A Survey of Quality Assurance Application in Technology Enhanced Learning

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Abstract:- This paper summarises the State of the Art of Technology Enhanced Learning Quality standards applied in Higher Education Institutions in Kazakhstan. It is a synthesis obtained from data collected from the European and Kazakh Universities involved in the KUTEL project. This data was gathered at an institutional and national level to understand the current situation and formulate a Quality Assurance framework on TEL. To this end, this research presents data that correspond to the real needs and quality gaps of Kazakh universities and a combined qualitative and quantitative analysis.

Keywords:- Quality Assurance; Technology Assisted Learning; National Survey.

I. INTRODUCTION

The importance of TEL (Technology Enhanced Learning) in national contexts is generally considered a critical factor to ensure continued development [1]. The Covid19 pandemic pointed out the urgency for learning environments, educational models, and tools that require a more holistic approach to TEL in Universities. A combined effort from students, university staff and policymakers, that is, from all stakeholders that directly or indirectly affect or are affected by the educational process, is the key to success [2].

Modern Higher Education Institutions (HEIs) are under tremendous pressure to align with the demands of society and the labour market [3]. Balancing social and technical factors with economic imperatives demands business agility and customer responsiveness; globalisation coupled with local focus; new technology systems; and effective talent management processes [4]. Quality Assurance (QA) raises as one of the top prerequisites for the Universities of the future [5].

A modernised learning strategy involves adapting to new ways of responding to business and society, incorporating new ideas and methods, and building on new opportunities offered by technology. In this context, the quality and effectiveness of the training need to be safeguarded by international, national, and local policies and best practices and ethical and legal considerations. These are the dimensions of crucial importance which every institution should consider when designing its policy for quality assurance and its internal quality assurance system [6]. On the other hand, the fast development of TEL results in the change of standards. It is a starting point for

emerging new modes of teaching and learning where specific criteria, indicators, guidelines, frameworks, and strategy(ies) supporting the e-learning provision should be considered. The challenge is internal to HEIs and external: national Quality Assurance agencies strive to develop practical solutions to external review methodologies that consider the particularities of e-learning and all the variety of its forms and implementations.

This research summarises the State of the Art of QA methodologies and standards in TEL at Higher Education Institutions in Kazakhstan. It is a synthesis obtained from data from the European and Kazakh universities involved in the European Union-funded KUTEL project [7]. KUTEL's core objective was to promote the reform and modernisation of Higher Education (HE) in Kazakhstan (KZ) through the introduction of a national quality assurance system for technology-enhanced learning by guaranteeing the improvement and implementation of accreditation standards, guidelines/procedures for quality assurance of TEL courses and study programs at a national level. This data was gathered at an institutional and national level to understand the current situation and formulate a Quality Assurance framework on TEL. To this end, this research presents data that correspond to the real needs and quality gaps of Kazakh universities and a combined qualitative and quantitative analysis. The multi-level research involved a desk research study in capturing the state of the art of HE related to the existing TEL Quality assurance Framework at an Institutional level in Europe and Kazakhstan). HEIs from each of the four participating European Union countries – Bulgaria, Finland, Greece, and Italy- and seven (7) HEIs from Kazakhstan. Each participating member provided a report describing the state of the Art for a quality standard on TEL in its institution. Five national (Bulgaria, Finland, Greece, Italy and Kazakhstan) and eleven (11) institutional reports were gathered. In parallel, field research based on guided Interview Questionnaires took place in seven (7) KZ HEIs and stakeholders influencing TEL and Quality Assurance practices at the regional/national level. A total of 91 respondents took part in the survey. Results show an increasing interest in QA for TEL among stakeholders and a growing community of practice with a mentality for continuous organisational improvement and efficient liaison with the labour market.

The paper is structured as follows: Section 1 details the survey methodology, while section 2 presents the state of the art quality assurance in technology-enhanced learning in Europe. The quantitative and qualitative results of the survey

are presented in sections 4 and 5, respectively. Finally, conclusions are drawn in section 6.

II. THE SURVEY

A. Context

Technologically enhanced teaching and learning are of great importance for the Higher education of Kazakhstan. In general, there is a comprehension of education standards of TEL considering new objective conditions and prospects for the development of higher education in the country [8].

As early as 2005, Kazakhstan has been taking part in a comparative analysis of students' achievements in international studies. Within the framework of creating the National System for Assessing the Quality of Education, internal and external assessments of the quality of education are introduced in all of the country's HEIs. As a result, monitoring and measurement tools have been improving. State control of the educational achievements of students is being carried out after each stage of education [9]. To solve problems introduced using TEL in education, investments were made at various levels, at the state, at the level of economically interested stakeholders, mainly by each institution individually. Improvement of long-term cooperation among universities, accreditation centres, business, and public authorities in education towards a more aware integration and implementation of TEL methods and QA frameworks for accreditation and recognition is somewhat lacking.

One of the key objectives of the survey contacted in this research was the definition of a TEL Roadmap for QA standards built upon the base of the national best practices by identifying a Baseline Kazakhstan TEL Quality Assurance Framework and national recommendations. To this end, qualitative and quantitative research was carried out in each partner country (National report) and Institution (Institutional report) to identify:

- Existing TEL practices, policies and standards.
- Challenges, obstacles and opportunities for applying TEL QA at a National and Institutional level.
- Needs of the stakeholders involved (policymakers, academic/teaching staff, students, administrative staff, technical staff, content designers and developers, education experts and didactical designers) in terms of support needed for the application of Quality Assurance processes.

B. Desk Research

The desk research aimed at providing answers to a set of questions (primarily based on ENQA recommendations [10]), which have been grouped according to 3 axes of research.

Axis 1 focused on recording existing Quality practices for TEL. It included a survey (identification, analysis) at an Institutional and National level of any training, policy, methodology, use of standards for:

- course development (structure design, content development, delivery), institutional support, teaching, learning, curriculum design, student support,
- student assessment (learner authentication, work authorship and examination security) and certification,

- academic staff assessment (assessment of academic staff by students),
- institutional assessment (assessment of institutional services by students and staff),
- ease of access to groups with special needs (for those students affected by disability, illness, and other mitigating circumstances),
- ethical issues (data privacy, intellectual property rights,
- software used for course delivery (network services, VLEs, MOOCs).

Axis 2 focused on challenges, obstacles, and opportunities to adopt TEL quality practices. The goal was to identify barriers to adopting both general TEL practises and specific TEL quality practises placed in Axis 1.

Finally, axis 3 focused on the training needs of the stakeholders for applying TEL Quality Assurance.

Concerning practices identified in Axis 1 and barriers identified in Axis 2, the research goal was to identify the needs of stakeholders for the adoption of TEL QA. The research took place simultaneously in each Institution. The partners reviewed earlier research studies and statistical data available for their country/institution to conduct the investigation and researched and reviewed policies and national legislation. The following general rules were also taken into consideration:

- The questions posed per axis were used guidelines to help organise the information; flexibility in the content organisation as possible.
- The answers should be short and to the point. All necessary information should be mentioned. An assumption was made in every question. There is a 'how and why' part. If possible, partners should explain why and how something (method, policy, tool etc.) was used.
- Key findings were to be organised using bullets or tables.
- To correctly identify the trends, sources should be recent (no more than two years old).
- Each finding should be, ideally, attributed to a source; therefore, a reference was needed. Specific frameworks, policies, legislation should be fully referenced.

C. Field Research

During the field research, KZ partners were required to use a standardised guided interview questionnaire. This research tool included two main types of questions:

- Closed-ended (or "closed") questions were questions for which researchers provided a suitable list of responses (e.g. Yes / No) that the respondent had to choose from (one or more selections were allowed). These questions produced mainly quantitative data.
- Open-ended (or "open") questions, where the researcher did not provide the respondent with a set of answers from which to choose. Instead, the respondent was asked to answer "in their own words". This produced mainly qualitative data.
- Interviews were beneficial for getting the story behind participants' experiences. The interviewers pursued in-depth information around the given topics. The interviews were also conducted to get more detailed and in-depth information. Those were shown in a one-by-one mode.

Interviewees were primarily people who hold critical positions in HEIs or influence quality assurance policies. The goal of the interviews was to collect qualitative information for essential indicators.

The main strength of this research tool was that it was easy to standardise. For example, every respondent was asked the same question in the same way. The researcher, therefore, could be sure that everyone answers the same questions, a pretty reliable method of research.

The set of questionnaires was designed under the prism of the desk research data and considered international studies that provided data on related issues, such as quality assurance principles, characteristics of TEL etc. The questionnaires were translated into the KZ language and were delivered as offline forms.

III. STATE OF THE ART

A. State of the Art at a European Level

Education and training are prominent in HEI strategies for innovative, sustainable, and inclusive growth [11]. Many works emphasise the significant challenges facing modern higher education systems and highlight the areas that need improvement [12]. Quality in teaching is one of the key recommendations. Quality assurance (development of internal QA systems and accreditation) is of increased importance, following the European Standards and Guidelines for Quality Assurance in Higher Education) as a common framework set for the global Higher Education Area. The following table summarises the primary European-wide efforts to issue frameworks and guidelines for QA in HE.

TABLE I. EUROPEAN STANDARDS/GUIDELINES FOR HIGHER EDUCATION

Standard/Guidelines	Published by:	Year
Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)	ENQA	2015
European Qualifications Framework (EQF levels 5-8)	EQF Advisory Group/EU	2008 (revision proposed in 2017)
ECBCheck Certification	EFQUEL	2008
E-xcellence Associates	EADTU	2009

Indeed, according to recent trends, there is a clear indication that the quality of learning and teaching will rely even more on standard guidelines and frameworks tailored to country-specific needs [13]. QA in TEL is not explicitly mentioned, although several guidelines and pointers exist for developing specialised TEL-related quality frameworks.

On-going work on quality assurance is performed by several bodies in the European Union, including:
- The European Association for Quality Assurance in Higher Education (ENQA)
- The European University Association (EUA)
- The European Association of Institutions in Higher Education (EURASHE)
- The National Unions of Students in Europe (ESIB)
- The European Consortium for Accreditation (ECA)
- The Central and Eastern European Network of Quality Assurance Agencies (CEE Network)
- The European Association of Distance Teaching Universities (EADTU)
- The International Council for Open and Distance Education (ICDE).

B. State of the Art at National Level

Since Kazakhstan joined the Bologna Process in 2010, the higher education system has developed by the parameters and the basic tendencies for developing education within the EHEA. There have been significant changes in quality assurance, internationalisation of education, students and staff mobility, improving the national qualifications framework. Following the parameters of the Bologna Process, the following changes in the national system of higher education have been introduced:
- The introduction of a three-level model of education (BA-MA-PhD);
- The use of credit system and the Diploma Supplement of the European standard;
- The development of national and sectoral qualifications frameworks;
- The student-centred education;
- The use of learning outcomes in educational programs design;
- Development of the concept for lifelong education;
- Implementation of the ESG recommendations into the national system of quality assurance.

Reform of the education system in these areas reflects the features of the Bologna process and global trends towards the development of the national education system. The implementation tools of the Bologna process contribute to the internationalisation of higher education, improve the quality and accessibility of education, integration of science, education and industry, promote the autonomy of HEIs. In Kazakhstan, the application of information and communication technologies (ICT) in the HE system is carried out within the state policy of informatisation of society and the economy.

Informatisation of society is enshrined as the most critical mechanism for shaping the competitiveness of the national economy in the Message of the President of the Republic of Kazakhstan N.A. Nazarbayev March 1, 2006 "Kazakhstan's strategy of joining the 50 most competitive

countries in the world. Kazakhstan is on the threshold of a breakthrough in its development."

The Republic has its QA system. Kazakhstan's accession to the Bologna Process in 2010, the introduction of amendments and supplements to the Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 № 319-III LRK in 2011 and the Presidential Decree of the Republic of Kazakhstan "On approval of the State Program on Education Development of the Republic of Kazakhstan on 2011 - 2020" dated 7 December 2010 № 1118 served as the impetus for the creation of the independent QA system in Kazakhstan.

➢ *Current policies and practices include:*
The development and improvement of the regulatory and legal framework for ICT use in higher education are carried out based on national laws, programs, and other regulations.

The Law of the Republic of Kazakhstan, "On Education", on July 4, 2018, introduced an article on the provision of non-formal education to adults and on recognising the results of non-formal education, which provides for the provision of distant education.

A State Program "Development of Education of Kazakhstan for 2011 – 2020" was scheduled. The implementation of the state program is planned in nine main areas; one of them is the introduction of e-learning (e-learning).

One of the steps towards creating conditions for the transition to informatisation in all areas, including education, was the state program "Information Kazakhstan-2020", approved in 2013. As a foundation for the digital transformation of the country's economy, this program contributed to the development of the following factors: the transition to an information society, the improvement of public administration, the creation of "open and mobile government" institutions, and the increased availability of information infrastructure not only for corporate structures but also for citizens. According to the results of three years of implementation of the state program "Information Kazakhstan 2020", 70% of the activities have already been completed, target indicators have been exceeded by 40%. However, the rapid development of IT on a global scale dictates its own rules and requires an adequate and timely response.

In 2017, the State Program "Digital Kazakhstan" was adopted. Its goal is to improve the pace of economic development of Kazakhstan and improve the quality of life of the population through the use of digital technologies in the medium term, as well as creating conditions for the transition of Kazakhstan's economy to a fundamentally new development trajectory ensuring the creation of a digital economy of the future in the long term. One of the objectives is to increase digital literacy in secondary, technical and vocational, higher education and the general population (training, retraining).

In technical and professional, higher, postgraduate education according to the Ministry of Education and Science of the Republic of Kazakhstan:

- Based on three specialities, the subject "Information and Communication Technologies" was introduced, which provides students with basic knowledge of the use of ICT in practice in the framework of their chosen profession;
- professional standards are being developed, which will become the main base for technical and vocational, higher, postgraduate education programs.

Furthermore, for 2014–2018, about 24 thousand educational grants have been allocated for training specialists in ICT specialities.

In 2017 The Government and the National Security Committee developed the concept of "Cyber Security of Kazakhstan" (2017 – 2022), the purpose of which is to ensure the information security of society and the state in the field of information and communications, as well as protect the privacy of citizens when they use the information and communication infrastructure.

Consequently, there are should be all necessary prerequisites for achieving the ambitious goal set in this Program and implementing the changes required for achieving it. So, in many universities, the educational programs System of Information security were introduced. Such legal documents regulate the creation of university information and educational environment as concepts for developing the information educational environment and development plans for the main areas of academic portals.

Kazakhstan has developed a holistic, multi-level National System for Assessing the Quality of Education (NSEQA), which includes internal and external education quality assessment. NSEQA is a set of methods, tools, and organisational structures to match the quality of the education with requirements of the state obligatory standards and conditions to achieve them within the external and internal evaluation. It is worth noting that 70 HEIs of Kazakhstan have been signed by The 'Magna Charta Universitatum' at Bologna University. All Higher Education Institutions in Kazakhstan use some of the practices mentioned above. Today, it is impossible to imagine a modern education system without using information technology in the learning process, including the use of computer technology and global information networks. The need to use the latest information technologies in high school education is dictated by the changed role of the teacher in the educational process.

Technological infrastructure is characterised by universities' access to the Internet-based on various communication channels: analogue, dedicated, wireless, satellite, mobile, etc. The most common is a dedicated and broadband communication line; the introduction of WAP technologies based on cellular communication is rare.

All universities of Kazakhstan have their portals and sites. They are informational, monitoring or educational. A distinctive feature of the outlets of leading universities is their functioning as application software systems implemented in an interactive design environment. Some universities have an extensive electronic infrastructure. Kazakhstani university

portals and sites mainly host a significant amount of their information resources. Educational resources are presented as an electronic library of full-text documents. Technological support for websites and portals is provided by leading IT companies based on international cooperation and public-private partnership, and university specialists.

Each university independently develops its database, electronic catalogues and electronic libraries. Often there is a relationship between universities, links to educational resources of other universities, primarily educational resources of universities are closed, available only to their students and teachers.

All universities in Kazakhstan have automated systems that meet the standards of the quality management system (QMS).

Many universities actively use online learning based on distance learning systems (LMS, CMS) and Adobe Connect webinar systems. For faculty members, an annual refresher course on working with the Adobe Connect webinar system is held annually, information letters are generated for students, and consulting services are provided ongoing.

The joint work of students and teaching staff in conducting online classes in a webinar format is organised based on a schedule: for students as a module of a distance learning system; for faculty in the form of service software that implements the functions of registering online classes and connecting to the Adobe Connect class according to an agreed schedule.

Records of online classes in a webinar format are placed in a distance learning system to enable students to review. Text-based educational materials (educational and methodological complexes in the disciplines, various methodological manuals, etc.) are placed in the university's electronic library, connected to the distance learning system. Thus, the link that provides access to online classes and educational materials in the disciplines for students and teaching staff is a distance learning system.

In some universities, Moodle was abandoned in favour of Adobe Connect. Expand distance learning opportunities. It allowed to significantly expand the possibilities of distance learning and communication: conduct lecture classes online record video lectures with the ability to listen online at any convenient time. Also, the transition to Adobe Connect made it possible to get rid of the support of video storage servers as this software stores data on cloud servers.

The universities of Kazakhstan have gained quite a lot of experience developing digital educational resources on case, network and TV technologies. In general, 10% of higher education content is digitised, which creates specific prerequisites for the development of e-learning.

The results of using QA practices can be recorded as follows: 84 universities out of the 131 universities provide training in IT specialities (Automation and Control,

Information Systems, Computer Science, Computer Science and Software, Mathematical and Computer Simulation, Radio Engineering, Electronics and Telecommunications, Information Security Systems). The number of students is 42,500.

IV. QUANTITATIVE RESULTS

The Field Research took place for two months in Kazakhstan. In total, 91 stakeholders participated, replying to various closed and open-ended questions. Among the respondents, 21 were authorities responsible for the accreditation and evaluation in the educational field in Kazakhstan. The total number of respondents internal to the project was 70, while those belonging to external stakeholders were 21.

The sample comprises academic personnel (tutors, researchers), administrative /technical personnel and managers. These are respondents internal to the project; they belong to the KZ HEIs participating in KUTEL. 23% of the respondents are external stakeholders, that is, authorities or organisations that influence Higher Education or QA.
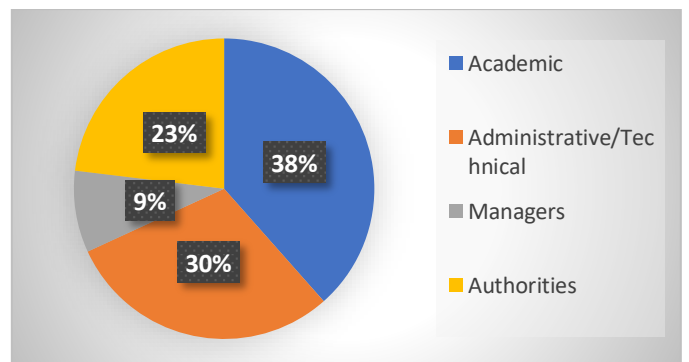

Fig. 1. Categorisation of respondents

The vast majority of respondents know that there are dedicated Q&A personnel in their organisation. Most of the respondents (66%) have experience related to Quality Assurance.
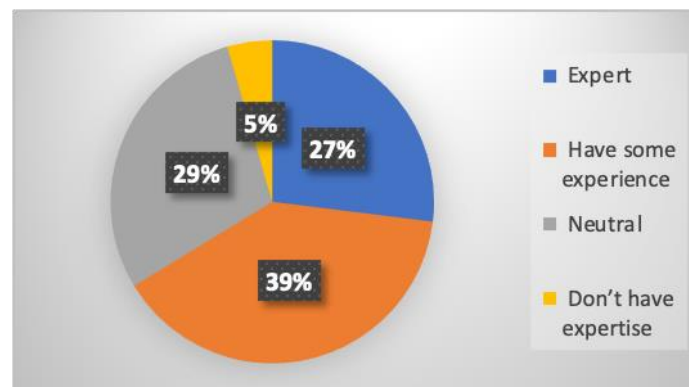

Fig. 2. Respondents experience related to Quality Assurance

Respondents were asked to rank the importance of Q&A training topics. The evaluation of learners (64% - Extremely significant), Quality assessment (64% - Extremely substantial), the evaluation of educational processes (63% - Compelling) and

the evaluation of educational content (61%- Extremely significant) rank among the first choices. However, most topics are of extreme interest to most respondents. Accreditation and basic concepts of Q&A rank among those with less interest.
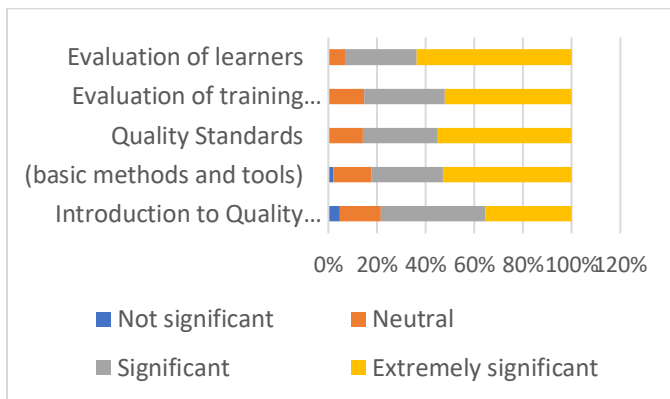

Fig. 3. Importance of QA training topics

An important issue is identifying skills that are necessary for academic staff to contribute to Q&A TEL processes. When asked, the respondents gave the following insights:
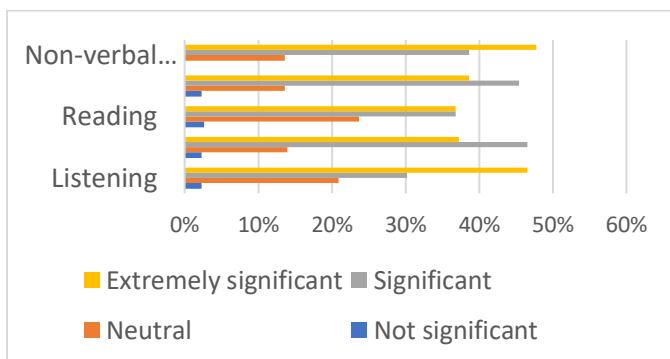

Fig. 4. Lang. and Com. Skills: importance for TEL Q&A

Non-verbal communication (confidence, expression, listening) was ranked top talent in this category with 48% of votes as an essential skill.

Email use, online collaboration tools use, and numeracy ranked top 3 in digital skills.
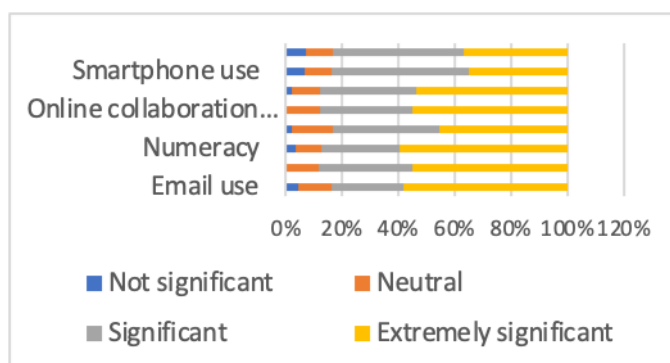

Fig. 5. Digital Skills: importance for TEL Q&A

Problem-solving and critical thinking were the two choices preferred by most respondents in the analytical skills category.
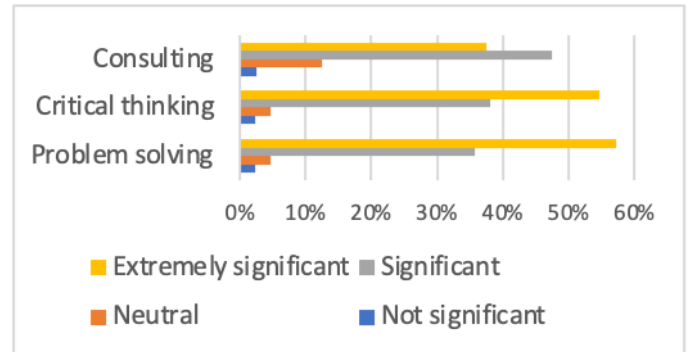

Fig. 6. Analytical Skills: importance for TEL Q&A

V. QUALITATIVE RESULTS

The responses presented in this section correspond to the second part of the questionnaire, which contained only open-ended questions for academic personnel and external stakeholders. The presentation of the answers is summarised per topic ac.

A. Current institutional policies

QA practices do exist, and academic personnel is aware of them. Quality Policies are provided as official documents. The strong points of current methods are:

- The existence of methodological frameworks and criteria,
- The unmistakable outline of responsibilities within the Institutions and the various departments.
- The understanding among the academic personnel of a need for constant improvement and adaptation of QA processes.
- On the other hand, the weak points/suggestions for improvement include:
- Quality is not considered sometimes as big a priority by the management as it should be.
- In some cases, the quality assurance level is low since there is no consistency between the specificity of the structure in the formulation of tasks. At the same time, the speed of execution is slow.
- A more transparent relationship between structural units and time management is needed.
- Mechanisms for strengthening the responsibility of each academic teacher towards quality that is, in turned duelled by student feedback.
- New staff is scarily aware of the university internal regulations and basics of QA.
- Frequent organisational changes deem the QA documentation somewhat outdated.
- Risk analysis and University's opportunities are not formally defined.
- The lack of a department responsible for an overall assessment of the quality of the University's educational activities, monitoring, analysis and reporting for analysis.
- HEIs must invest in the practicality of current QA policies involving all interested parties, such as teachers, students, employers.
- In some HEIs, Quality assurance policy needs modernisation. The processes are reported as being quite outdated and require rethinking. Also, all functions in quality assurance should be optimised. The use of

information systems for the complete automation of these procedures is required.

According to external stakeholders, it is well understood that almost all universities of Kazakhstan have a quality assurance policy, which is part of their strategic management. However, this policy is not applied systematically. To systematise and ensure the effective functioning of quality assurance policy in the last 8-10 years, many higher educational institutions of Kazakhstan have implemented a quality management system facilitated by an external quality assurance procedure. However, the quality assurance policy in universities is not always adequate since the internal quality system does not function at the proper level. Universities should implement a system of internal quality assurance using the results of Erasmus+ structural projects.

External quality assurance agencies evaluate the quality assurance policy in universities, and experts often give recommendations for improving this system. If an adequate internal quality assurance system is effectively implemented in universities, the accreditation and external quality assurance procedures will be done smoothly.

When passing the accreditation procedure, it is essential to consider the link between research, teaching and learning. Also, a quality assurance culture must be developed.

All Kazakhstan universities should develop a quality assurance policy aimed at continuous improvement of the educational process, research activities, and implementation of innovative projects. This policy should be based on the university's mission, vision, and values . The quality assurance policy should be reflected in all institution's internal documents.

As part of the internal quality assurance system, universities should analyse the identified inconsistencies, develop and implement corrective and preventive actions, analyse the effectiveness of changes, ensure the functioning of the communication channel (through which any interested person can make innovative proposals for improving activities), and also demonstrate examples of analysing these proposals and their implementation.

The quality assurance policy is considered adequate if it reflects a link between research, teaching, and learning, considering the national context, including the institute, the national context, and a strategic approach.

B. Stakeholder involvement in Quality Assurance

Stakeholders are considered a key to the success of developing a successful Q&A system as they can lend and share their voice to ideas, thoughts, and opinions. Stakeholder engagement is a vast topic that includes gathering and sharing information, dealing with concerns and grievances from your stakeholders, measuring the impact and importance of different stakeholder groups, communicating back and forth through various methods, and more. Initially, strategic planning of processes such as:

- identifying the diverse stakeholder groups as part of the environmental scan before initiating the strategic planning process.
- creating a system to solicit their feedback.
- use their feedback and concerns to create our strategic priorities.
- report back (as part of an implementation and communication plan and go back to stakeholders and discuss the findings).
- Are needed. The establishment of a single coordinating body and exchange of experience with domestic and foreign universities would help this end.
- Other, more specific actions in a tactical level may include:
- Improved interaction with employers organisations that provide the base of practice develop cooperation with local influence and sponsors
- Allocation of resources necessary for the quality system's creation, commissioning, and effectual functioning.
- Annual assessment of the quality system through the analysis and evaluation of the effectiveness and efficiency of the system by management.
- Developing a quality culture, recognising its importance and the need to provide consumers with quality guarantees.
- Informing the public and interested parties about the results of operations, their achievements and development plans.
- Maintenance by management of personnel competence, guaranteeing the quality of higher professional education and research works and products through internal financing and fundraising, material and moral encouragement.
- Cooperate with employers who will monitor the practical skills of students.
- involve students in the discussion of educational programs. Conduct surveys with students and employers on the quality of teaching and the content of educational programs.

C. Design and approval of TEL courses

Technology-Enhanced Learning is considered crucial by many respondents. It is necessary because most institutions use this as the standard of education, but it can also improve education. Each teacher should have sufficient knowledge and background, and experience in using and implementing TEL in the classroom. In this way, faculty can focus on HO (higher-order) learning at the cutting edge of their fields since this is now a widely used standard in education.

Coordination of goals, criteria with the objectives of the state policy in the field of quality, the development program is necessary; the goals should be clear and feasible; development of programs to broadcast the best practices of the EU countries in the field of quality education is needed. However, goals should align with national policies, copyrights legislation, privacy protection rights etc. This process includes rules such as:

- setting of program objectives should be based on learning objectives in this speciality.
- training criteria should be formed considering the market's needs, the speciality's objectives, national and regional programs.

- To develop an educational program, a development team is needed. Program development could also be associated with the market demand and the needs of employers.

According to stakeholders, HEIs have academic policies, appropriate quality assurance procedures, and standards for implemented programs to form an individual's professional competence, corresponding to the European, national and sectoral qualifications frameworks. The university should take responsibility and demonstrate the implementation of commitments to develop a quality culture, recognising its importance and provision. To achieve these goals, HEIs should develop and implement a strategy to continuously improve quality and activities.

Official policies and procedures are the structure through which a university can develop and monitor the effectiveness of its quality assurance system. The presence of such a structure helps to strengthen the university's independence and its recognition in society. The academic policy should reflect the intention of the university and the list of means and mechanisms for its implementation. Recommendations for applying all procedures can provide complete information on forms and tools of its performance. They are used as reference material for all those interested in its application.

The academic policy should also reflect the relationship and interrelation of the educational process and research work, the university's intentions regarding quality and standards, organisation of quality assurance system, responsibilities and contribution of structural units and teaching staff to quality assurance of academic programs, the student's participation in quality assurance procedures, and methods to be used while implementing educational policy.

The formation of the educational space of a university depends on how clearly and transparently a university defines its achievement's final learning outcomes and trajectories. The university formulates and documents each academic program's goals and development strategy. It also determines all methods and ways to adjust the purposes of the educational program and its effectiveness.

Taking into account the academic programs' specifics, HEIs should independently determine their requirements for various forms (full-time, part-time, correspondence), levels (BA - MA - PhD) and technologies (remote, TEL programs).

The development and approval of educational programs are necessary at all specified levels. Without the development of clear criteria, it will not be apparent to the purpose; without participation in national policy development, it is impossible to receive the expected result.

D. Guidelines for TEL courses

Survey participants were asked to propose guidelines for setting regulations covering all phases of the student "life cycle" for a TEL programme. This should include general guidelines on student admission, progression, recognition, and certification.

Nearly all respondents agreed that a shift to the student lifecycle management with an HEI is needed. More specifically:

- Admission - take into account professional orientation individual and professional qualities.
- Progression - is the achievement of high quality of learning, encouraging outstanding results in studies and science.
- Certification - analysis and comprehensive coverage of the quality of the performance of final works.
- Rating graduates by specialities with their publication on the university's website.
- Publication on the website of the university information about employment.
- Organization of periodic meetings of graduates in the university.

To track the phases of the students' life using the TEL programme, the following should be considered:

- Support students in embedding learning technologies effectively into the curriculum or support for learning;
- 2. Advance professional practice by promoting scholarship and action research in e-learning, including enhancing the student learning experience, particularly by enabling greater flexibility and widening opportunities;
- Facilitate the sharing of effective practice within and across institutions.
- Assist staff to meaningfully incorporate technology into learning, teaching and assessment, using the principles of the TEL programmes.
- Gamification- Exploiting the power of digital games for learning. Teachers could easily access the progress of the students through instant results and feedback from different applications

It should also be evident for both students and the university the responsibilities of each party. E.g. universities should provide high-quality learning materials, and students should know where to get them and how to use them. The workload of teachers and students should be well defined. Using materials prepared by teachers should be regulated – authorship.

Some respondents emphasised that students must have ICT knowledge, have computer literacy skills, and use e-mail. Also, students should actively use smartphones for classes. Their progress should be visible on the educational portal and accessible in real-time. Certification should be used to recognise the non-academic achievements of students in the educational process, along with the examination grade.

According to stakeholders, A HEI should have a policy of forming a contingent of students throughout the entire period of study and procedures after completion of training. For successful accreditation, a university must demonstrate specific, published and consistently applied rules governing all study periods, including admission, academic performance, recognition and certification. All rules and procedures should ensure a smooth and consistent development of a student's academic career and its promotion along the educational path. Their content should give learners a clear idea of all actions

needed. These procedures should include the students' initial acquaintance with the organisation's corporate culture, history, order, and peculiarities of studying within the framework of the academic program.

Universities must create a mechanism for students' academic achievements and progress to be effectively monitored.

Results of previous studies are an integral component of recognising the student's achievement. The university must ensure the objectivity of recognition.

An assessment of students' involvement in the educational process, professional competence, personal development, individual needs and capabilities of students is achieved by assessing compliance of all procedures with the Agency's accreditation standards.

The university should determine the procedure for recognising previous learning outcomes and competencies acquired in academic mobility and additional, formal and non-formal education.

From the 1st course in an educational institution, the standard and legal documents regulating the student's participation in scholarly activity, his rights and duties, a training trajectory are established.

At a stage of receipt to enter the written essay. It will allow defining the level of development of thought processes. To practice tasks for the development of creativity identity during the entire training period. As a result, the student has to have the created skills of various cogitative operations: the analysis-synthesis to reason, generalise and prove in the field of activity.

E. Skills needed for staff for TEL courses

Teachers of the TEL program need advanced training, both professional and organised. The teacher must have information and communication technologies used in the learning process at the entrance. Other skills include:
- Foreign languages, preferably English
- experience of pedagogical and scientific work
- Soft skills such as communicating, inspiring, listening, and creating.
- experience in the University for at least three years of experience in advanced technologies, TEL, and university implementation.

Some other requirements were also mentioned by quite a few members of the academic personnel, including staff development courses and economic motivation for TEL tutors.

Furthermore, faculty members should attend various seminars/workshops parallel to national policies and EU policies in implementing TEL programmes. Inviting experts to the university can also educate and enlighten faculty, especially the seasoned ones.

A department could coordinate all these procedures to introduce innovative educational technologies in the HEI. This department should employ highly qualified staff from methodologists, teachers, designers, programmers.

The appropriate financial resources are needed to support this scheme.

F. Support needed for TEL activities

There are various aspects and support that should be considered for TEL learning and teaching activities, such as:
- Consider the technical requirements for class equipment.
- Purchasing the required licenses, software tools, and equipment for developing multimedia educational material.
- Provide guidelines for developing TEL courses.
- Develop a certification system for students and instructors.
- University funding for improving the qualifications of teachers at the expense of the university. This may include mobility of teachers and students and exchange of good practices. Funding participation in international conferences.
- Formation of TEL teams comprised of highly qualified specialists.

G. Management of TEL programmes

The following means for collecting information were proposed:
- on-line questionnaires for students (including sociological data),
- on-line questionnaires for staff (relating to organisational and educational processes),
- data from running the courses (course analytics, students' certification achievement,
- round tables that promote the dialogue between the participants and the owners of evaluation processes.

Questionnaires should be designed by an appointed committee that will have the power to decide what should be measured, evaluated, and analysed. Questions should be meticulously selected and created. When implementing the survey, appropriate respondents should also be chosen carefully.

General information could be analysed each semester. All information should be collected from each department of the HEI. Following the collection of information, an analysis should take place and a benchmarking of TEL programs. It is necessary to use the results information to adapt the learning process to the student's educational needs (individual time, sequence, mode, content, etc.

Some respondents added that an essential component of the effective implementation of TEL programs with the university's work is a unified monitoring and reporting system for all departments. Monitoring should be directed towards various directions: efficiency of planning, educational programs, the activity of the teaching staff and efficiency of teaching, students and conditions for their personal development, research activity, material, library, information resources etc.

H. Monitor and review of TEL programmes

In a strategic level, the processes identified included:
- Constant monitoring of the processes.
- Participation in international projects, competitions, etc.
- International monitoring Planning.
- Constant comparison of the University's performance with other universities.
- Audit.

Each head of the department should be responsible for updating and monitoring teachers' progress.

More specific actions were also proposed:
- collect and analyse students' score achievement (lab completion, quizzes results, etc.
- collect and analyse employee feedback about the University's alumni professional level (technical and managerial) quality.
- Benchmarking of TEL programs (best practices).
- Assessment of students' knowledge should satisfy learning outcomes of the course.
- Monitoring the level of understanding of the University's Quality policy and its Strategic plan.
- Make the report of the educational process analyses on the Open Scientific council twice a year.
- Update programs annually, taking into account the requirements of employers and students.
- In the implementation and change process, TEL programs have to be revised and modified every two years. At the same time, participation of various levels of administration (university administration, faculties, departments, etc.) in the program evaluation process is necessary.
- Some respondents proposed to take into account other parameters such as:
- The analysis of information on the prospects of improvement, reliability and safety of training conditions.
- The analysis of structure and qualification of personnel.
- The need for defining new indicators of quality of educational service.

According to external stakeholders, HEIs should provide a review process of TEL content and structure, taking into account changes in the labour market, the requirements of employers and social demands of society. To establish an effective system for adequate revision of TEL programs, it is necessary to organise processes of approval and review of TEL programmes (how is it performed, by whom and when, how frequent, how stakeholders are selected, involved and at what stages).

Monitoring should be continuous (each semester) and academic year. Meetings with employers and more active participation of tutors to international conferences, symposiums, congresses were proposed as additional measures.

I. External Quality

According to many stakeholders, HEIs should have an effective internal quality assurance system, which provides a periodic external assessment of quality assurance. When building an internal quality assurance system, Kazakhstan's universities should be guided by Standards and recommendations to ensure higher education quality in the European space (ESG). External assessment may be independent accreditation and ranking of universities and academic programs. Kazakhstani universities should carefully select external quality assurance organisations. First of all, accreditation agencies must be full members of ENQA and be in the EQAR registry. This provides high-quality international external quality assurance of university and individual APs.

External evaluation should be inextricably linked with the internal system of internal quality assurance. The results of an effective internal quality assurance system should be recognised and successfully evaluated by external quality assurance agents. To this end, more meetings, conferences, round tables, and seminars should be organised. All interested actors in quality assurance should be invited to discuss the situation and enhance it. The opinion of the labour market/industry should be considered; this could be utilised through students, employers, teachers of departments in joint research work.

VI. DISCUSSION AND CONCLUSIONS

Technology-enhanced teaching and learning are of great importance for the Higher education of Kazakhstan. In general, there is a comprehension of education standards of TEL taking into account new objective conditions and prospects for the development of higher education in Kazakhstan.

Within the framework of creating the National System for Assessing the Quality of Education, internal and external assessments of the quality of education are introduced in all RK HEI, the monitoring and measurement tools have been improving. State control of the educational achievements of students is carried out after each stage of education. Starting from 2005, Kazakhstan has been taking part in a comparative analysis of students' achievements in international studies.

To solve problems in the technologization of education, investments are made at various levels, at the state, at the level of economically interested partners, by the institutions themselves.

The efficiency of investments in the computerisation of higher education depends on the degree of motivated and competent participation of teaching staff in the modernisation of the educational process based on ICT and their updating of the content of university curricula. This is due to multi-level computer literacy, possession of methods of using case technologies, ways of using network technologies, ways of using TV technologies, methods of using computer measuring systems, methods of using Internet resources, and methods of using interactive methods training etc.

It is also clear that each university should develop and implement a criterion-oriented comprehensive quality management system, which will be the basis of their competitiveness, will meet international standards and provide a strategy of "advancing" in the interests of students, their

families, teachers, educational institutions and society as a whole.

This combined survey showed that KZ HEIs have established Q&A systems and that the staff (academics, administrative/technical personnel) are aware of them. Several suggestions on how to improve these systems are included in this report. External stakeholders are also aware of their role in advancing the quality of the country's higher education system and are willing to participate.

There is a clear gap in Q&A for TEL. Generally, TEL is not yet considered a priority in many institutions; however, the academic staff is aware of its potential and is willing to participate in efforts that will introduce TEL courses and the appropriate processes for Q&A. Excellent suggestions were made in this report for institution-related initiatives that need to take place to make the next step. It is rather unanimously acknowledged that any effort towards TEL Q&A should be by KZ laws, strategic priorities, and significant European initiatives (like the Standards and Guidelines for Quality Assurance in the European Higher Education Area published in 2015). From the analysis of the results, it is relatively straightforward that any future effort should conform to such highly acknowledged standards.

In this context, a set of actions is proposed to close the TEL QA gap:

- Make Q&A and TEL a priority for the management of HEIs.
- Train HEI staff to understand how QA works and how it benefits the organisation.
- Provide staff motivation to introduce TEL (and appropriate Q&A processes) to the HEI.
- Organize TEL departments or central structures for coordinating Q&A (were not yet available).
- Update Q&A policies. Involve all personnel in the update cycle.
- Link Q&A to the market. Involve stakeholders in the process. Introduce structures (committees, boards) that liaison between external stakeholders and the HEI.
- Develop specific Q&A processes for TEL according to EU standards. Reinforce the relationship between KZ HEIs and between KZ HEIs and EU Institutions.
- Organize internal and national workshops for TEL and QA.
- Use Information Systems to manage the lifecycle of students.
- Allocate resources for personnel, equipment and training for TEL.

A TEL Quality Assurance Framework should take into account these general remarks. For each KZ HEI researched, there are additional, specific remarks that depend on the institution's character, strategic goals and capacity.

As far as the training needs for TEL Q&A are concerned, it seems that there is plenty of room for designing and running such programmes in different themes: advanced Q&A management, digital skills for TEL, soft skills for TEL, among the main ones identified. Each KZ HEI exhibited slightly different needs as far as the training needs are concerned. This report's proposal that each institution should choose from a pool of available options (e.g. the top 5 ranked in this report) according to the strategic priorities set and the resources available.

This report also exhibited the willingness of the KZ HEI to participate in programmes for exchanging good practices with EU HEIs. This exchange is a request from a significant number of respondents, proving that similar endeavours should be encouraged and intensified.

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