



Modernization and Internationalisation of Iranian HEIs via collaborative TEL-based curriculum development in engineering and STEM

Institutional and National Report

STATE OF THE ART OF HE FOR TEL

University of Sistan and Baluchestan (USB)

*Provide a short introduction describing the methodology you used and the number and types of sources:

This report is completed employing data collection (The Annual USB Educational Reports During 2020-2021) from the office of Vice chancellor for education at USB and interview with the following educational directors:

Dr. Ahmad Naseri, Director of International Office

Dr. Shahram Mohanna, Faculty of Electrical and Computer Engineering, (the responsible researcher for UNI-TEL at USB)

Dr. Mehri Rajayi: Director of Electronic-Learning Center (ELC)

Dr. Hadi Esmaeili: Deputy Director of Electronic-Learning Center (ELC)

Dr. Mehri Mehrjoo, Deputy Dean for Education, Faculty of Electrical and Computer Engineering (ECE)



Chapter 1. Institution Information

University of Sistan and Baluchestan (USB), founded in 1974, is a comprehensive university offering higher education for students from the province, nation, and overseas, presents a high quality education by providing learning experiences designed to develop intellectual abilities, as well as social, moral, cultural, and ethical values. By doing so, the students will be equipped with the skills, insights, attitudes and practical experiences that will enable them to become fully qualified for their chosen professions in the workplace and social services to their communities.

USB has launched an extensive development program that, in addition to the lately opened Faculty buildings, includes an almost completed 7 story library, and the new 14,000 square meter Faculty of Science building is under construction. The University also recently completed three phases of dormitory renovations. More expansions to the University's IT are planned.

The university organized with 16 Faculties and Centers, 8 Research Institutions; Arts and Architecture; Economics, Accounting and Management; Electrical and Computer Engineering (ECE); Engineering; Geography and Environmental Planning; Industrial and Mining Eng. (City of Khash); Mathematics; Psychology and Educational Sciences; Science; Theology; Literature and Humanities; E-Learning Center; Center of Research in Fuzzy Systems; Center of Research in Nanotechnology; Center of Research in Medicinal Plants; Earth Science and Geography Research Institute; Indian Subcontinent and South Asia Research Institute; Archeology Institute

Vision

The University of Sistan and Baluchestan strives to be one of the top universities in Iran in terms of scientific developments, developments in the theoretical and technological areas as well as maintaining its Iranian and Islamic identity aiming to ranked as a top university worldwide.

Mission

The mission of USB is to train students in knowledge, sciences, and technology who can best serve their communities, to develop leaders who will confront world's today problems, and to breed people and citizens who will live peacefully in a world full of dynamic and diverse cultures. The University of Sistan and Baluchestan provides scientific and research facilities and suitable opportunities for the internationalization. Due to its borders with Pakistan, Afghanistan, the Sea of Oman and the United Arab Emirates, this province has a special feature in terms of internationalization of the university and admission of international students. The highly skilled academic and scientific facility, laboratory, welfare and research facilities of this university have made it a suitable place for academic activities.

International Goals:

Admission of foreign students; Development of educational cooperation with international universities; Development of research collaborations with international universities; Holding international conferences Holding joint scientific and research workshops; Student exchange and professor exchange; Improving the level of scientific exchanges; Improving the level of cultural exchanges; Facilitate the creation of a suitable and safe environment in the border province of Sistan and Baluchestan



Chapter 2. Existing practices for curriculum planning

2.1. Policies and guidelines in use for curriculum planning

- How do you plan the initiation of a course (e.g. needs analysis for demand and constraint identification etc)

In Iranian higher education, plan for new courses must be approved by the Ministry of Science, Research and Technology (msrt.ir). Infact all higher education course are listed including the details of Modules and syllabuses at the ministry website. All higher education in Iran including the private institutions must follow the regulations. In each courses, up to 20% optional modules have been considered.

- What kind of goals are set in the organizational strategy and other governing documents for overall curriculum planning and development?

Specialized committees are formed under the University Educational Policy and Planning Council. The responsibility of the specialized committees is to hold regular meetings and take action to review the appropriate courses and executive strategies in line with the above objectives and to submit proposals to the Educational Policy and Planning Council for review and decision-making. The council then submits the approved executive plans to the university board for final approval in a report.

- Are the needs of working life and the industry somehow described in the governing documents? If they are, please describe, how?

There is a Strategic Entrepreneur Council at the USB, with the aim of formulating missions and policies in the field of entrepreneurship, and its mission as an entrepreneurial university in the southeast of Iran. The most important tasks of the Strategic Council includes; Targeting and planning in order to promote the position of USB in the field of entrepreneurship, according to the indicators and indicators of national and international levels; planning in order to encourage and attract all academic groups to entrepreneurship training and research courses; policy-making in educating and persuading students to become familiar with the principles of creating entrepreneurial businesses and stepping into the critical areas of entrepreneurship and innovation

- Is TEL/online learning part of the overall strategy for your institution's development and how?



USB designing and offering programs and courses base on virtual education E-learning. E-Learning Center aims at promoting the efficiency and efficacy of higher education through the use of information and communications technology within the university's in-person courses. This center was established in 2008 and has been attracting graduate students ever since, offering them absolute electronic learning. The e-learning courses are held as distance-learning classes, and the program does not require the students to be physically present at the college, except for the final-term exams which are held in-person at the University of Sistan and Baluchestan. The goals of this center include:

- Meeting the demands on the society's ever-growing need for higher education by increasing admission capacity in different degrees and various disciplines
- Improving and expanding the existing university disciplines and sub-disciplines by presenting them at an electronic environment
- Creating a favorable context for a more accessible higher education and overcoming spatial and temporal restrictions
- Admitting international students in electronic courses - a position suitable for applicants who are not able to attend classes in person
- Providing all students with experienced lecturers regardless of spatial and temporal restrictions
- Providing higher education opportunities for all social classes and for applicants who cannot benefit from the advantages of traditional educational systems for various reasons
- Promoting and improving the quality of education through the use of cutting-edge educational technologies alongside traditional educational strategies
- Collaborating with other departments of the University such as the Center for Growth, Science and Technology Park, and the Entrepreneurship Center in holding the necessary training courses for enthusiasts
- Conducting electronic-based examinations in some courses

- Do you foresee laboratory activities within curriculum planning?

Engineering and Science (STEM) students takes practical and laboratory base modules. It is not sufficient just to learn about technical systems, run some pre-designed experiments and pass the module. Students must practice techniques to be used in real situations. This is particularly important to emphasize the connections between different aspects of experiments to illustrate the



practical, technological and human constraints of solving real-world problems. Additionally, it is necessary to implement learning activities to develop expertise and soft skills of engineering graduates.

- Which kind of laboratory activities do you use? (e.g. in presence, virtual, remote labs etc.).

Undergraduate STEM courses are theory, problem based and have design elements. All laboratory activities required the presence of students and students have hands-on practices. So one of the major challenges facing the application of e-learning in engineering education is the students' laboratory work, which would necessarily differ from that in a campus-based curriculum. At the time, USB does implement some virtual labs in the faculty of ECE for some software based laboratory modules. But no Remote Lab was implemented because of lacking technology and equipment. One of Picturized aim of UNI-TEL at USB is to equip and implement a Remote Lab to present a couple of UG Lab Based courses.

- In case you use virtual/remote labs can you please describe them in terms of technological infrastructure and pedagogical model applied?

One of the major challenges facing the application of e-learning in engineering education is the students' laboratory work, which would necessarily differ from that in a campus-based curriculum, we planned to present web based or by distance learning options. Lectures are more straightforwardly administered online using video-conferencing software, but there is frequent need for hands-on work for laboratory and workshop modules. The virtual labs based on the contents prepared by lectures and instructors who creates videos of doing experiments themselves or present technical simulation software. Then these videos and document be uploaded to an LMS system for students. At the time, USB does implement some virtual labs in the faculty of ECE for some software based laboratory modules. But no Remote Lab was implemented because of lacking technology and equipment.

- Has the COV-19 pandemic affected your curriculum planning practices? In which way? (please describe any changes that occurred after covid pandemic broke out).

E-learning center at USB employs a Learning management systems based on the moodle.com, with address: vu.usb.ac.ir, also Adobe Connect webinar system has been launched with the address webinar.usb.ac.ir. However, due to the pandemic of coronavirus and the need to use these systems for all university courses in the second semester of 2019-20, a new system was launched with the address: lms.usb.ac.ir. As the pandemic was continuing in 2020-2021 academic year, to overcome the load, an additional LMS system has been developed: lms2.usb.ac.ir. For Online classes and



seminars as well as institutional meetings platforms has been developed: <https://webinar.usb.ac.ir>, based on AdobeConect and BigBlueButton.

2.2. Curriculum planning in practice

- How do you plan the initiation of a course (e.g. needs analysis for demand and constraint identification etc.)

While a new course of study needs to be presented in this university, there are standard procedures, and it should start from an academic department. The department committee should write a proposal to introduce a new course with their clear reasons, goals, and relations with university policies, society demands as well as having enough expert academics in the field. Then the request is reviewed by the Faculty committee, the university committee, and if it is accepted will be sent to the Ministry to get approval

- How are different stakeholders (e.g. teachers, students, businesses and other actors in society) and their needs taken into account in the curriculum development?

Any new courses should aim for improvement of the community, USB targets students from south east of Iran. As an example the people of the region traditionally make handicrafts and carpets, so in the Faculty of Arts some UG courses are offered and the syllables focuses on the regional arts. Thus, planning for the syllabus of new modules and programmes of a new course, the social impact must be considered. Moreover, Availability of expert academic staff, facilities, budget, the number of target students and available infrastructures would be considered.

- How is the content of the course designed?

For most courses the ministry of Science listed, Courses, Modules and well as Syllabuses. However, some flexibilities are acceptable made by academics who is expert in that specific field. But for planning a new module and syllables, the professors of a department provide a proposal and takes the procedure described in section 2.1 for approvals.

- In faculty level, does the curricula design reflect any specific pedagogical practices and innovation?

Faculty supervise course presentation and contents of taught modules with academics. This implies on selecting suitable text book, taking feedback and exams. In Lab based modules and workshops faculty support technically and logistically the professors, making sure all parts of defined syllables has been covered.



- In faculty level, what way is working-life relevance discussed in the curricula?

In engineering and science education (STEM) each subject is taught with examples from the real life and relevant industries or with research that should be done in the society.

- What is the teaching staff-student ratio? In USB this is different among different faculties. For STEM courses the Student/academic ratio is almost 28

Chapter 3. Designing and implementing and a TEL course

3.1. TEL as a practice in your institution

- Is TEL or online courses a usual practice in your university, or do you organize teaching like this only due to pandemic?

the E-Learning Center of University of Sistan and Baluchestan aims at promoting the efficiency and efficacy of higher education through the use of information and communications technology within the university's in-person courses. This center was established in 2008 and has been attracting graduate students ever since, offering them absolute electronic learning. The e-learning courses are held as long-distance-learning classes, and the program does not require the students to be physically present at the college, except for the final-term exams which are held in-person at the University of Sistan and Baluchestan.

One of the advantages of e-learning is that it enables the learners to break geographical boundaries and go beyond borders; therefore, this E-Learning Center is going to admit international Persian-speaking students in 2019 in order to establish the grounds for cultural, educational, and social exchanges amongst diverse societies.

- How many, in what level? (e.g. graduate/postgraduate).

In the 20-21 academic year USB includes; 70 Educational Departments, 400 Academic Staff, 8450 Students and 295 courses with total N. of students of 8450 at the Bachelor (BSc and BA;5750 students), Master (MSc and MA;2150) and PhD;55 levels. During 20-21 (The pandemic while all courses have been presented online) in which. over 200 courses online, with capability of recording all sessions, uploading over 46500 learning materials online; Supporting over 400 academic staff and 8450 students online at each semester, and online exams and interviews; Creating and presenting some virtual laboratories; Organized 5 online international conferences.

- Is TEL part of the overall strategy for your institution's development and how?



Yes; a E-learning center has been established 10 years ago for use of information and communication technology system in academic activities. E-Learning Center of University of Sistan and Baluchestan aims at promoting the efficiency and efficacy of higher education through the use of information and communications technology within the university courses. This center was established in 2008 and has been attracting graduate students ever since, offering them absolute electronic learning. The e-learning courses are held as long-distance-learning classes, and the program does not require the students to be physically present at the college, except for the final-term exams which are held in-person at the University of Sistan and Baluchestan.

- Is there a strategy in your institution for digital innovation, TEL being a part of it? Is this strategy known within the institution at all levels?

The Strategy of TEL based curricula at USB include:

- Meeting the demands on the society's ever-growing need for higher education by increasing admission capacity in different degrees and various disciplines
- Improving and expanding the existing university disciplines and sub-disciplines by presenting them at an electronic environment
- Creating a favorable context for a more accessible higher education and overcoming spatial and temporal restrictions
- Admitting international students in electronic courses, suitable for applicants who are not able to attend classes in person
- Providing all students with experienced lecturers regardless of geographical restrictions
- Providing higher education opportunities for all social classes and for applicants who cannot benefit from the advantages of traditional educational systems for various reasons
- Promoting and improving the quality of education through the use of cutting-edge educational technologies alongside traditional educational strategies
- Collaborating with other departments of the University such as the Center for Growth, Science and Technology Park, and the Entrepreneurship Center in holding the necessary training courses for enthusiasts
- Conducting electronic-based examinations in some courses

3.2. Technology in use

- What kind of technology are you using (e.g. platforms, videoconferencing etc.)



Domain name	year of launch and update	Application	the current version	Domain Address
Learning Management System (LMS)	The first year of operation with the address vle.usb.ac.ir in Sep. 2011 And the last update in September 2021	Used all the courses offered for Sistan and Baluchestan University and e-learning center courses	moodle3.11.2	https://lms.usb.ac.ir
Online class system paired with LMS system	The first year of operation with in Sep. 2020	Holding simultaneous classes (live online)	adobe connect 10.8	https://connect.usb.ac.ir
BigblueButton online class system	The first year of operation with in Sep. 2020	Holding simultaneous classes (live online)	BIGBlueButton	https://vc.usb.ac.ir
Online meeting system. Virtual conferences	The first year of operation with in Sep. 2020	Holding simultaneous meeting and seminars (live online)	adobe connect 10.8	https://webinar.usb.ac.ir
Online meeting system	Used for professors 'personal links to consult with graduate students, students' virtual defense sessions, workshops organized by the Growth Center and the cultural deputy for students	Holding simultaneous meeting and seminars (live online)	adobe connect 9.5	https://webinar2.usb.ac.ir/

- General description of the learning management system

E-learning center of Sistan and Baluchestan University since 2011 Learning management systems (model) vle.usb.ac.ir (dedicated to e-learning center) and vu.usb.ac.ir (teaching aid for other courses of Sistan and Baluchestan University In 2012, he launched the vu2.usb.ac.ir system for green management, to hold end-of-semester electronic exams (general undergraduate courses and specialized multiple-choice exams). In 2012, Adobe Connect webinar system was launched with the address webinar.usb.ac.ir. However, due to the epidemic of coronavirus and the need to use these systems for all university courses in the second semester of 2019-2020, two separate systems, vu and vle, were still used. But for better and integrated management in September 2019, a new system was launched with the address lms.usb.ac.ir.

3.3. Course development process

- How do you plan the initiation of a course (e.g. needs analysis for demand and constraint identification etc.) in TEL/online courses compared to face-to-face courses?



USB employs a Virtual Learning support team; the launch of the systems as well as its personalization according to the need and implementation of new plugins has been used by the experts have employed the university and there no outsourcing support the E-learning process. This include;

1. Programming team (head of the center), (teaching assistant), (employee of IT management company))
2. Virtual Servers Support and Systems Setup Team ((Deputy Director), (Information Technology Management Expert) (Network Expert))
3. Systems User Support Team (VE Center Expert) (VE Center Expert), (University Supervision Office Expert))

3.4. Stakeholders involved and their roles and tasks

- Do you involve students in TEL/online course design?

No, just in some cases some teaching assistants (TA) may help professors in tutorial sessions.

- How is the content of the course designed?

As mentioned in Section 2, The syllables of each module is already approved and is available at the ministry and the university educational departments. Professors and Lectures selects one or more text books for each module to cover the syllables. Then a presentation and exam plan will be designed by the academics.

- Is there any technical support for teachers in course design? Is support given at university, faculty or department level?

Some trainings and workshops are presented by the university for fresh employed academics. Professor and expert academics, get support from faculties by employing PhD students as teaching assistant.

- Are there any facilitators that support the learners? If there are, please elaborate: describe their role, tasks and the cooperation with the lecturer.

Yes, Academics are offered to employ TA or technicians to assist them in teaching or presenting the modules in class or labs as well as taking exams.

3.5. Protocol of course assessment

- How do you evaluate the course: Is there a systematic institutional process / protocol? Are students involved at this stage?



In undergraduate courses professors assesses the progress of students using variety of methods, such as midterm and quizzes, assign a portion of the grade to student presentations, and summarize the books they read during the semester as well as written and oral final exams. Students will be evaluated during the semester, and passing the course is conditional on receiving a passing score from the end-of-semester exam. For lab based modules, each session includes a design task and hands-on experiments. An engineering student can be asked for a workshop activity and given a final grade based on it, and if the work is laboratory or the field is both workshop and laboratory, the student can be assessed based on the activities performed in that field. In postgraduate courses the evaluation can be based on research or group work activities.

- How is evaluation performed after the course is taught/delivered?

Student evaluation should be done continuously, so that the professor observes the quality of the student's learning during the semester. They can ask students to review, promote, complete and short research articles in various formats. In STEM disciplines some academics takes exams just after completing teaching of a chapter or a topic. The final grades are a combination of marks they received during the semester and in the final exam, let to know attending the final exam is mandatory.

- How is data collected?

By Written papers or online submissions

- Do students give feedback on teaching? If, please describe how.

The evaluation of professors done every semester and students encourage fill in some questionnaires for each modules. This process is fully online and blind, to improve the quality of academics' educational performance in various dimensions, including teaching methods and teacher ethics, which is based on a questionnaire approved by the Supervision, Evaluation and Quality Assurance Council of the University. The process is fully online, set and the end of semesters before the final exams.

- Who is informed about the evaluation?

The academics only can see the results and feedback a few weeks after submitting the final marks of each module. The head of department, the dean and the vice chancellor for educations will see the evaluations.

- What measures can be taken for improvement?

The result of students' feedback is very important in USB and recorded in the academic staff annual promoting and endorsing. If a professor gets less than 75% an assessment mark, should report and improving action to the head of department, so if the low mark happens for 3 semesters, the academic cannot to lecture the specific course any more.



3.6. Identification of TEL /online quality practices or patterns of quality

- Is your Institution using Quality standards/frameworks for TEL/online?

Yes this is fully described in the section 3.1

- If no, what are the reasons?
- Are you planning to use one in the future?
- If yes, which are they?
- What quality areas do they cover? How long have you been using them?
- Does your Institution collect data in order to evaluate TEL/online programs?
- Is there a strategy on the use and purpose of learning analytics within the institution?
- Does your institution consider ethical norms and government policy with respect to data protection and the privacy of students?

Yes, information of the students is confidential, stored in a secure educational system. Hard copies of all documents are store in secure rooms with limited access

3.7. Process of continuous improving of educational provision

- Are TEL/online programs reviewed, updated, and improved and how?

Yes, by supervision and sending feedback from Vice chancellor for education and audit office at USB.

- Are there any Institutional policies, structures, processes, and resources in place to guarantee the successful teaching and learning process of students with special educational needs?

Yes, such students get support from university as well as some local charities.

- Is there an institutional policy and code of practice to ensure academic integrity and freedom and ethical behavior?

USB ethical statement: Let's try to being present at work in a timely manner and observing administrative discipline that reflects the personality of each person. we welcome students and colleagues with kindness and significance and we are diligent in guiding them. we should try to meet the requests of students in the shortest possible time, observing justice and fairness due to the value of time.

- Are there any electronic security measures set by your institution's policy/code of practice?

The admin staff use electronic gateway and their presence are monitored. But academics have some freedom and their activities are monitored by the head of departments.



3.8. Professional development of teachers and instructional designers

- In faculty level, do people involved in designing/ developing/ evaluating TEL/online programs have specific expertise in academic and technical aspects and which?

The deputy dean for education in each faculty, monitor, measure and evaluate the students progress and academic activities. The final exams taken by this office and presence of students and staff are recorded.

- Is the teaching staff involved in designing/ developing/ evaluating educational programs familiar with the advantages/disadvantages of using TEL/online in particular course contexts?

Yes, these are offered by the vice chancellor for education.

- Is the teaching staff trained and proficient in the use of learning technologies and (e-) assessment methods?

Yes, as mentioned in section 3.1 a support team do this.

- Are there any particular training activities for new staff?

Yes, the training and workshops presents by the vice chancellor for education, especially for fresh academics.

- Has the institution developed procedures to identify the support requirements of the teaching staff?

This is foreseen at Department, Faculty and University level.

- What workshops are available for your teachers to attend? (for example: professional development, enhancement of faculty competence in skills, enhancement of faculty competence in pedagogy and enhancement of faculty competence in TEL)

Every year USB organize a 10 days' event for improving academic staff skills. In Spring 2021 the event included, 8 keynote speeches were planned and delivered on the topics; Employability of students and curricula skills training, additionally, some curriculum review implemented to review some educational regulations specifically during the pandemic and online and distance learning. Moreover, some workshops done by expert professors of each faculty for fresh academics. During the event, highly ranked academic from each be prized and get certificates.



Chapter 4. Industry relevance

4.1. Policy and action plan for industry-relevance

- Are industry needs considered when developing the learning model and the curricula design?

According to the national documents on entrepreneurship development in the country and universities, the Strategic Council of USB disclosed some policies regarding regional development impact (on regional industries and the society, governmental organization and private sectors) on the province Sistan and Baluchestan University in the field of entrepreneurship and employability.

- How is industry and other stakeholders involved in the process? Are there specific needs considered for STEM education in your institution when transferring courses to technology enhanced learning or online learning? If so, please explain how.

To facilitate the creation of a suitable and safe environment in province of Sistan and Baluchestan, employability of undergraduate students is a priority for curricula design. Most STEM courses include internship modules where students spent a couple of month in local industries or organizations. Also, academic departments encourage academics to define some activities for students to do some research or practical project in industries and this will be marked. Recently USB implementing some regulations to provide some employability and entrepreneurship trainings for all students in Integrated technology and innovation center. This center established with the aim of formulating missions and policies in the field of entrepreneurship, and its mission as an entrepreneurial university in the southeast; Planning in order to encourage and attract all academic groups to entrepreneurship training and research courses; policy-making in educating and persuading students to become familiar with the principles of creating entrepreneurial businesses and stepping into the critical areas of entrepreneurship and innovation.

4.2. Infrastructure

- Is the technical infrastructure aligned with the teaching methodology, learning activities, and e-assessment methods? If so, please explain how.

Yes, USB has set up a fully online learning management system and educational database software.

- Does the mentioned infrastructure and used online tools support student active learning and collaboration?

Yes, this system is based on Moodle. Also a webinar system implemented for online teaching and meeting.



4.3. Assessment of learning

- Are (e-) assessment methods fit for purpose, allowing students to demonstrate the extent to which the intended learning outcomes have been achieved?

Course assessment is compulsory in USB, designed for effective teaching, workshop presentation and exam, quizzes. It is used for knowledge sharing, submitting the works and tasks reports of students. Due to the pandemic and implementation of online learning and assessment, Accordingly, some regulations developed designing and implementing e-assessment as well as continuous assessment.

- How are they designed?

The evaluation of each module in courses done by respected professors and academics who has freedom to design the evaluation process. There are some regulations that professors need to apply i.e. 50% of marks should be considered in the final exam.

4.4. Functionalities of the technical infrastructure

- Does the virtual learning environment, VLE (if any) support specific pedagogical methods and tools?

USB equipped with very good It Facilities: 14 Computer Sites; Over 30 Km fiber optic network and over 6000 connection nodes, the network's band width: 600 Mbps; A data Center with 100TB capacity; Dedicated wireless cloud with multimedia facilities; Virtual Education Facilities: Blended-learning classes; Adobe Connect Webinar and Web Conferencing Software; Polycom Video Conferencing System; Moodle based Learning Management System

- Is the VLE based on non-proprietary web standards and is it updated to reflect technological changes? How often?

Recently USB upgraded the VLE equipment to support curricula during the pandemic.

- Does the technical infrastructure ensure the accessibility of the TEL/online programme by students with special educational needs and how?

The VLE system accessible for students with physical disability and visual impairment. But for blind or hearing disable students, the online support may not be useful.



4.5. Use of virtual and remote laboratories

- Does the institution provide students with an e-library?

Yes, The central library content thousands of books (hard copies and electronic books) also it has access license to most online journals, additionally students have access to all submitted thesis and dissertations.

- Does the institution have virtual labs?

At the time, USB does implement some virtual labs in the faculty of ECE for some software based laboratory modules. But no Remote Lab was implemented because of lacking technology and equipment.

- Does the institution have remote labs?

But no Remote Lab was implemented because of lacking technology and equipment. One of Picturized aim of UNI-TEL at USB is to equip and implement a Remote Lab to present a couple of UG Lab Based courses.

Chapter 5. TEL quality practices and support

5.1. Staff professionalization

- Has your institution procedures for recruiting and hiring teaching staff?

A dedicated managing office for Academic Employment aiming: Identifying and determining the needs of attracting faculty members in educational and research groups; Carrying out a public call to attract faculty members of the institute; Deciding on how to hire faculty members, including contracted, contractual, probationary, permanent, exchange and transfer of faculty members; Supervising the proper implementation of laws and regulations related to the employment of faculty members.

- Do you offer pedagogical training for teaching staff? Do you have courses specific for technology-enhanced learning? How is it organized?

Yes, at the beginning of employment, academics takes several training and workshops. Booklets of academic regulations are provided to all new members. There are encouraged to get advise from expert professor in their department.

- How is the teaching staff coordinated during course delivery?



Supervised by the head of department.

- Do you have support materials available on the intranet for online learning and teaching?

Yes, all documents, regulation, promotion forms are available of the university website (www.usb.ac.ir), On the LMS there are some videos explain online teaching and assessment.

- Is pedagogical training mandatory for teaching staff?

Yes, for fresh academics and who gets low evaluation of teaching.

Chapter 6. Opportunities and challenges for adoption of TEL practices

- After describing the current state of art in previous chapters, identify opportunities and barriers for transformation of education. Put them in order: **the most important first.**

In Spring 2021 a questionnaire distributed among academics at USB by the Chancellor office for Education, to collect their feedback on Virtual (Electronic or TEL Based Education, specially their experience during the pandemic. The following List of opportunities and barriers summarized from the outcome.

6.1. Opportunities:

- Ability to share educational content prepared by faculty members on educational websites and display capabilities University professors
- Changing the attitude of officials, professors and students to e-learning
- Public determination to strengthen computer, Internet and other infrastructure in order to strengthen e-learning
- Possibility of continuing education more easily for employed and married students in the faculty
- National and international workshops organized in the form of webinars
- Possibility of participation of students and faculty in the conference
- Fading barriers to gender discrimination, physical disability, etc. in education
- The possibility of inviting professors from other universities and even universities abroad in the faculty
- Opportunities from the point of view of professors reducing costs, the possibility of sharing production content, changing attitudes of officials, professors and students are e-learning. It can be said that due to the necessity of various expenses, in particular



- Faculty use various methods in teaching course content (video, audio, live class, peer-to-peer assessment, empowering many professors to work with e-learning systems and increase their IT knowledge
- Faculty teachers use various and continuous methods of evaluating e-learning systems
- Existence of motivated faculty to change the teaching method from physical presence to electronic
- Updating course contents by faculty members and creating an updated content bank for each course by faculty members
- Better coverage of approved topics with the help of e-teaching facilities by professors

6.2. Barriers

- Lack of access to smart boards or optical pens or touch laptops to teach lessons of a mathematical and computational nature
- Lack of motivation of college students in pursuing educational content and timely activities
- Not using online classes to the extent necessary to fix problems and create interaction with the student
- Lack of precise control and non-use of anti-fraud techniques in electronic tests by professors
- Lack of continuous evaluation of the student by the professor
- Do not use the opportunity of e-learning to improve the skills of staff and experts in colleges
- Lack of supervision of the faculty on the quantity or quality of courses or lack of appropriate response in this regard.
- Low familiarity of some professors in working with software to produce the required educational content
- Low motivation in changing the teaching method for some professors and using student-centered and activity-based learning methods

Conclusions:

Considering that e-learning has made significant changes in many areas of education and research still need to conduct ongoing training courses on these developments and how to adapt to them, These workshops should not be limited to research weeks and decades of training excellence and can be in other areas and priority is given to e-learning for those faculty members. Holding a workshop on the introduction and use of laboratory simulators is recommended for laboratory experts. In order to strengthen the process of undergraduate, graduate and doctoral student counseling, a virtual room for each member of the staff is needed. The experience of UNI-TEL project partners during the pandemic and university investment in this regards, provides better vision to set outcome of UNI-TEL projects. Having



good experience of TEL based teaching and learning of theory STEM subjects, still needs to research on TEL based teaching and moderation of practical and lab based subjects.

References:

- 1-www.usb.ac.ir
- 2- USB Vice Chancellor Office, Annual Report for 20-21 academic year.

