BECK - Work Package 2

T.2.2. Report on common grounds for teaching and learning.

A report of the BECK Project WP2: Integrating education with consumer behavior relevant to energy efficiency and climate change at the Universities of Russia, Sri Lanka and Bangladesh (BECK)

Integrating education with consumer behaviour relevant to energy efficiency and climate change at the Universities of Russia, Sri Lanka and Bangladesh

BECK - Work Package 2

T.2.2. Report on common grounds for teaching and learning.

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1. INTRODUCTION

In recent decades, global development is a major issue of debate in the context of increasing global inequality, economic recession, conflict and climate change (Sayed and Ahmed, 2015). The current warming trend is of particular significance as most of it is (greater than 95 percent probability) due to the result of anthropogenic activity since the mid-20th century and proceeding at a rate that is unprecedented over decades to millennia (IPCC Fifth Assessment Report, 2014). Therefore, issues on energy efficiency improvement and mitigation of climate change become vitally important at global scale. As noted by UNESCO, "Education is an essential element of the global response to climate change. It helps young people understand and address the impact of global warming, encourages changes in their attitudes and behaviour and helps them adapt to climate change-related trends".

Higher education improvement strategies in improving teaching and learning in higher education institutions is the prime focus in the present world. preparation for accreditation and student learning assessment strategies are being used for teaching and learning in higher education with diverse outcomes (Igbinakhase and Naidoo, 2020). However, challenges and conflicts for the education improvement strategies in higher education is the snag to serve the defined purposes of the institute due to ineffective teacher professional development initiatives and lack of specifically developed programs designed for specific needs of the student (OECD, 2010; 2012; Igbinakhase and Naidoo, 2020).

In recent decades, progress towards quality education has been made through the implementation of structural reforms under the Bologna process. However, there is still a need to be more attentive to the process of learning and teaching itself (European Commission, 2018). Developments in learning and teaching are closely related to the collaboration with stakeholders, including national and international policy makers. Establishing quality education involves knowledge-building activities and studies, institutional development and peer learning, as well as related policy statements and recommendations.

The education sector is vitally important for social and economic development of Russia (Region 4), Sri Lanka and Bangladesh (Region 6). The objective of the energy policy of Russia is to maximize the effective use of natural energy resources and the potential of the

energy sector to sustain economic growth, improve the quality of life of the population and promote strengthening of foreign economic positions of the country. Supporting strategic initiatives, distinguished in Energy Strategy of Russia for the period up to 2030 (2010) include implementing of information and educational programs (events), promoting energy saving; developing and supporting international cooperation in energy saving and energy efficiency, and in research of new energy sources.

Sri Lanka has already launched a number of programmes to educate, train and promote awareness on climate change and related issues. However, there remains a large disparity in the level of education, information and awareness on climate change risks, issues and responses at the regional, national and local levels, and within vulnerable sectors. One of the key thematic priorities of the Sri Lanka is country partnership strategy (CPS, 2018-2022) focuses on strengthening environment, climate change, and disaster risk management.

Bangladesh contributes little to global greenhouse gas emissions, yet is one of the most climate vulnerable countries in the world, prone to a multitude of climate-related disasters such as floods, droughts, tropical cyclones and storm surges, which are being worsened due to global warming. In addition to this, Bangladesh also has an extremely high population density with one of the worst rates of poverty in the world. The existing training courses offer basic knowledge on the changing climate, however, the scoping study (Hasan Masum et al. 2011) identified lack of capacity on participatory, experimental, and inclusive teaching and learning methodologies and lack of quality training facilities are the key challenges for promoting climate change education in Bangladesh. Moreover, it was recognized that Article 6 of the UNFCCC and Article 10(e) of the Kyoto Protocol which call on governments to address climate change education, training and public awareness issues relating to climate change, have not received the deserved attention at national level.

It has been revealed that HEIs from Russia, Sri Lanka and Bangladesh have very few modern multi-disciplinary courses linked to climate change and consumer behaviour related to energy efficiency in the built environment. Moreover, improvement of teachers' qualification on modern study methods is considered as one of the most important measures to achieve high quality of education. there are important knowledge gaps that additional research may address, including integration of insights from a wide array of social science disciplines, including economics, psychology, political science, sociology and others

(Intergovernmental Panel on Climate Change, 2014). Climate change and energy related policy have not been incorporated in the BSc/specialists, MSc and PhD curricula for the students in Russian, Sri Lanka and Bangladesh. Therefore, universities from these countries faced problem due to the lack of the high level education and research in climate change and energy efficiency. Insufficient knowledge on climate change and energy efficiency in these countries, graduates having lack of multidisciplinary knowledge in climate change and energy efficiency, technological, organizational, management, social, environmental, economic, cultural, psychological, political and other aspects. Keeping this views, EU funded BECK project is aimed to upgrade the curricula with 16 new harmonized multidisciplinary adaptive MOOC modules on environmental protection technology in the Russian, Sri Lanka and Bangladesh universities in order to increase their capacity to continually modernise, enhance the quality and relevance of education of students to the global market needs and to ensure international cooperation. The project will achieve this aim through five objectives as detailed below.

1. To upgrade curricula of BSc/specialists, MSc and PhD programmes in Russian, Sri Lanka and Bangladesh universities by adding 16 new multidisciplinary adaptive, recognised and certificated MOOC modules on consumer behavior related to energy efficiency and climate change, to enhance the quality and relevance of education in PC and EU universities to global issues;

2. To transfer European practices in education (learning and teaching tools, methodologies and pedagogical approaches including learning outcomes and ICT-based practices) from participating EU universities to PC universities;

3. To assist competence development of teachers within PC universities;

4. To develop the Simulated Big Data Interuniversity Networked Affective Educational Centre to encourage use of ICT-based methodologies in education and research;

5. To strengthen educational and scientific networking among EU and PC universities in the BECK field.

The project in general terms also will spread and promote the awareness in the Partner Countries related to the EU policies referred to Energy Efficiency and Climate Change approach towards EU best practices, with specific reference to the "Environmental & Energy 20-20-20 targets".

2. BECK TEAM

2.1 Leader and Coordinator of the BECK Project

        P1- Vilnius Gediminas Technical University (VGTU) - Lithuania.

2.2 Lead Organization for WP2

        P2 - University of Huddersfield (UoH) - United Kingdom

        P13 - University of Barisal (BU) - Bangladesh

2.3 Other Partner Organizations

Estonia

        P3 - Tallinn University of Technology (TTU)

Italy

        P7 - Alma Mater Studiorum – University of Bologna (UNIBO)

Russia

        P4 - Moscow State University of Civil Engineering (MGSU)

        P5 - Kaliningrad State Technical University (KSTU)

        P8 - Peter the Great St.Petersburg Polytechnic University (SPbPU)

        P9 - International Public Organization of Assistance to Construction Education (ASV)

        P10 - M. V. Lomonosov Moscow State University (MSU)

Sri Lanka

        P6 - University of Ruhuna (UoR) – Sri Lanka

        P12 - University of Colombo, Sri Lanka (UoC)

        P14 - University of Moratuwa, Sri Lanka (UoM)

Bangladesh

        P11 - Patuakhali Science and Technology University (PSTU)

3. SUMMARY OF THE REPORT

HEIs from Russia, Sri Lanka and Bangladesh have limited modern multi-disciplinary courses linked to climate change and consumer behaviour related to energy efficiency in the built environment. Climate change and energy related policy have not been incorporated in the BSc/specialists, MSc and PhD curricula for the students in Russian, Sri Lanka and Bangladesh. EU funded BECK project is aimed to upgrade the curricula with 16 new harmonized multidisciplinary adaptive MOOC modules on environmental protection technology in the Russian, Sri Lanka and Bangladesh universities in order to increase their capacity to continually modernise, enhance the quality and relevance of education of students to the global market needs and to ensure international cooperation.

This report provides an overview of the commonly usable learner-centred and real problem-based teaching and lifelong learning mechanisms. It will form the basis for finer module details with relation to delivery mode, credit basis, etc. The findings of the survey on cross institutional module development, sharing and delivery from PCHEI and EU universities are based on literature survey as well as questionnaires survey, workshop, round table discussion, online meeting and focus group discussion. This report intends to explores the issues and constraints related to cross institutional module development, sharing and delivery from the perspectives of Russian, Sri Lankan, Bangladesh and European context. This report will first provide an introduction of the current strategies and status of inter-university partnerships, collaboration, Existing inter-university joint programmes, opportunities for module development, sharing, delivery in the BECK project, readiness of the university for cross institutional module sharing in terms of language, culture, administrative constraints, common assessment criteria, ability to share resources, intellectual property, access to state of the art technology and sustainability in Russian, Sri Lankan, Bangladesh and European universities. Finally, the report will provide conclusions and recommendations for cross institutional module development, sharing and delivery among PCHEI (Russia, Sri Lanka and Bangladesh universities) and European universities considering the issues, constraints and opportunities. This report shall be referred from all the PCHEI when developing the curricular for the proposed BECK MOOC courses. It is clearly identified that PCHEI and EU universities are positively proposing to accommodate the newly developed MOOC courses and modules in the existing programs along with the improvement in the existing academic structure.

4. WORK PACKAGE 2 – OVERVIEW

The objective of the WP2 is to create a suitable basis for education in the field consumer's behaviour related to energy efficiency and climate change in the built environment (BECK) by introducing integrated, multidisciplinary BSc, MSc and PhD adaptive, recognised and certificated MOOC modules to existing study programmes in Russian, Sri Lanka and Bangladesh universities.

WP2 will be completed as follows:

1. Preparation of the framework report for the common BECK curricula. The report will describe the common philosophical, pedagogical and practical understanding and capabilities of the partner institutions forming the basis for BECK adaptive MOOCs development and delivery. The report will be based on findings of WP1 (adopted Capacity Needs Assessment Methodology (CAPNAM) for Planning and Managing Education (United Nations 2013), cross-institutional consultations (online questionnaires), and on local visits to discuss and identify in detail any outstanding incompatibility issues.

2. Preparation of the report on common grounds for teaching and learning. The report will describe commonly usable learner-centred and real problem-based teaching and lifelong learning mechanisms. It will form the basis for finer BECK adaptive MOOCs module details with relation to delivery mode, credit basis, etc. BECK adaptive MOOCs will be based on common resource and infrastructure capabilities but built upon the expertise of various partner institutions to ensure good practice sharing at national and regional levels. The report will be based on cross institutional consultations through online questionnaires.

3. Training of teaching staff. The framework report for the common curricular and the report on common grounds for teaching and learning will be presented and discussed during the workshop to be organized in Vilnius, held by Vilnius Gediminas Technical University. During the workshop teachers will gain competences necessary for development of the new MOOC modules and student-centred teaching approaches.

4. Development of the BECK adaptive MOOCs content and teaching materials suitable for innovative delivery mechanisms as proposed in the WP3.

Since the BECK adaptive MOOCs content will be influenced by the findings of the previous reports, the new knowledge creation and dissemination will be triangularised with education (input from existing BECK module base), innovation (new online delivery and dissemination strategies as described in the WP3 and through institutional (built environment organizations) and research (through the shared research base across institutions).

The BECK adaptive MOOCs intended to be developed will usually comprise three main integrated parts: (a) consumer's behaviour related to energy efficiency, (b) climate change, and (c) the integration of the above-mentioned parts (a) and (b). In total 24 adaptive MOOCs (7 BSc/specialists, 11 MSc, 6 PhD) will be developed.

4.1   WP 2 – Tasks

T.2.1. Development of a common framework for BECK curricula.

T.2.2. Development of a common approach to learner-centred and real problem-based teaching and lifelong learning activities.

T.2.3.Training of teaching staff.

T.2.4. Development of BECK MOOC modules specifications and teaching (learning) materials and adaptation to different learning contexts and different cycles of studies to different stakeholders.

T.2.5. Assessment, recognition and certification of the developed BECK MOOC modules by universities in Russia, Bangladesh and Sri Lanka and integration to different cycles of corresponding studies.

4.2   WP 2 – T.2.2. Common grounds for teaching and learning overview

The report will describe commonly usable teaching and learning mechanisms. It will form the basis for finer module details with relation to delivery mode, credit basis, etc. Modules will be based on common resource and infrastructure capabilities but build upon the expertise of various partner institutions to ensure good practice sharing at national and regional levels. The report will be based on literature survey as well as cross-institutional consultations through questionnaires survey, workshop, round table discussion, online meeting and focus group discussion. General results was discussed during the workshop was organized in Vilnius, held by Vilnius Gediminas Technical

University. Social norms, religion, philosophy, ethics and culture highly affects human behavior. Human behavior is studied by the specialized academic disciplines of psychiatry, psychology, social work, sociology, economics, and anthropology. Project results are unattainable with merely national, regional or local funding, because the human behavior research and training agenda is global by nature.

5. METHODOLOGY

Different methodological approaches have been used to analyse the acquired data based on the literature survey as well as cross-institutional consultations questionnaires survey as follows:

1. An extensive literature survey as well as questionnaires survey have been conducted by all partner countries from the viewpoint of institutional, national and international perspectives.

2. Workshop and focus group discussion were organized and presented the data on "Identification of the appropriate issues for cross institutional module sharing" in the meeting of Huddersfield. All PCHEI and EU universities presented the status of the university for module development, sharing and delivery.

3. Round table discussion have been conducted to share the information among PCHEI and EU universities.

4. Acquired data were used to gather and analyze to prepare the individual report of PCHEI and EU universities.

5. Finally, data from all PCHEI and EU universities were used to prepare final report.

6. PROMOTING CROSS INSTITUTIONAL MODULE SHARING

The main objectives of the higher education is to prepare graduates for a knowledge-based society, by developing skills for independent and lifelong learning.

This section intends to explores the issues and constraints related to cross institutional module development, sharing and delivery from the perspectives of Russian, Sri Lankan, Bangladesh and European context. The section will first provide an introduction of the current strategies and status of inter-university partnerships and collaboration in Russian, Sri Lankan, Bangladesh and European universities. The report will then provide a brief introduction to cross institutional module development, sharing and delivery. Finally, the report will focuses the issues, constraints and opportunities in cross institutional module development, sharing and delivery among Russian, Asian and European region to provide conclusions and recommendations.

6.1. Cross institutional partnerships and collaborations

The changing world is a universal topic of interest, with particular resonance to higher education. To support students to live in this ever-changing world, those of us who work in higher education strive to provide solid, relevant preparation at the undergraduate and graduate levels (Harrison, 2017).

The roles of higher education in sustainable economic and social development increases year by year, and this will continue over the next decades. Higher education can be seen as a focal point of knowledge and its application, an institution which makes a great contribution to the economic growth and development through fostering innovation and increasing higher skills.

Partnership involves organizational joint ventures that may go by any number of names (strategic alliances, joint ventures, collaborations, partnerships, to name a few). It has several forms between or among institutions, through departmental alliances across institutions, or with university programs that pair with businesses or community agencies. Faculty pairings across institutions typically are referred to as collaborations rather than partnerships, though from these initial faculty collaborations, organizational partnerships may

emerge.

This section is presented to identify the state of collaboration and partnership of the partner countries university under Russia (05 universities), Sri Lanka (03 universities), Bangladesh (02 universities) and European (04 universities) context.

Russian Context:

International activity for collaboration and partnership is the priority of the Moscow State University of Civil Engineering (MGSU), Kaliningrad State Technical University (KSTU) and Peter the Great St. Petersburg Polytechnic University (SPbPU) as the national goal is to export education.

1. MGSU has 98 partners from 34 countries, international associations.
2. KSTU has Joint International educational MSc programon "Electrical Power Engineering and Electrotechnics" with ABB and Ostrava Uni (Czech Republic).
3. SPbPU has International educational platform "Coursera" for Joint educational program - Specialization.

Sri Lankan Context:

Education is generally state-funded and offered free of charge at all levels, including the university level (up to B.Sc. level) in Sri Lanka. There are 15 state funded universities under University Grant Commission (UGC). These institutes run as semi autonomous bodies. Student admission is through the UGC and the course is mainly developed by the institute. Universities in Sri Lanka has few partnership and collaboration with international university. However, partnership and research collaboration exists at university and department level with national ministries, department and institution to provide field training for undergraduates, practical placements for students undertaking a field-based course, internships for Honours Degree students.

1. Department of Sociology (University of Colombo) has established collaborations with many international and national universities. These includes University of Ljubljana, Slovenia; Durham University, UK; Deakin University, Australia and the Northern

Kentucky University (NKU), USA.

2. University of Ruhuna (UoR) is in collaboration with many national, and international universities and agencies.

3. UoR established a Centre for International Affairs (CINTA) to exchange student and faculty between the partner institutions.

4. Lack of opportunities for international students to enter the Sri Lankan universities.

5. Research collaborations, Internship for students, Industrial trainings, International symposiums are organized and collaborating with other universities at BSc level.

6. Lack of Opportunities for Cross institutional partnerships and collaborations.

7. No policies and strategic developments in state universities for module sharing.

8. Lack of platform to sharing resources with other universities.

9. Some module sharing opportunities are available at MSc level.

10. Strategies, priorities and polices are highly needed to expand and develop collaborative relationships with foreign universities.

11. The BECK project is a good approach towards module sharing, and to increase the inter university collaboration in university system of Sri Lanka.

Bangladesh Context:

Bangladesh is one of the most vulnerable country to climate change in the world. Education sector in Bangladesh is not sufficiently organized and formatted to combat energy and climate. University graduates have lack of multidisciplinary integrating education and syllabus at higher education (HE) in Bangladesh. Also, communication between universities and stockholders is insufficient to meet the challenges. Therefore, to increase the capacity of the HE, needs modernize and enhance the quality of the education. Education at HE is changing dramatically due to globalization, role of private sector, international ranking of the university and students demands and expectation. Therefore, it is high time to take initiatives for savings energy for future generation through changing consumer behavior by incorporating energy efficiency and climate change in course curriculum at primary, secondary and tertiary level of education. Bangladesh is at initial stage in this regards. The government of Bangladesh is ready to go with all kinds of online education in the country at every level of education by policy initiatives and practical physical supports. Education sector is not fully ready, although a few e-learning initiatives at a small scale are found at the

lower level of the education system. The tertiary level institutions still rely fully on the conventional system of providing education, with the exception of Bangladesh Open University (BOU) which has developed necessary infrastructures for e-Learning. Government has undertaken various initiatives for making the people technology-aware and developing country-wide internet connectivity.

1. Patuakhali Science and Technology University (PSTU) has already made Memorandum of Understanding (MOUs) with the international universities (Boda University, Norway, Hohenheim University, Germany; University of Salford, UK; University of Copenhagen, Denmark; University of Canberra, Australia; Kyungpook National University South Korea; Sunchon National University, South Korea; North Eastern Hill University, India) to enhance and exchange Quality Higher Education and Research.
2. Barisal University (BU) has MOUs with Sheffield University, UK and has few collaboration with national organization.
3. No partnership or agreement for faculty development, accreditation, harmonization of curricula, operating regulation and module sharing.
4. Still lacks in cross institutional module sharing approach.
5. Barisal University (BU) and Patuakhali Science and Technology University (PSTU) will be the pioneer in cross institutional module sharing in Bangladesh.

European Context:

1. The University of Bologna (UniBo) has recently developed a new internationalisation plan which includes strategies aimed at removing obstacles to mobility and increasing the international dimension of the institution.
2. UniBo has an International Relations Division.
3. In this framework, UniBo fosters the institutional participation in several European programmes, networks and initiatives on internationalisation of higher education and development cooperation.
4. Tallinn University of Technology (TUT) has existing partnerships with foreign universities.

6.2. Existing inter-university joint programme and module sharing arrangements

This section will provide the overview of Existing inter-university joint programme and module sharing arrangements for Russian, Sri Lankan, Bangladesh and European universities.

Russian Context:

1. Moscow State University of Civil Engineering (MGSU) has Joint programs with universities of Uzbekistan, Finland and Poland within the area of Construction, Environment protection, Water recourses, Architecture and Urban planning.
2. KSTU is currently using "STEPIC" platform to provide 02 MOOCs for inter university students. More courses are currently under development and testing.
3. KSTU has electronic educational information environment for students and teachers (EIOS).

Sri Lankan Context:

1. University of Colombo (UoC) has few joint programmes such as the international student exchange programme with the Justus Liebig University (JLU), Giessen, Germany for students specializing in English.
2. However, the department has not ventured into module sharing arrangements with other local and foreign universities.
4. University of Moratuwa (UoM) has joint programme with University of Colombo at national level.
5. University of Ruhuna (UoR) has Inter-University joint programmes for research work and industrial training at national level with University of Moratuwa, University of Colombo, University of Peradeniya and University of Sri Jayewardenepura (USJP).
6. UoR has international joint for research with Ryukyus University, Japan;

Ibaraki University, Japan; and Kobe University, Japan; Naresuan University, Thailand; Asian Disaster preparedness Center, Thailand.

7. No inter-university joint programs for module sharing at national and international level.

8. Working towards strengthing the inter-university module sharing through BECK Project.

Bangladesh Context:

1. Patuakhali Science and Technology University (PSTU) and Barisal University (BU) have inter-university joint program for research at national and international level.

2. PSTU and BU have no inter-university joint program for curricula development and student, faculty exchange and module sharing arrangements.

European Context:

1. The existing inter-university programme is witnessed by the ongoing international projects, as well as by the visiting professors and the number of foreign students regularly enrolled at the University of Bologna (around 6.000). Another 2.000 students arrive every year on international mobility programmes (such as LLP/Erasmus, Overseas and Erasmus Mundus Action II). Moreover, the number of outgoing students on study grants is more than 2.000 per year

2. In addition, the University of Bologna has developed an application about innovation and digital learning: UniBO Open Knowledge (BOOK) is an initiative designed to plan and deliver Massive Open Online Courses (MOOCs).

3. TalTech (TUT) has existing joint programs of staff exchange.

4. PostDoc from VGTU in TalTech will deliver part of the module.

6.3. Opportunities for module development, sharing and delivery in the BECK project

This section is aimed to know the current status of the Russian, Sri Lankan, Bangladesh and European universities for module development, sharing and delivery in the BECK project.

Russian Context:

1. MGSU developed module for three departments (Urban Planning; Heat, Gas Supply and Ventilation; Social, Psychological, and Legal Communications) with International Unit

2. Module sharing with key partners of MGSU and key members of International Public Organization of Assistance to Construction Education (ASV) in all countries.

3. Introduced and delivering the curricula of "Urban planning" and "Construction".

4. STEPIC is an Russian online learning platform that offers massive open online courses (MOOC) in a variety of subjects, that can be used for module development, sharing and delivery in the BECK project for KSTU.

Sri Lankan Context:

1. It is valuable for resource sharing, knowledge sharing and to build inter university collaboration platform.

2. It's a good exposure to European education system/techniques and platforms.

3. Greater opportunity to Sri Lanka to boost and uplift the education system with MOOCs approach.

4. Good opportunity to address lack of funding issues in HEIs.

5. Introduction of new technology platform for HEIs in Sri Lanka.

6. Content can be developed jointly.

7. Delivery should be subjected to respective faculty upon board approvals.

8. NO credit transfer is possible.

9. Only contents can be shared with unique subject codes and names.

10. UoR, UoC and UoM are collaboratively working towards implementing new policies on HEIs in Sri Lanka on this learning platform.

Bangladesh Context:

1. Resource personnel/teachers of PSTU and BUN have no experience in preparing MOOC modules. Hence, it will be a challenge in preparing quality MOOC modules.

2. Development of comprehensive teaching and learning materials and incorporating innovative teaching and learning methods has become an issue.

3. PSTU and BU have "Institutional Quality Assurance Cell" (IQAC) and have resource trained personnel who are able to design and ensure quality curriculum with Padagogy and/or Andragogy.

4. Resource persons/teachers have experience in preparation of different training modules that knowledge will be helpful module development.

5. Appropriate training will be necessary for ensuring quality MOOC.

6. No obligation to develop, share and delivery MOOC modules to the BECK Project. (as agreement with BECK).

7. Able to and promote lifelong learning at large within the society by making study material accessible outside traditional classroom environment to various parties within the society from students, teachers to practitioners and policy makers.

8. Have unlimited high speed internet facilities. Therefore, BU has sufficient ICT to adapt latest technology to succeed cross institutional module sharing.

9. ICT is good enough to facilitate cross institutional module sharing

10. Able to provide virtual campus, open educational resources with the aid of high speed internet connection.

11. PSTU and BU will be benefited from BECK project in preparing and sharing MOOC modules.

European Context:

1. The BECK MOOC module that will be developed by the University of Bologna could constitute a new online course within the BOOK (UniBO Open Knowledge) website.

2. The international dimension of the University of Bologna guarantees a wide diffusion of the project, which could also became attractive for other countries.

3. TUT has a lot of ERASMUS joint recognition agreements.

7. READINESS OF THE UNIVERSITY FOR CROSS INSTITUTIONAL MODULE SHARING

Cross institutional module sharing largely depends on several factors such as Language and culture, administration policy, common assessment criteria for grading, ability to share module, intellectual property (IP), access to geographically dispersed knowledge, technology readiness, maintaining quality and sustainability. This section aims to identify the readiness of the Russian, Sri Lankan, Bangladesh and European universities from the viewpoint of module sharing.

7.1 Language and culture

Language and culture are the major factors to achieve the goal of module sharing across the border. Language and teaching culture differs from country to country. This section provide the scenario of language used for the academic programs and cultural status of the education system.

Russian Context:

1. Departments are having staff with English language skills.
2. Programs on English are implemented.
3. International projects are being conducted.
4. KSTU has more than 15 international programs and 250 plus international students are enrolled in different programs.
5. SPbPU has more than 7000 international students.

Sri Lankan Context:

1. Official languages of Sri Lanka are Sinhala and Tamil.
2. However, most of the degree programs in Sri Lankan universities are conducted in English language only.
3. The undergraduates are exposed to both traditional and blended learning, especially through Learning Management Systems. In some cases, courses are completed on a fully online basis through the Virtual Center of the university.

Co-funded by the
Erasmus+ Programme
of the European Union

4. There are 6 main streams in SL higher education.

5. Science, Mathematical and Technology streams are totally delivered in English.

6. There are very few number of courses conducted in Sinhala and Tamil languages.

7. English language courses help to overcome the language barriers of students who are coming from different ethnic groups.

Bangladesh Context:

1. In Bangladesh most number of degree programs at university level are conducted in English language only.

2. Science and technological subjects are exclusively taught and delivered in English.

3. PSTU and BU students would prefer face to face learning, laboratory and field (community) learning, as well as distance learning.

4. PSTU and BU are ready to do MOOC as authority assure to cooperate the project.

5. Have virtual class room, cyber center, geo-information science and earth observation lab along with high speed internet facility to carry out the cross institutional module sharing.

6. PSTU has experience in directing e-learning during 2008-2012 with the help of CDMP, Bangladesh.

7. With the development of ICT, the new generation of students of BU has techno-cultural skills comparable to reading and writing and may prefer internet based learning activities.

European Context:

1. BECK MOOC module will combine the international dimension of the project, the staff expertise about energy efficiency, consumer behaviour, technical aspects and architectural restoration, and heritage buildings and culture (UniBo).

2. Common language is English for TUT and UniBo.

7.2 Administrative constraints

Administrative issue is one of the major factor in cross institutional module sharing. Different universities have different administrative setups due to the rules and regulation of the governments, institution policy and political context. Some universities have very rigorous administrative and governance arrangement while other institutions have very flexible governance arrangements. This section explore the status of the Russian, Sri Lankan, Bangladesh and European universities.

Russian Context:

1. BECK team of MGSU has the administrative support of vice-rector for international activity.
2. Teachers have the freedom to develop curricula such as number of weeks in syllabus, number of hours in 1 ECTS.

Sri Lankan Context:

1. Introducing additional courses into exiting curricular in BSc, MSc and PhD; are related to issues in accreditation procedures in Sri Lanka.
2. No policies and lack of approving procedures available for MOOCs.
3. Any addition/deletion needs faculty and then senate approval.
4. Approval and accreditation to offer courses on the topic from tertiary educational bodies and committees within the university and the University Grants Commission, in accordance to the Sri Lankan Quality Framework (SLQF).
5. The rationale of any course will be ratified by respective University/Industry Consultative Boards (UICB) at regular intervals.
6. Rigorous process to get approval from regulatory bodies for integrating modules into system followed by -
   - Faculty Board and Faculty Curriculum Development Committee .
   - University Senate and Quality Assurance Unit.
   - University Grant Commission.
   - Ministry of Higher Education.

7. Content and the delivery will be overseen by international accreditation bodies and should comply with their observations.

8. Time constraints on getting approvals from regulatory bodies.

9. Lack of Inter University collaboration in current context.

10. Lack of Clear university rules and regulations to offer courses to all internal and external students.

11. Different universities across borders have different administrative setups which would depend on the political context.

Bangladesh Context:

1. Administrative issues are also one of the major barriers in cross institutional module sharing.

2. BU administration have flexible governance arrangements which would help in the development and delivery of shared modules.

3. BECK team of BU has the administrative support of vice-Chancellor for international activity.

4. Rigorous process to get approval from regulatory bodies for integrating this modules into system are -

   - Submission of the content to the department academic committee.
   - Screening and reviewing by four expert personnel.
   - Approval from the syllabus committee following the rules and regulations of the faculty (science and engineering faculty).
   - Approval from the university academic council.
   - Approval from the university syndicate.

5. PSTU Administration needs at least months for the approval of MOOC and have to go through rigorous process.

   - Invite relevant department and research institution for submitting content of the course.
   - Screening by expert personnel.
   - Department syllabus committee.

- Department academic committee.
- Faculty executive committee.
- Institutional Quality Assurance Cell (IQAC).
- University academic council.
- Approval from Regent board.

1. Module must be approved for the inclusion into a study program.
2. TUT university has flexibility with Erasmus partners.
3. UniBo is still working on the issue.

7.3. Defining common assessment criteria

Common assessment criterion is also major factor for module sharing as course credits and assessment criteria varies from one institution to another. In the BECK project newly developed module will be added into existing program. Number of credits allocated and methods of assessment procedures could be different from country to country, university to university as well as program to program. Therefore, it is important to be well-matched for sharing module in terms of existing standard and practices of the different university. Therefore, this section has been aimed to gather information on practices, standard and mode of assessment in Russia, Sri Lankan, Bangladesh and European universities.

Russian Context:

1. System of the assessment is to be common in BECK modules.
2. Equality of education.
3. Diversity of teaching and learning strategies.
4. Accessibility of learning materials.
5. Sustainability of learning outcomes.

Sri Lankan Context:

1. Assessment criterion in the university is continuous assessments and final examination or report.
2. Common assessment criteria have to be defined by relevant partner universities.
3. Modules assessment criteria should be complied with institutional criteria.
4. Sri Lankan credit system is defined by Sri Lankan Quality framework/ UGC
5. In terms of the number of credits or ECTs

   - One academic year corresponds to 60 ECTS credits that are normally equivalent to 1500–1800 hours of total workload (1 ECTS = 25 - 30 hours)
   - 1 credit equal to 15 hours of lectures, 30 hours of laboratory studies, 45 hours of field studies, 90 hours of industrial trainings.

6. Hence, assessment criteria should be fixed at the beginning, however, the mode of assessment can be changed

Bangladesh Context:

1. BU and PSTU students are assessed based on combinations of written exams of course works, practical examination and viva-voce.
2. PSTU usually follow two types of assessment

   - Formative assessment (30%): Short answer, Quiz test, Presentation, Assignment, Group/field work, Project
   - Summative assessment (70%): Final Exam (written)

3. PSTU usually follow two types of assessment

   - Written examination based on course work (60%)
   - Internal Assessment (40%)
     - Quiz – 20%
     - Assignments- 10%
     - class performance- 5%
     - Attendance- 5%

4. In terms of the number of credits or ECTs

- 1 ECTS = 25 hours of student works

European Context:

1. The students of the UniBo BECK MOOC module will have to see all the lessons of the online course in order to take the final exam.
2. Passing the final examination makes it possible to obtain a certificate of attendance.
3. 1 ECTS credit = 26 hours of student work.
4. Any other grading systems have to be converted to ECTS.

7.4 Ability to share resources

Another important challenge for module sharing is the ability to share resources. Module sharing entirely depends on the ICT, high speed internet facility, ICT based courses and resources person. Different universities may have level of ICT, internet facility, resources person etc which are the major factors to achieve the goal of module sharing based on collective efforts from all partner university. This section gather the information of the ability to share resources of the Russia, Sri Lanka, Bangladesh and European universities to fulfill the goal of cross institutional module sharing.

Russian Context:

1. MGSU has Open Network" technical support centre.
2. Educational online platform is to share learning materials.
3. KSTU has "STEPIC" platform for providing MOOCs module sharing for interuniversity students.

Sri Lankan Context:

1. The success of a cross institutional collaboration lies on the willingness

and ability to share resources.

2. In a situation where the courses/ modules are shared, the university lacks rules and regulations on which to operate as previous attempts have not been made (UoC).

3. There is a need of policy requirements and policy implementation to module/ resources shearing with universities (UoR).

4. Need of technology adaptation in sharing resources on ICT based courses (UoR).

5. Online resource sharing is possible between universities (UoM).

6. Responsibility of the content should bared by the respective lecturer (UoM).

7. Should be delivered as a course which owns by the respective university/faculty/ department (UoM).

Bangladesh Context:

1. BU has technology advantages in sharing module resources.
2. Need technology adaptation in sharing resources on ICT based courses.
3. BU and PSTU are able to share online resource between universities.

European Context:

1. The UniBo BECK will provide useful MOOC module materials to share the course resources (e.g. the pdf presentations of the lessons, data sheets about some case studies, a reference bibliography).

2. The UniBo staff will also produce publications on these issues.

3. Mainly virtual courses (TUT) are conducted.

4. Access to university Module has to be arranged (TUT).

5. Use of ERASMUS Mobility programme for face-to-face support if needed (TUT).

7.5 Intellectual Property (IP)

Intellectual Property law generally changes from one country to another (Burgi, 2009). Different institutions follow different procedure for IP rights for sharing resources. It is very important to understand the IP rights rules for different university to apply the rules in sharing module, teaching and learning materials etc. This section provides an overview of the Intellectual Property Rights (IPR) provisions applicable in Russia, Sri Lanka, Bangladesh and European universities to fulfill the goal of cross institutional module sharing.

Russian Context:

1. The results of BECK project are to be in open access.
2. The results of CENEAST and MAPREE Tempus projects are to be used for the development of BECK modules.

Sri Lankan Context:

1. Lack of clear university rules and regulations for intellectual property rights of the courses developed by the consortium (UoC).
2. IP rights are mainly governed by the establishment code of the state services (UoM).
3. In addition, UGC as its own guidelines on IP rights
4. Individual universities have their own IP policies and an IPac committee.
5. There are intellectual property rights with authors on institution basis.
6. UoR can share Intellectual Property , rights with partner organizations.

Bangladesh Context:

1. BU administration is flexible on sharing knowledge among different institution and community. Therefore, BU laws would be flexible for different study materials according to the needs.
2. PSTU is flexible on sharing knowledge among universities, institutions, communities and researchers but patent should be to the

participating universities.

3. Author's would be expect to be honored by other users of the teaching materials.

European Context:

1. Lack of clear concept on BECK project property, authors, EU and University (TUT).

2. The procedure is under process (UniBo).

7.6 Access to state of the art technology

State of art technology is an integral part in sharing module and cross border partnership. ICT is an important entity for quality teaching and learning as well as cross institutional module development, sharing and delivery. Advanced technologies are prerequisite for module sharing. Therefore, advanced ICT based systems have to be compatible in Russia, Sri Lanka, Bangladesh and European universities to successfully module development, sharing, delivery and management. This section provides an overview of the access to the state of the art technology for partner countries.

Russian Context:

1. MGSU as the National Research University is producing new technologies.

2. The modern technological solutions are to be implemented in the curricula.

3. Best European and World practices are to be given attention to ICT.

Sri Lankan Context:

1. There are constrains on when introducing this technological improvement to current education system.

- Lack of resources
- Lack of trained professionals
- Lack of infrastructure facilities
- Lack of experience in those fields
- Runs with limited resources
- Restrictions in bandwidth limits the access to online resources
- Limitation of availability of internet facilities – Student/staff
- Outdated software and hardware
- Lack of online platforms (The virtual campus of the university merely coordinates programmes and does not have the online platforms to run the programmes)

2. UoR uses the Moodle environment for e-Learning facilities and used for disseminating purposes on presentations, lecture notes, assessments etc.

Bangladesh Context:

1. PSTU has a-
   - Modern Virtual Class (VC) room
   - Cyber center
   - Geo-information science and earth observation lab
   - Lab has smart board/ multi-media projector and internet facility
   - All class rooms have audio-visual facility

2. Lab has smart board/ multi-media projector and internet facility.

3. All class rooms have audio-visual facility.

4. ICT based teaching and learning now become an integral part of BU education systems.

5. There are some constrains on technological improvement to current education system in BU and PSTU.
   - Lack of resources
   - Lack of trained professionals
   - Lack of infrastructure facilities
   - Lack of online platforms (does not have the online platforms to run the

programmes)

6. BU and PSTU would collaborate effectively with partner universities.

European Context:

1. Starting from the skills and expertise of the University of Bologna staff that is involved in the project, the access to state of the art technology will be carried out through bibliographical and regulatory researches
2. The course is in Moodle – free to use (TUT).
3. The hardware is needed where the students are located.
4. The software is generally free for student use (TUT).

7.7 Sustainability

Shared module maintenance and its sustainability is a major issue for beyond the life of the project. The project is for 3 years but the objectives of the project is lifelong learning. Therefore, it is very important to keep the module up to date and maintain following the protocols and copyright issues. This section provides the overview on the partner countries status on module delivery and maintenance.

Russian Context:

1. Complex approach of the combination of the social, economic and ecological aspects for the solution of technical issues in the modules is the key element to reach high level of sustainability.
2. The cooperation with industry partners is the key to the sustainability.

Sri Lankan Context:

1. Maintains of the shared modules after funding period ?

2. Need alternative funding source, specially for SL universities (Due to free education policy, unable to get money from students for B.Sc. level)

3. A sustainable funding module should be developed.

4. Need continuous assessment , monitoring , maintain and updating procedures on shared modules.

5. Continuous Inter university collaboration after completing project among local and international universities.

6. Sudden changes in policies/systems (UoM).

Bangladesh Context:

1. It is very important to have a clear sustainability plan which identifies how the collaboration would sustain beyond the life of the project.

2. As a result it is very important to define protocols on how the modules could be amended/ changed, how to deal with copyright issues.

3. Sustainability of MOOCs will depend on its contents. Hence, all MOOCs should be demand driven/ practical. Also depends on:

   - Technical supports
   - Determination of the university supported by budget facility

4. Need to formulate easy strategy to revise/ update the module as and when needed.

5. Need alternative funding source for Bangladeshi universities as education is free.

6. BU and PSTU would cooperate BECK partner universities regarding collaboration to have clear sustainability plan.

European Context:

1. Archival researches and operational surveys will implement the bibliographical and regulatory researches in order to produce a BECK MOOC module on the themes of sustainability, by conjugating energy efficiency, consumer behaviour, climate change and heritage buildings (UniBo).

2. The course will be constantly developed and maintained (TUT).

8. TEACHING AND LEARNING STRATEGIES

Philosophical and pedagogical approaches to teaching, classroom instructor utilize diverse and highly creative methods involving specific strategies, prompts and tools.

The traditional form of teaching in a University often involves lectures being given to large groups of students, accompanied by tutorials and workshops, with some independent study. However, there are several other modes of delivery that can also be very effective. Various modes of delivery can be utilized in teaching and learning (i.e. teaching large groups, small group teaching, demonstrating in practical classes, Massive open online courses (MOOCs), Flipped classroom, Active learning, Problem based learning, Work based learning, Blended learning, Student-led learning).

This section provides an overview of the teaching and learning strategies in Russia, Sri Lanka, Bangladesh and European universities for BECK project.

Russian Context:

1. Teaching and learning will occur through studying modules presentations, passing online tests and solving practical tasks.
2. All students will be supported by extensive use of the Moodle (Coursera) virtual environment.
3. The programmes will utilise an e-based learning strategy.
4. Organized lesson-divided materials
5. Long read type lectures
6. Info graphics
7. Case studies
8. Problematic questions
9. Teaching and learning strategies can be implemented using simulated big data interuniversity networked affective educational centre (the BECK Centre).
10. Assessment methods involves problematic questions, regular tests, peer evolutions, written essay, assignment, intelligent and regular test, online examination.

Sri Lankan Context:

1. Blended Teaching-learning methods.

2. Integrated affective tutoring and affective computing methods. The Integrated Method includes computer learning systems, an affective tutoring system, access to e-sources (open-source videos, simulators such as calculators and software, and case studies from the best universities around the world), self-study in the Moodle Virtual Environment (learning materials including audio visual materials, text materials), online discussions

3. Theory lectures / case studies through PPT, benchmark videos, expert videos, sofa session video.

4. Assessment methods involves problematic questions, regular tests, peer evolutions, written essay, assignment, projects, tutorial, auto-mated grading of exercise, quizzes/in-video quizzes, forum discussion/peer assessment, project reports/self-assessment/artificial intelligent assessment.

Bangladesh Context:

1. Teaching and learning through moderation of forum discussion for the preparation of papers.

2. Students participate in on-line discussions, peer reviews and group work.

3. Assessment methods involves problematic questions, regular tests, peer evolutions, written essay, assignment, projects, tutorial, auto-mated grading of exercise, quizzes/in-video quizzes, forum discussion/peer assessment, project reports/self-assessment/artificial intelligent assessment.

European Context:

1. Theory will be supported by the selection of applicable case studies.

2. Lecture materials in pdf format, Video lessons, Reasoned

bibliography, On-line resources Learning tests

3. Online training sessions includes -

   • Organizational skills

   • Self-management skills

   • An overview of appropriate research methods

   • Accessing and using electronic-based sources

   • Research ethics

   • Referencing and citation techniques

4. Assessment methods of student achievements: (for B.Sc and M.Sc level)

   • Automated feedback (at the end of each lesson)

   • Regular tests

   • Problematic questions

   • Partial and final evaluations

   • Certificate of attendance

5. Assessment methods of student achievements: (for PhD level)

   • Supervisor review;

   • Recommend to submit / submit after

   • revisions

   • Examiners review;

   • Approve for the next stage

   • Resub. of report

   • Resub. of report & viva

   • Transfer to M.Phil.

   • Fail

9. CONCLUSIONS AND RECOMMENDATIONS

The report has been prepared as part of a EU funded BECK (Integrating education with consumer behaviour relevant to energy efficiency and climate change at the Universities of Russia, Sri Lanka and Bangladesh) project aimed at upgrading the curricula of BSc/specialists, MSc and PhD programmes in Russian, Sri Lanka and Bangladesh universities by adding 16 new multidisciplinary adaptive, recognised and certified MOOC modules on consumer behaviour related to energy efficiency and climate change, to enhance the quality and relevance of education in PC and EU universities to global issues on climate change and energy efficiency.

The report explore and evaluate the benefits and constraints related to cross institutional module development, sharing and delivery in PCHEI (Russian, Sri Lanka and Bangladesh) and EU universities. The report forms a basis to understand the institutional protocols associated with the cross institutional collaboration and partnership. The findings of the survey on cross institutional module development, sharing and delivery from PCHEI and EU universities based on questionnaires survey are as follows .

1. Partnership and collaboration programmes exists in PCHEI (Russia, Sri Lanka and Bangladesh) with other institute and universities for research, industrial trainings at national and international level which can be helpful for PCHEI for module development, sharing and delivery with the support of experienced EU universities.

2. PCHEI (Russia) are currently using platform to develop, share, and deliverthe module. EU universities have number of ERASMUS joint programmes for module development, sharing and delivery. PCHEI (Sri Lanka and Bangladesh) have resource person to develop the content of module. However, developing module/content development will require support from EU universities.

3. PCHEI and EU universities are conducting undergraduate and graduate level programs which commonly run in English and beneficial for module development, sharing, and delivery.

4. PCHEI have support from administration for international activity; and module development, sharing, and delivery. However, constraints for implementing and approval of the module in the existing programs will require time to maintain the formal procedures in respective universities.

5. Practices, standard, and mode of assessment in the universitiesof Russia, Sri Lanka, Bangladesh and Europevary considerably. However, it hasfound that, in terms of credits or ECTs, 1 ECTs equal to 25-30 hours for PCHEI and European universities. Therefore, it is important to be synchronized for sharing module regarding existing standards and practices of the different universities.

6. Module sharing entirely depends on the ICT, high speed internet facilities, ICT based courses and resources personnel. PCHEI are capable to share developed module with ICT, internet facility and resource personnel. However, the constrains for few universities will be required rules and regulations for module sharing.

7. Some PCHEI administrations are flexible for intellectual property (IP) right, while other universities have their own IP policies which would be helpful for module sharing and delivering in BECK project.

8. State of art technology is an integral part for sharing module in BECK project. Implementing and delivering BECK project courses are major concern for PCHEI as some of the universities will require infrastructure facilities, trained personnel and online platforms.

9. Shared module maintenance and its sustainability is a one of the major concern for the life-long of the project. PCHEI will require funding source after the 3 years project for continuous assessment, monitoring, maintain and updating procedures of the shared modules.

10. Teaching and learning at PCHEI will use online teaching-learning platform through studying modules presentations, passing online tests and solving practical tasks. Lecture materials will be in pdf format, Video lessons, reasoned bibliography, on-line resources. Assessment methods will be problematic questions, regular tests, peer evolutions, written essay, assignment, projects, tutorial, auto-mated grading of exercise, quizzes/in-video quizzes, forum discussion/peer assessment, project reports/self-assessment/artificial intelligent assessment.

From the above observation it is clearly identified that PCHEI and EU universities are positively proposing to accommodate the newly developed MOOC courses and modules in the existing programs along with the improvement in the existing academic structure.

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ANNEXURE

P3 - Tallinn University of Technology (TTU)

Promoting cross institutional module sharing	
Cross institutional partnerships and collaborations	• Will be determined based on WP-1 gaps and needs in Sri Lankan, Bangladeshi and Russian universities
Existing inter-university joint programme and module sharing arrangements	• TalTech has existing joint programs of staff exchange. • PostDoc from VGTU in TalTech will deliver part of the module
Opportunities for module development, sharing and delivery in the BECK project	• There are a lot of ERASMUS joint recognition agreements
Readiness of the university for cross institutional module sharing	
Language and culture	• English
Administrative constraints	• Easy with ERASMUS partners
Defining common assessment criteria	• 1 ECTS credit = 26 hours of student work • Any other grading systems have to be converted to ECTS
Ability to share resources	• Mainly virtual courses • Access to university Moodle has to be arranged • Use of ERASMUS Mobility programme for face-to-face support if needed
Intellectual Property	
Access to state of the art technology	• The course is in Moodle – free to use • The hardware is needed where the students are located • The software is generally free for student use
Sustainability	• The course will be constantly maintained and developed
Conclusions & Recommendations	• Common assessment should be based on ECTS • No apparent major barriers to module sharing

	• Technology constraints may be encountered in some student localities

P4 - Moscow State University of Civil Engineering (MGSU)

Cross institutional partnerships and collaborations	MGSU international activity is the priority of the university as the national goal of export of education • MGSU: 98 partners from 34 countries, international associations • ASV: 150 HEI from 10 CIS countries

Existing inter-university joint programme and module sharing arrangements	• Joint programs with universities of Uzbekistan, Finland and Poland:
	   • Construction
	   • Environment protection. Water recourses
	   • Architecture
	   • Urban planning

Opportunities for module development, sharing and delivery in the BECK project	• Development: 3 departments of MGSU (Urban Planning; Heat, Gas Supply and Ventilation; Social, Psychological, and Legal Communications) + International Unit • Sharing: key partners of MGSU and key members of ASV in all countries • Delivery: introducing in the curricula "Urban planning", "Construction"
Language and culture	• Departments are having staff with English language skills • Programs on English are implemented. International projects are realized.
Administrative constraints	• MGSU BECK team has the administrative support of vice-rector of international activity. • Teachers have the freedom to develop curricula • Number of weeks in syllabus • Number of hours in 1 ECTS
Defining common assessment criteria	System of the assessment is to be common in BECK modules. • Equality of education • Diversity of teaching and learning strategies • Accessibility of learning materials • Sustainability of learning outcomes
Ability to share resources	• "Open Network" technical support centre • Educational online platform is to share learning materials

Intellectual Property	• The results of BECK project are to be in open access • The results of CENEAST and MAPREE Tempus projects are to be used for the development of BECK modules
Access to state of the art technology	• MGSU as the National Research University is producing new technologies • The modern technological solutions are to be implemented in the curricula • Best European and World practices are to be given attention to
Sustainability	• Complex approach of the combination of the social, economic and ecological aspects for the solution of technical issues in the modules is the key element to reach high level of sustainability • The cooperation with industry partners is the key to the sustainability
Conclusions & Recommendations	• The common approach for the development of the modules should be used in the project

P5 - Kaliningrad State Technical University (KSTU)

Promoting cross institutional module sharing	
Cross institutional partnerships and collaborations	• Joint International educational MSc program **«Electrical Power Engineering and Electrotechnics»** with ABB and Ostrava Uni (Czech Republic) • **Program start:** September 2019 **Modes and duration Full time:** 2 years **Tuition fees No tuition fee** for the applicants who pass the selection process • **Awarded degree** Master of Science • **Language of instruction** English **Accreditation** Program is accredited by the Russian Government
Existing inter-university joint programme and	• Electronic educational information environment for students and teachers **«EIOS»** eios.klgtu.ru • KSTU on open educational platform **«STEPIC»** National

module sharing arrangements	digital educational environment in Russian Federation https://stepik.org/org/klgturu • International project's Portals **ERASMUS+** • Using STEPIC platform we currently provide 2 MOOCs for interuniversity students. More courses are currently under development and testing
Opportunities for module development, sharing and delivery in the BECK project	• STEPIC is an Russian online learning platform that offers massive open online courses (MOOC) in a variety of subjects, that can be used for module development, sharing and delivery in the BECK project. • Specializations and degrees can be organized. • **Specialization** A series of **4 to 7 courses make up a Specialization**. • **Course.** A course helps learners master a certain skill. Each course should include at least **15 hours of content, delivered in 4 to 6 modules/weeks**. All courses include lessons and modules. • **Modules.** A module is a collection of lessons that comprise a larger unit of learning. Module can include 1 to 6 lessons, with a total of 3 to 5 hours of learner engagement time. Each module should include at least 10 ungraded questions and graded assessment. • **Lessons.** A lesson is a unit of content that should take a learner around 30 minutes to complete. Lesson includes several videos and at least one ungraded assessment (e.g. a practice quiz). Lessons can also include supplemental readings.
Readiness of the university for cross institutional module sharing	
Language and culture	• **124** BSc, MSc, PhD programs • **15+** International programs • **250+** international students • **annual** academic mobility • **12000+** students

Administrative constraints	
Defining common assessment criteria	
Ability to share resources	
Intellectual Property	
Access to state of the art technology	
Sustainability	
Conclusions & Recommendations	

P6 - University of Ruhuna (UoR) – Sri Lanka

Promoting cross institutional module sharing	Education is generally state-funded and offered free of charge at all levels, including the university level (up to B.Sc. level) in Sri Lanka. • No policies and strategic developments in state universities for module sharing. • Lack of platform to sharing resources with other universities. • The BECK project is a good approach towards module sharing, and increase the inter university collaboration in university system of Sri Lanka.
Cross institutional partnerships and collaborations	• Lack of opportunities for international students to enter the Sri Lankan universities. • Lack of Opportunities for Cross institutional partnerships and collaborations • UoR is in collaboration with many national, and international universities and agencies. • UoR established a Centre for International Affairs (CINTA) • Research collaborations, Internship for students, Industrial trainings, International symposiums are organized, collaborating with other universities at BSc level • Some module sharing opportunities are available at MSc level • Strategies, priorities and polices are highly needed to

	expand and develop collaborative relationships with foreign universities.

Existing inter-university joint programme and module sharing arrangements	• Inter-University joint programmes for research work and industrial training.
	    • National –Eg. with UoM, UoC, UoP, USJP
	    • International –Eg. Ryukyus University, Ibaraki University, Kobe University, (Japan).
	• - Naresuan University (Thailand), ADPC (Thailand)
	• No inter-university joint programs for module sharing
	• UoR is working towards strengthing the inter-university module sharing through BECK Project.

Opportunities for module development, sharing and delivery in the BECK project	• It's a good exposure to European education system/techniques and platforms • Greater opportunity to Sri Lanka to boost and uplift the education system with MOOCs approach. • Its valuable for resource sharing, knowledge sharing and to build inter university collaboration platform • Good opportunity to address lack of funding issues in HEIs • Introduction of new technology platform for HEIs in Sri Lanka. • Capacity building of Academic staff, Technical staff and Students • BECK project assists all universities in Sri Lanka to formulating policies on MOOCs based education • (UoR, UoC and UoM are collaboratively working towards implementing new policies on HEIs in Sri Lanka on this learning platform).
Readiness of the university for cross institutional module sharing	
Language and culture	• Official languages of Sri Lanka are Sinhala and Tamil. • However, in Sri Lankan universities the greatest number of degree programs are conducted in English language only. • There are very few numbers of courses conducted in Sinhala and Tamil languages. • English language courses help to overcome the language barriers of students who are coming from different ethnic groups.

Administrative constraints	When introducing additional courses into exiting curriculars in BSc, MSc and PhD;
	• Issues in accreditation procedures in Sri Lanka
	• No policies and lack of approving procedures available for MOOCs
	• Rigorous process to get approval from regulatory bodies in Intergrade this module into system
	• Faculty Board and Faculty Curriculum Development Committee
	• University Senate and Quality Assurance Unit
	• University Grant Commission
	• Ministry of Higher Education
	• Time constraints on getting approvals from regulatory bodies
	• Lack of Inter University collaboration in current context
	• Different universities across borders have different administrative setups which would depend on the political context.
	• Universities should adapt standardized administrative system for all universities.
Defining common assessment criteria	• Common assessment criteria have to be defined by relevant partner universities
	• Modules assessment criteria should be complied with institutional criteria
	• In terms of the number of credits or ECTs
	• One academic year corresponds to 60 ECTS credits that are normally equivalent to 1500–1800 hours of total workload (1 ECTS = 25 - 30 hours)
	• Sri Lankan credit system is defined by Sri Lankan Quality framework/ UGC
	1 credit equal to 15 hours of lectures, 30 hours of laboratory studies, 45 hours of field studies, 90 hours of industrial trainings
Ability to share resources	• There is a need of policy requirements and policy implementation to module/ resources shearing with universities
	• The success of a cross institutional collaboration lies on the willingness and ability to share resources
	• Different partnering institutions may have different level of resources; different level of expertise, access to literature, facilities, etc. and all these need to combine together to achieve a synergetic benefit.
	• need of technology adaptation in sharing resources on

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	ICT based courses.
Intellectual Property	• There are intellectual property rights with authors on institution basis • UoR can share Intellectual Property, rights with partner organizations

Access to state of the art technology	• There are constrains on when introducing this technological improvement to current education system
	    • Lack of resources
	    • Lack of trained professionals
	    • Lack of infrastructure facilities
	    • Lack of experience in those fields
	    • Other technological requirements
	• UoR uses the Moodle environment for e-Learning facilities and used for disseminating purposes on presentations, lecture notes, assessments etc.

Sustainability	• Maintains of the shared modules after funding period? • Need alternative funding source, especially for SL universities (Due to free education policy, unable to get money from students for B.Sc. level) • A sustainable funding module should be developed. • Need continuous assessment, monitoring, maintain and updating procedures on sherd modules. • Continuous Inter university collaboration after completing project among local and international universities.
Conclusions & Recommendations	• UoR is committed to an interuniversity collaboration which encompasses developing closer cooperation with other universities. • There are many constraints on cross institutional modular development and sharing. • Sustainability plays the major role modular sharing and completing this project. • Issues and challenges associated with cross institutional platform should be addressed. • Increase of cross institutional collaboration and partnerships is highly needed.

P7 - Alma Mater Studiorum – University of Bologna (UNIBO)

Promoting cross	

institutional module sharing	
Cross institutional partnerships and collaborations	• The University of Bologna (UniBo) – the oldest university in Western Europe – is the most international of all Italian universities today • UniBo has recently developed a new internationalisation plan which includes strategies aimed at removing obstacles to mobility and increasing the international dimension of the institution • UniBo has an International Relations Division • In this framework, UniBo fosters the institutional participation in several European programmes, networks and initiatives on internationalisation of higher education and development cooperation
Existing inter-university joint programme and module sharing arrangements	• The existing inter-university programme is witnessed by the ongoing international projects, as well as by the visiting professors and the number of foreign students regularly enrolled at the University of Bologna (around 6.000). Another 2.000 students arrive every year on international mobility programmes (such as LLP/Erasmus, Overseas and Erasmus Mundus Action II). Moreover, the number of outgoing students on study grants is more than 2.000 per year • In addition, the University of Bologna has developed an application about innovation and digital learning: UniBO Open Knowledge (BOOK) is an initiative designed to plan and deliver Massive Open Online Courses (MOOCs)
Opportunities for module development, sharing and delivery in the BECK project	• The BECK MOOC module that will be developed by the University of Bologna could constitute a new online course within the BOOK (UniBO Open Knowledge) website • The international dimension of the University of Bologna guarantees a wide diffusion of the project, which could also become attractive for other countries
Readiness of the university for cross institutional module sharing	
Language and culture	• The UniBo BECK MOOC module will combine the international dimension of the project, the staff expertise about energy efficiency, consumer behaviour, technical aspects and architectural restoration, and heritage

Co-funded by the
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Administrative constraints	
Defining common assessment criteria	• The students of the UniBo BECK MOOC module will have to see all the lessons of the online course in order to take the final exam • Passing the final examination makes it possible to obtain a certificate of attendance
Ability to share resources	• The UniBo BECK MOOC module will provide useful materials to share the course resources (e.g. the pdf presentations of the lessons, data sheets about some case studies, a reference bibliography) • The staff will also produce publications on these issues
Intellectual Property	
Access to state of the art technology	• Starting from the skills and expertise of the University of Bologna staff that is involved in the project, the access to state-of-the-art technology will be carried out through bibliographical and regulatory researches
Sustainability	• Archival researches and operational surveys will implement the bibliographical and regulatory researches in order to produce a BECK MOOC module on the themes of sustainability, by conjugating energy efficiency, consumer behaviour, climate change and heritage buildings
Conclusions & Recommendations	• The specifications about the UniBo MOOC module will be presented in the following presentation • In the meantime, UniBo staff is organising the Italian meeting on November 2019

P8 - Peter the Great St. Petersberg Polytechnic University (SPbPU)

Promoting cross institutional module sharing	
Cross institutional partnerships and collaborations	• International educational platform **«Coursera»** **Joint educational program - Spesialisation**

	• **33 million** registered users • common methodology and terminology • common assessment criteria • ability to share resourses • sustainability of project results
Existing inter-university joint programme and module sharing arrangements	
Opportunities for module development, sharing and delivery in the BECK project	• **Specialization** A series of **4 to 7 courses make up a Specialization**. • **Course.** A course helps learners master a certain skill. Each course should include at least **15 hours of content, delivered in 4 to 6 modules/weeks**. All courses include lessons and modules. • **Modules.** A module is a collection of lessons that comprise a larger unit of learning. Module can include 1 to 6 lessons, with a total of 3 to 5 hours of learner engagement time. Each module should include at least 10 ungraded questions and graded assessment. • **Lessons.** A lesson is a unit of content that should take a learner around 30 minutes to complete. Lesson includes several videos and at least one ungraded assessment (e.g. a practice quiz). Lessons can also include supplemental readings.
Readiness of the university for cross institutional module sharing	• **20** Master Degree programs • **30** Summer Schools • **34** DD agreements • **2 000** academic mobility • **7000**+ international students • National portal **«Open Education»** openedu.ru • International educational platform **«Coursera»** coursera.org

	• SPbPU platform **«Open Polytech»** National project «Modern digital educationalenvironment in Russian Federation» online.edu.ru • International project's Portals **ERASMUS+**
Language and culture	
Administrative constraints	
Defining common assessment criteria	
Ability to share resources	
Intellectual Property	
Access to state of the art technology	
Sustainability	
Conclusions & Recommendations	

P11 - Patuakhali Science and Technology University (PSTU)

Promoting cross institutional module sharing	• No doubt, Bangladesh is one of the most vulnerable countries to climate change in the world. • In one hand, over/inefficient energy consumption leads to climate change and on the other hand, climate change has several negative impacts on energy sector, particularly in Bangladesh. • Hence, it is high time to take initiatives for savings energy for future generation through changing consumer behavior by incorporating energy efficiency and climate change in course curriculum at primary, secondary and tertiary level of education. • And still we are at initial stage in this regard. • The government of Bangladesh is ready to go with all kinds of online education in the country at every level of education by policy initiatives and practical physical supports. • But the education sector is not fully ready, although a few e-learning initiatives at a small scale are found at the

	lower level of the education system. • The tertiary level institutions still rely fully on the conventional system of providing education, with the exception of Bangladesh Open University (BOU) which has developed necessary infrastructures for e-Learning. • However, in terms of MOOC, only one university, Bangabandhu Sheikh Mujibur Rahman Digital University (BDU) has started MOOC on "Digital Learning Design" this year (2019) in the country. • The encouraging fact is that the government has undertaken various initiatives for making the people technology-aware and developing country-wide internet connectivity. • But, still lacks in cross institutional module sharing approach. • We wish, Patuakhali Science and Technology University and Barishal University will be the pioneer in cross institutional module sharing in Bangladesh.

Cross institutional partnerships and collaborations	▪ By the Parliamentary Act no. 38 of 2001 and APA with government, PSTU is bound to generate and disseminate knowledge.
	▪ PSTU already made **MOUs** with the following universities and institutes *to enhance and exchange Quality HigherEducation and Research*.
	   • Boda University, Norway
	   • Hohenheim University, Germany
	   • University of Salford, UK
	   • University of Copenhagen, Denmark
	   • University of Canberra, Australia
	   • Kyungpook National University South Korea
	   • Sunchon National University, South Korea
	   • North Eastern Hill University, India

Existing inter-university joint programme and module sharing arrangements	• Not exist • But, PSTU is going to take initiatives starting such joint programme and module sharing approach through BECK centre
Opportunities for module development, sharing and delivery in the BECK project	• None of our university resource personnel/teachers have participate in preparing MOOC modules. Hence, it will be a **challenge** in preparing quality MOOC modules for us. • But, we have experience in quality assurance by Institutional Quality Assurance Cell (IQAC) and we have resource personnel who are able to design and ensure quality curriculum in line with Padagogy and/or

	Andragogy. • In addition, our few resource persons/teachers prepared different **training modules** that knowledge will help us in this regard. • Moreover, appropriate **training** will be necessary for ensuring quality MOOC. • We do not have any obligation to prepare, share and delivery MOOC modules to the BECK Project (as we made agreement with BECK). • MOOC is new area for PSTU. We believe, PSTU will be benefited from BECK project in preparing and sharing MOOC modules.
Readiness of the university for cross institutional module sharing	▪ Mentally, PSTU is ready to do MOOC and PSTU authority assure us that they will assist and cooperate the project. ▪ We have virtual class room, cyber center, geo-information science and earth observation lab along with high speed internet facility to carry out the cross institutional module sharing. ▪ In addition, PSTU has experience in directing e-learning during 2008-2012 with the help of CDMP, Bangladesh.
Language and culture	*Language* • There is a nexus between **language and learning**. • Educational requirements and language vary from country to country. Hence, preparing common module is always a challenge. • Our most of the higher education students are supposed to complete their graduation with the **medium** of instruction in **English.** • But our thinking is, we can produce MOOCs in **multi-language including English, Russian, Bangla etc.** *Culture* • In Bangladesh, most of the students prefer **class room, laboratory and field (community) learning**. • However, our few institutions /organizations (Muktopaath, 10 Minute School, Virtual Skills Development System-VSDS, Shikkhok.com, ShikkhokBatayan , Kishor Batayan) and one university (Bangladesh Open University) have started **e-learning and distance learning** few years back. • But MOOC approach has adopted in this year (2019) by Bangabandhu Sheikh Mujibur Rahman Digital University. The university has been established **to promote online, distance and virtual learning** in

	Bangladesh. • However, our new generation is much more advance in ICT and they would prefer **MOOC approach**.
Administrative constraints	▪ Administrative procedure of MOOC approval will take at least 6 months. ▪ **Accreditation** hierarchy → ▪ In addition, we have only one virtual classroom. The number should be at least three.
Defining common assessment criteria	**PSTU usually follow two types of assessment** (i) Formative assessment (30%): Short answer, Quiz test, Presentation, Assignment, Group/field work, Project (ii) Summative assessment (70%): Final Exam (written) **Need to talk about common assessment criteria**
Ability to share resources	**PSTU is able to share the resources through -** • Its website and social media pages • Arranging seminar, symposium and awareness meeting • Circulation in print and electronic media • Arranging motivation/ debating competition • Press briefing / meeting • University Journal, bulletin, brochure and prospectus • Talk-show in mass media (TV and Radio)
Intellectual Property	• PSTU is flexible on sharing knowledge among universities, institutions, communities and researchers but patent should be to the participating universities.

Access to state of the art technology	• **PSTU has a-**
	     • Modern Virtual Class (VC) room
	     • Cyber center
	     • Geo-information science and earth observation lab
	 • Lab has smart board/ multi-media projector and internet facility

	• All class rooms have audio-visual facility

Sustainability	• Sustainability of MOOCs will depend on its contents. Hence, all MOOCs should be **demand driven/ practical**.
	• Also depends on:
	    • **Technical supports**
	    • Determination of the university supported by **budget facility**
	• We need to formulate easy strategy **to revise/ update** the module as and when needed.

Conclusions & Recommendations	• MOOC approach in higher education institutes (university) is new in Bangladesh. • We need assistance from BECK centre establishing MOOCs in PSTU. • PSTU will be benefited by preparing modules and establishing MOOCs. • But we need to give more focus on the sustainability issues of the MOOCs. • Better to have some specialized personnel to work together who have past and enough experience in this approach.

P12 - University of Colombo, Sri Lanka (UoC)

Promoting cross institutional module sharing	

Cross institutional partnerships and collaborations	• The Department of Sociology has established collaborations with many international and national universities. These include: University of Ljubljana, Slovenia; Durham University, UK; Deakin University, Australia and the Northern Kentucky University (NKU), USA
	• In addition, the department collaborates with many national ministries, departments and institutions to
	    • Provide field training for undergraduates,
	    • Provide practical placements for students undertaking a field-based course component particularly within the social work study stream (Urban Development Authority, Ministry of Social Empowerment and Welfare, Alcohol and Drug Information Center, and various healthcare

	providers as well as institutions for patients with mental disorders), and • Provide internships for Honours Degree students in the third year.
Existing inter-university joint programme and module sharing arrangements	• At the moment, the university cater to a few joint programmes such as the international student exchange programme with the Justus Liebig University (JLU), Giessen, Germany for students specializing in English. • However, the department has not ventured into module sharing arrangements with other local and foreign universities.
Opportunities for module development, sharing and delivery in the BECK project	• New knowledge, expertise and training • Platforms for module development • Funding prioritizing the different facets of consumer behaviour relevant to energy efficiency and climate change • Academic opportunities and awareness building • Training and pedagogic practice in integrated education on consumer behaviour relevant to energy efficiency and climate change
Readiness of the university for cross institutional module sharing	
Language and culture	• In the University of Colombo, mediums of instruction are from Sinhala, Tamil and English. • The undergraduates are exposed to both traditional and blended learning, especially through Learning Management Systems. In some cases, courses are completed on a fully online basis through the Virtual Center of the university.
Administrative constraints	• Approval and accreditation to offer courses on the topic from tertiary educational bodies and committees within the university and the University Grants Commission, in accordance to the Sri Lankan Quality Framework (SLQF) • Lack of Clear university rules and regulations to offer courses to all internal and external students • Costs attached to offering and maintaining the course • Online Platforms to offer the programme • Technical knowledge for organization of MOOCs

Defining common assessment criteria	• The prevailing assessment criterion in the university is continuous assessments and final examination or report. • However, this has to comply with the SLQF framework
Ability to share resources	• In a situation where the courses/ modules are shared, the university lacks rules and regulations on which to operate as previous attempts have not been made
Intellectual Property	• Lack of clear university rules and regulations for intellectual property rights of the courses developed by the consortium
Access to state of the art technology	• Lack of online platforms (The virtual campus of the university merely coordinates programmes and does not have the online platforms to run the programmes) • Lack of technical knowledge and expertise • Lack of modern, up to date resources
Sustainability	
Conclusions & Recommendations	• It is mandatory to comply with rules and regulations with the university, higher education authorities including the UGC and Higher Education ministry • A lot of time can be spent on establishing the legal frameworks on which the modules can be developed • A lot of expertise and training is required to provide MOOCs

P13 - Barisal University (BU)

Promoting cross institutional module sharing	• Bangladesh is one of the most vulnerable country to climate change in the world. • Education sector in Bangladesh is not sufficiently organized and formatted to combat energy and climate. • However, universities in Bangladesh faces high level educational and research in relation to energy efficiency and climate change. • University graduates have lack of Multidisciplinary integrating education and syllabus at higher education (HE) in Bangladesh. • Also, communication between universities and stockholders is insufficient to meet the challenges.

	• Therefore, to increase the capacity of the HE, needs modernize and enhance the quality of the education.
	• Still we are at initial stage in this regard.
	• The government of Bangladesh is taking initiatives for e-learning education system.
	• HEI's at Bangladesh having lacks in cross institutional module sharing approach.
	• Barisal University and Patuakhali Science and Technology University will be the pioneer in cross institutional module sharing in Bangladesh.
Cross institutional partnerships and collaborations	• Higher education plays an important role in shaping the capacity of the work force and in fostering research and innovative thinking (ADB, 2012).
	• Education at HE is changing dramatically due to globalization, role of private sector, international ranking of the university and students demands and expectation.
	• Therefore, importance of collaboration and partnerships in the higher education sector has widely been recognized.
	• Partnerships are increasingly becoming important in the current context. Partnerships have become common in the field of academic for various reasons (Amey et al., 2007).
	• Barisal University (BU) has partnership and collaboration with one UK university and has few collaborations with national organization.
	• However, there is no partnership or agreement for faculty development, accreditation, harmonization of curricula, operating regulation and module sharing.
Existing inter-university joint programme and module sharing arrangements	• At present BU has no inter-university joint program and module sharing arrangements.
	• However, BU is taking initiatives to enhance the opportunities for inter-university joint program.
Opportunities for module development, sharing and delivery in the BECK project	• As a result, development of comprehensive teaching and learning materials and incorporating innovative teaching and learning methods has become an issue in Barisal University.
	• Therefore, BU will be benefited from cross institutional knowledge sharing on module development.
	• BU would be able to and promote lifelong learning at large within the society by making study material accessible outside traditional classroom environment to various parties within the society from students, teachers

	- to practitioners and policy makers. - None of our university resource personnel/teachers have participate in preparing MOOC modules. Hence, it will be a **challenge** in preparing quality MOOC modules for us. - T**raining** will be necessary for ensuring quality MOOC. - We are free to prepare, share and delivery MOOC modules to the BECK Project according to Barisal University (BU) rules and mutual agreement for the BECK project. - BU will be benefited from BECK project in preparing and sharing MOOC modules.
Readiness of the university for cross institutional module sharing	- In a collaborative partnership it is of paramount importance to have a clear idea on the skills, interest and capabilities of the staff engaged in the other institutions. - These need to be coupled with effective communication channels which indeed require use of Information and Communication Technology (ICT). - With the latest development in ICT, many channels are available for cross border collaboration and knowledge sharing. - BU has unlimited high-speed internet facilities. Therefore, BU has sufficient ICT to adapt latest technology to succeed cross institutional module sharing. - BU would be able to provide virtual campus, open educational resources with the aid of high-speed internet connection. - BU ICT is good enough to facilitate cross institutional module sharing. - Thus, BU is ready to adapt latest technology to succeed in cross border collaboration.
Language and culture	*Language* - There are some issues and challenges related to cross institutional module development. - Defining a common module is not always easy. Based on the geographic location, climatic conditions, economic climate, supply and demand of education sector vary from one country to another. - Language and culture are major hindrance to cross border partnerships. - BU students would prefer face to face learning as well as distance learning.

	• With the development of ICT, the new generation of students of BU has techno-cultural skills comparable to reading and writing and may prefer internet-based learning activities.
Administrative constraints	▪ Administrative issues are also one of the major barriers in cross institutional module sharing. ▪ BU administration have very flexible governance arrangements which would help in the development and delivery of shared modules. ▪ To approve the MOOC course in BU, need to go through few academic and administrative procedure as follows. ▪ First to submit primary course content. ▪ Screening by academic committee with external expert. ▪ Final approval from academic council
Defining common assessment criteria	**BU usually follow two types of assessment** (i) Formative assessment (40%): Short answer, Quiz test, Presentation, Assignment, class attendance and performance (ii) Summative assessment (60%): Final Exam (written).
Ability to share resources	• Another important factor is the ability to share resources. BU has technology advantages in sharing module resources. • Its website and social media pages • Arranging seminar, symposium and awareness meeting • Circulation in print and electronic media • Arranging motivation/ debating competition • Press briefing / meeting • University Journal, bulletin, brochure and prospectus • Talk-show in mass media (TV and Radio)
Intellectual Property	• Intellectual Property law generally changes from one country to another (Burgi, 2009). • Different institutions may have different licensing models and as a result when sharing resources it is very important to have a prior understanding on how these different laws would apply for different study materials. • BU administration is flexible on sharing knowledge among different institution and community. Therefore, BU laws would be flexible for different study materials according to the needs.
Access to state of the art technology	• State of art technology is an important element in cross border partnerships. • ICT based teaching and learning now become an integral part of BU education systems. • BU would collaborate effectively with partner

	universities.
Sustainability	• It is also very important to have a clear sustainability plan which identifies how the collaboration would sustain beyond the life of the project. • As a result, it is very important to define protocols on how the modules could be amended/ changed, how to deal with copyright issues and so on in order to ensure smooth evolution of the module delivery. • BU would cooperate BECK partner universities regarding collaboration to have clear sustainability plan.
Conclusions & Recommendations	• MOOC approach in higher education institutes (university) is new in Bangladesh. • No major barriers to module approval, delivery and sharing at BU.

P14 - University of Moratuwa, Sri Lanka (UoM)

Promoting cross institutional module sharing	

Cross institutional partnerships and collaborations	• There are 15 state funded universities under UGC
	• Out of which 06 universities offer Engineering degrees
	• These institutes run as semi-autonomous bodies
	• Student admission is through the UGC and the course is mainly developed by the institute
	• NO content sharing
	• Research
	   • Undergraduate-YES
	   • Postgraduate -JOINT SUPERVISION (degree offered by a single university)

Existing inter-university joint programme and module sharing arrangements	• Collaboration among;
	• Undergraduate
	   • University level NO
	   • Interfaculty YES
	• Postgraduate
	   • University level NO
	   • Interfaculty YES
	   • Cross supervision YES (degree offeredby a single university)

Opportunities for	• Content can be developed jointly

module development, sharing and delivery in the BECK project	• Delivery should be subjected to respective faculty board approvals • NO credit transfer is possible • Only contents can be shared with unique subject codes and names
Readiness of the university for cross institutional module sharing	
Language and culture	• There are 6 main streams in SL higher education • Science, Mathematical and Technology streams are totally delivered in English • Students are mainly thought in Sinhala up to their Advance level at schools • And are with different socio-cultural adaptations • Exposure to IT related skills and Social networking is vastly vary with respect to their inherent cultural aspects • Students are mainly trained on content-based education and they are poorly adopted to self-learning and teaching
Administrative constraints	• Any addition/deletion needs faculty and then senate approval • The rationale of any course will be ratified by respective University/Industry Consultative Boards(UICB) at regular intervals • Content and the delivery will be overseen by international accreditation bodies and should comply with their observations
Defining common assessment criteria	• Subject outcomes are fixed and need to assess them through the subject delivery • Total evaluation can be 100-0% continuous assessment or 0-100% end semester exam • This criterion should be fixed and cannot be altered • Mode of assessment can be changed based on their effectiveness • Hence, assessment criteria should be fixed at the beginning, however, the mode of assessment can be changed
Ability to share resources	• Online resource sharing is possible • Sharing resources between universities – Possible • Responsibility of the content should bare by the respective lecturer • Should be delivered as a course which owns by the respective university/faculty/ department

Intellectual Property	• IP rights are mainly governed by the Establishment code of the state services • In addition, UGC as its own guidelines on IP rights • Respective universities to have their own IP policies and an IPac committee
Access to state of the art technology	• Runs with limited resources • Restrictions in bandwidth limits the access to online resources • Limitation of availability of internet facilities – Student/staff • Outdated software and hardware • Poor knowhow on ICT
Sustainability	• Poor connectivity • Sudden changes in policies/systems • Interference –faculty/own staff/ industry
Conclusions & Recommendations	• There are cross socio-cultural aspects, which govern the success • Poor facilities and ICT knowhow will be a barrier • changing attitudes of teacher centered education will be a huge challenge • None availability of CPD for staff will weaken the system • Stick to a common structure and maintain the continuity • Get relevant approvals on time • Urge institutes to strengthen their ICT facilities • Do regular training –In-house/online • Maintain a user manual and send regular updates • Make sure the contents are up to date and update timely • If possible, run a manual system partially until the system is fully geared to online