Tran and Vuong (2022) highlighted elements that both facilitate and hinder students' capacity to study English independently. Teachers' viewpoints were noted as crucial factors influencing learner autonomy. The study underscored the significance of supportive learning environments, intrinsic motivation, learning preferences, and technological advancements in promoting autonomous learning.

Challenges in teacher efforts to promote learner autonomy can be multifaceted. Teachers may face resistance from students who are accustomed to more traditional instructional approaches. Balancing autonomy with the need for structured guidance can be challenging, as teachers must provide enough freedom for learners to make choices while ensuring that they stay on track. Inozu (2011) provided insights into the challenges faced by teachers in their efforts to develop learner autonomy. In a case study, it was found that the teacher's attempts to foster autonomy were disappointing for both the teacher and the learners. The teacher's methods caused discomfort and anxiety among students, negatively impacting their self-esteem. This case study illustrates the need for teachers to adopt effective strategies in promoting autonomy while ensuring a positive learning environment.

When participants acknowledged the importance of learner autonomy in English vocabulary learning, their interest and behavior did not align with this awareness (Tran, 2020). His study suggests that teacher efforts to instill learner autonomy may face resistance from students who may not fully engage with autonomous learning practices. It highlights the importance of addressing affective and behavioral aspects to encourage autonomous learning.

In the context of Bangladesh, where English language learning is highly valued, understanding the role and prospects of teachers in fostering learner autonomy is essential. The studies reviewed in this literature review demonstrate the importance of teacher perspectives, supportive learning environments, and effective strategies in promoting learner autonomy. Additionally, addressing challenges and resistance to autonomy among students is crucial for successful implementation. Ultimately, the cultivation of learner autonomy has the potential to accelerate language learning and improve English proficiency in the context of Bangladesh.

3. Methodology

This paper follows mixed method approach where quantitative data has been collected through a survey on 39 EFL/ESL teachers of different private universities of Bnagladesh and for qualitative data, a focused group discussion has been held with 5 EFL/ESL teachers having 5 to 10 years of teaching experience at tertiary level. Firstly, the analysis of the survey brings forth the challenges faced by the teachers while implementing learner autonomy as well as provides a thorough survey on the teachers' knowledge about the concept of learner autonomy and on developing materials for conducting learner autonomous classes. In the second part of data collection, in-depth interviews with EFL/ESL teachers brings out the personal experiences, pedagogical practices, and strategies employed by the teachers to promote learner autonomy.

4. Findings and Discussion

Table 1: Teachers' Ideas and Expectations about Learner Autonomy

Questions	Strongly	%	Unsure %	Agree %	Strongly Agree %
1. Learner autonomy is promoted when learners are involved in making decisions about the objectives of a course.	3.2	16.7	6.5	56.7	16.7
2. Learner autonomy is promoted when learners can make choices about the topics or content of learning.	3.2	23.3	10	53.3	10
3. Autonomy is encouraged when learners have the freedom to choose classroom activities that align with learners' personally relevant goals	3.2	13.3	10	60	13.3
4. Autonomy means that learners can make choices about the methods and approaches in which they learn.	3.2	20	16.7	43.3	16.7
5. Learner autonomy is promoted when learners have the freedom to decide how their learning will be assessed.	10	50	10	30	
6. The most effective way to develop autonomy is learning outside the traditional classroom settings.	3.3	16.7	13.3	46.7	20
7. Learner autonomy means learning without the guidance of a teacher.	13.3	53.3	6.7	23.3	3.3
8. Learner autonomy entails a rejection of conventional teacher-centered teaching methods.	3.3	33.3	10	43.3	10
9. Individuals who lack autonomy tend to be less successful as language learners than their autonomous counterparts.	6.9	10.3	20.7	48.3	13.8
10. Language learners of a more advanced age tend to find it relatively simpler to cultivate self-directed learning abilities compared to their younger counterparts.	6.5	10	6.7	60	23.3
11. The proficiency of language learners does not affect their ability to develop autonomy	3.2	38.7	22.6	29	6.5
12. Confident language learners are more likely to develop autonomy than those who lack confidence.		3.2	3.2	54.8	38.7
13. Motivated language learners are more likely to develop learner autonomy compared to those who lack motivation				41.9	58.1
14. Learner autonomy is attainable by learners of all cultural backgrounds.	6.5	16.1	6.5	48.4	22.6
15. Learner autonomy is only possible with adult learners.	16.1	51.6	22.6	6.5	3.2
16. Learning how to learn is key to developing learner autonomy.		3.2	6.5	67.7	22.6
17. To be successful autonomous learners, learners need to possess the ability to Identify their own needs.			9.7	48.4	41.9
18. To be successful autonomous learners, learners need to possess the ability to Identify their own strengths and weaknesses.			3.2	48.4	48.4
19. Acquiring the ability to work independently is central to the development of learner autonomy			13.3	50	36.7
20. The ability to self- monitor one's own learning progress is central to learner autonomy.			19.4	45.2	35.5
21. To become autonomous, learners need to develop the ability to evaluate their own learning.	3.2	3.2	12.9	58.1	22.6
22. The teacher plays a crucial role in supporting and encouraging learner autonomy.			3.2	48.4	48.4
23. Learner autonomy has significant positive effect on one's success as a language learner.			6.5	51.6	41.9

Table 1 illustrates Bangladeshi EFL teachers' ideas and expectations related to learner autonomy. Various models of learner autonomy revolve around the notion of learners' capacity and freedom to strategize, execute, monitor, and assess their own learning experiences (Littlewood, 1996; Macaro, 2008; Benson, 2001; Little, 2020). In the context of the present study, majority of the respondents agreed on the notions that learner autonomy is promoted when learners are engaged in making decisions about the objectives of a course (56.7%), about learning content (53.3%), classroom activities (60%), teaching

methods and approaches (43.3%). However, the survey illuminated the respondents' reservations regarding the notion of learners' freedom in deciding how their learning will be assessed as majority (50%) disagreed on this point. While the majority of survey respondents (46.7%) endorsed the notion that fostering learner autonomy is best achieved through non-traditional learning environments outside the classroom, the majority of teachers surveyed disagreed with the idea that learner autonomy entails learning independently without teacher guidance. Different other researchers have also recognized the importance of teacher role, although not of the traditional kind, in promoting autonomous learning (Benson and Voller, 1997;Weiyuyan, 2002; Rongmei Yu, 2020). Learner autonomy is reported to be closely interwind with various other aspects of learners, including high motivation, openness to communication, self-belief influencing language learning outcomes, the ability to step back and reflect critically, make informed decisions, and engage in self-directed learning (Dickinson, 1995; Ushioda, 2006; Little, 2007; Brown, 2007; Raya et al., 2020). Majority of the survey participants in this research supported the view that learner autonomy has positive correlation with learners' advanced age (60%), higher proficiency level (38.7%), self- confidence (54.8%) and high motivation (58.1% strongly agreed). However, while the majority (48.4%) of the survey participants in this study believe learner autonomy to be negatively corelated with cultural factors, numerous scholars attributed the challenge of fostering learner independence in Asia to cultural factors. In this context, students might perceive teachers' attempts to promote learner autonomy as a disregard to their traditionally expected roles (Illés, 2012). Finally, table 1 shows that learner autonomy has significant positive correlation with one's success as a language learner. When learners believe they have the agency to make choices about how they learn English and can do so in their preferred manner, they are more inclined to cultivate a genuine passion for learning the language, as opposed to feeling obligated to do so (Dang, n.d.).

Table 2: Practices and Strategies to promote learner Autonomy

Questions	Strongly Disagree %	Disagree%	Unsure%	Agree%	Strongly Agree%
Learner independence can be achieved by consistently providing chances for learners to complete tasks independently.	2.6	12.8	0.0	69.2	15.4
2. Collaborative activities encouraging students to work in groups foster learner autonomy.	0.0	0.0	2.6	66.7	30.8
3. Engaging in self-directed study in the library fosters learner autonomy.	0.0	5.1	10.3	59.0	25.6
4. Learner autonomy is facilitated through self- directed activities in a self-access center.	0.0	7.7	17.9	61.5	12.8
5. Out-of-class tasks which necessitate students to utilize the internet promote learner autonomy.	0.0	0.0	10.3	69.2	20.5

Questions	Always%	Very Often%	Sometimes%	Never%
6. How frequently do you use 'Self- evaluation with a checklist' for evaluating student papers in your EFL classroom?	0.0	7.7	66.7	25.6
7. How frequently do you use 'Peer evaluation' for evaluating student papers in your EFL classroom?	0.0	28.2	51.3	20.5
8. How frequently do you use 'Project presentation or other group work ' in your EFL classroom?	33.3	53.8	12.8	0.0
9. How frequently do you use 'Giving choice, e.g., choosing own topic for presentation' in your EFL classroom?	33.3	46.2	20.5	0.0

10. How frequently do you use 'Home assignments promoting e- learning' in your EFL classroom?	25.6	38.5	35.9	0.0
11. How frequently do you encourage students for additional self- study?	56.4	33.3	10.3	0.0
12. How frequently do you guide students to select materials for self- study?	17.9	38.5	38.5	5.1
13. How frequently do you create scope for peer teaching in your EFL classroom?	5.1	30.8	51.3	12.8
14. How frequently do you arrange short reflection sessions, in which students talk or write about what they have learned, what they will do next?	5.1	35.9	43.6	15.4

Table 2 outlines the practices of Bangladeshi EFL teachers concerning learner autonomy. The data indicates a theoretical alignment with concepts such as individual task completion (62.2%), collaborative activities (66.7%), self-directed study (59%), and out-of-class tasks (69.2%). However, a discernible gap exists between theory and practice, revealing inconsistent application in classrooms. Specific tasks, like 'Self-evaluation with a checklist' (66.7%), 'Peer evaluation' (51.3%), and group work (53.8%), show infrequent use of materials crucial for fostering learner autonomy. This discrepancy may hinder the development of "responsible learning" (Patterson, 1977). Notably, a substantial number of teachers (38.5%) don't permit students to choose materials, limiting autonomy where learners could create content based on their needs. As a result, the findings indicate that Bangladeshi tertiary level teachers are still guided by sort of teacher-centered learning strategies.

Table 3: Feasibility of Learner Autonomy at my Institution

Questions	Always%	Very Often%	Sometimes%	Never%
1. To be successful autonomous learners, my students should be involved in making decisions about the objectives of a course.	35.9	41.0	17.9	2.6
2. To be successful autonomous learners, my students should be involved in selecting materials for the course.	35.9	43.6	17.9	0.0
3.To be successful autonomous learners, my students should be involved in making decisions about the kinds of tasks and activities they do.	15.4	53.8	23.1	5.1
4.To be successful autonomous learners, my students should be involved in making decisions about the topics discussed.	5.1	46.2	35.9	10.3
5. To be successful autonomous learners, my students should be involved in making decisions about how their learning will be assessed.	28.2	46.2	20.5	2.6
6. To be successful autonomous learners, my students should be involved in making decisions about the teaching methods used.	33.3	35.9	28.2	0.0
7. To be successful autonomous learners, my students need to have the ability to Identify their own needs.	5.1	23.1	51.3	17.9
8. To be successful autonomous learners, my students need to have the ability to identify their own strengths and weaknesses.	0.0	17.9	51.3	28.2
9.To be successful autonomous learners, my students need to have the ability to monitor their progress.	0.0	28.2	43.6	25.6
10.To be successful autonomous learners, my students need to have the ability to evaluate their own learning.	2.6	33.3	46.2	15.4
11. In general, the students I teach English most often to at my institution have a fair degree of learner autonomy.	0.0	25.6	33.3	33.3
12. In general, when teaching English at my institution, I give my students opportunities to develop learner autonomy.	0.0	2.6	10.3	71.8

Table 3 illustrates the teachers' views about the feasibility of learner autonomy in the institution. In an autonomous learning process, students are primarily responsible for determining the goals they want to achieve. According to learner autonomy, the learning activities should be selected by the learners as this is a self-directed learning (Holec, 1979). Additionally, Holec claims that when learning to talk in English, the student will make decisions along the lines of "I have to be able to do this in conversation with such and such a speaker, in such and such a sphere." (1979). However, in table 3 it is evident that despite the teachers' more favorable theoretical leanings towards the concept, they have reservations regarding the practical feasibility of fostering learner autonomy. (Simon Borg).

5. Interview Results

While interviewing four teachers about learner autonomy, they shared very similar perspectives. They defined learner autonomy as students' ability to take charge of their learning, diagnose needs, having control over selecting materials and assessment modes, fostering independence. They mentioned challenges including cultural norms valuing traditional teaching methods, exam-oriented culture, lack of patience, perseverance, ethics and motivation hindering effective implementation of autonomous learning in Bangladeshi EFL context. Two teachers talked about situations when they tried to apply strategies such as recommending websites for pronunciation practice or using AI for eliciting corrective feedback for writing improvement but expressed their dissatisfaction with student response. Overall, they agreed on the potential benefits but acknowledged the need for cultural adaptation and gradual implementation in Bangladesh's educational landscape.

6. Conclusion and Recommendation

In conclusion, while teachers in Bangladeshi EFL/ESL contexts are familiar with the concept of learner autonomy, there is a significant disparity between this theoretical understanding and its actual implementation in classrooms. Teachers harbor reservations, perceiving students as not fully capable of thriving in an autonomous learning setting. This reluctance impedes the consistent incorporation of learner autonomy principles, highlighting the necessity for targeted interventions to address the gap between perception and practical application.

Recommendations for the success of learner autonomy can be listed as follows:

1. Revision in Education System: Revising the primary and secondary education system to introduce learner autonomy at an earlier stage is crucial.
2. Student Orientation: Offer orientation programs to help students to understand the benefits and challenges of autonomous learning, reducing fear and hesitation.
3. Criteria for Material Selection: Establish criteria for students to select their own learning materials, empowering them to choose materials aligned with their interests and needs.
4. Diverse Activities: Implement various learner-centered activities to cater to individual interests, increasing motivation and engagement.
5. Teacher Training: Provide training opportunities for teachers to equip them with the skills and knowledge necessary to facilitate learner autonomy effectively.
6. Innovative and Interactive Classrooms: Foster innovative and interactive classrooms with supportive, dedicated, and approachable teachers, creating an environment conducive to autonomous learning.

In summary, challenges faced by teachers is a major concern in implementing learner autonomy in tertiary-level EFL/ESL classrooms in Bangladesh. By addressing these challenges and embracing these prospects, educators can help students to develop the critical skills of independence, motivation, and confidence essential for successful language learning.

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Appendices:

1.Questionnaire (Can be provided upon request)

2. Interview questions (Can be provided upon request)

Bio- *Tasneem Shereen Khan is a lecturer in the Department of English at American International University-Bangladesh. Previously, she served as a lecturer in the Department of English at Canadian University of Bangladesh. She completed her graduation and post-graduation from the Department of English, University of Dhaka. Her interested research areas are Meta-Modernism, South Asian Literature, ELT, Teaching Approaches.*

Bio- *Tasnia Tarannum is currently working as a Lecturer at the Department of English in American International University- Bangladesh. She has teaching experience of more than eight years and has previously worked in two other renowned private universities of Bangladesh. Before embarking on her teaching career, she graduated with a Bachelor degree and also completed her Masters from Dhaka University, the most prestigious public university in Bangladesh.*

Bio- *Risala Ahmed is an Assistant Professor in the Department of English at American International University-Bangladesh. Prior to AIUB, she worked as a Teacher in an English Medium School in Dhaka previously. She has completed her Honors and Masters from the Department of English, University of Dhaka. Her interested research areas are ELT, Shakespeare studies and post-colonial literature.*

Bio- *Md. Asif Kamal is an Associate Professor of English at American International University-Bangladesh (AIUB) and has been teaching literature and language courses for the last 15 years. He has published 14 research articles in different referred national and international journals. His recent publication is a chapter in The Routledge Handbook of English Language Education in Bangladesh published in 2021. He also co-authored the Essay and Report Writing Module published in 2017 published by UGC of Bangladesh and supported by British Council. He has completed his PhD thesis on Content and Language Integrated Learning (CLIL) in Bangladesh.*

Messages

Dr. Dipu Moni, M.P.
Honorable Minister
Ministry of Education
Government of the People's Republic of Bangladesh

The aim of education is the knowledge, not of facts, but of values, and the pursuit of quality education at the tertiary level is a paramount endeavor for the Government of Bangladesh. In recognition of its transformative potential, the Ministry of Education has undertaken a concerted effort to maintain and enhance the standards of excellence among all public and private universities.

The trajectory of qualitative changes in Bangladeshi academia are indeed noteworthy. Despite facing challenges and constraints, most universities have commendably embraced transformative approaches to learning, venturing beyond traditional pedagogical methods. We acknowledge and applaud the contributions of these institutions in fulfilling the nation's aspirations for a more erudite citizenry. I welcome all the members, organizers, partners, volunteers, and other stakeholders of the Asia Pacific Quality Network (APQN) to Bangladesh, a land of stories – stories of progress and perseverance.

It is with immense pride that I note the selection of the American International University – Bangladesh (AIUB) as the host for the APQN Academic Conference 2023. Since its inception in 1994, AIUB has demonstrated a steadfast commitment to quality education, consistently implementing innovative initiatives that have yielded remarkable outcomes. In addition to its exemplary academic and non-academic programs, AIUB's significant contributions to research in diverse fields are particularly noteworthy. The hosting of this prestigious conference is yet another testament to AIUB's dedication to excellence.

Under the visionary leadership of our Honorable Prime Minister, Sheikh Hasina, the education sector in Bangladesh has witnessed unprecedented growth and development. Our unwavering commitment to quality education is driven by the aspiration to produce graduates equipped with the knowledge, skills, and critical thinking abilities necessary to contribute meaningfully to the realization of our national vision of a SMART Bangladesh by 2041. The insights and recommendations generated through this conference will be invaluable as we embark on the formulation of a new policy framework for higher education in Bangladesh.

I extend my sincere gratitude to the APQN for organizing this important event in our country. I am confident that it will catalyze further collaboration among stakeholders dedicated to realizing the vision of the greatest leader of the nation, Bangabandhu Sheikh Mujibur Rahman, for the advancement of quality education. I thank you all for your participation in this conference and wish you all the success in your endeavors.

May knowledge and enlightenment prevail.

Joy Bangla, Joy Bangabandhu.
May Bangladesh Live Forever.

Dr. Dipu Moni, M.P.
Minister
Ministry of Education
Government of the People's Republic of Bangladesh

Mr. Nar Bahadur Raika
President
Asia Pacific Quality Network (APQN)

It is with great pleasure that the American International University Bangladesh, the host of the 2023 APQN Academic Conference and Annual General Meeting, is bringing out the Proceedings of the papers presented during this significant event.

The conference, centered around the theme "Innovation and Sustainable Development in Higher Education," will primarily focus on transformative teaching-learning, blended education, digital quality assurance, and university-industry linkages. We are dedicated to exploring and advancing these essential aspects of education for a brighter future.

The participants, representing diverse backgrounds and experiences, have come together to share their valuable perspectives, practices, and observations. These collective insights are invaluable contributions that will shape the future of education.
In today's fast-paced world, learners are no longer mere recipients of information; they must actively engage with new knowledge, adapting it to their lives and the ever-changing situations they encounter. Embracing lifelong learning is crucial, and in this digital age, it necessitates accepting various modes of learning.

This Proceedings serves as the enduring record of the presentations made during the 2-day Conference. These papers reflect the state of development in various aspects of this crucial topic at the time of writing and will prove invaluable to all individuals responsible for ensuring quality assurance in higher education.

The presentation of papers at this conference serves as a vital platform for sharing research-based evidence with broader communities of academicians. This exchange fosters collaboration, innovation, and a deeper understanding of the multifaceted challenges and opportunities in education today.

We extend our heartfelt gratitude to our fellow members of the Organizing Committee for their unwavering encouragement in promoting participation on this vital theme. Our sincere thanks also go to the chairmen who played a pivotal role; without their support, the conference could not have achieved the success it did. Furthermore, we express our deep appreciation to the authors themselves. Their expert input was fundamental; without their dedicated efforts, this conference would not have been possible. Their contributions made a significant impact, playing a vital role in its overall success.

Mr. Nar Bahadur Raika
President
Asia Pacific Quality Network (APQN)

Professor Dr. Jianxin Zhang
Former President
Asia Pacific Quality Network (APQN)

It is with great pleasure that the American International University-Bangladesh, the host of the 2023 APQN Academic Conference and Annual General Meeting, is bringing out the Proceedings of the papers presented during this significant event.

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Professor Dr. Jianxin Zhang
Former President
Asia Pacific Quality Network (APQN)

Professor Dr. Mesbahuddin Ahmed
Chairman
Bangladesh Accreditation Council

It is indeed a great pleasure to know that APQN Academic Conference 2023 will be held in AIUB from 02-04 November 2023. The contribution of APQN to improving quality in higher education is commendable and admirable. APQN has truly dissolved the boundaries and is working towards a quality region. Among the universities in Bangladesh, AIUB is one of the pioneers and promoters of quality assurance in higher education. I thank APQN for choosing AIUB as the host for this conference.

APQN provides a platform for academicians and researchers to interact and exchange ideas on quality education. I believe that this year's conference, which coincides with the 20th anniversary of APQN will draw the outlines that will provide us the opportunity to introduce innovation and sustainable development in higher education.

I hope that all the national and international participants of this conference will develop a network which will actively play a role in qualitative changes in higher education. It is my trust that the presentations and discussions in this conference will embrace the new ideas for quality assurance and quality enhancement. I believe that the deliberations from various distinguished speakers will benefit the participants to update their knowledge on blended education, internationalization and innovation in higher education.
The themes and sub-themes of this conference have given us an opportunity to discuss the challenges and needs of quality education. My best wishes for the success of this APQN Academic Conference 2023, and looking forward to working with you for the continuous development of quality education in Bangladesh.

Professor Dr. Mesbahuddin Ahmed
Chairman
Bangladesh Accreditation Council

Professor Dr. Muhammed Alamgir
Chairman (Aditional Incharge)
University Grants Commission of Bangladesh

I am delighted to know that APQN (Asia-Pacific Quality Network) Academic Conference 2023 is going to be held in American International University-Bangladesh (AIUB). I welcome all the local and international authors, researchers, speakers and delegates who are going to join this conference to discuss innovation and sustainable development in higher education. The themes and sub-themes of the conference are very timely and important for the growth of quality higher education.

I am very happy to know that this is the 20th year of APQN. I congratulate the Board of APQN for the success of holding such an event regularly and acknowledge their contributions in improving the awareness on quality assurance. I strongly believe that APQN will continue to grow and positively play a role in quality enhancement.

I, on the behalf of the University Grants Commission of Bangladesh, always encourage and support the constructive dialogue for the overall improvement of teaching learning environment. I believe that this conference will create a platform where ideas will be generated which and disseminated will help for the betterment of higher education.

We are aware that AIUB has been working on quality assurance for a long time and UGC was always a partner to ensure that the activities undertaken by AIUB to go in the right direction. In the future, we will continue to support all the programs focusing on quality education.

I would like to extend my sincere thanks to the organizing committee for their untiring efforts to make the conference happen. I thank the experts from home and abroad for sharing their ideas, knowledge, and expertise on the quality assurance in higher education.

I wish APQN Academic Conference 2023 a grand success.

Joy Bangla, Joy Bangabandhu.
May Bangladesh Live Forever.

Professor Dr. Muhammed Alamgir
Chairman (Aditional Incharge)
University Grants Commission of Bangladesh

Ishtiaque Abedin

Chairman and Founder-Member
Board of Trustees
American International University-Bangladesh

American International University-Bangladesh (AIUB) started its journey with a vision to ensure quality education and adequate research in the field of science, engineering, business, arts and social sciences. AIUB has gone through an extensive infrastructural development and expansion of physical resources to provide innovative and sustainable development in higher education in Bangladesh. The success and achievements of AIUB was acknowledged by the national and international agencies. To get the opportunity to host APQN Academic Conference 2023 is another success of AIUB.

On behalf of the Board of Trustees and Management of AIUB, I would like to thank the Board of APQN for giving us the opportunity to host this conference. We are aware that this scholarly event will feature highly respected internationally renowned speakers who will share, discuss, debate, and dissect significant new developments in higher education, and propose meaningful changes in transformative learning which are necessary to counter the challenges that higher education is facing.

The domain and parameter of development in higher education have become more diverse and are so great in complexity and number that on one direction can be a panacea. The outcome of this conference will certainly guide us to choose the corrective actions for a new journey to quality enhancement in higher education.

My heartfelt congratulations to the organizing committee who have made this event a success through their hard work and dedication. A conference of this magnitude would not have been possible without the support and sincere efforts from the different committee members from AIUB and APQN.

As the Chairman of the Board of Trustees of AIUB, I assure that AIUB will always be there with APQN for the future activities.

I wish all the success of APQN Academic Conference 2023.

Ishtiaque Abedin
Chairman and Founder-Member
Board of Trustees
American International University-Bangladesh

Dr. Carmen Z. Lamagna
Member
Board of Trustees
American International University-Bangladesh

I am delighted to extend a warm welcome to esteemed scholars from around the world who are joining us for the Asia Pacific Quality Network (APQN) Academic Conference 2023. This year's conference holds special significance as we celebrate the 20th anniversary of APQN. I extend my heartfelt congratulations to all those currently involved with APQN, as well as those who have been part of APQN's journey in the past. We wholeheartedly recognize and appreciate the contributions each of you has made towards enhancing the quality of higher education.

It is worth reminiscing that back in May 2007, the American International University-Bangladesh (AIUB) organized the 'International Workshop on the Development of Measurements for Higher Education Quality Assurance in Bangladesh' with support from the Secretary of APQN attended by participants from 13 countries. Since then, AIUB has undertaken various initiatives aimed at ensuring the delivery of quality education, initiatives that have garnered praise from both national and international entities. Notably, in 2016, AIUB was honored with the Best Model IQA University award by APQN.

AIUB has been diligently working to establish robust networks of programs and facilitate the sharing of resources and expertise with local and international educational institutions and organizations. These efforts are aimed at accelerating and implementing educational programs to enhance and uphold global academic standards. This academic conference serves as a valuable platform for participants to expand their networks and formulate action plans to address the challenges in higher education.

I would like to express my gratitude to the Board of APQN for selecting AIUB as the venue for this year's conference. I am hopeful that the discussions led by distinguished speakers in areas such as transformative teaching and learning, digital quality assurance, university-industry collaboration, and blended education will provide new insights that contribute to the sustainable development of higher education.

I extend my best wishes for the tremendous success of the APQN Academic Conference 2023. I trust that your active participation and valuable contributions will make this conference an unforgettable event.

Dr. Carmen Z. Lamagna
Member
Board of Trustees
American International University-Bangladesh

Dr. Hasanul A. Hasan
Founder-Member
Board of Trustees
American International University-Bangladesh

I'm pleased to extend a warm welcome to all the distinguished scholars, both from home and abroad, who have gathered for the APQN Academic Conference 2023. This assembly includes esteemed keynote speakers, researchers, and authors. I trust that your collective contributions to this conference will play a pivotal role in advancing sustainability in the realm of higher education.

This academic conference is centered around the exploration of challenges and opportunities in the fields of quality enhancement and transformative teaching-learning. Our aim is to discover innovative approaches to higher education.

I'd like to express my sincere gratitude to APQN for choosing AIUB as the host for this conference. This reflects AIUB's ongoing commitment to research that leads to significant developments in higher education. Our university is dedicated to continuous growth and to providing educational services that meet the evolving needs of society. The conference's theme aligns with AIUB's vision and goals, and I believe it will effectively highlight the latest research findings and forward-looking insights in various interdisciplinary domains related to higher education quality.

On behalf of the founders of AIUB, I wish to express my deep appreciation to the Ministry of Education, the University Grants Commission, and the Bangladesh Accreditation Council for their collaboration and participation, which have greatly contributed to the success of this event.

I offer my best wishes for the success of the APQN Academic Conference 2023.

Dr. Hasanul A. Hasan
Founder-Member
Board of Trustees
American International University-Bangladesh

Nadia Anwar
Founder-Member
Board of Trustees
American International University-Bangladesh

Internationalization is not just about sending our students out into the world but bringing the world to our students as well. It is a matter of great pleasure for us to be able to host the APQN Academic Conference 2023 at the American International University – Bangladesh (AIUB).

As a platform that integrates the knowledge and experience of esteemed scholars and practitioners from across the region, the Asia Pacific Quality Network (APQN) has been pivotal in enhancing the quality of higher education. And AIUB has always been geared towards contributing to accomplishing that, committed to providing quality education and producing competent world-class professional since it started. We have been relentlessly engaging in community outreach programs, enriching academic programs with co-curricular activities, developing and sharing resources and expertise of the university. This conference provides a unique opportunity for us to come together and share our research, insights, and best practices on the critical issues facing higher education today.

Themed on "Innovation and Sustainable Development in Higher Education", this year's conference crucially focuses challenges and opportunities that we grapple with in the 21st century. We believe that this conference will help us all to achieve our goals by providing a forum for the exchange of new ideas and the development of creative solutions. I hope, that together, by proactively participating in thought-provoking discussions, we will gain a better perspective on improving our approach towards the growth of quality education, regionally and beyond.

Thank you for joining us here at AIUB. We look forward to the constructive and collaborative sessions of the APQN Academic Conference 2023!

Nadia Anwar
Founder-Member
Board of Trustees
American International University-Bangladesh

Professor Dr. Md. Abdur Rahman
Pro-Vice Chancellor
American International University-Bangladesh

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Professor Dr. Md. Abdur Rahman
Pro-Vice Chancellor
American International University-Bangladesh

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APQN Administrator

XU Yingjie

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*Names are not listed as seniority basis.

Program Schedule

Date	Name of the Event	Time
03 November 2023 (Friday)	**Opening Ceremony** Venue: AIUB Campus	**9:00 AM - 10:00 AM**
	Introductory Speech and Theme Address by **Prof. Galina Motova**, APQN Vice President	9:00 AM - 9:10 AM
	Welcome Remarks by **Mr. Ishtiaque Abedin**, Chairman, Board of Trustees, AIUB	9:10 AM - 9:20 AM
	Speech by Special Guest Professor **Dr. Haseena Khan**, Member, University Grants Commission (UGC), Bangladesh	9:20 AM - 9:30 AM
	Speech by Chief Guest Professor **Dr. Mesbahuddin Ahmed**, Chairman, Bangladesh Accreditation Council	9:30 AM - 9:40 AM
	Speech by Prof. **Dr. Jianxin Zhang**, APQN Board Director, Immediate Past President, on the occasion of APQN's 20th Anniversary	9:40 AM - 9:50 AM
	Plenary and Parallel Sessions Venue: AIUB Campus	11:00 AM - 3:30 PM
	Gala Dinner	7:00 PM - 10:00 PM
04 November 2023 (Saturday)	**Plenary and Parallel Sessions** Venue: AIUB Campus	11:00 AM - 3:00 PM
	Closing Ceremony Venue: AIUB Campus	3:00 PM - 4:00 PM
	Announcement of the next host of 2024 AAC by APQN Vice President and Presentation by the local Host	3:00 PM - 3:15 PM
	Agreements, MoUs	3:15 PM - 3:25 PM
	Closing Remarks by the APQN Board Director, Chair of the Conference Programme Committee: Dr. Timur Kanapyanov	3:25 PM - 3:30 PM
	Closing Remarks by Dr. Hasanul A. Hasan, Founder Member, Board of Trustees, AIUB	3:30 PM - 3:35 PM
	Special Guest Speech by Professor Dr. Md. Abu Taher, Member, University Grants Commission of Bangladesh (UGC)	3:35 PM - 3:40 PM
	Speech by Dr. Carmen Z. Lamagna, Member, Board of Trustees, AIUB	3:40 PM - 3:45 PM
	Speech by Chief Guest Dr. Dipu Moni, M.P., Honorable Minister, Ministry of Education, Government of the People's Republic of Bangladesh	3:45 PM - 3:50 PM
	Presentation of Appreciation Crest and Certificate to APQN from AIUB	3:50 PM - 3:55 PM
	Vote of Thanks by Mrs. Nadia Anwar, Founder Member, Board of Trustees, AIUB	3:55 PM - 4:00 PM

APQN Academic Conference 2023

About the APQN Academic Conference (AAC) 2023

The APQN Academic Conference (AAC) is an annual Asia-Pacific event that brings together Higher Education Institutions (HEIs), Quality Assurance Agencies (QAAs), government regulators and organizations working in the field of quality assurance together to discuss and advance quality assurance in higher education. This conference will focus on the discussions of the issues related to Innovation and sustainable development in Higher Education. More specifically the conference will concentrate on transformative teaching-learning, blended education, digital quality assurance and university-industry linkage. The 2023 APQN Academic Conference (AAC) has been hosted by American International University-Bangladesh in Dhaka, Bangladesh on 02 to 04 November 2023.

The theme of the conference is:
Innovation and Sustainable Development in Higher Education

The subthemes of the conference are:

1. Quality of Transformative Learning (TL) and Transformative Teaching (TT)
2. Blended Education from the perspective of 4th Industrial Revolution and the COVID Pandemic
3. Digital Quality Assurance and Journey to Quality Enhancement
4. University-Industry Linkage in the background
5. The 20th anniversary of APQN

About APQN

Founded in 2003, the Asia-Pacific Quality Network (APQN) is a non-governmental and non-profit network who has been striving for "Enhancing the Quality of Higher Education in the Asia-Pacific Region" and "Dissolving Boundaries for a Quality Region".

After 20 years of development, APQN has 268 members from 47 countries and territories, becoming the largest and the most influential international organization on higher education in this Region. APQN has played a crucial and unique role in improving the QA mechanism, exchanging theory and practice experiences, promoting substantive co-operations, establishing Consultant Bank, reviewing Asia-Pacific Quality Register (APQR) and Asia-Pacific Quality Label (APQL) in this Region.

APQN Goal:
Dissolving Boundaries for a Quality Region

APQN Mission Statement:
To enhance the quality of higher education in Asia and the Pacific region through strengthening the work of quality assurance organizations and extending the cooperation between them.

APQN Vision:
To be a self-sustaining Network, a first point of reference for advice or support, efficient in its operations and open in its information sharing.

APQN Values:
To be committed to quality higher education and supportive of quality organizations in the region.

APQN Methods:
APQN achieves its purposes through a range of methods, including: dissemination of information through newsletters, documents, journals and books, whether in paper-based or electronic form; training and development through seminars, workshops, conferences and staff movement; developing and utilizing databases and other resources from other organizations; other appropriate means as determined by the General Council or the Board.

About AIUB

Overview

American International University–Bangladesh (AIUB), one of the most renowned private universities in the country, has long made its mark in developing the quality of education over the years, staying true to their motto, "Where Leaders Are Created". Established back in 1994, by Late Dr. Anwarul Abedin, an idealistic leader himself, AIUB has continuously pursued excellence in all its practices, whether it was in terms of their academic achievements, their co-curricular programs, or even the various efforts made towards research and social welfare. With a diverse pool of over 11,000 students spread across its internationally accredited programs in 4 distinct Faculties of Business Administration (FBA), Engineering (FE), Sciences and Technology (FST), Sciences and Technology (FST), and Arts and Social Sciences (FASS), AIUB has always maintained a strong presence, both nationally and internationally, by means of their numerous networks and linkages, with globally recognized brands like Microsoft, Cisco, Oracle, etc. It is with this very perseverance, graduating nearly 37,000 bright, young, and talented minds over the past 3 decades and still continuing its legacy, that AIUB remains as one of the front runners in the evolving platform of education in Bangladesh.

Vision

American International University-Bangladesh continuously transforms the students to become globally competitive and equip them with excellent, state-of-the-art and invigorating academic environment nurturing their full potentials as future leaders in their respective field of endeavor.

Mission

American International University-Bangladesh is committed to provide quality and excellent academic programs responsive to the emerging global challenges. We are dedicated to nurture and produce competent world class graduates imbued with strong sense of ethical values ready to face the competitive world of business, science, technology, engineering and social science.

Campus

AIUB is running its operation in its own beautiful campus since 2017, sprawled over nearly 12 acres of land, nestled in the heart of the city, and conveniently located in Kuratuli, Kuril, Dhaka. It is one of the largest private university campuses premises within Dhaka, noted as one of the most picturesque. From an architectural and aesthetic standpoint, this campus has already been considered as an iconic landmark. The unique dome-shaped administrative building, housing the rich library with a panoramic view, surrounded by a full-fledged football field with extended sports complex and lush greeneries, it makes for an incredibly scenic ambience and conducive environment. The state-of-the-art classrooms, dynamic fully equipped laboratories, awe-inspiring open-space amphitheater, cafeteria, and food carts, etc. add value to provide a holistic educational experience for its students and staff.

Degrees Offered at Present

AIUB currently operates under four distinct faculties: Faculty of Arts and Social Sciences (FASS), Faculty of Business Administration (FBA), Faculty of Engineering (FE), and Faculty of Science and Technology (FST).

Faculty of Arts and Social Sciences

Undergraduate Program

- Bachelor of Arts in English
- Bachelor of Arts in Media and Mass Communication (MMC)
- Bachelor of Social Science (BSS) in Economics
- Bachelor of Laws (LL.B)

Graduate Program

- Masters in Development Studies (MDS)
- Masters in Public Health (MPH)
- Master of Laws (LL.M)

Faculty of Business Administration

Undergraduate Program

- Bachelor of Business Administration (BBA) in
  - Accounting
  - Finance
  - International Business (IB)
  - Economics
  - Human Resource Management (HRM)
  - Investment Management (IM)
  - Management
  - Marketing
  - Tourism and Hospitality Management (THM)
  - Management Information Systems (MIS)
  - Operations and Supply Chain Management (OSCM)

Graduate Program

- Master of Business Administration (MBA) in
  - Agribusiness
  - Accounting
  - Business Economics
  - Finance
  - Human Resource Management (HRM)
  - Management
  - Management Information Systems (MIS)
  - Marketing
  - Operations and Supply Chain Management (OSCM)
  - Tourism and Hospitality Management (THM)
- Executive Master of Business Administration (EMBA)

Faculty of Engineering

Undergraduate Program

- Bachelor Architecture (BArch)
- Bachelor of Science (BSc) in Electrical and Electronic Engineering (EEE)
- Bachelor of Science (BSc) in Industrial and Production Engineering (IPE)

Graduate Program

- Master of Engineering in Telecommunications (MTel)
- Master of Electrical and Electronic Engineering (MEEE)

Faculty of Science and Technology

Undergraduate Program

- Bachelor of Science (BSc) in Computer Science and Engineering (CSE)
- Bachelor of Science in Data Science
- Bachelor of Science in Computer Network & Cyber Security

Graduate Program

- Master of Science in Computer Science (MSCS)

About Bangladesh

Nestled in South Asia, Bangladesh, with an area of approximately 148,460 square kilometers, is a nation brimming with diverse landscapes, rich history, and vibrant culture. Bordered by India to the west, north, and east, Myanmar to the southeast, and the Bay of Bengal to the south, its strategic geographical location has influenced its cultural tapestry and trade, making it a captivating destination for travelers.

Historical Significance:
Bangladesh holds dear the memory of its Liberation War of 1971, commemorated on Victory Day, December 16th, marking its triumph over Pakistani forces. Visitors can explore historical sites like the Liberation War Museum in Dhaka, which vividly narrates the nation's struggle for independence.

Natural Splendors:
The country's natural beauty is evident in places like the Sundarbans, the largest mangrove forest in the world and home to the majestic Royal Bengal Tigers. Sylhet, in the northeast, boasts picturesque tea gardens, while Cox's Bazar offers miles of stunning beaches along the Bay of Bengal.

Cultural Marvels:
Dhaka, the capital city, showcases a blend of modernity and tradition. The ancient city of Bagerhat, a UNESCO World Heritage Site, features centuries-old mosques and architectural marvels. Additionally, the 60 Dome Mosque in Bagerhat stands as a testament to medieval architecture.

Spirit of Language and Independence:
February 21st is celebrated as International Mother Language Day, honoring the Language Movement martyrs. Visitors can learn about the nation's linguistic heritage at the Shaheed Minar in Dhaka. Independence Day on March 26th marks the country's freedom, celebrated with fervor, including grand parades and cultural events.

Culinary Delights:
Bangladeshi cuisine, rich in flavors, is a treat for food enthusiasts. From traditional dishes like biryani and hilsa fish to delectable sweets like roshogolla, the country offers a diverse culinary experience.
Exploring these historical landmarks, natural wonders, and cultural gems, Bangladesh offers travelers an unforgettable journey, where the spirit of its people and the beauty of its landscapes create an enchanting blend of experiences.

Keynote Speakers

Professor Dr. Mesbahuddin Ahmed

Chairman
Bangladesh Accreditation Council

Stéphane Lauwick

President
European Quality Assurance Register, Belgium

Jan Friis

Senior Vice President for Government Affairs at Council for Higher Education Accreditation (CHEA), United States.

Dr. Olgun CICEK

Senior Advisor to Rector, Global Engagements and Partnerships, MANAS University, Bishkek, KZ

Keynote

Navigating Boundaries: Digitalization, Democratic Values, and the Future of European Higher Education Quality Assurance

Stéphane Lauwick
President, European Quality Assurance Register, Belgium

Abstract

After an introductory overview of the EHEA, the positioning of EQAR as (one of) the standard-bearers of the values of the EHEA, which are underlain by a Western-European approach to democratic values, is highlighted. How can we reconcile such fundamental EHEA values as the Autonomy of universities and the guarantee of academic freedom with the expected "public responsibility for and of higher education" which means that governments generally have a responsibility to massively fund HE?

To address this issue, a number of references are made to the fundamental tools and texts of the EHEA (the Lisbon Recognition Convention, the European Standards and Guidelines for QA) that have been carefully co-developed and agreed upon over the last 25 years: they articulate a framework for QA in the EHEA.

A more in-depth approach to the ESGs is proposed that highlights the EHEA's evolution in the last 5 to 10 years: towards more diversity, more transnational QA, the recognition of all forms of delivery (incl. digital & distance learning). An overview of the specific differences between the Chiba principles and the ESGs is offered with a few relevant examples (eg: How we approach independence and the story of how one and perhaps more agencies have been or will be de-registered).

In this context, the mission of EQAR and DEQAR is explained and our belief that digitalisation is relevant to internal QA, ie to the institutions themselves, less so to agencies or accreditation bodies.

So the question of digitalising QAAs and QA procedures arises. Can we digitalise the whole process from data collection to accreditation? If so, what for?

We would argue that only increased digitalisation will make it possible to open EQAR and DEQAR to more systems and operators, including new, alternative providers, those concerned by micro-credentials and to more students. We have already connected some EHEA actors and stakeholders to the workflow of our digital Register. Similarly, better digital operation will accelerate the fight against accreditation mills. In short, it will allow us to better serve the public. However, there are aspects of our mission that we won't digitalize: site visits are all important, and so are the training of experts, including student experts. These are all intensely analogue processes, all the more so that evaluation fatigue must be fought. Person-to-person contact builds trust, promotes understanding, and in fine, strangely enough, may well foster innovation.

The 2015 rewriting of the ~~ESGs aim~~ed at consolidating the double approach to quality: accountability (or control, our word) and enhancement (or improvement) and we propose that while the accountability approach is generally understood, we regret that QA is not seen often enough as empowerment for enhancement, power to humans, academics and students, to

better themselves and the systems they create. Indeed, if QA is indispensable to accreditation, a QA that only aims at accountability misses the point. We contend that the ultimate aim of our QA, our social responsibility as QA specialists is to build up on our energy to promote democratic values, to open science to all.

In the EHEA, QA is ultimately seen as the means to our grander aim: the opening of the whole region, or to quote you, "dissolving boundaries", for all to enjoy increased mobility and shared learning and research opportunities.

The new challenges of QA in the EHEA are then discussed: it is clear that the drivers of change, the true operators of transformative learning and teaching are the new European Universities. In other terms, a few years after some thought that the Bologna Process had reached its term, the EHEA is faced with the urgent need to advance its QA systems, within an evolving landscape in which, regrettably, digitalisation is forced to take second seat to the will or ability of our governments and legislators to adapt their policies.

The new University alliances are therefore drawing our attention to the limitations inherent to practicing QA nationally in an open world. What solution(s) can we offer to those who are today developing joint diplomas? How can we encourage and assure transnational, transborder evaluation? Some of the tools that are part of the European approach to QA are described. The provisional conclusion however is that although they seem to perform well, they are rarely used.

We thus finish by showing that as we are equipped with the relevant tools and supported by seemingly adequate funding from the European Commission and governments, we are opening a new era in European QA, one which (hopefully) will lead us to "dissolving [our] boundaries" wider for the good of the people of Europe.

Keynote

Innovation and Sustainable Development in Higher Education

Jan Friis
Senior Vice President for Government Affairs at Council for Higher Education Accreditation (CHEA), United States

Abstract

With the world coming out of the global pandemic and with the international disputes that are ongoing there is a continuing need for innovation and sustainable development in higher education. As part of the innovation necessary to continue to educate our students the community needs to move toward an international agreement as to what counts as quality and how to measure it. Students are mobile and their educational needs have changed since the global pandemic. Calls are increasing for credit for competency-based education, credit for prior learning, synchronous and asynchronous on-line education, stackable micro-credentials, reverse transfer, quality in the AI environment and other educational modalities. There needs to be agreed upon quality measurements for transformative learning and transformative teaching, and digital quality assurance. The never-ending question is how to finance higher education as a completely tuition-based model excludes many educationally qualified people.

Keynote

The importance of University – Industry Linkage for Quality Assurance during post-pandemic era

Dr. Olgun CICEK
Senior Advisor to Rector, Global Engagements and Partnerships, MANAS University, Bishkek, KZ

Abstract

As the importance of partnerships and collaboration become imminent, HEIs and QAAs priorities their "Internationalization" strategies during the post-pandemic era.

What is internationalization of HE? As per the definition of IAU "Internationalisation of HE is the intentional process of integrating an international, intercultural or global dimension into the the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society".

Internationalization is not a goal in itself, but a means of enhancing quality and excellence of higher education and research.

One of the main pillars of Internationalisation is engagement with "External Stakeholders". University – Industry linkage is one of the important components to be evaluated.

Collaboration between universities and industries ensures that educational programs are aligned with the current needs of the job market, helping students acquire practical skills and knowledge. The critical issue at this stage is who is responsible for what? Is there a give & take balance in this relationship?

A perfect combination would be "industry input" in curriculum design and providing internships or co-op opportunities in return can "produce job-ready graduates" who are better equipped to contribute to the workforce. Industry partnerships can serve as a quality control mechanism, helping universities maintain high standards by incorporating industry-relevant benchmarks and practices.

The role of QAA is to ensure the quality assurance of the outcome is up to the standards.

The post-pandemic era demands rapid adaptability. University-industry collaboration can facilitate the development of agile, relevant programs and research projects that respond to changing market conditions.

Finally, the link between universities and industries is vital for ensuring that education and research remain relevant, adaptable, and of high quality in the post-pandemic era. This collaboration can better prepare individuals for the workforce and foster economic growth and resilience.