ASEM Education in a digital world

Bridging the Continents – Connecting the People

Asia-Europe Meeting

Erasmus+

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Bridging the Continents

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Dear reader,

Digitalisation is changing higher education. New ways of teaching, communication and cooperation are creating chances and challenges for international higher education cooperation. Fostering cooperation, building up mutual understanding, trust and exchange between Europe and Asia are the major aims of the ASEM Education Process (Asia-Europe Meeting). In the digital era, the diversity of the 51 ASEM member countries offers great opportunities, but also new challenges for the international dialogue and cooperation. Additionally, Industry 4.0 implies new expectations on skills and employability of young students and graduates.

To look into this matter more deeply, the Erasmus+ National Agency for EU Higher Education Cooperation at DAAD has organized the conference "ASEM Education in a digital world: Bridging the continents – connecting the people?" in November 2018 in Cologne, Germany.

The conference focused on the digital impact of the priorities of the ASEM Education Process. It tackled questions on how ASEM countries can learn from each other in a digital world and how key instruments can be used for realizing the common vision of tangible and practical cooperation.

For the first time, our yearly conference has taken a thematic approach to the ASEM Education Process. In order to generate input for discussion during the various sessions, we decided to publish a call for papers inviting young researchers from ASEM member countries to present their scientific research on digitalisation's role for Asian-European educational cooperation. Tackling thematic areas of high importance like the mobility of young students, understanding cultural differences, the digital change for teaching and learning as well as needed skills of young students and graduates to be well prepared for the labour market of today and tomorrow. The selected candidates were invited to present their results at our conference in Germany. This has offered an important thematic and academic input.

The overwhelming feedback to our call for papers reaffirmed our idea and the high topicality of the subject. We are delighted to be able to present you the results of the chosen papers in this publication. To draw a bigger picture, we aligned them with a conference report and an introduction to the ASEM Education Process.

We would like to cordially thank all contributors to the publication and all conference participants who enriched the discussion with their expertise and experience. Moreover, we would like to express our gratitude to the German Federal Ministry of Education and Research for funding the conference as well as this brochure.

Photo: Jan von Allwörden/DAAD

We hope this publication provides you with new and insightful input on transnational cooperation in education in the era of digitalization. For Europe, Asia and beyond.

Enjoy your reading!

Martin Schifferings

Head of Section Erasmus+ Policy Support
Erasmus+ National Agency for EU Higher Education Cooperation

ASEM Education in a digital world

Reflections on Bridging Continents and Connecting People

Following Berlin in 2016 and Hamburg in 2017, at the end of November 2018 the German Academic Exchange Service (Deutscher Akademischer Austauschdienst, DAAD) hosted a conference within the framework of the ASEM Education Process (AEP) for the third time. 65 participants from 15 of ASEM's 53 members attended the two-day conference. The organisers were pleased to welcome so many international participants to Cologne. This was considered to be one of the reasons why the meeting was so lively and productive.

The participants reflected on a number of questions related to the ASEM Education Process in the digital era. In the plenary meeting, in workshops, and in more informal settings they discussed how ASEM countries can learn from each other across continents, despite cultural differences and how key instruments can be used to achieve the common vision of concrete and practical cooperation in a digital world.

Setting the Stage: the Seoul Declaration

The impetus for the conference came from the Seoul Declaration, adopted by Education Ministers and heads of delegations of ASEM partner countries as well as representatives of the European Union (EU), the Secretariat of the Association of Southeast Asian Nations (ASEAN) and ASEM stakeholders at the 6th ASEM Education Ministers' Meeting (ASEMME6) in Seoul, Republic of Korea, in November 2017. In the document, the Ministers call for closer collaboration in education and training between Asia and Europe, and they outline, as reiterated in the subtitle of the declaration, a vision for the next decade, focusing on the promotion of mobility and skills development.

Regarding mobility, the Seoul Declaration emphasises "people-to-people contacts ... as a critical form of cooperation to promote connectivity between Asia and Europe, boosting intercultural and inter-religious understanding and contributing to peaceful and sustainable development". Concerning skills development, (lifelong) "education and training" are identified as crucial "for enhancing the employability of current and future generations", and "the development of key competences" is stressed. Related to that, "[g]iven the pivotal role of universities in nurturing future talent", the document speaks out in favour of "inter-disciplinary education" and the promotion of research.

For both areas – mobility as well as skills –, the Seoul Declaration expresses its support of traditional forms of exchange and teaching. At the same time, it "recognises that technology can be used to create virtual mobility and increase the attractiveness of education and learning, and ... acknowledge[s] the importance of supporting various cooperation activities, including the active use of cyberspace". Information and Communication Technologies (ICT) are thus described as "useful tool[s] for education innovation", and ASEM partners are urged "to use" them "to innovate teaching and learning practices".

Striking Out on a New Path: the Cologne Conference

These suggestions concerning ICT as well as their implications for the ASEM Education process were precisely the aspects the conference organisers wanted to see discussed and covered in more detail in Cologne. Against the background of the challenges and opportunities that come with digitalisation, the aim was to reflect on the topicality and relevance of AEP's four thematic priority areas – Quality Assurance and Recognition, Engaging Business and Industry in Education, Balanced Mobility, and Lifelong Learning including Technical and Vocational Training (TVET) – initially adopted in 2011;

to identify needs and potentials in these areas; and to generate policy recommendations. The keyword in this respect is evidence-based policy-making.

In the call for papers, particularly young researchers – PhD students and postdocs – interested in Asian-European cooperation in the field of education were encouraged to submit an abstract on one of four different topics. They were asked to think critically about 1) the possibilities of boosting exchange by balancing mobility between Asia and Europe through digital formats, 2) fostering intercultural connectivity and understanding in a digital way, 3) educational cooperation through virtual learning and blended formats and how to assure its quality, or 4) the new challenges for skills and competences that young students and graduates face in industry 4.0.

By choosing a thematic scientific approach to this cross-cutting issue – digitalisation is doubtlessly of utmost significance to all areas of AEP – DAAD broke new ground, as previous conferences had focused on institutional aspects of international cooperation for higher education. Given the number of submitted abstracts, it was the right decision. Almost 200 abstracts met the selection criteria, both formally and in terms of content, underlining both the relevance of and interest in the subject. Even more noteworthy is the fact that they came from (prospective) academics based in 25 different ASEM countries, that is to say, half of all partner countries.

Unsurprisingly, some topics received more attention than others. The majority of abstracts addressed issues related to quality assurance (topic 3) and the importance of digital competences for young graduates (topic 4). In the end, though, one paper for each of the four topics outlined in the call for papers was chosen for the discussion sessions. In view of the strong response, which far exceeded the organiser's "humble expectations", as Martin Schifferings (DAAD) admitted in his opening address, a decision was made to select five poster presentations by awardees of the call for papers. Both the papers as well as the poster presentations are included in this publication.

Going into Detail 1: Boosting Exchange Between Europe and Asia

Cooperation between Europe and Asia is the main commitment of the Asia-Europe Meeting and its Education Process. Balancing the mobility of young people has been one of the main goals since its initiation in 2008. Balancing the number of students and graduates, studying or working in the partner regions, thus remains a challenge. In this context, digital formats provide new opportunities to connect people, exchange and build trust even without being physically mobile. One example was provided by Lionel Alvarez and Mariana Steiner, both from the University of Teacher Education Fribourg, Switzerland. In their paper titled "Content Online International Learning: From a Literature Review About Implementation Barriers to a Detailed Implementation Plan" (Topic 1), they take a closer look at various aspects of Content Online International Learning. COIL, defined "as a learning environment created by two universities from different countries in which students have the opportunity to experience online collaborative learning and develop cross-cultural and technological skills with international peers", should be seen, they argue, as a key instrument for the much vaunted internationalisation at home and as a means that could strengthen the cooperation between Asian and European institutions of higher education.

Their starting point is a review of the secondary literature, with a particular emphasis on those aspects that impede the efficient and successful implementation of COIL programmes, subsumed under the domains didactics, technology, and organisation. On the basis of these results, they develop three detailed implementation processes. It is their intention, as they point out in their paper, to try and test them in a future research project with international partners.

Going into Detail 2: ASEM's Cultural Diversity

Compromising 51 Member countries from Asia and Europe, the Asia-Europe Meeting is characterized by a high diversity of different countries, their culture, history and tradition. Aiming for trust and co-operation, partners on all levels need to develop cultural awareness, open their minds and strengthen their intercultural competences. An asset which is not limited to one specific target group but effects all educational sectors and their people, from young students to adults. The development of these competences and the connectivity between cultures can be fostered through digital formats. One outstanding example of how to tackle this challenge has been given by Christina Armutlieva of Varna University of Management, Bulgaria.

Her paper is, as the title suggests, "a case study of the FRIENDS initiative as a tool for fostering intercultural engagement through virtual mobility" (Topic 2). The joint university initiative 'Furthering International Relations Capacities and Intercultural Engagement to Nurture Campus Diversity and to Support Internationalisation at Home' (FRIENDS), launched by four European and 12 Asian higher education institutions (HEI) in seven ASEM countries, aims at strengthening the internationalisation capabilities of the participating Asian universities and at developing Asian students' global competence and outlook by integrating intercultural dimensions into universities' formal and informal curricula and by means of virtual mobility.

Designed as a solution to problems related to a general lack of access to global skills and knowledge due to limited student mobility in the Asian countries concerned, the lack of targeted intercultural education in the 12 Asian universities' formal curricula as well as the inadequate infrastructure ("hard" and "soft") to support campus diversity, FRIENDS, as Armutlieva explains, shifts the focus of HEI from outbound mobility to virtual mobility as well as to on-campus intercultural engagement for the benefits of non-mobile students' global skills development and employability. Despite some shortcomings and legal obstacles, FRIENDS is, as she forcefully argues, a bottom-up initiative that can make a difference at both personal and institutional levels. It has the potential to promote internationalisation at home and intercultural understanding.

Going into Detail 3: Quality Assurance

Quality Assurance and Recognition build one of the four priorities of the ASEM Education Process. Building trust among higher education systems to promote attractiveness, transparency, comparability and permeability of each system is the common objective set forth in ASEM education cooperation. But digitalisation also leads to new formats in teaching and learning in Europe as well as in Asia. In order to foster exchange and cooperation, also in the field of digital learning, its quality needs to be ensured. Recognition remains one of the major principles for exchange but cannot be realized without assured quality. Therefore, Chandrani Singh from the Sinhgad Institute of Management in Vadgaon, India, addressed this topic with her paper "Educational cooperation through virtual learning and blended formats: How to assure its quality?".

The academic opens her paper with a discussion about higher education and the current global scenario. Further, she analyses ICT-based education initiatives taken by Europe and Asia either alone or together, before shedding light on the implementation of quality assurance principles and policies for effectiveness in learning outcomes through blended learning approaches for cross-border initiatives. She considers the roles of all stakeholders – from students to governments – for ensuring quality and creating a framework.

Blended learning initiatives for specific target groups, she points out, should monitor the course aim, prerequisites, content delivery, learning targets and outcomes, tutor skills, knowledge transfer, and didactic rules, organisational frameworks, media platforms, adaptivity, a channel for course information and rules for dividing the course content. Singh also argues that people involved in curricu-

lum design should include instructional designers as well as content and technical experts with very well-defined roles and responsibilities. It is important to exchange agreements with other educational institutions concerning the virtual mobility of students and to provide e-learning programmes.

Going into Detail 4: Industry 4.0 and the Challenge to Skills Development

Digitalisation implies great opportunities for cooperation and exchange. Europe and Asia can learn from each other in order to boost exchange, employability and the competitiveness of people, institutions, countries and regions. Meanwhile, Industry 4.0 and further digital developments demand new skills and competences of young students and graduates. Necessary skills and competences for the demands of the labour market as well as technological developments need to be adapted within Higher Education Institutions. Sarah Kellermann of the Baden-Wuerttemberg Cooperative State University Stuttgart (Duale Hochschule Baden-Württemberg Stuttgart, DHBW) sets out to identify the set of skills future employees need in order to remain competitive and employable in a constantly changing world in her paper titled "Defining a Framework for Digital Global Collaboration Culture" (Topic 4). She explicitly focuses on higher education institutions and how they need to change in order to promote these skills. Kellermann also adopts an intercultural perspective, asking whether some future skills are more important in specific cultural contexts than in others, thereby shedding some light on potential effects of culture on the skill demands of the future.

The basis for her explanations is a "future skills" study which she conducted. The qualitative study examined 11 advanced, networked and agile organisations through in-depth interviews. The results of the data analysis indicate that the focus has shifted from disciplinary knowledge to another skill set in which self-organisation is a major underlying component; Kellermann calls these "future skills". Based on their frame of reference, these skills, she argues, can be subdivided into three main categories: subject-related (e.g. self-efficacy, self-management), object-related (e.g. digital literacy, agility), and organisation-related (e.g. cooperation skills, sense-making).

While Kellermann claims that companies are actively responding to the changing skill demands, organisational representatives report that from their point of view HEI have not adapted accordingly; they still focus on discipline-based knowledge. From a higher education perspective, however, a shift towards a future skills focus is necessary not only in companies but also for future graduates and in higher education institutions.

Adding More Layers: Poster Presentations

The poster presentations introduced even more facets and examples of cooperation and mobility in a digital world. One poster, jointly prepared by Syed Ahmad Gillani (Universiti Teknologi, Malaysia), Syed Afraz Gillani (Government College University Faisalabad, Pakistan), and Regina Brautlacht (Bonn Rhein-Sieg University of Applied Sciences/Hochschule Bonn-Rhein-Sieg, Germany), provided an example of how international digital projects can facilitate cross-cultural learning between European students, on the one hand, and Asian and African ones, on the other.[1] Another poster, authored by Allison Kolling (Saarland University/Universität des Saarlands, Germany), presented an initiative which uses co-design to create MOOCs (Massive Open Online Courses) for South East Asian audiences.

The three other posters, all of them, incidentally, submitted by (prospective) academics from India, were no less varied. Nikhar Pandya (Bhailalbhai & Bhikhabhai Institute of Technology, BBIT – Polytechnic) explained why he believes industry 4.0 is an opportunity to promote education, skills and employability among young people, whereas Kumar Satish (Manipal Academy of Higher Education) took the title of his paper "Boosting Exchange: Balancing mobility between Asia and Europe" from the call for papers. Last but not least, Ritika Joshi (Jawaharlal Nehru University) assessed the prospects and challenges of digital storytelling.

1. The abstract from Gillani/Gillani/Brautlacht (2018) has been presented during a poster presentation at the conference. The full paper is not listed in this publication.

Outlining a Way Forward: the Challenges Ahead

The conference was an unqualified success. The thematic approach, combined with the professional input, offered new insights and helped advance the discussion about the ASEM Education Process in general and the role of digitalisation in AEP in particular. The number of participants and more importantly the number of submitted abstracts also underline the relevance of the topic. As Saskia Weißenbach (DAAD) pointed out in her retrospective analysis, these facts also convinced the organisers that digitalisation is an issue that should be pursued even more forcefully in the future, not least at the political level.

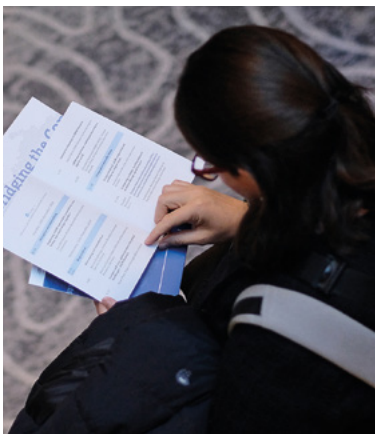
The political framework conditions certainly seem promising at the moment. As Lewe Paul of the German Federal Foreign Office (Auswärtiges Amt) reminded conference participants in his brief talk about ASEM and the relations between Europe and Asia, the topic of digitalisation plays an important role in the political process of ASEM. At the 12th Asia-Europe Meeting (ASEM12) in Brussels in mid-October 2018, the assembled leaders "reaffirmed the conclusions of the 6th ASEM Education Ministers' Meeting" and also, as stated in the Chair's Comments, "recognised the value ... of enhancing the use of digital tools in teaching and learning". Digitalisation is likely to be on the agenda of the 7th ASEM Education Ministers' Meeting (ASEMME7), to be held in the Romanian capital of Bucharest in May 2019.

It is worth remembering that the extent to which the ASEM partner countries, or more specifically the different actors involved in AEP, implement these recommendations and use ICT in collaborative projects and initiatives is their responsibility alone. Even though AEP is a "quite structured process within ASEM", as David Urban of the Brussels-based ASEM Education Secretariat (AES) noted in his presentation about current developments in ASEM Education, it is still very much informal in nature; the focus is on the exchange of ideas and on open dialogue between Asia and Europe and as such AEP is, according to Henk van Liempt (German Federal Ministry of Education and Research), "an important instrument for sustainable coalitions in times of global change".

The level of commitment is not necessarily a question of willingness, however; this, too, should be noted. It also has to do with equipment, digital infrastructure, and organisational structures. And in that respect there are notable differences within the two regions as well as between them, as Thérèse Zhang (European University Association, Belgium) and Chantavit Sujatanond (SEAMEO RIHED, The Southeast Asian Ministers of Education Organization Regional Centre for Higher Education Development) forcefully and convincingly argued in their respective talks,. Many of the countries in Asia and Europe still lack basic skills to use new technologies, for instance, or mistrust online education.

Concluding Remarks

What remains is the conviction that AEP is an important forum to exchange ideas and foster collaboration between 53 partners on two continents. It is also clear that Information and Communication Technologies can help connect people and facilitate cooperation in ways that were not deemed possible in the pre-digital world. Ultimately, however, as was also pointed out in the final panel discussion, digitalisation is not an end itself, and the great challenge still is to connect people and establish networks.



Photos: Michael Jordan/DAAD

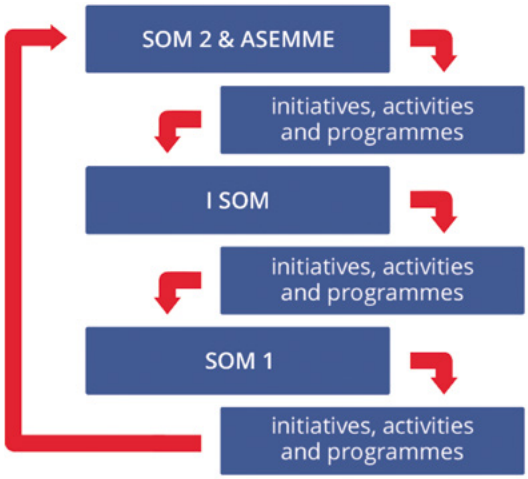
The ASEM Education Process, a unique form of multilateral collaboration

David Urban, ASEM Education Secretariat

The Asia-Europe Meeting (ASEM) is an intergovernmental process established in 1996 to foster dialogue and cooperation between Asia and Europe. Today, it comprises 53 partners: 30 European and 21 Asian countries, the European Union and the ASEAN Secretariat. ASEM addresses political, economic, social, cultural and educational issues of common interest, in a spirit of mutual respect and equal partnership.

The ASEM Education Process (AEP) is embedded within the ASEM Process and refers to the socio-cultural and educational dimension: The Education Ministers from the ASEM partner countries meet regularly every two years to advance transregional educational collaboration. The ASEM Education Ministers Meeting (ASEMME) is a platform for informal dialogue and collaboration among the ASEM members at the highest political level. The very first meeting was held in Berlin on 5-6 May 2008.

The AEP consists of two levels, the political and the stakeholders level. At the political level, the ASEMME is held once every two years. It is chaired by a host country and prepared by the Intermediate Senior Officials' Meeting (ISOM) and the Senior Officials' Meeting (SOM) with the help of the ASEM Education Secretariat (AES).



The purpose of the political level is to create a platform and a dialogue for political mandates and set the agenda by initiating and following up the implementation of projects, activities, initiatives, and programmes. The platform is extended at the stakeholder level with policy makers and experts in various events, meetings, expert groups,working groups and conferences etc. This is done both to encourage policy dialogue and develop concrete outputs and results.

In the first ASEMME, the Ministers emphasised the agenda on internationalisation of higher education, training, employability and strengthened the cooperation and collaboration in the field of education by setting the agenda for a strategic 21st century Asia-Europe education partnership. In the third ASEMME, four priority areas of the AEP were settled as follows:

i. Quality assurance and recognition

The main aim of this priority is to strengthen interregional cooperation between ASEM partners, stakeholders, quality assurance bodies and its networks. The strengthening process is necessary to develop mutual values and improve mutual recognition of qualifications. This priority also plays an important role in increasing attractiveness, transparency, comparability and permeability of higher education systems of ASEM partners to foster a more balanced mobility.

ii. Engaging business and industry in education

The main aim of this priority is to identify tangible methods to improve employability, economic growth and social development of ASEM partners. It will encourage innovation networks and knowledge dialogue between higher education institutions, business and industry as well as formulate concrete measures with the help of stakeholders and experts.

iii. Balanced mobility

Under the third priority, most initiatives are directed towards student mobility, more specifically to tackle the imbalanced mobility between Asia and Europe. In fact, the number of outgoing students in Asia is higher than the number of incoming students. Most programmes and initiatives target a more balanced student mobility. Some activities involve some forms of staff mobility.

iv. Lifelong learning including Technical and Vocational Education and Training (TVET)

This priority is aimed at fostering lifelong learning opportunities for citizens of ASEM partners. It encourages continuous education and training as well as competence development for a better work-life balance and social inclusion. Initiatives and programmes under this priority area offer a platform for dialogue, research and data collection on TVET and lifelong learning

The ASEM Education Secretariat

To ensure effective coordination of all ASEM Education Process initiatives and activities, the ASEM Ministers of Education agreed on a rotating ASEM Education Secretariat (AES) during ASEMME2 in 2009. Countries in Asia and Europe take turns to host the AES on a voluntary basis. Germany was the inaugural host of the AES from 2008 to 2013. It was followed by Indonesia on 1 October 2013. The current secretariat is hosted by Belgium, both by the French community (Ministry of Wallonia-Brussels Federation) and the Flemish Community (Ministry of Education and Training).

There is no Term of References (TOR) or Statute that specify the roles and functions of AES. The task of AES is commonly stated in the Conclusions by the Chair agreed by the Ministers during ASEMME. The main task of AES is to coordinate ASEM education cooperation between ASEM partners. The summary of the ASEMMEs Conclusions by the Chairs clearly specifies that AES tasks are to coordinate the organisation of ISOM, SOM and ASEMME, monitor the implementation of ASEM Education Process initiatives and provide support to ASEM partners as well as keep up-to-date a list of focal points of ASEM partners. In addition, AES helps establish expert and working groups, creates effective communication

Contact and more info

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Boosting exchange: balancing mobility between Asia and Europe through digital formats?

- **Collaborative online international learning. From a systematic review of literature about barriers to an implementation plan**

  Dr. Lionel Alvarez; Dr. Mariana Steiner

- **Boosting Exchange: Balancing mobility between Asia and Europe through digital formats**

  Dr. Satish Kumar

Collaborative online international learning. From a systematic review of literature about barriers to an implementation plan

Dr. Lionel Alvarez, University of Fribourg, Switzerland
Dr. Mariana Steiner, University of Teacher Education Fribourg, Switzerland

A university program that allow students to collaborate online with culturally-diverse learners is an opportunity that is currently valued. Collaborative online international learning (COIL) programs have been developed for several years, and previous experiences offer insights about what makes their design and implementation difficult. The systematic literature review presented in this paper helps to identify the barriers to efficient COIL implementation, so that universities interested in an internationalization at home policy can prepare carefully.

Internationalization at home.

Up until now, traveling has been the favorite way to discover new cultures and develop intercultural skills. Nowadays, in a digital era, new ways of fostering the development of these competences can be developed. Indeed, in the higher education field, traditional student mobility is recognized as a great way to bring benefits to participants. Nonetheless, there is a clear consensus around the fact that mobile students represent a small proportion of the whole student population (Belee and Jones, 2015). This proportion becomes even smaller when we speak about Asian-European student exchanges. The cultural gap, distance, and cost of living can be the most important barriers discouraging student from traveling and discovering other countries during their studies (and vice versa). The ERASMUS program has not reached its mobility target of a 10% study-abroad rate. Therefore, the issue for the decision makers should be articulated around the question of what to do 'for the remaining 90%'. If they cannot go out into the international world, how can this world be brought to their home campus (Crowther et al., 2000)?

To tackle this challenge, internationalization at home (IaH) can be developed, especially in European and Asian higher education institutions. It seems important to emphasize that IaH should not be seen as a second-best option. Indeed, Beelen and Jones (2015) define this special modality of mobility and exchange as the integration of an international and intercultural dimension into the curriculum for all students in their domestic learning environments. The paradigm behind IaH is that the benefits of developing international and intercultural skills should be open. IaH is intended to offer a democratization of the benefits of internationalization to a broader segment of society (Harrison, 2015). This stance on IaH has been defended by the European Association of International Education since 1999 and is articulated around three key features described by Crowther at al. (2000).

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Diversity as a resource.

This first feature stresses the idea that IaH should draw upon a vision of diversity as a resource. Various scholars have shown that diversity is constructed as an enriching international experience for the socially privileged students that have access to the international university market, but the situation is not the same for home students. Not all home students enter higher education wanting or even valuing international and intercultural experiences (Ippolito, 2007). Therefore, far from being obvious, constructing diversity as a chance to enrich the home student experience and international skills is something that has to be well prepared at all levels (political, pedagogical and didactical).

Internationalized curriculum.

The discussion around what exactly entails an internationalized curriculum is beyond the scope of this paper. However, it is important to sketch the lines of the most consensual definition of this kind of curriculum. An internationalized curriculum is seen as the integration of knowledge about other nations, the use of perspectives and epistemology from other nations and with the aim of developing intercultural skills for all students (Harisson, 2015). In short, the internationalization of the curriculum should be a broad thought process about the whole curriculum, the diversity of the teaching staff and students, and how international skills can be introduced at all levels.

Culturally sensitive pedagogy and strategy.

Cultural sensitivity to cultural diversity represents the third and final key component of an IaH program. It is well known that organizations such as universities are often characterized by initial ethnocentrism (Adler, 1991). Through IaH, more participants can enjoy learning experiences that improve their acceptance of social variety and their ability to tolerate diversity without feeling it is a major threat to their own-shared cultural identity. Therefore, if the university regards cultural variety as having potential for mutual intellectual growth, and if all perspectives are considered openly, internationalization can lead to benefits for both the students and the institutions (Crowther at al., 2000).

Even if these three components of IaH have been presented in a separate way, it is obvious that they are highly intertwined and interconnected. Therefore, we can argue that to be effective, the political aspects of IaH need a strong pedagogical support to allow domestic and international students to work together. Collaborative online international learning (COIL) – defined as a learning environment created by two universities from different countries, in which students have the opportunity to experience online collaborative learning and develop cross-cultural and technological skills with international peers (The SUNY center, 2015) – should be seen as a key instrument that makes IaH tangible. By using the great potential of information and communication technologies, COIL can help in realizing practical cooperation between international students and educational institutions.

However, as with every innovative pedagogical tool, COIL encapsulate a large range of advantages, as well as various issues that should not be neglected if a higher education institution wants a successful COIL implementation. In addition to emphasizing the importance of intercultural skills, international collaborations, and technological competences, the COIL format provides improvement in various dimensions related to the training. For instance, the implementation of an online learning community increases students' perception of the quality of learning and teaching (Gray and Tobin, 2010). Guevara and Legaspi (2018) detailed how COIL programs help to challenge stereotypes of students.

The success of a COIL program as a resource that serves IaH will depend on the quality of its implementation. In other words, COIL is not a simple solution that can be integrated with 'one's eyes closed' in every institution. On the contrary, COIL is a complex academic organization that has to be clearly thought through before starting its implementation. Using a COIL format changes the method of teaching, and requires technological input too.

Research question.

With the various issues of IaH developed above and the promising opportunities of COIL programs in mind, the aim of this systematic review is to identify the barriers to effective COIL implementation. With such information, faculties that want to engage in IaH development have the opportunity to be better prepared.

Literature extraction.

This review followed guidelines detailed in the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement (Moher, Liberati, Tetzlaff, and Altman, 2009). Four scientific databases were sought: *dimension.ai, ovid sp* (ERIC + PsychINFO), *web of science*, and *semantic scholar*.

As the literature about COIL implementation is limited (Macleod, Yand, and Xu, 2016), the literature extraction started with a broad keyword selection. Only "collaborative online international learning" was used. Once duplicates were deleted, the title and abstract were read. All the articles that purport to explicitly discuss barriers to COIL implementation or explicitly discuss an implementation process were searched. Access was impossible for a couple of documents. Finally, the remaining articles were analyzed with the inclusion criteria: language (English, French, and German only), content (explicit discussion of barriers or implementation processes), and intervention (COIL or international classes pairing students in a similar topic thanks to communication technology). Figure 1 presents the study selection process that was undertaken in October 2018.

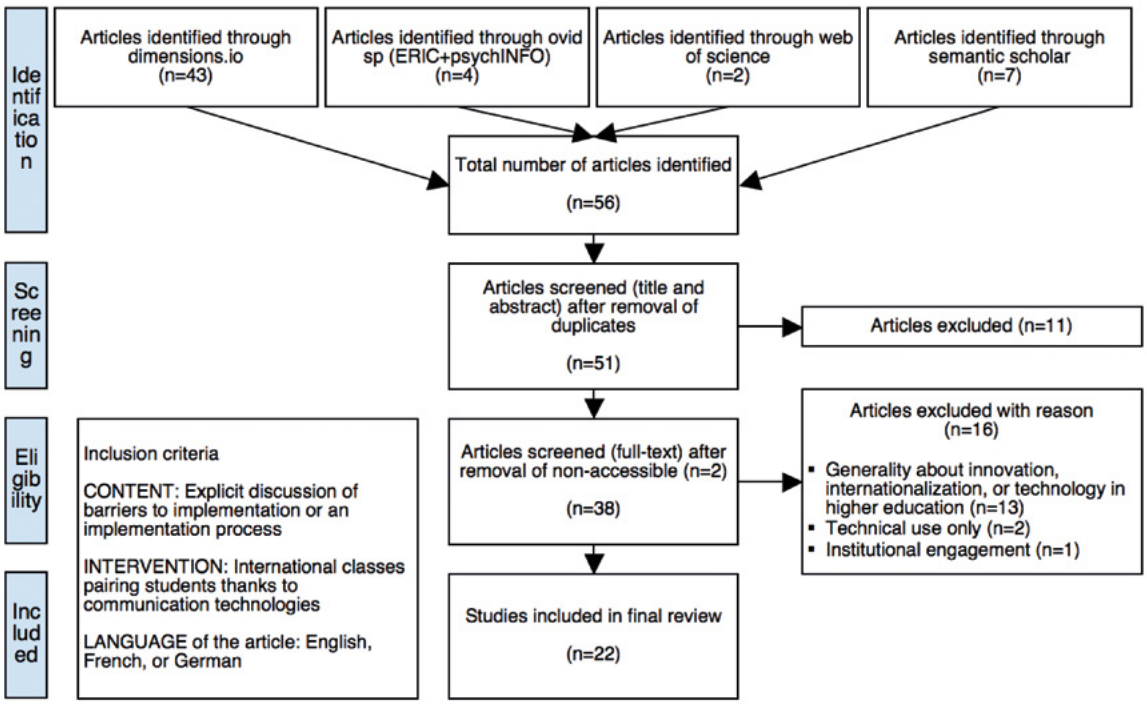

Figure 1: Article extraction process (PRISMA). In the bibliography, articles from this literature extraction are marked with an asterisk (*)

Studies collected.

Twenty-two articles were included in the analysis. Within each study, an international program pairing students by means of communication technology is presented, and either implementation barriers or implementation processes were exposed. These studies cover partnerships between several countries, but the United States is largely represented. The scientific fields in which COIL occurred are diverse, from nurse pre-service training to climate change learning, or entrepreneurial development. Table 1 summarizes those contexts in which the studies were conducted.

#	Authors	Date	Regions involved	Scientific field
1	Fitzgerald, and Lemieux	2010	Mexico and USA	Law studies
2	Solem, and Balachandran	2014	India and USA	Geography
3	Wojenski	2014	USA and several	Intercultural development
4	Knoth	2015	Germany, USA and Canada	Gender studies
5	McKinnon, Smith, and Thomson	2015	Scotland and Japan	Entrepreneurship
6	Loewen	2016	Russia and Canada	Religious studies
7	Macleod, Yang, and Xu	2016	Taiwan and USA	Job application training
8	Marcillo-Gómez, and Desilus	2016	Mexico and USA	International business
9	Pisutova	2016	Slovakia and USA	Marketing and employment
10	Risner, and Kumar	2016	USA and several	Sustainable development
11	Villar-Onrudia, and Rajpal	2016	UK and several	not specified
12	Yan, Zhu, and Macleod	2016	USA and several	not specified
13	Àlvarez	2017	Spain and several	several
14	Bruhn	2017	several	not specified
15	Critelli, Lewis, and Méndez-López	2017	Mexico and USA	Human rights and development
16	Fezzey, et al.	2017	several	several
17	Popov, Brinkman, and van Oudenhoven	2017	several	several
18	Ullom	2017	Canada and Macedonia	Cross-cultural conversations
19	Caniglia, et al.	2018	Germany and USA	Geography
20	Luo, and Yang	2018	China and several	several
21	O'Dowd	2018	France, Germany, and USA	Literature
22	Velazquez, Perkins, Munguia, and Zepeda	2018	Mexico and USA	Climate change

Table 1:

Contexts of COIL programmed in the studies supported

COIL programs represent recent academic developments in different scientific fields, and in numerous regions of the world. COIL seems to be a teaching approach that is currently being developed, even if countless roadblocks are in the way.

Barriers identified.

The presentation of barriers to an efficient COIL implementation is organized into three categories: didactical, technological, and organizational (Kiv, and Knoth, 2018). **The didactical barriers** correspond to what makes the content, the tasks, or the evaluation more challenging in a co-teaching class, where teachers might have different languages and cultures, and where content might be perceived in another way. Some sensitive topics could lead to intercultural conflicts that add to the implementation barriers. Fitzgerald and Lemieux (2010) present the example of terrorism as a sensitive topic. New faculties interested in COIL programs should start with subject matter that is not, per se, a sensitive topic. Beyond this basic safeguard, the roles and responsibilities of teachers in a co-teaching model can be challenging (Yang, Zhu, and MacLeod, 2016): codesigning the teaching plan, co-selecting the resources, co-delivering the content, co-managing student interaction, co-providing face-to-face student support, and co-evaluating students' performances. With such a list of roles and responsibilities that has to be thought through, an introductory discussion is certainly needed between the two partnering teachers to decide who does what, how, and when. It seems obvious that the less clear the roles and responsibilities of the co-teachers are, the less satisfying the COIL program might be. On top of this, when a COIL program is project-oriented (as against discipline-oriented), and therefore interdisciplinary, the vocabulary and models of the two scientific fields mastered by the partnering teachers can add to the need for clarification (Fezzey, Fujieda, Amerman, Goerdt, Kahler, and Nikoi, 2017).

Cultural differences can bring didactic challenges too (Macillo-Gómez, and Desilus, 2016; Pisutova, 2016). Teachers' roles, authority, and power distance are topics that could be discussed by the two teachers, because on the one hand, some cultures consider the teacher as the source of the truth, someone that should not be questioned, a person with great authority. And on the other hand, some cultures consider learning as self-directed, where teachers act as a guide, like partners. The cultural differences can also become didactic issues depending on the teacher activities assigned. For instance, debates and conflicts of opinions might be harder to facilitate when conflict management and students' participation is usually experienced distinctively within each learning culture. Finally, the cultural differences raise the question of students' efforts within the assignments. Between students' diligence as opposed to students' responsibility, or regarding what is expected of a student in need, each culture has its own view of students' engagement and expectations placed on them. Again, these are topics that might have to be discussed when two teachers design a COIL program together.

The final didactic issue identified when a COIL program is implemented is reflexivity. According to Villar-Onrubia and Rajpal (2016), and Popov, Brinkman, and van Oudenhoven (2017), specific moments and tasks engaging participants in an in-depth reflection about cultural differences and similarities is essential to fully enjoy what COIL has to offer. This means that in addition to the specific learning outcomes that orient the program, intercultural goals should be expressed.

Technological barriers identified in the literature go from obvious issues like occasional internet breakdown (Critelli, Lewis, and Méndez-López, 2017) and language (Fitzgerald, and Lemieux, 2010), to more subtle and unexpected ones, like the degree of students' digital literacy (Critelli, Lewis, and Méndez-López, 2017), communication misunderstandings (O'Dowd, 2018), and international access to the learning management system (Fitzgerald, and Lemieux, 2010). When the content and assignments are designed, internet limitations have to be considered. For instance, it might be impossible to organize live online teaching, so lectures recorded in a universal format and of a limited size might

be preferred. It means that teaching must be prepared well in advance, or even before the beginning of the training period. Nowadays, Internet speed is less of a problem when it comes to sharing documents, papers, or datasets. However, the communication tools have to be insightfully chosen. Is your Moodle accessible to the other university? In several COIL implementations, free features of the largely available commercial tools are usually preferred. For example, documents are shared with a google drive and online communication is organized with Skype. One thing is for sure, it seems crucial to test the established communication channels before starting the COIL.

Even with no technical-specific issues, the technology can be a barrier to an efficient COIL implementation. Students' digital skills and literacy might sometimes fall short of enabling full learning engagement. Once a technical roadblock interferes with learning, students can disengage and use technology as a justification for a lack of involvement. In addition to that, online communication sometimes leads to misunderstandings (Risner, and Kumar, 2016; O'Dowd, 2018)). Therefore, students' digital skills should be assessed before the COIL program starts, and should be supported when needed.

Organizational barriers are also diverse and range from simple precautions to real barriers that have to be thought through. Firstly, even if a COIL program looks like it brings amazing opportunities for students, it requires a greater commitment from them. Therefore, finding participants is often challenging (Villar-Onrubia and Rajpal, 2016; Buhn, 2017). When the COIL is not directly part of the curriculum, or when it does not bring additional credits to the students involved, it is understandable that the additional commitment is an obstacle, especially when students are engaged in a curriculum that is already intensive and difficult, or when career or research interests between the partnering students are not aligned (Risner and Kumar, 2016). That raises the question of self-motivation and time management skills that participants need for a fruitful commitment in the COIL program (Fitzgerald, and Lemieux, 2010). Often, COIL programs offer a lot of autonomy and responsibility to the participants, and some of them might not be familiar with this way of learning. So, the coaching offered for technical barriers can be coordinated with personalized coaching for commitment and organization, or simple guidelines could be proposed so that participants are aware of the deadlines and the effort required.

A COIL program is an opportunity for intercultural skills development. But, according to Wojenski (2014), the link between the two international peers is occasionally poor. O'Dowd (2018) talks about a level of authenticity that should be fostered to really enjoy a COIL program. This authenticity is limited by restricted communication, only focused on learning. These testimonies of experience encourage designing moments and tasks within the program that are related to the quality of collaboration. For instance, free class time could be proposed for personal communication between the partnering students, or ice-breaking and team-building tasks could be proposed at the very beginning of the program. Finally, time-zones have to be considered to facilitate communication (Loewenij, 2016). Table 2 summarizes the barriers to efficient COIL implementation identified in the literature.

Table 2: Barriers to efficient COIL implementation

Domains	Barries
Didactic	• Co-teaching is, per se, challenging (teaching plan design, resource selection, content delivery, support, performance evaluation) • Interdisciplinarity adds barriers to the learning design • Cultural differences have to be considered, especially about student's role and engagement • Sensitive topics might create conflicts • Must be reflexive to really take advantage of COIL
Technology	• The learning management system must allow international access • Digital literacy of students should be assessed and supported • Internet speed and occasional breakdowns limit teaching activities • Communication misunderstandings might happen depending on the tools used
Organization	• Cultural differences imply the need to clarify expectations (about tasks, engagement, and evaluation) • Finding participants is difficult, possibly due to COIL not offering additional credit or poor alignments with students' career/research interests • Students' skills (self-motivation, time-management, language) might be an issue • Poor link with international peers is often observed • Level of communication authenticity might have to be supported • Time zone has to be considered

These barriers are now identified. Some implementation processes found in the literature give examples of how to overcome them.

Implementation processes.

The studies included in this systematic literature review present different implementation processes, with 1) varied perspectives, and 2) dichotomous ways to consider the cultural gap. Some of the authors (e.g. Loewen, 2016; Luo, and Yand, 2018) describe their COIL program with a student perspective, detailing what the tasks and opportunities offered were. For instance, Fitzgerald and Lemieux (2010) show examples of the assignments. They present not only a question that has to be answered and developed by the international students, but also detailed instructions elaborated to decrease the possible discrepancies in the didactic contracts[1] due to cultural differences. These detailed instructions associated with the assignments might be an example of what Pistutova (2016) recommends: Detailed expectations. The student point of view of the presentation of COIL programs is also used by Knoth (2015) who shows the variety of tasks that could be offered to maintain students' engagement. This variety is made possible thanks to the digital environment and the collaborative learning. For instance, assignments can be formulating questions based on a video, analyzing the discrepancies in the questionnaire responses, writing a critique about a text on a blog post, creating infographics after a joint reflection, etc. Such a diversity of activities might be an option to counter the self-motivation barrier explained by Fitzgerald and Lemieux (2010).

The other perspective used to present the COIL program implementation is the teacher/faculty point of view (e.g. Àlvarez, 2017; Velazquez, Perkins, Munguia, and Zepeda, 2018). McKinnon, Smith, and Thomson (2015) go into the implementation process deeply by providing details about how a COIL program was designed by the faculty. We barely read the students' assignments in their article. Starting with cultural sensitivity assessment, they then design the skills evaluation, the communication tools, the lectures, and the booklet. This teacher/faculty perspective is also proposed by Caniglia, John, Lang, Wiek, Cohmer, and Laubichler (2018). Their global classroom is designed with four steps (design, implementation, formative evaluation, and final development of the model) in which teachers, technicians, administration staff, and students work closely together on the curriculum development.

1. By didactic contract, we understand all the implicit actions and understandings within an educative event that do not have to be explained to properly engaged students, because of their teaching habits and routines.

The studies analyzed represent a broad range of COIL implementation, from simple coordinated tasks to a whole faculty engagement with internationalization. They also represent various ways to consider the cultural gap, from no time allocated, to a whole program especially designed around this concept. Figure 2 summarizes the scope of, what we call, depth of implementation.

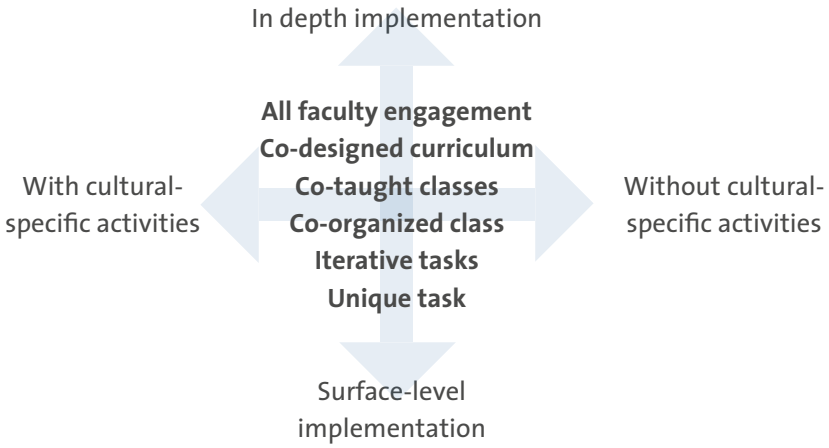

Figure 2: Depth of implementation of COIL programs

Proposed implementation process.

Based on this analysis of barriers and different implementation processes, we propose an implementation model to support future COIL projects. This suggestion will be trialed as part of an IaH development project and will be supported by research work.

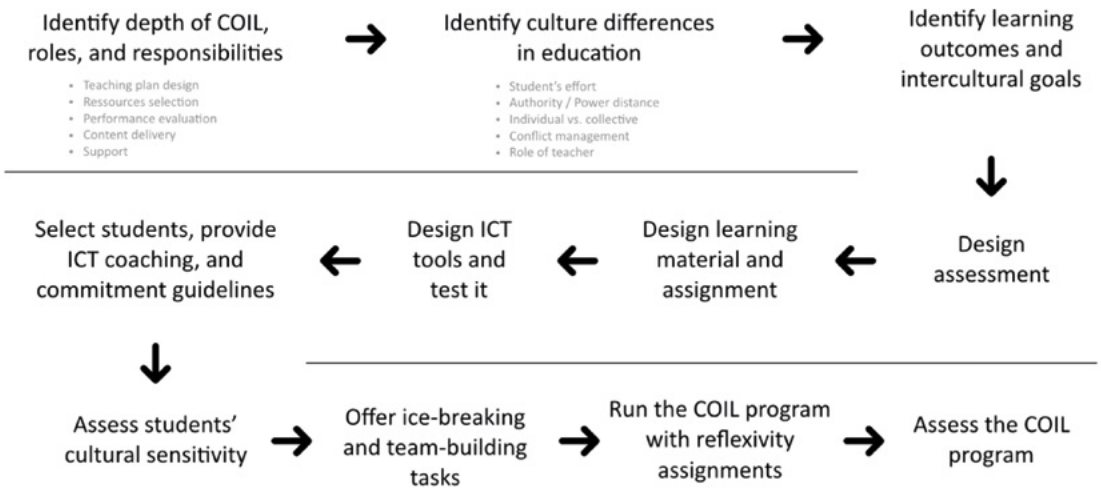

Figure 3: Proposed COIL implementation process

Conclusion.

Acknowledging the different barriers and the depth of implementation discussed above, we can argue that COIL programs should be well structured and prepared in order to allow a real commitment between students. The participants need to have a purpose which becomes the focus of shared work. It engages the students with alternative perspectives, understanding how the cultural heritage of the "others" can improve the task at hand (Pettigrew, and Tropp, 2006). This argues against a vague and blurred COIL implementation model in favor of a more structured and supportive one.

By reflecting on how technology can be used to create virtual mobility, this paper addresses didactical, technological, and organizational considerations in order to increase COIL implementation efficiency. These considerations can drive Asian-European higher education exchanges. If COIL programs do not represent the perfect solution to IaH political difficulties alone, we can argue that they represent a great means of engaging students in a real collaborative landscape. This can contribute to developing a vision of diversity as a resource, and a culturally sensitive pedagogy to tackle the hegemonic ethnocentrism.

Finally, this paper has left serious questions open. For instance, what IaH is remains unresolved. This question would be less central if the universities and faculties were taking international dimensions for granted. Between a marketized vision of universities producing high quality graduates for the global labor market and alternative perspectives arguing that worldwide problems require the intervention of a new generation of 'global citizens' (Harrison, 2015), COIL programs do not answer this question per se. However, after a deeper institutional reflection around the purposes of IaH, a successful internationalization policy can benefit from considering the barriers before COIL program implementation.

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Boosting exchange: balancing mobility between Asia and Europe through digital formats.

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Higher Education sector has undergone several changes regarding their delivery, assessment and learning confirmations. The intensity of changes depends upon several factors irrespective of the continent and medium of instructions. The economic openness of the country has been an essential factor considered as one of the critical factors for the reforms in the higher education system of the country. The economic openness of the continent or the country mainly depends upon several factors which are primarily driving the economy into self-sufficiency and growth-oriented. The macroeconomic theories emphasis on socio-demographic factors as a critical variable for economic openness. The resource underutilization and demographic transition may be the change factors for resource utilization and economic self-sufficiency of the economy.

Education is the critical factor, which identifies economic underutilization and struggles for economic growth of the country. Higher education participation enhances the innovation and entrepreneurial segment in the labor force of the state. The level of the involvement is responsible for the country socio-cultural values and living standard. In this context, the higher education system as one of the crucial essential factor which itself means and ways.

Student mobility becomes one of the critical aspects of the internalization of education. Economic openness facilitated the cross-border movements of students and faculties along with the technology and other teaching methodologies. Learning with intracultural values with diversified learning methodologies and campuses become the need of the generation. This approach has been identified as one of the important indicators to assess the quality and ranking of the Higher Education Institute(HEIs). Research evidence reflected student mobility way from World WarII and increased in the twenty-first century. The nature of student mobility is also from weak economies to industrialized countries. International competitiveness attracted several developed economies to establish exchange programs and joint degree programs to support student mobility from Asia.

Review of Student Mobility in Asia

Research literature reveals the majority of Asian students at the initial stage of exchange prefer to go to developed or industrial countries. The reason is due to the initial phase of economic growth of those economies enveloped with Europe and another developed economy model. And mobility led to human capital formation, training, and skill formation. Many advanced economies, at the initial stage of their industrialization, attempted for labor migration from weak economies. This mobility was only onesided and majorly concerned about labor force mobility. This kind of movement in Asia is considered to be vertical mobility to horizontal movement.

Student mobility is also affected by labor migration and overseas employment opportunities. This has supported by the several developing economies convert their international students into potential productive labors. This approach has strengthened the mobility of student from Asia to Europe due to the demographic transition in their countries. Globalization has supported the free flow of employment, trade and capital flow. Labour intensive economies find their destinations by exporting their students as potential labors services. Increasing demand for skilled and productive work has

boosted the student mobility. International trade treaties and economic arrangments made this attempt to yield through sufficient migration of labor from developing economies to developed economies. Several international agencies also fund movement.

Sustained expansion of GDP and cross-border trade in services in Asia explored advanced technology for the human capital formation and entrepreneurial class through the internalization of higher education their respective countries. This has opened new avenues for student and staff mobility form Asia to Europe.

Changing economic policies and strategies in developing economies in Asia considered a market-led approach for the higher education sector. This has shifted spending on education from public to private in Asia. Increased per capita income and reduction in population growth rate advocated a higher level of expenditure on education. This has developed a new generation tendency towards internationalization of higher education with mobility. The demonstrate effects triggered teaching community adopts cross-border approaches in the delivery and assessment of the learning outcomes in higher education.

Economic Openness and Educational Sector: Indian Context

Significant research studies support the positive relationship between trade openness and spending on education sector due to the increased productivity of human capital. This may increase the comparative advantage of the country in labor-oriented industries.

Higher Education Statistics at a Glance

Particulars		2011–12	2012–13	2013–14	2014–15	2015–16
Number of Universities		642	667	723	760	799
Number of Colleges		34852	35525	36634	38498	39071
Number of stand Alone Institutes		11157	11565	11664	12276	11923
Number of Foreign Students	Male	21852	25565	27889	30151	
	Female	12922	13952	14404	15273	

Source MHRD Report

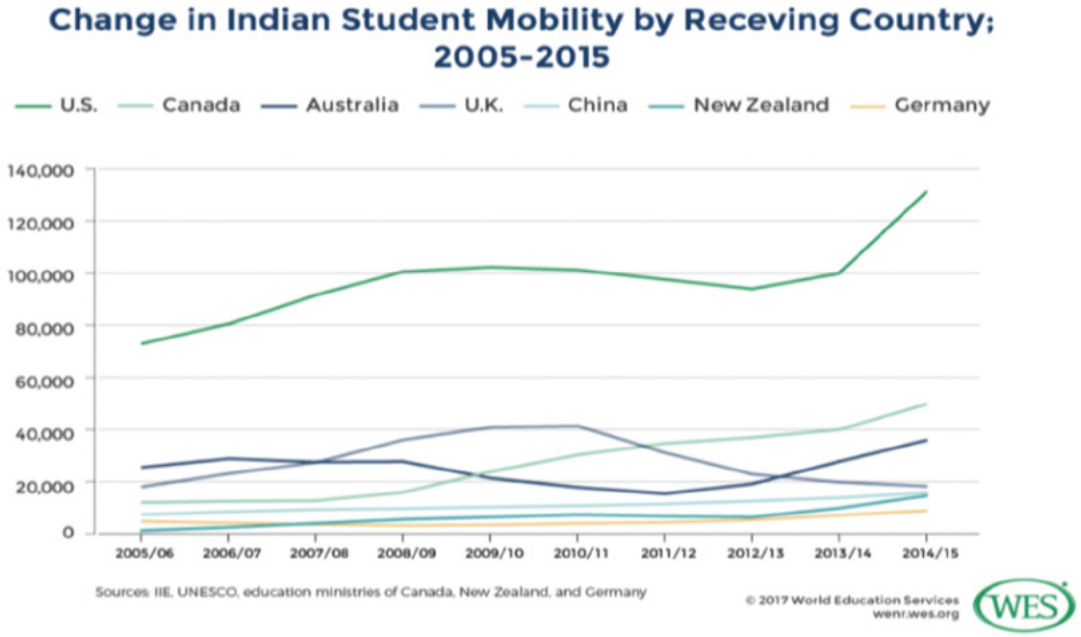
India's economic reforms in the 90's, facilitated the degree of openness and explored new dynamics for the human capital sector. Acquiring basic literacy becomes policy agenda of the government. Sustained spending on education sector yielded economic growth of the country and became the priority of the development. State and Central governments in Indiaprioritized education as one of the critical welfare measures of the economy.

Economic openness in developing economies led to a revolution in information and communication technology. As a result, globalized and interconnected economies emerged since the 1990s. Higher education institutions (HEIs), which used to be domestic-oriented entities, experimented with the introduction of technology into their delivery of knowledge and connecting the different international approaches for their curriculum. This affected in popularising the concept of internationalization of higher education. This process covers the mobility of ideas, values, courses, programs, faculty, students, and even campuses.

Physical student Mobility in India

Due to the demographic changes which led to a young populated country in the World, India is closer to China regarding most qualified students for mobility and second largest country to send students for higher education studies abroad. The physical mobility of the students and faculties from India is also influenced by increased economic growth and purchasing power of the country and entry of private universities. Apart from the internal factor, physical mobility is influenced by factors like safety, cost of education and immigration policies in receiving countries. Secondly, the direction of mobility has been changing over the years. Major countries like USA, UK Australia, and Germany, etc. The presence of international students in India is increasing over the years.

The international students come from 166 different countries from all across the globe.



Highest share of students come from the neighboring countries of which Nepal is 25.0% of the total, followed by Afghanistan 9.5%, Sudan 4.8%, Bhutan 4.3%, Nigeria 4.0%, Bangladesh and Iran both have 3.4%, Yemen 3.2%, U.S. 3.1%, and Sri Lanka 2.7% of the foreign students. Among significant contributors, Nepal has more female students than males. On the other hand, Sudan (92.5%), Yemen (91.5%) and Afghanistan (88.9%) have a considerably higher number of male students. Although a maximum number of international students comes from Nepal, the maximum number (215) enrolled in Ph.D. are from Ethiopia followed by Yemen (202). Also, there are 14.8% of Foreign Students from the United States of which 54% are female students. The highest number of international students enrolled in Undergraduate courses, that is, 77.4%

Virtual Mobility – New Era of Exchange:

the Increased intervention of technology and communication sector has developed a new era of exchange as virtual mobility which has started the new Era of internationalization with ICT enabled digital platforms. The BEING MOBILE - Disseminating Virtual Mobility for Students and Teachers project opts for a more elaborate definition: “Virtual Mobility is a form of learning which consists of virtual components through a fully ICT supported learning environment that includes cross-border collaboration with people from different backgrounds and cultures working and studying together,

having, as its main purpose, the enhancement of intercultural understanding and the exchange of knowledge".In India, application of internet and other allied tools for the delivery of knowledge and assessment of the learning confirmation was limited at the initial stage. But the introduction of smartphones and other social media apps has changed the dimensions of higher education. This has reduced the distance among continents through virtual mobility of both students and faculties.

Objectives of the Paper:

1. To understand the relationship between MOOCs and student mobility to Europe concerning the Manipal Academy of Higher Education.
2. To establish an academic model which will enhance the student mobility through MOOCs

Research Methodology:

The research study involves primary and secondary information. In this research study, 100 students of DoC who has completed one single course from Coursera as a research sample. They belong to the same age and the first year of their studies with learning ability. Structured questionnaire prepared and distributed to students and collected their responses and displayed in the form diagrams.

Research Area: Research Area: Department of Commerce, MAHE Manipal

Department of Commerce (DoC) provides a "Multidisciplinary Interactive Environment" where the future leaders of business and society are groomed to lead and deliver meeting stakeholder expectations. It was established in the year 2007 with the launch of its flagship undergraduate business programme specializing in e-Banking & Finance. It has got nine specializations to their undergraduate students and three specialization subjects for Master of Commerce. Department recently launched two MSc programmes in Financial Economics and Health Economics.

Massive Open Online Course (MOOC):

A Massive Open Online Course (MOOC) is a web-based platform which provides an unlimited number of students worldwide with a chance of distance education with the best institutes in the world. It was estblished back in 2008 and gained momentum in 2012 as a favorite learning tool. Many MOOCs have communities that have interactive sessions and forums between the student, professors and Teaching Assistants (TAs) along with the study/course material and video lectures.

The University Grants Commission (UGC) along with the HRD (Human Resource Development) Ministry has launched the MOOC program in India for higher secondary, bachelors and masters degrees. This will cover a wide range of subjects that may or may not be taught in regular campus studies.

A new portal for MOOCs named 'Study Webs of Active-Learning for Young Aspiring Minds', in short, SWAYAM, is said to present students with an opportunity to study anything from a list of 2000 courses out of which 200 are currently available for registration. Audio-visual medium, illustrations, research and case studies with self-assessment are few of the mediums chosen to approach the study of these courses.

Manipal Academy of Higher Education (MAHE):

Manipal Academy of Higher Education located in Manipal, Karnataka in India. MAHE has created some of the country's best institutes across diverse streams like medicine, dentistry, engineering, pharmacy, hotel management, and communication.MAHE has initiated a multidimensional ap-

proach towards internalization and boosting its inbound and outbound student and faculty mobility. MAHEs Office of International Affairs & Collaborations actively involved in physical mobility. MAHE has signed MoUs with Europe, Australia, North and South America, Asia and Africa. MAHE has inbound and outbound mobility with European countries like Germany, France, Latvia, UK, Austria, Belgium, Denmark, Finland, Ireland, Lithuania, Netherlands, Norway, Portugal, Spain, Sweden, Turkey, Poland, Ukraine, Italy and the Czech Republic. MAHE has adopted MOOCs through Coursera to its regular curriculum and students and staff are the beneficiary of the digital platform.

Highlights of MOOCs in DoC

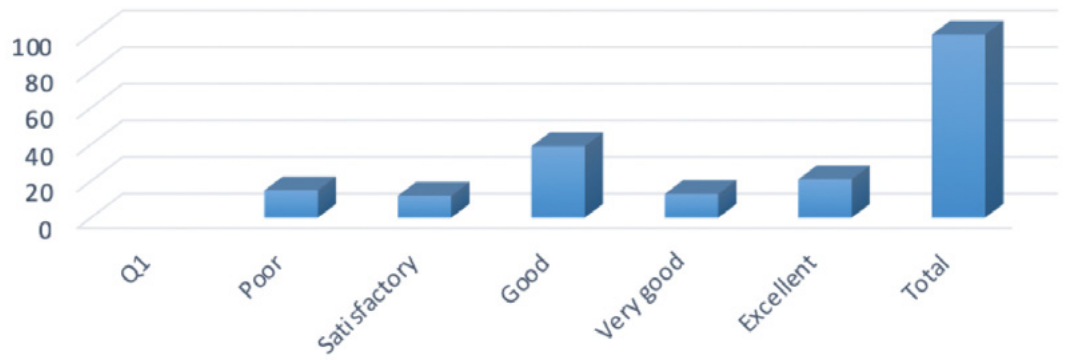
1. The average number of unique active users per week during the cam-paign period was 1,714 against a YTD average of 1,559
2. 4,590 students from MAHE Manipal participated representing 48% of total student members from the university in the platform
3. MAHE Manipal had 13,284-course enrolment, and 2,051 were completed with a 15% completion-enrolment ratio
4. 35 students are part of the leaderboard
    a. Toppers enrolled in 1,007 courses (7.5% of total MAHE enrolment) and completed 564 (27% of total MAHE completion) courses with a 56% completion-enrolment ratio
    b. 9 students completed 20 or more courses during this period.

Research Discussion and Future Directions:

Department of Commerce is one of the dynamic department with internationalization has its objectives. It has five centers of excellence which all involved in research consultancy and student exchange. International Centre for Business Studies (ICBS) is looking after student and faculty exchange in the Department. Every year Centre is facilitating inbound and outbound student mobility to Europe and other continents. The center is working along with European Studies department other research bodies to explore research and student grants. Department has got five MoU with European universities. International collaboration office of MAHE has got separate body titled Manipal Student Exchange Program (MUSEP) to promote inbound mobility.

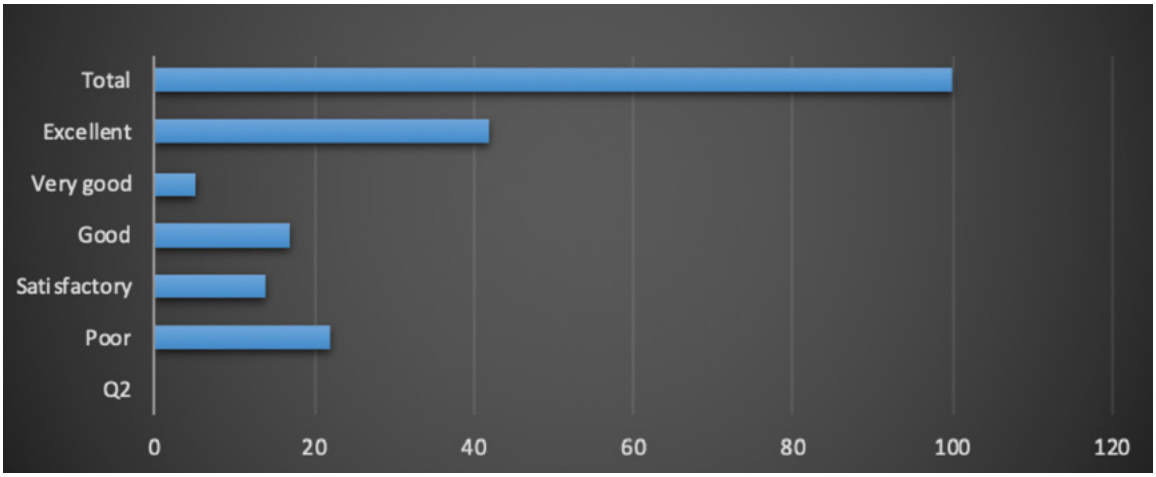
Data Analysis: The current study involved individual and group discussion with focused objectives. The results of personal questionnaire method are discussed as follows:

Chart 1: Student's level of understanding in MOOCs course



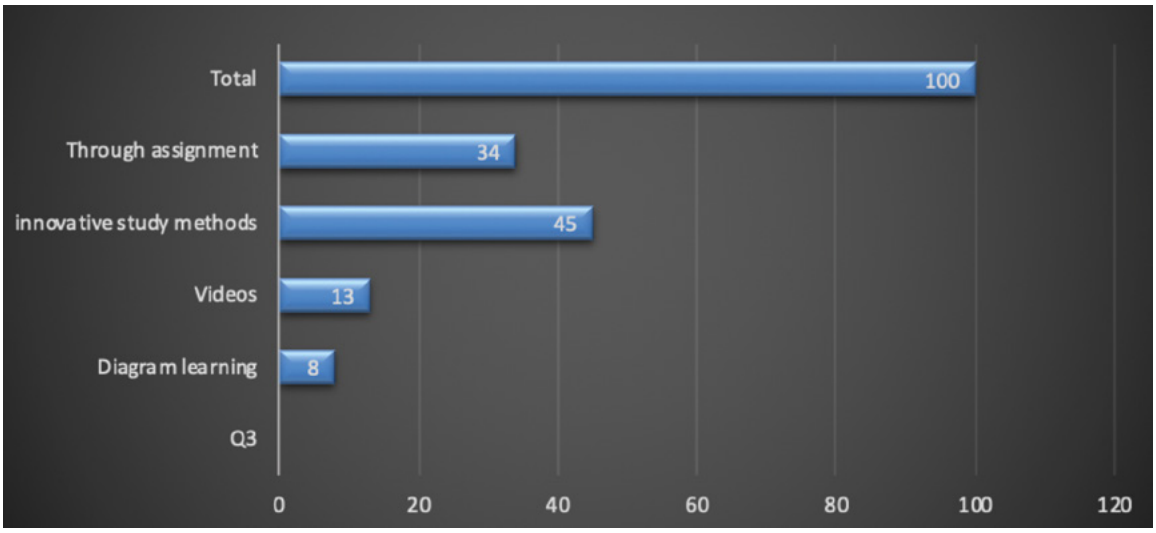
Understanding from this graph is that 39% of students voted for good to the MOOCs course. Which implies that still there are few improvements to be made to improve the level of understanding.

Chart 2: Level of Effectiveness of the MOOCs



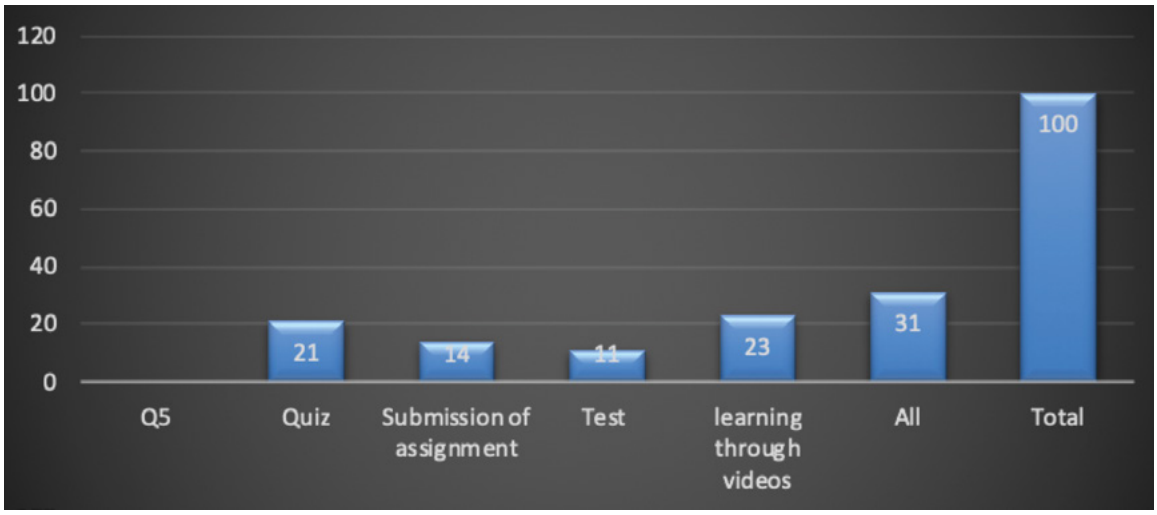
From the chart, we conclude that almost 40% of the students voted for ex-cellent for the level of effectiveness of the MOOCs. This question is posed to check the understanding and participation of students in MOOCs.

Chart 3: Reasons for proactive participation in MOOCs



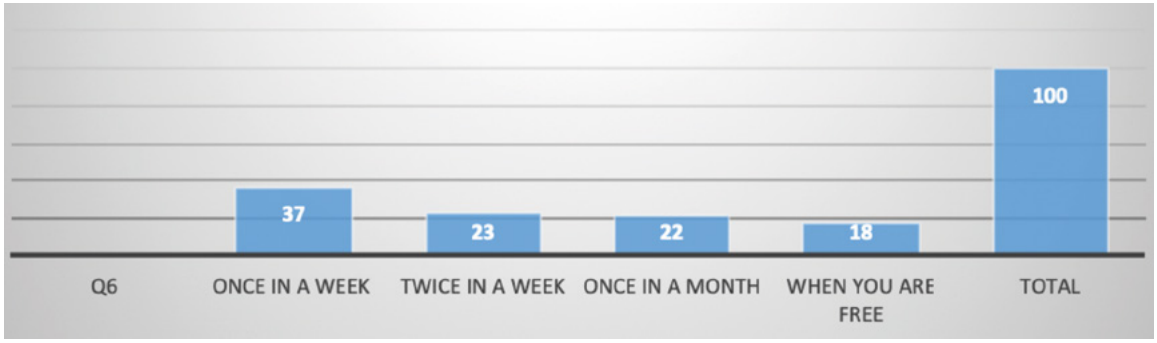
From the chart, we understand that innovative learning methodology attracted more to have pro active participation MOOCs.

Chart 4: Learning Assessment

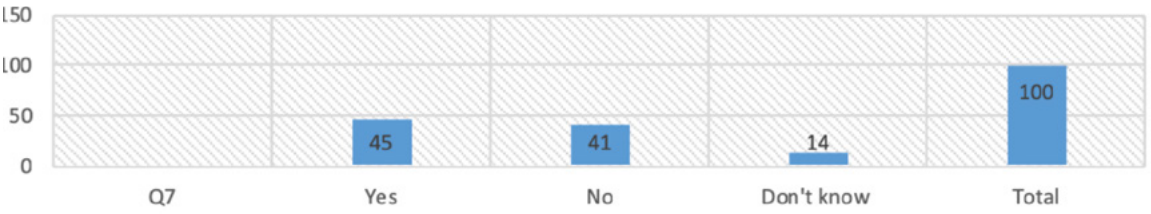


Though all the methods of learning like quiz, submission of assessment and other methods voted by the participants. There is a requirement for modifying the evaluation. Maybe over the period, evaluation of the learning will be modified according to the demand. But there is a requirement of common assessment indicator which can reduce the regional differences in evaluation. Graph 5 reveals the frequency of visit to MOOCs platform which may also reflects students interest on MOOCs for further studies.

Graph 5: Level of interest in visiting MOOCs for further studies:

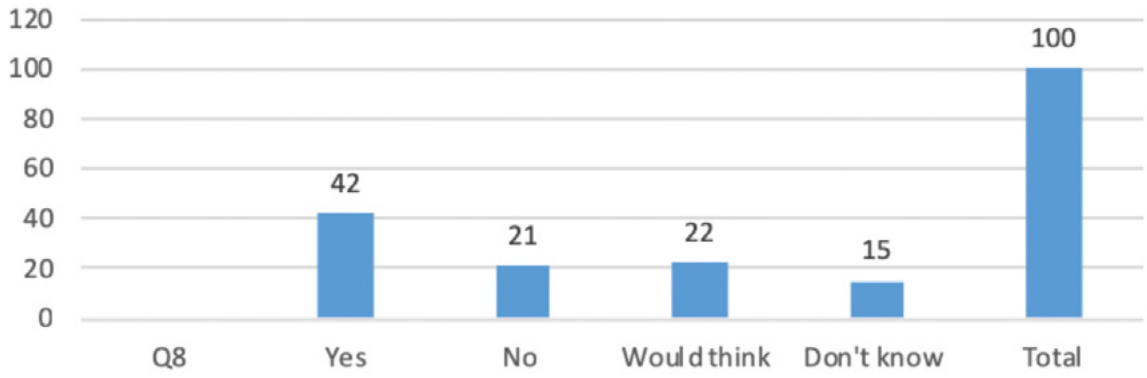


Graph 6: Level of interest of the student for a further course in MOOCs



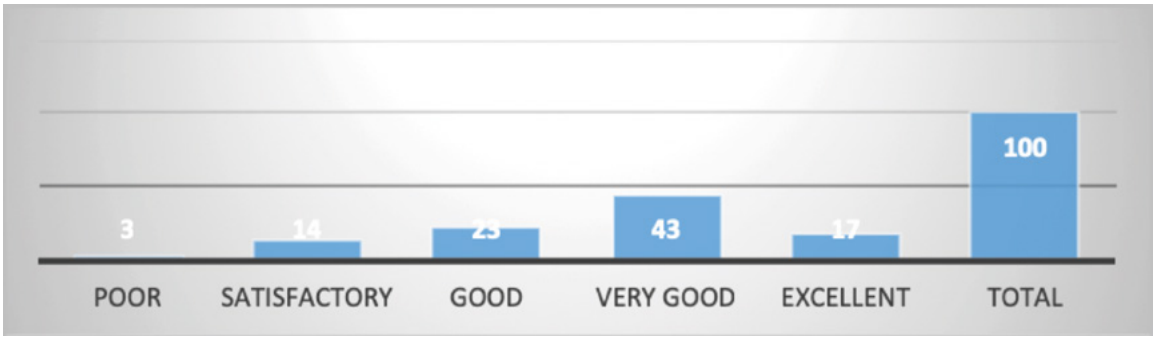
From Graph 6, we can understand that 45% of the student is interested in participating in more than one course.

Graph 7: Level of interest in mobility to Europe



From the analysis, we have understood that 42% of the people are interested in going to Europe for their further studies. This question is further discussed in a focused group along with collaboration team. Though MOOC has created interest and given the exposure to Europe, specific economic and social challenges need to be addressed.

Graph 8: Overall Rating to MOOCs



Most of our student is satisfied with the MOOCs, and 43% of people voted as very good for the MOOCs.

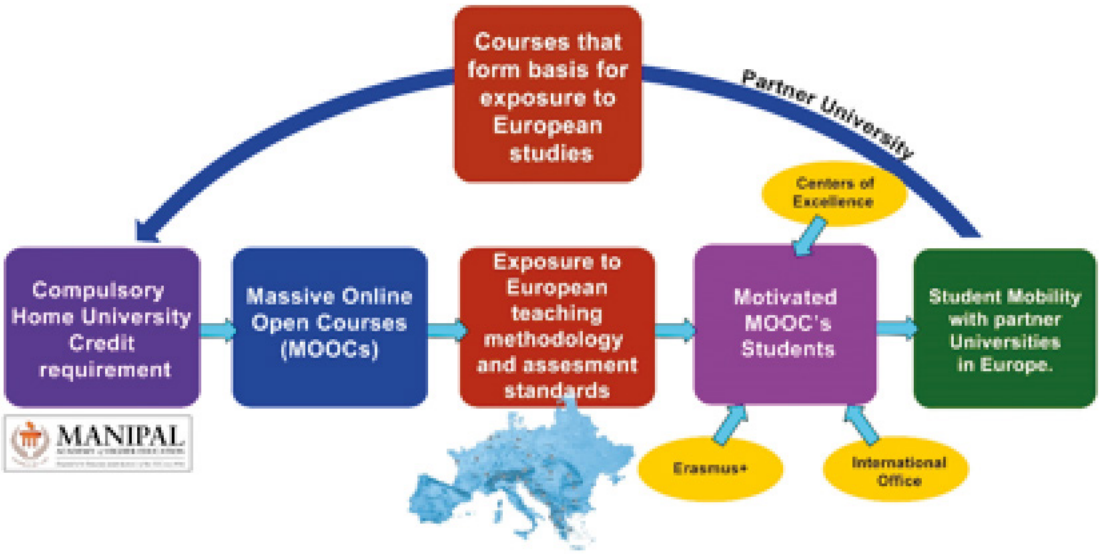
In the above study, overall perception about online courses especially about courses driven from Europe has been witnessed steady change. This is also captured by the internalization process in the department. The same sample has undergone a discussion on mobility to Europe, and 60 to 70% of the students showed their positive response towards physical mobility to Europe.

There are a few important issues in physical mobility for the students are cost of living, language, and cultural values. DoC has further arranged interaction with international students of the department and incoming foreign students. Secondly, the department organized online and offline interaction with delegates from European Universities.

MOOCs along with identification of appropriate exchange opportunities will lead to increased physical mobility. DoC has developed a model which is customized for MAHE requirement which will support student and faculty exchange. There is a need to establish converting digital format into physical mobility from Asia to Europe.

Boosting Exchange: Asia to Europe through Digital Formats Model:

The individual and group discussions with the students, research study, can understand the connect with digital and physical effort to improve the mobility. This has been identified with the following model, which may be with the MAHE approach but this can also be implemented and modified with the customized requirement of the HEIs.



The model is also valid only when the partner Universities reflect in their feedback for the appropriate online courses which may reduce the student's challenges in exchange. There is a requirement of developing a definite number of courses to Asian students to understand the socioeconomic conditions of Europe.

Future Research Scope:

- Digital orientation on learning assessment methodologies which can be implemented as a basic requirement before the exchange.
- Digital follow up a mechanism for MOOCs beneficiary students and faculties for physical mobility.
- Identification of potential exchange stakeholders and creating a digital platform for the promotion of balanced exchange from Asia to Europe.

Conclusion: Economic openness of the developing economies are effectively implemented the process of globalization of higher education. The student mobility between Europe and Asia is identified as one of the game changers for the continents. The sustained economic growth and change in demographic profile have increased the process of exchange from Asia to Europe. MOOCs become one of the critical digital format which has got potential seeds of physical mobility. The process of conversion from virtual to physical mobility requires multi-institutional approach and digital intervention.

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ASEM's diversity: fostering intercultural connectivity and understanding in a digital way

- **A case study of the FRIENDS initiative as a tool for fostering intercultural engagement through virtual mobility**

  Christina Armutlieva

- **Digital Storytelling: Prospects and Challenges**

  Ritika Joshi

A case study of the FRIENDS initiative as a tool for fostering intercultural engagement through virtual mobility

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Introduction – Globalisation and technology, both leading to stronger intercon-nectedness between people, institutions and societies, are reshaping the higher education agenda worldwide. As a result, internationalisation efforts and digital learning initiatives are gaining momentum at higher education institutions across Asia and Europe. While universities have always been exposed to international trends and influences, the increasing ICT spread along with other determinants outside higher education institutions' control, are changing significantly the 21st century higher education landscape through the new communication tools created (Altbach, Reisberg, Rumbley, 2009). Thanks to technology development, curricula, people and organisations could now cross borders, engage in meaningful dialogues and build sustainable relations without having to leave one's place (Scatolini, Van Maele, Bartholome, 2010).

The inter-university initiative entitled FRIENDS that stands for Furthering International Relations Capacities and Intercultural Engagement to Nurture Campus Diversity and to Support Internationalisation at Home, is one of the numerous Erasmus+ multilateral projects that strive to enhance university cooperation and academic communities' interconnectedness through digital learning means. The FRIENDS initiative was selected for funding in 2018 under the Erasmus+ programme for Capacity Building in Higher Education (CBHE) and is implemented through project number 598652-EPP-1-2018-1-BG-EPPKA2-CBHE-JP. FRIENDS connects four higher education institutions located in four Erasmus+ Programme Countries (Bulgaria, Hungary, Poland and Turkey) and 12 universities from five Asian countries, namely Bhutan, Cambodia, Malaysia, Philippines and Thailand. The project thus feeds into the ASEM education process' stakeholder level activities that promote dialogue-oriented cooperation through mutual learning and exchange of good practices between European and Asian universities. The project addresses the Erasmus+ CBHE regional priority for improving management and operations of higher education institutions through internationalisation. It was initiated in the context of the European Commission's renewed EU agenda for higher education (2017), the European Higher Education in the World (2013) policy statement and the EU Communication on the Agenda for Change (2011).

The FRIENDS project is built around the concept of internationalisation at home (IaH) and suggests both offline and online solutions for improving campus cultural diversity and for fostering students' intercultural competence. The designed tools and key project outcomes include the development and delivery of the Intercultural Passport virtual module, the adoption of institutional IaH Action Plans as well as the establishment of university-based multicultural hubs named FRIENDS Teahouses.

FRIENDS theoretical background

The IaH term was initially introduced by Bengt Nilsson (1999) in his Internationalisation at home – theory and praxis article with concern to the large non-mobile student bodies and the universities' responsibility to internationalise these too. It is evident that from the very beginning of its existence, the IaH concept promoted access to quality education for all students and inclusive university culture. The notion of IaH was further elaborated and approached from various angles in the Internationalisation at Home. A position paper by Crowther, Joris, Otten, Nilsson, Teekens and Wächter

(2000). According to Nilsson's famous definition from 2003, IaH is „any internationally related activity with the exception of outbound student mobility" (Nilsson, 2003, p. 31). According to Jane Knight (2008, p. 22), IaH covers "those aspects of internationalisation which would happen on a home campus". Knight's perception of IaH is to be analyzed in the context of her general definition of internationalisation in higher education from 2003 that is "the process of integrating an international, intercultural and global dimension into the purpose, function or delivery of postsecondary edication" (Knight, 2003, p. 2). By embedding the intercultural and global dimensions into the definition of higher education internationalisation, Knight widens and diversifies the focus and scope of activities to fall under the umbrella of university internationalisation. According to her, the term of international refers to „relationships between and among nations, cultures or countries" (Knight, 2003, p. 2). Under intercultural dimension, on the other hand, Knight understands the „diversity of cultures that exists within countries, communities, and institutions" (Knight, 2003, p.2). Lastly, the global dimension shall be interpreted as one with a worldwide scope of intervention.

The global versus international opposition as well as the dynamics between globalisaton and internationalisation of higher education are presented in detail in De Wit's introduction to the online monograph Globalisation and Internationalisation of Higher Education (2011). In the same paper, by building on Knight's earlier research conclusions, De Wit summarizes IaH as a variety of on-campus, curriulum oriented activities aimed to develop students' international awareness and intercultural skills. On the contrary, internationalisation abroad activities encompass all forms of crossborder education cooperation including mobility of students, staff, curricula, initiatives and education institutions (De Wit, 2011).

In reality, in Europe the term IaH as opposed to outbound mobility and internationalisation abroad received increased attention outside the education management expert circles only after its inclusion in the European Higher Education in the World (2013) policy document. In this EU level internationalisation strategy that laid the foundations for the Erasmus+ Programme implemented in the period of 2014-2020, the correlation of IaH and digital learning is promoted by the European Commission to one of the three key higher education internationalisation priorities and areas for recommended interventions and actions. As a result, more and more EU higher education institutions have started embracing IaH as an institutional policy for internationalisation in the domains of curriculum, teaching and learning, extra-curricular activities as well as the meaningful interactions with local cultural and ethnic groups. The IaH and digital learning agenda are further embedded in the European Commission's renewed EU agenda for higher education published in 2017. As mentioned above, these two EU policy documents have served as a stepping-stone at the FRIENDS project's initial development phase.

For the purposes of the FRIENDS initiative, the partners agreed to apply consistently throughout the whole project the IaH definition as provided by Beelen and Jones. The latter perceive IaH as "the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all the students within domestic learning environments" (Beelen & Jones, 2015, p. 12). Beelen's and Jones' interpretation clears up the „conceptual fog" around the IaH term and seems to solve the issue of previous interchangeable use of the terms IaH and internationalisation of curriculum.

The FRIENDS consortium relied entirely on Beelen's and Jones' IaH definition when developing the project's main aspects and formulating its wide objective. The project's chief end is to strengthen the involved Asian universities' internationalisation capabilities and to develop their students' global competence through the purposeful integration of intercultural dimensions into the universities' formal and informal curriculum. Given the time and resource constraints an Erasmus+ CBHE joint project like FRIENDS faces, the consortium members decided to focus exclusively on the campus diversity as an IaH prerequisite and on the notion of students' and graduates' intercultural competence as a key outcome of university internationalisation. In a knowledge-based society, in which the

barriers of time and place are rapidly disappearing, even locally employed graduates who have never left their local educational environment would need to take a global view.

As mentioned in the 2013 UNESCO document Intercultural Competence: Conceptual and operational framework, thansk to globalisation, cultural diversity and intercultural contacts are now an inevitable part of peoples' lives across the globe and the intercultural competence is deemed highly instrumental in dealing with these challenges. In fact, according to the same UNESCO report, cultural diversity shall be perceived as a valuable resource similar to the way biodiversty is considered. According to another UNESCO document from 2009, „cultural diversity is not simply an asset to be preserved but a resource to be promoted" (UNESCO 2009, p. 2). Projected to the higher educational sector, this line of thought allows us to see campus diversity as an asset and a resource that is economically driven, enhances universities' competitiveness, and fosters students' intercultural competence. The latter constitutes a major part of the graduate employability that is universally acknowledged as the key outcome of higher education.

The literature on intercultural competence reveals the multifaceted nature of this construct. A comprehensive review of its definitions as suggested by a wide range of renowned scholars in the field over the last 30 years is provided in the 2016 article Assessing Intercultural Competence in Higher Education: Existing Research and Future Directions by Griffith, R. L., Wolfeld, L., Armon, B.K., Rios, J., Liu, O. L.. By referring to Spitzberg and Changnon (2009), the authors organise the various existing intercultural competence definitions in five categories, namely: compositional, cooriented, developmental, adaptational and causal (Griffith, Wolfeld, Armon, Rios, Liu, 2016). For the purposes of the FRIENDS project, the consortium members agreed to use Deardorff's definition of intercultural competence that is also among the most widely recognized and used ones. The latter sums up the construct's essence as „the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills and attitudes" (Deardorff, 2006, p. 247). As Deardorff finds out, there is a certain level of hesitation in the terminology used by higher education administrators when refering to intercultural competence. In addition to intercultural competence, practinioners often use other terms such as cross-cultural or global competence as well as global citizenship, regardless of the fact that these terms cover slightly different realities. In the framework of the FRIENDS project, the terms of intercultural sensitivity, global competence and global skills and knowledge are used as synonyms of intercultural competence. Furthermore, in the project the process of building and fostering students' intercultural knowledge, skills and attitudes is planned and organised in line with the taxonomy for developing intercultural competence that presents three domains (knowledge, skills and attitudes) and three levels of development, namely awareness, understanding and autonomy (Ridings, Simpson & Leask et. al., 2008). In other words, all three main project outcomes mentioned above (the Intercultural Passport virtual module, IaH Action Plans and FRIENDS Teahouses) cater for improving the Asian students' knowledge, skills and attitudes so that they could gradually learn to operate effectively in an independent manner in culturally diverse environments.

FRIENDS project rationale

The main reasoning behind the FRIENDS project is to transfer the IaH concept to the Asian universities involved and to share with them IaH practices that have proven successful at the four Programme Country higher education institutions. The consortium members argue that the IaH concept seems well suited to help the 12 Asian universities address the following three problems:

- Extremely low student mobility figures across the five Partner Countries concerned
- Lack of intercultural education to build students' global competence across the consortium
- Insufficient institutional soft infrastructure to assist international students and campus diversity.

The problem of having large majorities of non-mobile students is relevant to all 12 Asian partner

institutions involved in FRIENDS. In particular, the two universities in Bhutan (Royal Thimphu College and Royal Institute of Management) and those in Cambodia (Svay Rieng University and Dewey International University) reported on zero student mobilities carried out in 2016/2017. In Bhutan, opportunities for student mobility are scarce on national level too and if any, they are mostly sponsored by the Government of India. In the ASEAN region, most efforts for student mobility have been streamlined through programmes like AIMS, UMAP and SHARE whose collective long-term goal is the ASEAN higher education area integration in view of ASEAN Economic Community's single market development. The AIMS programme implemented in three of the four ASEAN countries represented in FRIENDS, namely Malaysia, Philippines and Thailand, targets exclusively elite students and between 2012 and 2017 has provided access to mobility to over 1200 students. The impact of the UMAP programme is even more subtle with 380 student mobilities conducted in the period of 2011-15 (Yung Chi Hou, Hill, Chen, Tsai, Chen, 2017). In light of the ASEAN population and total number of higher education institutions and students across the region, the AIMS' and UMAP's student mobility figures speak for themselves. The SHARE programme is supported through the EU and includes, inter alia, a strand for intra-ASEAN and ASEAN-EU student mobility. Only one of the 12 FRIENDS Asian partner universities is involved in it, namely Payap University in Thailand. Since academic year 2015/2016, the Erasmus+ International Credit Mobility programme is being implemented in Asia and so far only three of the 12 FRIENDS partners in Asia, namely Royal Institute of Management in Bhutan, Berjaya University College in Malaysia and Payap University in Thailand have benefitted from it.

At the bid development phase, the majority of the Asian universities in FRIENDS showed little evidence, if any, of targeted intercultural education integration in their formal and informal curricula. The initially conducted research within the consortium suggested that efforts dedicated to intercultural competence development are mostly perceived as content taught in English or as delivery of joint and double degree programmes in collaboration with foreign universities. In fact, almost half of the 12 Asian partner universities in FRIENDS reported on having already introduced double or joint degree programmes. While the acknowledgement of English as an academic lingua franca supports undoubtedly the development of students' English language profeciency and the enrolment in study programmes delivered across borders is a significant step towards university internationalisation, the direct contribution of these two developments to the acceleration of students' cultural literacy and ability to move freely in a variety of cultural environments is not explicit.

With the recent economic growth and development, Malaysia, Thailand and Philippines have evolved and are seeking to transform into international educational hubs with growing numbers of international students. This ultimately requires improvement of the quality of services and care provided to accommodate international students' needs and expectations. In particular, Malaysia has gained ground as a real international educational hub. As of the end of 2016, Malaysia had a total number of 132,710 international students (Jusoh, 2017) and this figure is expected to grow by 2025 to up to 250,000 as envisaged in the Malaysia Education Blueprint 2015-2025 (Higher Education). Similarly, in Thailand the 12th Higher Education Development Plan (2017-21) sets out a priority to increase the international students' number. Considering the English language of instruction and in light of the Commission on Higher Education (CHED) Strategic Plan (2011-2016) encouraging, inter alia, an alignment of the Philippine universities' study programmes with the international labour markets' needs, the Philippines seem to be well placed to become in the future an educational hub too.

Cambodia, the fourth ASEAN country in FRIENDS shows a completely different picture in terms of international and cultural diversity across the universities. There is only limited mention of higher education internationalisation in the country's current Education Strategic Plan (2014-18). In Cambodia, the admission of foreign students was typically regarded as low priority and according to experts in the field, this was probably due to the overall low enrolment opportunities available in the country. The latter has been the case for a very long time in Bhutan too. Nevertheless, and in contrast to the

traditionally modest efforts towards higher education internationalisation in Bhutan, in the early 2010s the Government of Bhutan came up with a groundbreaking initiative to launch the Education City Project. The Education City investment was estimated at 1 billion USD and aimed to attract top universities from abroad to establish branches in Bhutan and to accommodate high numbers of international students (Bhonsale, 2014). Although the project was later cancelled, it exemplifies the Government of Bhutan' aspirations in the field of higher education internationalisation. These are implicitly underpinned in the Gross National Happiness Index too, that is considered a guiding philosophy and approach to sustainable development in Bhutan and entails nine key domains, incl. education, cultural diversity and community vitality, all three relevant to the FRIENDS initiative.

The Intercultural Passport virtual module

The Intercultural Passport virtual module designed and piloted in FRIENDS aims to build students' intercultural knowledge and sensitivity to cultural diversity. The Intercultural Passport related activities are rooted in the intention to integrate intercultural dimensions into the Asian universities' formal curriculum. In the project, the Intercultural Passport virtual module is complemented through the establishment of the already mentioned FRIENDS Teahouses. These new units for offline collaboration and networking aim to transform the Asian universities' International Offices into vibrant multicultural focal points and thus to enhance the intercultural dimension of the universities' informal curriculum. The latter refers to student learning experiences outside the classroom and the timetabled formal education.

The Intercultural Passport certificate to be awarded to students across the five Asian countries involved in FRIENDS is launched as a metaphorical supplement to the official international passport each student would need when traveling abroad and crossing political borders. In other words, the Intercultural Passport will encourage and entitle students who have obtained it to move across different cultures in a safe and secure manner. The reasoning behind the Intercultural Passport virtual module's implementation during and beyond the project lifetime after 2021 is to ensure that the Asian partner universities' students have open and userfriendly access to teaching materials and learning content in the fields of intercultural awareness and communication, and cultural diversity. The Intercultural Passport certificate will be issued and is subject to award to students who meet the following predefined requirements:

- Successful completion of a self-paced MOOC named Intercultural Awareness and Cultural Diversity (IACD) and delivered through the FRIENDS project website
- Assessment and validation of international and/or intercultural prior experiential learning evidenced through relevant digital stories created by the Intercultural Passport applicants.

Similar initiatives for provision of an intercultural certificate are offered by a good number of highly internationalised universities across the globe and aim to develop and assess student global competence. When it comes to strengthening the IaH activities at the 12 Asian universities involved in FRIENDS, the Intercultural Passport plays a two-folded role. Beyond the enhanced intercultural knowledge and engagement, through the MOOC, the Asian students will take part in a virtual mobility, which is considered a key IaH tool per se. As initial screening of the 12 Asian universities' internationalisation portfolio revealed, the virtual mobility potential continues to be underestimated as opposed to the physical mobility, and therefore less attention has been paid to it so far. In the framework of the project, in total at least 1200 students from the 12 Asian universities are expected to register and follow the IACD MOOC during its initial release in the second project year. At least 15% of them will successfully complete the MOOC, and simultaneously prepare and submit a relevant digital story. As a result, at least 180 Asian students will be awarded the Intercultural Passport at the virtual module's prototyping phase.

The Intercultural Passport virtual module envisages student workload that equals four ECTS. The Intercultural Passport recognition as part of the students' elective formal curriculum raises the question on the endorsement and introduction of mechanisms for virtual mobility outcomes' formal recognition. The latter exceeds by far the scope of intervention of a joint Erasmus+ CBHE project like FRIENDS. Nevertheless, in the framework of the institutional IaH Action Plans to be adopted in FRIENDS, each of the 12 Asian partner institutions will identify existing good practices for MOOC learning outcomes' recognition that are applicable and compatible to the universities' internal rules and regulations.

IACD MOOC

The four Programme Country universities in FRIENDS are responsible for the IACD MOOC design and delivery. The IACD MOOC will be made accessible and will be facilitated through a platform built on the FRIENDS project main website. The MOOC follows the patterns and methodologies of virtual mobility opportunities created and distributed by renowned providers like edX and Coursera. The IACD MOOC core components comprise a wide range of topics such as key principles and theories of cross-cultural studies, the role of culture, barriers to intercultural communications, stereotypes and prototypes, cultural taxonomies, European cultural identity and diversity, business etiquette and protocol, effective strategies for working in a multicultural environment, cultural shock and ways of overcoming it, cultural conflict and strategies for dealing with it. Each MOOC unit consists of video-recorded materials (lectures, presentations and interviews) that are complemented through connecting assignments and quizzes to assess learners' progress and knowledge acquired. As a result of the IACD MOOC, the Asian students will be able to recognize and address various dimensions of culture-bound differences when learning, working and living in multicultural environments. The IACD MOOC learning out-comes include the ability to:

- Operate effectively in culturally diverse settings
- Analyse and reflect on how cultures differ
- Analyse how different cultures affect one another
- Identify cultural values, styles of communication and sociocultural behaviours inherent to the targeted cultures that could clash with their own culture
- Critically appraise personal and work related issues from a perspective other than their own cultural background.

The above listed IACD MOOC themes and learning outcomes fully reflect the expertise and collective experience of Varna University of Management, Bulgaria, the project coordinating institution. The IACD MOOC builds on the modules Intercultural Awareness for Business and International Business and Cultural Diversity taught at Varna University of Management at the undergraduate level and the modules Managing People and Markets across Cultures, and People and Organisations delivered in the master programmes.

After its release in the second year of the project lifetime, the IACD MOOC will continue to be offered in a self-paced, ondemand format. The latter provides the students with freedom and flexibility to learn and progress with their studies on their own terms. To ensure that the self-paced MOOC is effective in terms of peer-to-peer learning, the self-paced IACD MOOC will apply "live office hours" led by student volunteers with experi-ence in the course and/or in some of its topics. Thus, the IACD MOOC will offer an extra layer to the opportunities for intercultural interaction that are already in place in the project. Quality of the IACD MOOC and the relevance of the teaching methodologies applied will be evaluated by its end users, hence the Asian students. In addition, prior to its release, the MOOC's content and pertinence will be pilot tested by potential users in the framework of scheduled testing sessions at FRIENDS partner universities located in each of five Asian countries involved.

The participants in the pilot testing will be required to provide feedback on general features of the MOOC, its accessibility, organisation, language, layout, outcomes, course content, learning strategies applied and learning resources offered. The listed criteria are borrowed from the Criteria for Evaluating the Quality of Online Courses by Clayton R. Wright.

Digital storytelling segment

The Intercultural Passport award in the FRIENDS project is a two-step process and the IACD MOOC is supplemented by a compulsory digital storytelling component. As Wilson states in What is Digital Storytelling and How to Get Started? Workshop description (2018), the digital storytelling process combines "many elements of storytelling, including the oral tradition, the writing process, the power of visuals and the role of digital media in recording and sharing stories". To ensure that Intercultural Passport applicants could meet properly the requirements for the provision of a digital story that evidences their prior international and/or intercultural experiential learning, the Asian partners in FRIENDS will draft a Digital Storytelling How-to manual. The How-to book will be accessible through the project website and will provide assistance and instructions on the technical elaboration of the digital stories. In addition, the manual will offer an insight into the methodology of building up inspirational and meaningful digital stories. Ideally, the digital stories that will be prepared by the students of the Asian universities as part of their efforts to obtain an Intercultural Passport will present a transformational learning curve they have gone through in the course of an intercultural and/or international experience. Contrary to the IACD MOOC, the digital storytelling related activities in FRIENDS are entirely assigned to the Asian partner universities and, in particular, to their International Offices. These will be responsible for spreading the word about the Intercultural Passport across campus to ensure a high number of registered IACS MOOC learners as well as a high number of students motivated to prepare and submit a relevant digital story.

The provision of consultations and mentoring on how to craft and submit a good digital story as well as the assessment of the digital stories' quality and relevance will become a long-term part of the International Offices' responsibilities. In early 2020, during the sec-ond year of the project lifetime, the 12 Asian partner universities in FRIENDS will conduct a digital story student contest. The submitted digital stories will be uploaded on the FRIENDS YouTube channel (following a specific permission and declaration provided by the authors). Students who have prepared the best digital stories at each of the 12 Asian universities will be rewarded and invited to take part in the Student Boot Camp to be hosted and facilitated by the project coordinating institution. Upon completion of the Student Boot Camp, the student participants are expected to become fully equipped to take over their responsibilities linked to setting up and piloting the FRIENDS Teahouses at their home institutions.

Conclusion

The FRIENDS Erasmus+ CBHE project is a bottom-up initiative engaging European and Asian partner universities in a long-term conversation on the benefits of IaH, the significance of students' intercultural competence and the potential of digital learning to foster these. By investing in systematic institutional efforts to build nonmobile students' global skills and knowledge, the Asian partner universities foster an egalitarian community spirit across campus where internationalisation is not a privilege of the few any more but an asset all students can benefit from. This seems to have become even easier to achieve thanks to the virtual student mobility that is promoted in the project through the Intercultural Passport virtual module.

The FRIENDS initiative was drafted and designed in late 2017, and submitted as an Erasmus+ CBHE project proposal in early February 2018. On 15th March 2018, the European Commission launched the Erasmus+ Virtual Exchange initiative that promotes intercultural dialogue and mutual understanding between young people from Europe and the countries of the Southern Neighbourhood of the EU.

Although the geographical coverage of the Erasmus+ Virtual Exchange is different from FRIENDS, this European level initiative is perceived by the FRIENDS partners as a reinforcement and endorsement of the project's thematic relevance and methodological pertinence. Through the FRIENDS initiative, the project partners are building a comprehensive online and offline infrastructure for IaH that fosters students' experiential intercultural learning and enhances their employability. The FRIENDS project strives to make a difference at both personal and institutional levels and has the potential to spread the word to even larger academic audiences in Bhutan, Cambodia, Malaysia, Philippines and Thailand about the Erasmus+ programme and the EU education policies and tools for promotion of cultural diversity and mutual understanding, including through the means of digital learning.

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Digital Storytelling: Prospects and Challenges

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Since times immemorial, narrating stories have served various purposes- from satiating human desire to express themselves, facilitating a sense of community to catalysing the feeling of belongingness to the mankind. Stories, in all the forms- legends, tales, personal narratives- are significant component of culture. They serve not only as a critical mode of communication but are valuable nuggets of lessons that a generation passes onto the next. With the dawn of Twenty-First Century and technology rapidly taking onto our lives, the older forms of human expression have metamorphosed into digital forms of human expression. Somewhat is true of Digital Storytelling as well. Digital Storytelling brings out the best in both the world- the "new world" of internet and communication technology combined with "old world" of narrating stories. This particular facet of technology has huge potential in field of education, business, hospitality sector etc. This paper will try to analyse its potential in enhancing inter-cultural co-operation and the various limitations associated with digital storytelling.

Stories are shared everywhere in today's time. From television shows to advertisements to online social networking sites, world is bombarded with stories. It has led to blurring of geographical boundaries, increase in cultural contacts and, in general, a more inter- connected world. With the herald of digital era, the set of challenges posing the world community are new. Twenty first century need skills to participate in globally diverse communities. With the world getting more interconnected and globalisation occurring on magnanimous scale, the world will be a small village but with diversity intact. Twenty first century is increasingly being identified as digital era. while it can spell lot of connectivity and mutual benefits, a lot of its potential can go unharnessed too if we do not develop cultural understanding. Talking particularly in context of Asia and Europe, both regions have not only wide geographical expanse but also cultural expanse.

To begin with, Asia- Europe Meeting (ASEM) partners represent 55% of global trade, 60% of world's population, 65% of global GDP and 75% of global tourism. In absence of Inter-cultural understanding, all the pillars of mutual support could suffer. The cultural differences can "cause difficulties in trade negotiations and business partnerships" for both Europe and Asia (Brien, 2001). It is "essential to build up personal ties and networks which provide basis of trust". Apart from business, wide access and democratisation of knowledge are equally important in enhancing inter-cultural cooperation between both the continents. Inter-cultural cooperation should take into account most potent element of human civilisation- knowledge and should bring about change in its structure while making it more accessible. For "knowledge structure determines what knowledge is discovered, how it is stored, and who communicates it by what means to whom and on what terms"(Susan 1994). Today, knowledge is at crux of any major advance taking place in technological, economic, political and social sphere. Another important point is, education and knowledge are most potent symbols of culture. They are the most visible symbols of cooperation among cuturally diverse areas as of Asia and Europe. Mode and dissemination of knowledge varies from place to place. Digital storytelling offers a potential here by making the dissemination of knowledge more democratic.

Asia and Europe face challenges of terrorism and separatism. Another parallel development along with advancement of technology is the rapid growth of insecurity in international relations. There is intolerance of all sorts- varying from racial, ethnic, class, color etc. It seems like there is a parallel development of world becoming best and worst place. Against this backdrop, it is not only necessary but imperative for Asia and Europe to enhance inter-cultural understanding. In this regard, informa-

tion and communication technology can come to the fore. Another question which comes to the fore is why is it important to promote intercultural understanding. Bhikhu Parekh(2000) argues that, " Different cultures represent different systems of meaning and visions of the good life. Since each realizes a limited range of human capacities and emotions and only grasps a part of the totality of human existence, it needs others to understand itself better, expand its intellectual and moral horizon, stretch its imagination and guard against the obvious temptation to absolutize itself... Since each culture is inherently limited, a dialogue between them is mutually beneficial. It both alerts them to their biases, a gain in itself, and enables then to reduce them and to expand their horizon of thought".

In this regard, digital storyteliing can play an extremely important role. At the very basic, Digital Storytelling is a process of telling stories through digital means. It includes a range of digital narratives- web based stories, interactive stories, hypertexts and narrative computer games. Not only it can be used for sharing personal narratives, but of late it is also used for advertising and promotion efforts by commercial and non profit enterprises. Dana Atchley, pioneer of digital storytelling once remarked that digital storytelling will result in "old world" of PowerPoint slides filled with bullet point statements being replaced by a "new world" of examples via stories, accompanied by evocative images and sounds."

Digital storytelling is a modernized and diversified version of ancient storytelling. With the increasing influx of globalization and movement of people, goods and ideas across territories, it is important to understand the significance of cultural markers and the attitudes and lifestyle. Digital Storytelling provides a platform where diverse people can share their life stories with others. This revolution in storytelling- in the form of movies, videos, personal narratives could become possible because of the advent of accessible media production techniques on a large scale. Digital cameras, digital voice recorders, windows movie maker have changed our world drastically. Today, rather than being receiver of the information, we are also the provider. The narratives, stories are no one's monopoly. This popular media is crucial in understanding the lifestyle, culture of the other geographical territory. These new technologies allow individuals to share their stories over the Internet on YouTube, compact discs, podcasts, and other electronic distribution systems. Not only limited to people to people personal narratives, they find wide usage in classrooms- from primary to university level. Pictures speak a thousand words and digital stories can serve as a medium to integrate conventional knowledge of the subject matter with the newer forms of medium of electronics and communication technology. Students can work individually or collaboratively to produce their own digital stories. "Once completed, these stories can easily be uploaded to the internet and can be made available to an international audience, depending on the topic and purpose of the project". (Roland, 2006)

Technology enables those without a technical background to produce works that tell a story using "moving" images and sound. The most important characteristics of a digital story are "that it no longer conforms to the traditional conventions of storytelling because it is capable of combining still imagery, moving imagery, sound, and text, as well as being nonlinear and contain interactive features". The expressive capabilities of technology offers a broad base from which to integrate. It enhances the experience for both the author and audience and allows for greater interactivity.

Digital Storytelling finds role in primary and secondary education as well. Learning needs would be different for various age groups. For students in primary grade, requirements would be colorful pictures, appropriate music and narration is required. While for upper elementary and middle school students, content related digital stories can help understand a complex, layered concept. Also added advantage is when students themselves participate in process of Digital Storytelling, they build several literacy skills- Research skills by critically analyzing the information, writing skills when developing a script, and organizational skills by managing the scope of the project within a time constraint, technology skills and presentation skills etc.. Students also gain interview, interpersonal, problem-solving and assessment skills through completing their digital story and learning to receive and give constructive criticism.

Teachers can also make wide use of it . It can be introduced into curriculum and can aid in global participation, collaboration and communication skills. Besides, incorporating it into the curriculum, information technology skills can be imparted to students such as "information literacy, visual literacy, global awareness, communication and technology literacy" (Komplar, 2007). The educational goals for teachers using digital storytelling are to generate interest, attention and motivation for students of the "digital generation" in classrooms. Digital storytelling also "capitalizes on students' creative talents and allows their work to be published on the Internet for others to view and critique".

Digital storytelling find use in museums as well. Worldwide, this facet of technology has been incorporated in various museums. for instance, the project culture shock in North East of England. the project inspires people to create their own digital stories, which are then added to relevant museum collections. Human experiences embody narratives. Digital storytelling is being used by many different museums. The largest project, "Culture Shock", is currently taking place in the North East of England. This project is using museum and gallery collections to inspire people to create their own digital stories, which are also being added to the relevant museum collections.

Another common element which unifies the world is religion- universal element and a potent symbol for inter-cultural cooperation. For instance, "Digital faith stories" initiated in 2005 by church of Norway where young people raised questions of faith and life." Digital media therefore contribute to trends in the personalization of religion, as "individuals can reflect on their own narratives and can also participate in collective reflection on what it means to assume religious identity in particular context" (Clark 2014).

Digital storytelling finds use in libraries as well. It basically acts as a platform for people to create digital stories which may act as a oral archive from the public perspective. Multiple facets such as personal experience, incident, description of events or space are the main focus areas. For instance- the popular story centre model (formerly centre of digital storytelling) served as the basis for 30 digital storytelling telling libraries spreading from northern down the coast to southern California.

Digital storytelling has emerged as a new area of interest in business too. The practicality of digital storytelling has led to opening of avenues with development of marketing in digital world. Digital storytelling is used as a tool to facilitate consumers in sharing their opinions based on the experience about a product/service. Startups are adopting digital storytelling as an innovative way to pitch their ideas to the potential investors and also to carve out their space in market by reaching potential customers.

Not only in business and education, there is a humanitarian touch to digital storytelling as well. With the proper emotional and cultural supports in place, digital storytelling can contribute to personal healing and intergenerational reconciliation. The healing properties of storytelling, for both groups and individuals are increasingly being recognized and it can be deployed as a tool to understand people. When we share stories, we not only share our personal experiences but also share hope. Storytelling binds the community, "Storytelling is part of the healing journey, and it can influence self-esteem, self-confidence and personal growth". When grounded in oral tradition and Indigenous history, digital storytelling has the power to lead to individual and collective healing. Inspite of many advantages, digital storytelling has its own limitations. One of the limitations to digital storytelling involves technology. Even in the best of times, technical glitches with computers, recording devices, image projectors and other technological equipment will happen. Another issue is with the access. The internet penetration in remote and rural areas is not deep enough. The European commission had set a target of complete digital penetration by 2020, which has still not been achieved. "The European Commission set a target 7 years ago to have broadband internet access everywhere in the EU by 2020. So far, there are still a lot of rural areas in the bloc with bad internet connectivity". (Stup2017) Limited and interrupted internet access can pose problems for storytellers who want to review and

download programs and other project related materials from the internet. Digital storytelling does require the use of technology to produce digital stories. As such, video storytellers will require a basic understanding of how computers work and general knowledge about performing basic computer operations, such as opening, saving and transferring electronic data files. Another issue associated with the use of digital storytelling is "sentimentality". Kelly Mc. William and Sharon Bickle (2017) argues that "excessive, self indulgent and banal use" can "manipulate audiences into tender emotional responses". However, there is a plus side to this as well. The sentiment value of digital storytelling can be used in cultivating a sense of acceptance among the people cutting across nationality, race, ethnicity and color. "The sentimentality of the digital storytelling process – the focus on the personal, the vulnerability and the affective connection established – leads to an interest in the Other, which is necessary for an engagement across difference. When we see one another as humans after establishing this affective connection, we might be invested enough to continue our work of critical self transformation" (Gachago 2015). Despite the various limitations associated with digital storytelling, there are several advantages to using modern technology for telling stories. Digital storytelling provides a far wider reach and hence one can connect to large number of masses. The messages can be shared far and wide, instantly and simultaneously. It somehow make common masses free from complexity of writing process. Making videos around personal narratives can be more emotionally engaging than any other medium. Social media is an inalienable part of life today and younger generation use social media as a part of daily routine. Digital storytelling can be used to capture the attention of youth. it can have a powerful impact in terms of messaging. Digital storytelling is versatile, can be used anywhere, used across a range of digital devices, its messages can cut across people of all ages, social groups and languages. It can be done either in video or audio format. In a conclusive note, while digital storytelling can be an engaging medium, some challenges are associated with the implementation. Though our society has become interconnected digitally, policymakers and educators should take into account issues of equal access to all, keeping in consideration socio- economic background and learning needs of people. Digital storytelling can be a powerful instrument for inter-cultural cooperation and understanding world at large.

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Educational cooperation through virtual learning and blended formats: how to assure its quality?

Educational cooperation through virtual learning and blended formats: How to assure its quality?

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Educational cooperation between countries represents the positive relationship between the entities thus contributing to the social, economic and human development and security, ensuring academic mobility, a greater level of forbearance and reverence for cultural diversity. Educational cooperation from ASEM's perspective, an active international regulatory body, revolves mainly around the following points:

- Industry Institute Linkages
- Professional Education and Training
- Academic mobility, lifelong learning, and enriched learning experience
- Quality assurance and credit point recognitions

In addition ASEM has three pillars around which the regulatory bodies initiatives revolve and they are as follows:

- Political - ASEM's political pillar focuses on international crisis, security, multilateralism and initiates dialogue beteen the policy makers of Europe and Asia.
- Financial and Economic – The activities that revolve around this pillar include enhancing trade and investment frameworks, fostering dialogue on financial crisis and issues, finally aiming at promoting economic stability and progress.
- Social, Cultural and Educational –This pillar encompasses a wide range of enhanced contacts and dialogue between the two regions on topics such as education, social protection and employment, and cooperation on the protection of cultural heritage.

Under the Educational pillar a number of initiatives are hosted to enhance cooperation and mobilization beteen Asia and Europe.In the recent years, several international bodies like UNESCO, UNHCR and UNICEF, and institutions under the World Bank Group have been driving varied initiatives to make education equitable and accessible for all and intentional attempts are being made by developed countries to promote education in developing countries. UNESCO has adopted the blended learning approach to help promote inclusive education for even those who are marginalized or are in vulnerable situations. Initiatives are also being taken to promote inclusive education and ensuring people to people connectivity under the cross border initiatives. Involvement, intervention and initiatives of international bodies together with evolution in learning models have helped in shaping the above action points.

The topics of discussion in this paper has been segmented in the following manner. The paper initially opens up with the discussion on ASEM being a platform encouraging dialogue and communication for sustainable development and growth and its contribution towards educational cooperation and mobilization. It then discusses both the continents challenges with respect to Educational Cooperation and Mobilization and their initiatives to intensify the cooperation. Next the paper discusses about Educational cooperation and strategy for regional mobilization and their initiatives and plans for future. A highlight on the joint initiatives of Asia and Europe has also been reported in the paper. The succeeding sections of the paper then discusses on the innovative pedagogical approaches

as blended learning thus promoting a mix of physical and virtual mobilization amongst students across regions.The parameters identified and responsible for Educational Cooperation and Mobility between the continents considering the network infrastructure,internet usage, ICT penetration and that of virtual learning (focus on inclusion), digital skill acquisition,secondary and tertiary education scenario and fund mobilization have been considered for discussion in this paper. The last section of the paper opens with a discussion on creating a quality assurance framework for blended learning initiatives applicable to schools,universities, countries and continents for enhancing cooperation and mobilization under cross border initiatives. The framework considers establishment of intercontinental and regional guidelines, national government interventions, policies and procedures in amalgamation with guidelines from external quality assurance providers, a shared generic framework for internal quality assurance and standards along with institutional governance for the assurance and adoption of blended learning best practices. It is expected that this initiative (the adopting of blended learning) while restricting actual physical mobility or even anticipating chances of brain drain to the West (as is the current scenario) can assure retainment of talent and skill within the country and the continent acting as a positive indicator to nurture and strengthen one's own innovative and intellectual potential to become a knowledge based economy and foster person to person ties.

Current scenario in Asia and Europe – Educational Cooperation and Mobility

Asia Europe Meeting (ASEM) has been instrumental in planning and executing several initiatives and have conducted numerous Education Ministers and Stakeholders Meetings and Conferences where in issues in these following areas have been rigorously addressed:

- harmonizing qualifications and mobilization
- increase employability and cooperation
- raise productivity and sustainability
- creation of skilled workforce
- promoting inclusion etc

It has been proved that they bring huge benefits for students,staff and individuals related to the development of new insights and vital crosscutting skills, attitudes such as tolerance, confidence, problem-solving ability and curiosity which are the key traits being looked for by an employer in his employee across the globe.

Educational Cooperation between Europe and Asia started with the pioneering initiative of Asia Europe Foundation (ASEF) which is the outcome of ASEM's process in 1997. As already stated one of the prime areas of concern of ASEM countries, which sits at the top in priority by universities and by national governments in its policies and programmes, is the educational cooperation and more so in the segment of Higher Education. To find a solution to the above, promoting ICT applications in human resource development, capacity building, narrowing the digital divide between developed and developing countries, increase educational cooperation between countries through university linkages and fostering regional and sub-regional e-learning networks to optimize on the use of ICT resources were some of the key measures taken by European Commission, Association of South East Asian nations, ASEM etc. In addition to ASEM's initiatives several other joint initiatives of Cooperation and Mobility taken by both the continents are portayed below:

Joint initiatives

- Launch of **ASEMUNDUS**, an initiative of German Academic Exchange, with the aim of networking, promoting and implementing joint initiatives in terms of projects, study, funding options between higher education institutions from Asia and the European Union. Participating countries being Indonesia, South Korea and Thailand, along with Japan and China etc. National Agencies of Austria, Belgium, Cyprus, Estonia, Hungary, Latvia, the Netherlands and Poland, launched ASEMUNDUS in connect with Germany within the European region. Currently, 7.7 % of all Erasmus Mundus courses have an Asian partner or associate partner in their consortium.
- German Academic Exchange/DAAD's contribution for Structural and Long term Educational Cooperation attributing to Research and Development and Mobility has also been initiated.
- Implementation of Linking Organisation through University Synergy (LOTUS) aiming at cooperation through mobility of students for undergraduate, post graduate and doctorate programs, academic and administrative staff mobility with regard to training teaching and research is a strategic initiative taken by the continent. But still there are a lot of challenges encountered by the continents with regard to building a strong cohesive and conducive platform and they are as follows:

Challenges Intercontinental

- Language barriers, different academic calendars, diversity in teaching methods, intercultural discrepancies, absence of learning agreement and outcomes.
- Crucial selection of Universities to initiate joint study programmes with respect to Diversity and Expertise with the compliance of all national legal frameworks and accreditation procedures and the tuition fee policies of partner institution.
- To ensure and maintain full support of all Universities involved, restrict size of consortium for effective coordination, accordance of dual degree by Universities and ensuring adequacy in academic and administrative courses.
- Creation of joint curriculum and degree courses and the concept of sustainable funding for joint degree programmes with massive changes brought to the financial structures.

These challenges are being addressed jointly by European Commission, European Higher Education, Association of South East Asian Nations and other bodies through projects and initiatives like ASEMUNDUS, LOTUS, and MIND etc.

Current scenario in Asia – Educational Cooperation, Mobility and Blended Learning

Asia is more of a cultural concept than being a homogeneous entity and has a large and growing number of dual-mode learning providers. E-learning, B-learning, and M-learning are being implemented in universities, schools, workplace training, and non-formal education modes. Some of the Asian nations such as Japan, China, and South Korea have the most advanced ICT infrastructure and some are demarcated by the prominent digital divide. Many Asian institutions, cyber universities, and international consortia are entering the blended learning market and are involved in cross-border b-learning initiatives promoting inclusive education practices. With b-learning penetration even up to 60 pc in developed countries in Asia, the continent as a whole still continues to reel under the differences in the socio-economic circumstances, traditions and beliefs, philosophies and practices with a topping up of fusion of Western and Asian thinking and practices. Several other challenges acrrue to the following:

Challenges Intra-continental

- Diversity, gender Issues, lack of infrastructure, cost of internet, cyber security awareness
- Low representation of minority groups, criminalization of freedom of expression.
- Internet politics, governmental intervention, role of media, multiple stakeholders, limitation of network and collaboration, cooperation and collaboration of Internet organizations.
- Lack of standardization and identification of Internet core values, lack of transparency and accountability

But apart from the challenges encountered across the Asiatic belt several initiatives have been taken across the continent to facilitate Cooperation and Mobility and they are as follows:

- Launch of University Mobility Asia Pacific Credit Transfer Scheme
- The Launch of University Mobility Asia Pacific Student Connection Online (USCO)
- ASEAN International Mobility for Students (AIMS) with 11 countries.
- Launch of Internationalisation Award and study visits by SEAMEO Regional Centre for Higher Education and Development and launch of CAMPUS Asia Program between Universities of Japan, Korea and China.

As of 2015 Asian countries sent an estimated 2.3 million degree seeking students abroad, and attracted just 928,977 in return. But now the scene is changing with Asian powers trying to balance mobility between the continents. The given fact sheet justifies the work in pogress status of Asia with regard to the initiatives of mobilization.

FACT SHEET	
Asian Students expected to circulate intra regionally	1.4 million
Internationally mobile students from Asia account for an estimate of the world total today	55 %
7 Asian countries to reach top 25 economies by becoming knowledge based economies	2050
China and India are far and away the most dominant senders of students	
Launch of **Asian Universities Alliance**	15 Universities
China to expand Higher Education market International recruitments to be done by China, Japan, South Korea Taiwan and Malaysia	2050
One belt and One road Initiative to promote student mobility across 60 European and Asian nations and mostly the affected regions.	2020-2025

Table 1 Fact Sheet – Asian region cooperation and mobility

Several countries within Asia have chalked out a plan named Education 2020 to attract foreign students in larger numbers and their ambitious target is as follows:

Country	China	Japan	Malaysia	Taiwan	South Korea	Thailand	Indonesia
Inbound Student Target	500000	300000	250000	150000	200000	In thousands	In thousands

Table 2 Inbound Mobility Target

The developing or the least developed countries where the awareness has just set in and Government is trying to strategize on the cooperation and mobilization show some optimistic trends for sustainable development through Education in terms of economic growth and they are as follows:

Country	Initiatives
KAZAKSTHAN	Outbound students to attain a percentage of 20 pc by 2020.
SRILANKA	Equitable access to Education (vocational and skill development program and employment rate to be increased from 57 pc in 2015 to 62 pc by 2021.
United Arab Emirates (UAE)	Heavy investment in Education and Innovation thereby achieving a world-class education system and competitive knowledge economy (Vision 2021). Promote itself as a regional and global education hub, particularly for higher education.
Saudi Arabia	Investment in education and training programs to develop a skilled, knowledge-based local workforce and with a vision to attract global workforce in future. Completed 50 technical colleges, 50 girls' higher technical institutes and 180 industrial secondary institutes. Creation of training placements for about 500,000 students, including 250,000 girls.
Iran	Vision 2025 puts Education in priority and Vision 2040 prioritizes Education in Science, Technology, Engineering and Management.
Kuwait	To diversify to Education for economic growth with a focus on mobility
Qatar	National Vision 2030 is driving for Knowledgebase Economy and mobility
India	With 25 years into association with ASEAN and promoting people to people connectivity through student and faculty exchange, innovative schemes as Think Tanks, Hackathon's to identify, nurture and utilise talent from the entire sub-continent.ndia's initiatives with European Union constitute of Launching Global Initiative of Academic Networks which aims at improving the quality of higher education in the country through international collaboration and high quality international academicians for delivering short-term courses and programs in Indian institutions and other initiatives as well.

Table 3 Countries and their cooperation initiatives

With outbound mobility of Asian students to West, standing at 55 pc of the total population Asia should first try to find a balance which would only be possible with the National Governments playing a key role to resolve issues with regard to restriction in funding, credit recognitions, migration restrictions etc and should try to build and promote the ICT Infrastructure across the regions for penetration of innovative educational pedagogies for attracting foreign students, enhancing virtual mobility for sustainability, opportunity realization and investment.

Current scenario in Europe – Educational Cooperation, Mobility and Virtual Learning

On the other side European Commission's assurance of modernization of higher education through the modes of e-learning and blended learning is to bring in a sea change of educational practices. EC's chief focus area is to make education free and accessible for all ,augmented with enriched analytics, lifelong and personalized learning while maintaining security and privacy, professional develop-ment, enhanced retention and internationalisation. EC is also encouraging collaborative cross-border initiatives with support from Bologna Process and European Union Modernization Agenda and attainment of educational rates at emerging economies through digital modes. European Commission's notion is that the quality assurance guidelines around these forms of learning can provide due credit and recognition and they can be as reliable alternatives to the traditional degree programmes. There has also been a massive transformation in the definition of digital competency

which EC has taken a note of owing to low digital skills till date. Till date a number of initiatives have been carried out with regard to strengthening cooperation and intensifying mobilization and some core objectives have been identified under the European Shared Agenda (chiefly focussing on EU) to promote the same:

- Recognition of qualifications, both at the level of schools and higher education with modernization of curricula.
- Making learning mobility a reality for all and boosting language learning, preserving cultural heritage
- Fostering a sense of European identity and culture and creating world-class European universities that can work seamlessly together across borders.
- Improving education, training and lifelong learning driving innovation in education in the digital era and giving more support to teachers.

The fact sheet of Europe owing to the initiatives taken for cooperation and mobilization are as follows:

FACTSHEET
• The project Move2Learn Learn2Move for young Europeans to discover and learn about Europe
• Erasmus+ a program operational from past 30 years has helped 9 million people to study, train,teach, or volunteer in another country. Erasmus programme involves 230 000 HEI students, has budget of EUR 14 billion, 33 pc earmarked for Higher Education. Till today only 3.7% of young people have the chance to take part in this type of mobility (Erasmus+).
• Formulation of European Education Area for education, innovation and research as an outcome of Sorbonne Process, the Sorbonne – Bologna Process, the Bologna – Praha Process for several cross border initiatives.
• European University Association (EUA) a pan-regional university association representing over 800 universities in the European Higher Education Area supports policy development and carrying out European led projects for higher education reform and development.
• Creation of a School of European and Transnational Governance for seamless cooperation.
• Europe currently attracts 45% of all international students and European Commission's Study in Europe project implemented for increased mobilization.
• EU student card roll out by 2019 , ensuring student mobility across borders by 2025 and tracking student performance through it.
• Support of European Commission for ESAA (Erasmus + Student and Alumni Alliance) comprising of Alumni Association (EMA), Erasmus Student Network (ESN), garagErasmus (gE) and OCEANS Network.
• EC's key target is to bring considerable increase in the number of young people completing third-level education (at least 40% of 30-34 year-olds by 2020 as per ET Strategic Framework).
• Renewed EU agenda for higher education' (COM(2017) 0247) focuses on four priority areas, of which one is widely accessible inclusive education with focus on Innovation and Technology
• European Parliament active intervention to foster close cooperation between member states

Table 4 Factsheet – European Regional Cooperation and Mobility

A research has also been conducted by taking into account countries which are not under the European Union to explore the extent of cooperation/mobilization and initiatives related to the subject and following are the case based observations:

Switzerland Initiatives (Advanced Economy)

International mobility in education with implementation of NQF, International cooperation in vocational and professional education and training (IC-VPET) and continuing education initiatives. Active participation in the framework of OECD, UNESCO EUROPEAN COUNCI with an aim to promote mobility.

Luxembourg Initiative (Advanced Economy)

Ensure that 66% of the working population between the ages of 30 and receive university education and earn university degrees between 2014 and 2020 underlying a robust mobility initiative.

Norway Initiatives (Advanced Economy)

- Implementation of DIKU (formerly Norwegian Centre for International Cooperation In Education)
- Launch of NORPART (Norwegian Partnership Programme for Global Academic Cooperation) supports academic partnerships and student mobility with an emphasis on Master level between higher education institutions in Norway and selected developing countries.
- The Indo-Norwegian Cooperation Programme in Higher Education and Research (INCP) is enhancing higher education links between India and Norway.

Iceland initiatives (Advanced Economy)

- European Erasmus and Nordic Nordplus for Educational Cooperation and Mobility. Availability of 570 Erasmus programmes agreement with majorly Nordic and Eastern Universities in EU state.
- Participation in two Erasmus Mundus joint master programmes with European universities, creation of joint masters programmes with Nordic Universities, so called Nordic masters.
- Excellence in Research by increased international cooperation and formulation of an effective knowledge triangle by establishing strong links between Education, Research and Business.

Turkey initiatives (Emerging Economy)

- Involvement of Turkey in Bologna process from 2001 with good performance in Higher Education Area.
- In 2013, Turkey has gained impetus on international mobility in higher education. "Study in Turkey" web-site (www.studyinturkey.gov.tr) was designed to increase the number of foreign students in Turkey.

Developing Economies

Bosnia Herzegovina
- Development of Higher Education in Bosnia and Herzegovina for the period 2016-2026.Establishment of (HEA), (CIP; ENIC BiH) by the FHLE in Bosnia and Herzegovina.

Kosovo
- Kosovo Strategic Plan for Higher Education. Higher Education Article 2 emphasizes on student and staff mobility.

Moldova
- Education Development Strategy of 2014-2020.Implementation of Education 2020 strategy by Rep of Moldova with a focus on mobility.

Russia
- Participation of Russian Federation impacting internationalization of Education, with high degree of autonomy. Strengthening long-term intensive inter-university cooperation and networking.

Serbia
- 40% of students finishing the 4-year vocational secondary education and 95% who finishing general secondary education to enter the 3rd cycle.50% of student's enrolment –Bachelors to Masters programme and 10% of Masters to PhD programme and with a future vision to attract students .

Ukraine
- 2016 Tempus & Erasmus+ Structure Projects outcomes ensuring internationalization and mobility. ATHENA Fostering Sustainable Autonomous HE Systems in the Eastern Neighbouring Area- A mobility initiative.

TABLE 5 European Developing Economy's status on Educational Cooperation

Having discussed the scenario in the European zone, it is appropriate to justify that the research on the said topic with respect to regional and intercontinental cooperation and mobilization has been undertaken to assert and assess that substantial work has been done in this segment and that there is a continuous need to address and initiate such activities to promote useful contacts beteen the institutions across the regions aiming for progression,mobilization to accord a global citizenship status.The paper further addresses the topic across the usage of innovative pedagogical approach i.e. blended learning and goes on to explore the parameters required to effectuate such innovative strategies. Not limited to the implementation and penetration aspect, the paper moves forward to discuss a qualitative framework to impart education successfully with desired learning outcomes,using innovative strategies to promote virtual mobilization.The factors hence taken into consideration to evaluate and create a benchmark for blended fomats are as follows:

- Interconnectivity beteen Europe and Asia
- Network Usage,Internet Penetration,ICT readiness across Europe and Asia
- E-learning ,B- Learning Penetration across Europe and Asia and Fund Mobilization
- Blended readiness and Format Usage across regions

Interconnectivity between Europe and Asia

Prominent networks like Trans-Eurasia and its interconnection with the GEANT2 network of European sub continent for increased collaboration in education and research between Asia and Europe were some initiatives which were given a major impetus ten years back. With the advent of e-learning and blended learning concepts, methods and tools there is an additional boost given to the Education sector from all regulatory bodies to use the above network infrastructure to further upgrade the digital competencies in every individual with an aim to accord a global citizenship status with exposure to multiple and diverse opportunities across the world. A small brief on GEANT and TIEN reflects on the infrastructure potential both the regions have.

GÉANT

The pan-European research and education network which interconnects Europe's National Research and Education Networks (NRENs). This network has 50 million users at 10,000 institutions, 500 GBPS of assured bandwidth and is being utilized for research in areas such as energy, the environment, space and medicine. Other countries to which it connects to are as follows:

North America	Middle East	Latin America	North Africa
Caribbean	Southern and Eastern Africa	Central Asia and the Asia-Pacific Region	Western and Central Africa

Table 6 GEANT Network connecting other countries

TIEN

The Trans-Eurasia Information Network (TEIN) provides dedicated high-capacity Internet connectivity for research and education communities across Asia-Pacific. With over 50 million users, TEIN is the world's largest research and education network. It currently interconnects universities and research centres across Asia and then world

China	Malaysia	Laos	Bhutan	Pakistan
India	Nepal	Thailand	Sri Lanka and Cambodia	Japan
Indonesia	Singapore	Vietnam	Philippines	Korea

Table 7 TIEN Network connecting in other countries

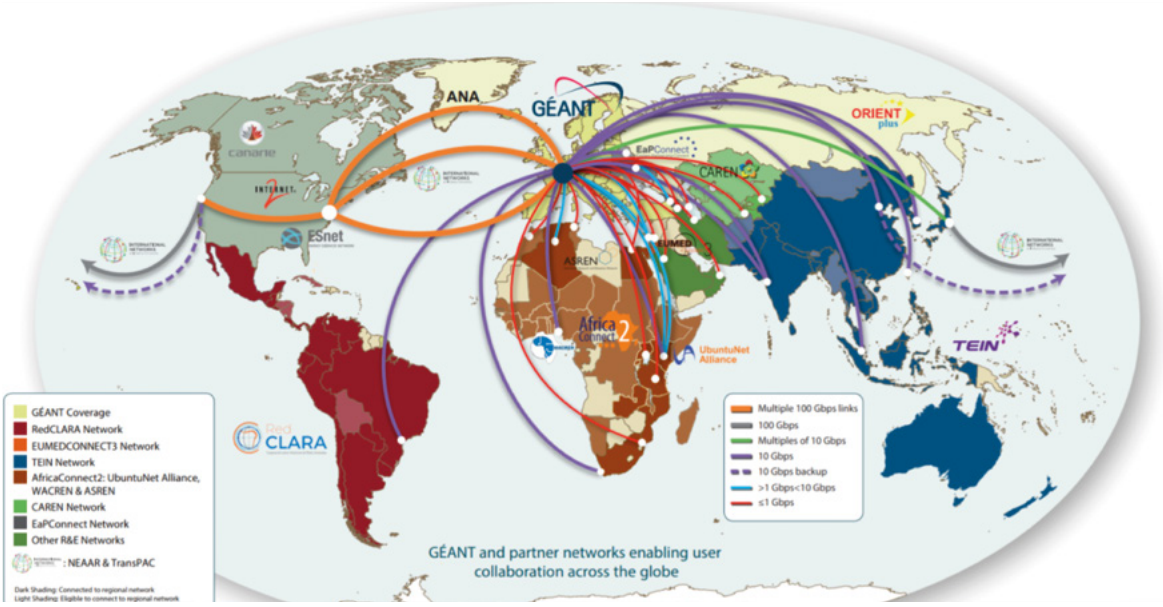


Figure 1 GEANT NETWORK

The immense potential of this network can bring phenomenal results if joint research initiatives can be carried out by increasing number of universities participation across both the regions, but in Asia till date only around 30 percent of the countries are connected through the research networks.The successful launch of TIEN Cooperation Centre and Asia@connect programme is a motivating indicator to infer that TIENS regional reach will increase subsequently in coming years, rendering a promise towards mobilization through blended learning.

Network Usage, Internet Penetration, ICT readiness across Asia and Europe

It is said that the gap in internet usage between emerging and advanced economies is narrowing but there are still significant numbers of people in the world who do not use the internet. Among the Asian countries, research for internet penetration and usage presents the following figures: China's as of 2018 is at 71 per cent followed by Japan at 76 per cent, Vietnam 64, Philippines 56, Indonesia 30 and India 25 pc respectively. Penetration rate in Asia as of 2016 was as follows and is growing at a rate of 2000 percentage.

World Regions	Population (2016 Est.)	Population % of World	Internet Users 30 June 2016	Penetration Rate (% Pop.)	Growth 2000-2016	Table % Users
Asia	4,052,652,889	55.2 %	1,846,212,654	45.6 %	1,515.2 %	50.2 %

Figure 2 Internet usages in Asia

At the same time a fact sheet on Asia with regard to internet penetration and usage gives the following statistics and the scenario.

China, the country with most users (642 million in 2014), represents nearly 22% of total, and has more users than the next three countries combined (United States, India, and Japan)
India is the one with the lowest penetration: 19% and the highest yearly growth rate
Concern is with regard to the least developed zone as Timor Leste Myanmar and Afghanistan etc with barely 5 pc internet penetration.
Challenges • Asia being diverse and having limitations is constrained by rapid technological changes and accelerated internet governance system. • A big digital divide segregates people into classes: - with access and information and without access and information. • Issues surround open standards, cost, awareness and collaboration and quality of internet service. • LDC's in Asia suffer from lack of knowledge, technical support and barriers in adoption of standardization in internet governance. • Nine in ten people now have access to electricity in Asia and the Pacific. • Broadband internet subscriptions increased, but 58% of the region's population remains unconnected to the internet. • Internet Adoption Barriers: Infrastructure, Relevance, Low income and Gender Gap are some of the responsible factors.

Table 8 FACTSHEET ASIA

A further survey on the adoption of ICT curricula nationwide shows that more than 50 pc of the countries have adopted ICT in the tertiary education level and 30 pc of the countries across all levels as shown below.Tertiary Education has seen a huge rise in South Korea much above 80 pc and South Asia just above a meagre 20 percent a projection of drastic imbalance.

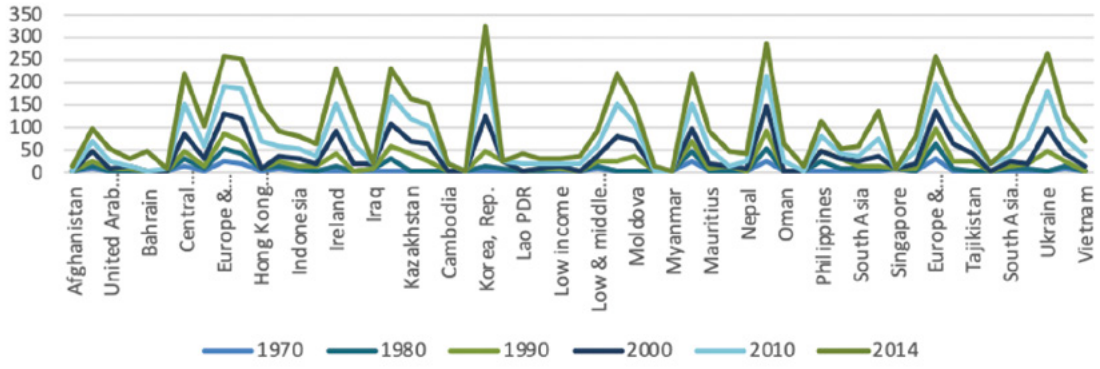


Figure 4A Enrolment of Tertiary Education in Asia

Country	Primary	Lower Secondary	Upper Secondary	Country	Primary	Lower Secondary	Upper Secondary
Kyrgyzstan	N	Y	N	Bangladesh	Y	Y	Y
Kazakhstan	–	–	Y	China	Y	Y	Y
Cambodia	N	N	Y	Hong Kong	Y	Y	Y
Myanmar	N	N	Y	Macau	Y	Y	Y
Nepal	N	N	Y	Georgia	Y	Y	Y
Sri Lanka	N	N	Y	Indonesia	Y	Y	Y

Armenia	N	Y	Y	Iran, Islamic Rep.	Y	Y	Y
Bhutan	N	Y	Y	Japan	Y	Y	Y
Lao PDR	N	Y	Y	Malaysia	Y	Y	Y
Philippines	N	Y	Y	Maldives	Y	Y	Y
Samoa	–	Y	Y	Mongolia	Y	Y	Y
Thailand	Y	Y	Y	Singapore	Y	Y	Y

Figure 4b ICT in National Curricula in Asian Schools

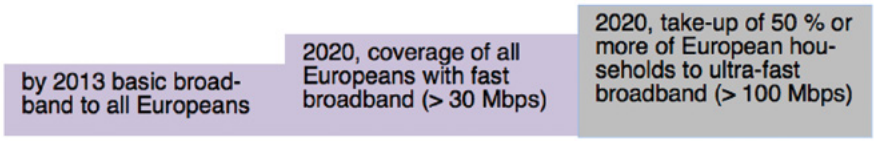
With regard to ICT penetration in Asia few other facts related to countries are as follows:

Digital Bangladesh by 2021	Singapore-FutureSchools by 2016	Myanmar's initiative (MIDO and MNO Telenor) 100 tech based centre's
Indonesia's KBS 2025	Malaysia-MEDO and Asia e-University by 2013	Iran's launch of National Internet Project
SriLanka using Mobitel and MODES since 2011 and COLOMBO University launch of online courses	Digitization of Schools by Nepal	Palestine - ICT Framework and infrastructure for Education finalized in 2015
Vietnam's initiative to promote digitization using Viettel	Laos initiative with China for ICT based Education 2012	Afghanistan's e-quality alliance through Angel
Launch of Telecentres by Pakistan	Cambodia's five year project to digitize schools	Mongolia 2012 E-Mongolia National Program

TABLE 9 ICT Penetration in Asian Countries

Moreover broadband penetration and infrastructure in Asia i accrues to 75 percent in East and North East Asia while the south and the west regions are way behind.

Moving onto the European Segment the scenario and the statistics (86 pc penetration) show an advancement in all sectors with regard to the parameters identified-Attainment of Tertiary Education, Internet Usage, ICT and Broadband penetration and the statistics show a minimum of 30 pc growth with re-spect to Asian region.The inference drawn or the question which gets raised immediately that: while Asian regions progress is encouraging, the appropriate measure would be to intensify virtual mobilization rather than balancing it across the entire belt, considering the vast population marked at 55.2% against Europe's 6.7% population as compared to the rest of the world. Below figure portrays European Commission's initiative towards building a knowledge base economy:



E-Learning and B-Learning penetration and Fund Mobilization in Europe and Asia

E-learning market continues to Shift, Grow and Evolve with the growing prevalence across geographies, emerging trends and technologies and social/collaborative learning trends and a complicated Learning and Development Industry. E-Learning expenditure is projected to grow at 23.0% p.a. to $255.5 from 2012P-2017P which comprises of:

K-12 Education CAGR of 33.0%	Higher Education CAGR of 25.0%	Corporate market CAGR of 8.%0
Eastern Europe E learning Market 1.2 bn $ as on 2016	Western Europe E learning Market 8.1 bn $ as on 2016	Asia E learning Market 11.5 bn as on 2016

TABLE 10 –E-learning market trends

E-Learning Market size was estimated at over USD 150 billion in 2016 and is predicted to grow at over 7% CAGR from 2017 to 2024 and 331 billion by 2025. Promising players of Asia Pacific include China, India and Japan. E-learning's offset being Blended Learning the topic of discussion for this paper revolves around the usage of this pedagogical mode to promote mobility initiatives in the Education sector.

Blended learning model combines traditional (classroom) training with digital online content and was developed with a notion that teachers can spend more time to create preferred learning pathways for students with respect to their needs using this approach. Analysis shows its effectiveness and eficacy. Investments in education and vocational training have reached EUR 14.6 billion, with a project selection rate close to 30 % and the Commission's Regional Strategy Paper for EU-Asia Cooperation (2007-2013) allocates €44 million for cooperation in Education and Science. Below are few case studies and caselets of Universities showcasing Educational Cooperation and Mobilization, have adopted blended learning approach and with a quality assurance system in place for effective learning outcomes,the ultimate topic of discussion of the paper.

Blended Formats a valuable approach for inclusive education and marginalized students – SDG4 UNESCO!!!!

Case Study Malaysia and its Online Learning Initiatives

- Formulation of Malaysian Blueprint for Higher Education(2015-2025)
- Malaysia is the first country in the world to initiate a nationally coordinated online learning initiative have 7,60000 students, 1,08,000 overseas students and 880 courses.
- In line with Shift Nine of the Malaysia Education Blueprint 2015-2025 (Higher Education) on "Globalised Online Learning".
- Challenges include: time consumption, more training ,change in attitudes, study preferences, Engagement and pattern changes. Some robust indicators of Malaysia with regard to prioritization of Education.

Gross higher education enrolment rate	Public higher education institutions	Private institutions	Colleges	Community college
48%	20	70	410	91

Aim

- Democratising access, technology-driven innovations and personalised learning experiences
- To increase higher education enrolment to 70% of the relevant population by 2025
- 70 pc programs to use blended pedagogical approach
- To eradicate under representation of disadvantaged students
- Fostering acceptance and understanding diversity

Blended Learning - Perception of HE's across Malaysia

- Promotes equality by making available courses and material
- Provides greater flexibility for students who have commitments atop their studies

Sunway University in Malaysia, has implemented blended learning in a range of forms across university degrees and benefits accrued are as follows:

- helps students access subject information and resources
- enhances understanding and impacts positively on students' engagement, retention and academic achievements.

Blended readiness of Malaysia	
Technological Access amongst students	Good
Online Skills and Relationships amongst students bore an acceptable level of readiness	Yes
Motivation (with online distractions and distractions at home) -	Good
Motivation(with context to participation)	Good
Online Audio/Video usage	Good
Internet Discussions ability	Good
Students Success Measures	Instructor Access, Admin and Technical Support, Participative Learning, Early Experience with Online Technology, Course Application- satisfactory
Technology, Peripheral access, Management and Receptive Skills	Good
Blended Learning Awareness	Good (amongst trainee teachers)

Case Study of Malaysian University

Cooperation between the Kebangsaan University, Malaysia and the University of Duisburg-Essen, Germany(A blend of UKM Engineering Innovation and German teaching tradition in Engineering Sciences)

Highlights

Project kick off and funding by German Academic Exchange (DAAD) in the year 2000 resulting in partnership by end of 2000.

Objective to explore opportunities for collaboration with international institutions to expedite international recognition and standing. Kebangsan University, Malaysia and the University of Duisburg-Essen, Germany have same size ,age and structure of Engineering faculty.

Challenges faced

- initially funding requirements
- differences in the educational and cultural aspect
- Language ,academic structure, operation and style
- socio-economic and political systems between Malaysia and Germany

Outcome

- Student and staff educational and professional mobility (20 in number) as a result of the double degree and exchange programmes.
- Openness,adaptibility,global citizenship status
- Joint Phd programs(PromISE) and establishment of research clusters
- UKM and UDE collaboration under European Community and Intercultural Communication under Asia-Link
- European-ASEAN Credit Transfer System (EACTS). Other University partners being Universitas Indonesia and University of Parma, Italy

Progression Snapshot

1998- 2006 Development of international degree courses at UDE	2001 – today Development of double degree programmes at UDE and UKM	2001– 2006 Institutionalisation through the establishment of the Mercator Office and the Multimedia Lab at UKM to establish joint teaching and research	2010 Establishment of the UKM International Office at UDE Double degree PhD programmes at UDE and UKM	2010 Establishment of the UKM International Office at UDE Double degree PhD programmes at UDE and UKM

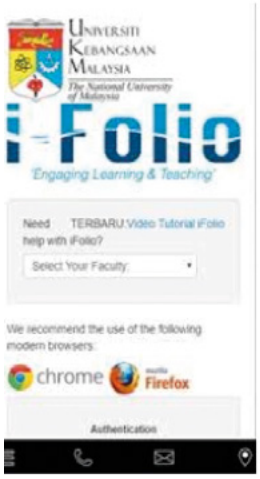
2018 – All programs under Engineering Faculty of UKM in association with UDE are recognized jointly thus promoting educational cooperation

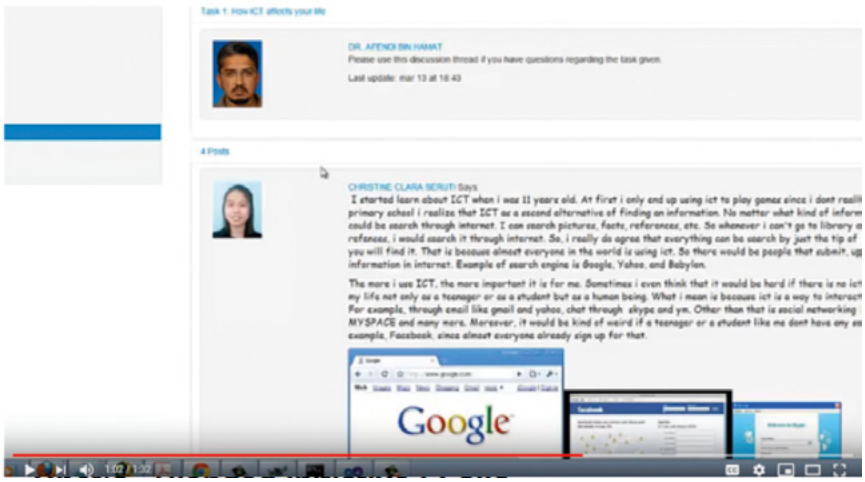
Quality Assurance and Management

- Accreditation of Courses by Malaysian Quality Agency and ASIIN
- Internal procedures with intervention of all stakeholders
- SWOT Analysis performed through one day workshop
- Evaluation and assessment by external assessors with reporting and auditing conducted with generation of positive results.

Cooperation statistics

- University of Duisburg-Essen, Germany Worldwide partnerships - 130 countries
- Kebangsaan University, Malaysia Worldwide partnerships - 30 countries





UKM's Blended Initiative i-Folio

Along similar lines UDE Germany has JACK - An automatic exercise, testing system and feedback system which can also generate visualizations of data structures, detailed result in the teacher's view and various analytics.

Moving on to quality assurance strategies it is ascertained that UKM abides by the Quality assurance guidelines for Blended learning/ E-learning as set by Ministry of Education Malaysia. Similarly a Quality Assurance of Blended Learning/E-learning policy guideline by European Commission is followed by UDE Germany. Following this is another caselet on Educational Cooperation and cross border initiatives from Asian and European University.

Case-let : Educational Cooperation between STT Open University Thailand and 35 other Universities around the world comprise of attaining these main objectives :

FACTSHEET

- Exchange of students, staff (teaching and administrative)
- Joint Development of Academic Programs to be offered at STOU
- Short courses development and delivery at STOU and shared doctoral programs
- Academic development of both the Universities and Curriculum development and exchange of publications course materials, scientific material etc.
- Joint Research and Consultancy Programs and Collaborate in undertaking programs, projects, and other related activities, Organize workshops, seminars and conferences

Case-let: UTRETCHT UNIVERSITY NETHERLANDS BLENDED APPROACH

Under Education Innovation Program UTRETCHT's initiatives are as follows: Optimally digital with Educate-it

- A special programme named Educate-it to innovate education, improve it and make it blended.
- With the help of IT tools, lecturers lift their teaching to a new level.

Experimenting with new forms of education

- Blended education with a Light board in the Teaching and Learning Lab

Funding for Education Innovation

- Educatieve Middelen Pool Teaching Fellowship Programme
- Utrecht Education Incentive Fund

Educational Cooperation

- Initiative - UTRETCH Summer School Highlights
- In 2017, the Utrecht Summer School attracted over 4000 students from over 120 different countries.
- European credits according to the European Credit Transfer System (ECTS) are awarded for most of the courses

Quality Assurance Policy@ UTRETCHT

- In alignment with the Accreditation Organisation of the Netherlands and Flanders

Case let : Nottingham Trent University Online

NTU student survey and result on blended formats and the benefits are as follows :

- the flexibility of being able to complete assignments in any place/at any time
- the convenience of not having to come to campus as often
- the benefits of the online component when job responsibilities and other commitments make it difficult to attend face-to-face classes

Quality Assurance Policy@ NTU

- AACSB and EQUIS accreditation which 1 % of the business schools have attained

Inference

Above case studies are an evidence to Educational Cooperation, Blended Learning and Internal Quality Assurance Frameworks and initiatives taken by countries of these regions

Blended learning and quality assurance for cross-border initiatives

The increased internet access and availability of virtual platforms in current era have encouraged, blended learning (the synthesis of online and face to face teaching-learning) to have paved the way to augment quality, parity, and entrée to learning opportunities for the lifetime of an individual. Scalability and sustainability of blended learning have been a major challenge, hence a framework has already been proposed around strategic dimensions for the attainment of quality in these new reforms while the basics revolve around competence requests, quality in the classroom and online teaching mechanisms and the course organization and communication mechanism. It is as a mandate that Institutional quality policies have to align themselves with the Vision and Philosophy, Curriculum and Academic Delivery, Professional Development, Learning Support, Facilities as in Infrastructure and Support, Institutional Structure and Policies, Partnerships, Research and Evaluation with respect to blended learning to assure the qualitative outcomes envisaged with respect to the stakeholders involved. Transitioning from macro to micro, quality policy for any blended learning initiatives should not only include assessment at the institutional level but also at the course and degree level. As per a case study East China Normal University sites that to device an appropriate quality assurance mechanism it is mandatory that gaps/issues, effectiveness, and strategies to be identified and devised at the course, class and program level for blended learning to become a success. To assure quality, the instructional design and delivery mechanism from content creation to lecture and guided practice and from interactive discussion sessions to project and casebased simulations, from classroom to computermediated, from synchronous to asynchronous and from instructorled to social learning, each aspects outcome have to be qualitatively determined and monitored. Target group specific blended learning initiatives for a course should aptly monitor course aim, course prerequisites, content delivery ,learning target and outcomes, tutor skills, knowledge transfer, and didactic rules, organizational frameworks, and media platforms, adaptivity , a channel for course information exposition and rules for split up of the course content. The curriculum development should implement the 7 R's as discussed by Ron Ritchart. People involved in curriculum design should be a hybrid bunch of instructional designers and content and technical experts with roles and responsibilities very well defined. It is important to have an exchange of agreements with other educational institutions for students' virtual mobility providing e-learning programs. Technology being an enabler, a documented technology plan should be prepared to ensure the assurance of quality. Appropriate learning management tools used in individual and collaborative learning should be in agreement with the IT infrastructure available, with desired connectivity, learning adaptivity, tutoring skills etc. Operating, security and recovery procedures should be in place with a performance management application for troubleshooting purpose. Support for building and maintaining the b-learning infrastructure should be addressed by a centralized system. Tutors should have access to documented resources to render support to student-centric issues with regard to electronically-accessed data. Under the Institutional policy, there should exist an e-portfolio service and an erepository for students to present their dynamics to concerned entities. Appropriate indexing and archiving of e-learning materials in the erepository should also exist. External training service providers should be introduced and they should adhere to all national and international legal requirements and policies. Learning outcomes should match to a national level of qualification and be placed in a context with wider dimensions. The institution should have a clear policy with regard to reviews and updates on learning outcomes and the acquirement and valuation of transferable skills, including e-skills. Institutional policies should have an appropriate grievance registration and addressable system for all stakeholders and should adopt good ethical practices. Periodic reviews with formative evaluation should be carried out to ensure the quality and performance of b-learning systems.

The Quality Assurance agencies or third parties involved in giving accreditations should make assessment supportive for blended learning by being receptive to new pedagogical methods, devise a maturity model for blended learning ,evaluate tutor skills, document standards and collaborate for

ad-option of good practices and have a repository of blended learning experts or onboard them into the team.

For the national government to assure quality and accreditation in higher education it should cultivate drivers for novelty and quality and appraise governing regulations and practices, encourage and accelerate innovation with an expression for change through national strategies. Below the framework designed around the above guidelines which takes into consideration quality guidelines for educational cooperation between borders and quality frameworks established by Government, Agencies and Institutions to create a generic model for assuring quality.

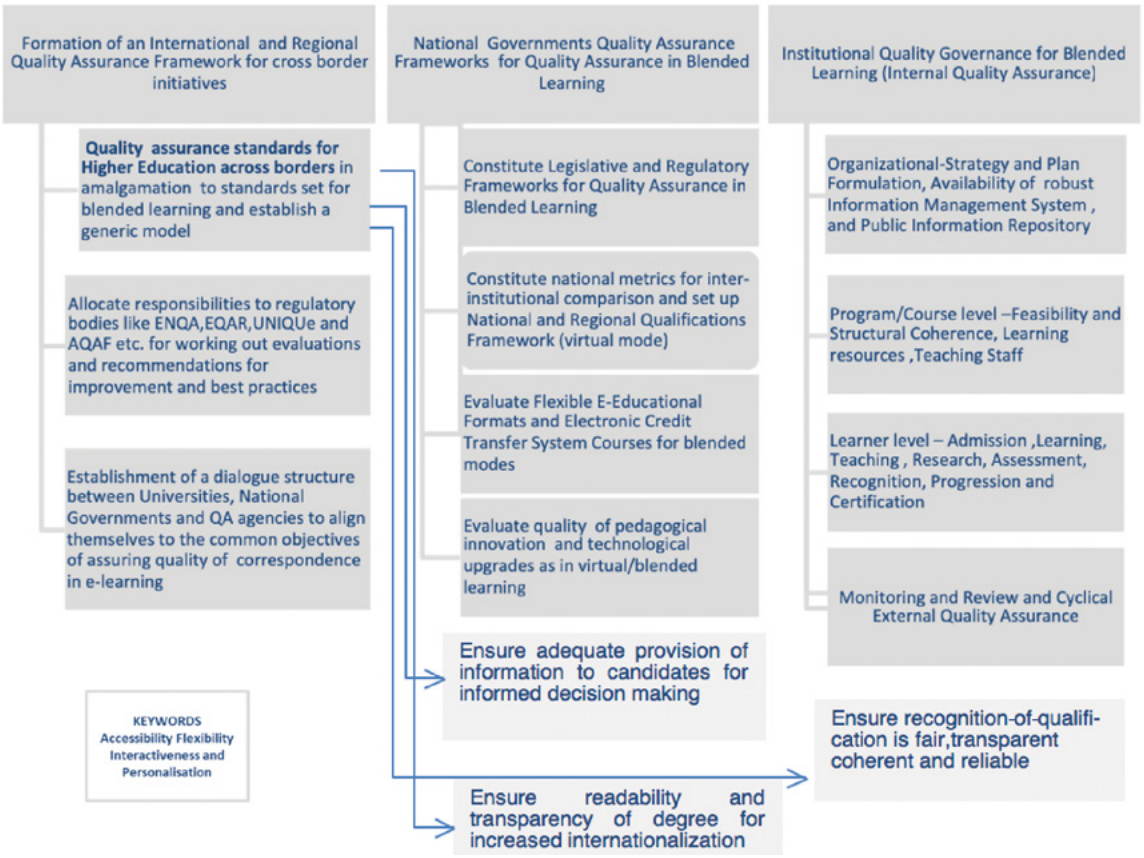


Figure 6 Design of a quality assurance framework for educational cooperation through virtual learning and blended formats

National Governments Quality Assurance Frameworks for Quality Assurance in Blended Learning Quality assurance standards and processes

Guidelines

- Encourage and accelerate innovation with an expression for change through national strategies
- Adoption of best practices and in line with the international best practices
- Enrolment of stakeholders as QA Agencies and other providers to develop the standards
- Publicizing of standards with due regard to cultural diversity of various institutions
- To analyse the Self-Assessment Report with site visits by peer team and providing feedback
- Fair transparent evaluation by trained assessors of agencies
- Policy documents ,evaluation process and methodology, feedback, cyclical validity
- Code of conduct for reviewers / assessors associated with the process

Appointment of external Quality Assurance Agency

Guidelines

- Ensuring frame of mission and common goals
- Ensure having legal basis and being recognized and trusted
- Autonomy and responsibility in decision making
- Devise a maturity model for assurance of e-learning
- Ensuring good governance and accountability
- Aligned with innovation and latest developments
- Collaboration with national and international stakeholders
- Reliable system for auditing ,controlling and assessing
- Publicizing of policies, procedures, criteria, standards and assessment for transparency

Institutional quality governance for blended learning (internal quality assurance) Blended learning quality strategy and plan formulation-organizational perspective

- Blended learning policies and procedures should align to Institutional goals and strategies and should have a clear governance structure.
- Adoption by any unit should also be aligned with overall Institutional requirements and should have an appropriate departmental plan.
- Investment on infrastructure and other resources should be taken into consideration and should be in alignment with market scenario.
- Formulation of policies and strategies with regard to recruitment, admissions,grievance redressal, fees regulations and additional registrations.
- Quality policies for course feasibility, content creation ,development and maintenance, session management, designing and implementation of collaborative environment.
- Formulation of Assessment and Evaluation policy for virtual learning and formulation of a Board of Asses sors experienced in this setup
- Formulation of faculty and student induction, training and appraisal policy
- Formulation of guidelines for creation and maintenance of student recordkeeping system.
- Formulation of team to design the blended environment constituting of technical profession academicians, experts and specialists and support staff.
- Formulation of guidelines for technical infrastructure scalability and reliability including support tools as : blogs, forums, online video conferencing platforms, internet voice communication, virtual practical training.
- Formulation of security policies engulfing data protection , protection of enrolled mentor and mentees, identification and authentication of remote learners(using encryption, protection and backup)
- Draft of an appropriate procurement plan and up gradation policy for cloud services, hardware and software.
- Draft of appropriate contingency plan and accreditation plan by regulatory bodies ,IPR and software license.
- Formulation of anti-plagiarism policy , technology usage policy(teaching and support), up gradation and migration.

- Formulation of due diligence and risk management for transnational initiatives as recognition by statutory bodies, permission for foreign providers.
- Synchronous delivery policies in case of gender considerations and other jurisdictional requirements.
- Drafts for implementing new business models as blended learning which includes fiscal taxation, recognition of qualification, employment laws ,validity of software licenses ,regulation policies for foreign nationals etc.

Expectations publicized and published

- Learning resources and learning environments specification document for validation and review and all relevant policy documents
- Assessment creation, conduction, monitoring, receipt, evaluation and feedback specification document.
- Specification document for international students with regard to previous eligibility, credit transfers, program recognition, employment rules etc
- Agreement documents in case of collaborations, legal rights and responsibility distribution, instruction manual of platform usage for all stakeholders
- Provision of a robust Information Management System that will enable data collection from all possible databases.
- With respect to learning scenarios reports on learning outcomes based on performance, retention and dropout rates to be monitored for improvement of the programs which are further publicized.
- The institution should publishes reliable, complete, and up-to-date information on technical support.
- Technical requirements and infrastructure to enable effective use of the system are clearly identified and published.
- The institution publishes information on completion rates, pass rates, and dropout rates.
- The IMS will enable to extract analytics from all recorded scenarios to understand the current trend along with quantitative and qualitative data justifying academic, research and employment achievements.

Course/Program level perspective

- Program / Course feasibility study and its structural coherence to be justified and updated regularly
- Program development and delivery in coherence with the blended approach to meet intended learning outcomes and with valid recognition and ranking.
- Program development and delivery to consider technology and information professionals, Instructional designers, subject expert's contribution.
- Program/module ownership authentication, establishment of communication channels for learning, tutor/ student skill acquisition to handle blended courses.
- Teaching, learning and assessment can be synchronous or asynchronous with requirement of Adaptable Performance Tracking System.
- Instructional design approach for high impact resource development , with appropriate student support and feedback for future enhancement
- Technology specialist to design the learning platform for enhanced interactive learning experience and ensuring that ensure that technology is in the service of delivery.

- Stakeholders of the program/course are bound by institutional and program level policies even with respect to hardware/software etc.
- Incremental version testing and adoption under approved configuration management policy
- Learning material and the digitized assets are to be peer reviewed with incorporation of feedback mechanism by internal/external mechanism for improved learning outcomes.
- Appropriate integration of media to the modules for learners achievement, segregation of course content into face to face and online in alignment to learning repository.
- Following of protocols by all stakeholders
- Approval and validation of program/course by internal and external stakeholders
- Continuous training and learning for staff with respect to teaching instructional design, technology upgrades.
- Ensuring on-going upgrades to the development of the platform in alignment with regulatory body requirements
- Time management and scheduling with respect to all activities as development, delivery, assessment and feedback.

Learner perspectives

- Learner to be equipped with necessary skills to be an independent learner with clarity on staff availability
- Learner to be given the desired clarity on blended learning strategy to be followed and percentage of hand holding and autonomy rendered.
- The contact hours with the staff and the collaborative learning environment and the committed hours of the learner.
- Participation and attendance mandate with respect to face to face and online learning and appropriate remote setup for the candidate
- Online academic calendar, schedules for course delivery, assessment calendar, assessment pattern, progress report, learners engagement statistics to be provided as support and progress deliverables.
- Intimation of availability of learner repository, eligibility specifications, classroom and activity schedules, course an feedback enablement and validity.
- Equitable opportunity to all learners with respect to learning provisions, authentication and validation, sharing, safety, reliability and desired communication and exchange protocols.
- Learners to be intimated of e-libraries and virtual labs
- Learners to be intimated of support in the form of instructional, technological and administrative elements based on individual profile, specification and needs

Other factors

Learning Environment Design

- **Accessibility** – Course should be accessible by even disabled students through assistive technology, should be mobile compliant and should have alternatives to auditory and visual contents
- **Course readability** – Should facilitate all learners from various learning background and the interface should be functional and attractive.
- **Navigation**-Well organized easy to navigate with web pages being consistent throughout.

- **Availability of Prints and Downloads** – Print and download versions of learning resources should be made available in proper formats and compression forms.
- **Copyrights, Citations and Legal requirements** – Learning resources should be devoid of copyright, should have proper citations and should satisfy legal requirements.

Technology specifications, server, security and support

- Adequate technical support should be provided for building and maintenance of blended learning infrastructure.
- System recovery in case of failures with back up procedures, with desired operating and security standards and less turnaround time with analytics in access patterns.
- Technical infrastructure should comply with e-learning and course objectives and outcomes and should be up-to-date with guaranteed profiling of learners from diverse background following inclusiveness approach.

Summarizing the above, for assuring the quality of blended strategies across the borders the framework to be considered should instil a top down approach with internationalization of quality assurance policies and procedures with due regard/mandates to national legal and statutory guidelines and continuous governmental interventions/assistance with regards to legal and policy updates, innovations, updates, scalability of the virtual learning infrastructure etc, while at the micro level a detailed alignment to policies and guidelines with cyclical monitoring and review by external agency, internal cell would assure quality.

Conclusion and references

As per the observations and study the extent of Educational Cooperation between Asia and Europe till today stand at an approximation of nearing 30 - 35pc(optimistic range)considering all countries across Europe and Asia though the future potential looks to be great for enhancing the economic growth in this belt through knowledgebase building .

Intra-continental initiatives as in the European zone appears to be more promising and they are significantly ahead than the Asian belt and Asia is at a stage where-in there is a significant progress in the penetration of virtual learning even in LDC's related to mobilization through pedagogical innovations and technological advancements which is encouraging. Balancing mobility can be addressed as encouraging virtual for Asia and physical for Europe attributing to population imbalance.

A Plan 2050 should see almost 80 pc of the countries towards a progressive economy backed by highly technical infrastructure and technological advancements and assured by quality and adoption of best practices for Education.

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Using Co-design to Create MOOCS for Southeast Asian Audiences

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This paper examines the process of co-design for MOOCs. As part of the COMPETEN-SEA project experts from six countries address the issue of bringing continuing education to geographically, or socially, isolated groups. In particular, COMPETEN-SEA aims to provide education in the form of MOOCs to single mothers in Malaysia, rural health workers in the Philippines and rural fishermen in Indonesia. These case studies are used to explore the process of co-creating appropriate learning environments for groups that do not have the same needs and expectations as the academic MOOC participant. Co-design intentionally involves multiple groups of stakeholders and has been successfully implemented in various contexts with positive results in the past. In this particular case, successful co-design requires several different types of expertise, namely instructional designers, technology experts who can compensate for weak infrastructure, content experts, sociologists, anthropologists, and community members. All of these individuals must reach a common understanding of the project's context and goals as well as the implementation strategy.

Since their emergence in 2008, MOOCs have been generating conversation about the future of education. One idea that surfaces repeatedly, particularly in mainstream media, is that MOOCs can, and will, play a major role in democratizing education around the world (Dillahunt, Wang, & Teasley, 2014). In the now famous *New York Times* article, which announced the Year of the MOOC, Laura Pappano states, "[t]he shimmery hope is that free courses can bring the best education in the world to the most remote corners of the planet, help people in their careers, and expand intellectual and personal networks" (Pappano, 2012). One year later in 2013, Thomas Friedman, also from *The New York Times*, argued, "Nothing has more potential to lift more people out of poverty- by providing them an affordable education to get a job or improve in the job they have. Nothing has more potential to unlock a billion more brains to solve the world's biggest problems" than MOOCs (Friedman, 2013). Naturally, alongside the optimistic reviews of MOOCs there are the sceptics warning against solutions that are too good to be true.

Common criticism of MOOCs include, lack of personalization, low completion rates, inadequate instructional design, and perhaps most notably, failure to meet the lofty goal of making education accessible to marginalized and underrepresented groups. Indeed looking at demographics, the picture can be bleak. A 2013 study of over 400,000 Coursera users, at that time the largest provider, revealed that 83% of users already had a higher education degree, with 44% having at least a Bachelor's degree. The study showed that "In addition to being highly educated, the Coursera student population tends to be young, male, and employed, with a majority from developed countries" specifically two thirds had full-time employment, and less than 20% of users came from developing countries (Christensen et al., 2013).

Even more critical Liyanagunawardena, Williams, and Adams reports that of those 20% of participants from the developing world, the vast majority presumably belong to the more privileged residents, thus indirectly contributing to the education gap within these countries. The team identifies several possible reasons for this. Primarily, is access to the necessary technology, followed closely by a lack of digital literacy, poor infrastructure, and linguistic and cultural differences. These challenges led the team to state, "there is significant doubt that in their current form they will be able to provide a significant platform for expanding the higher education needs of developing countries

to match the expansion of opportunities in the developed world" (Liyanagunawardena et al., 2013). Nevertheless, many nations are turning to online education, particularly MOOCs, to reach their most vulnerable populations. One of the regions that is actively pursuing online education as a method of reaching marginalized groups is Southeast Asia. In Southeast Asia, the COMPETEN-SEA project is uniting experts from six countries to tackle the issue of bringing continuing education to geographically, or socially, isolated groups (Weinberger et. al 2018).

Co-Design

Considering the limited number of disadvantaged users, it would seem that traditional MOOCs might not meet their needs in the first place. In an effort to determine and address the needs and desires of the targeted audiences in South East Asia, the decision was made to implement a co-design strategy. Co-design intentionally involves multiple groups of stakeholders, in this case researchers, content experts, instructors, and technology experts, in producing an instructional design tailor-made for the learning context. Co-design has been used for designing E-learning environments and tools in the past. Recent examples include the creation of digital formative assessment tools (Penuel, Roschelle, & Shechtman, 2007), digital tools for kindergartners (Cviko, McKenney, & Voogt 2014), and participatory pattern workshops being held for a wide variety of domains (Mor, Warburton, & Winters, 2012). Co-design is particularly appealing for use in high-context cultures. Co-design's focus on involving multiple perspectives provides the opportunity to customize the course design to fit the goals, needs, and resources of targeted groups.

Despite its promise, some common problems emerge in the co-design process. One of the main challenges of co-design is facilitating communication about design ideas and learning activities between different stakeholders, in particular between researchers, programmers, and instructors (Reiser et al., 2000; Penuel, Roschelle, &Shechtman, 2007). Computer scientists may lack the domain language and specific examples of how tools/methods/learning activities etc. could be used within a learning context. Similarly, instructors may have difficulties expressing their pedagogical ideas in a non-ambiguous, highly formalized way that computer scientists can convert into online learning environments. These different perspectives and expectations can make the co- design process frustrating for both groups. Co-design teams need to develop a common language that they can use when talking about the context and design decisions of their courses (Penuel et al., 2007; Har-rer, Göhnert, Hoppe, 2013). One approach to creating a common language is to use an educational modelling language (EML).

Several methods of describing activities within courses have emerged in recent years including the IMS Learning Design Specification (Koper, Olivier, 2004), participatory pattern languages (Mor, Winters, 2008; Mor, Warburton, Winters, 2012) and the Integrated Learning Design Environment (ILDE) (Hernández-Leo et al., 2018). All of these projects look at orchestrating and implementing individual learning activities into an existing course structure. Weinberger looks at formalizing collaborative learning environments (Weinberger et al., 2007), and in a few cases EMLs have been based on business processing languages (Bergtham et al., 2012). Despite the variety of EMLs in use, most are either limited in their scope, showing a single learning process or only applicable in specified domains, or they are complex and require a large investment in time to understand and utilize the EML (Koper, Tattersall, 2005). The COMPETEN-SEA project created an EML (CoDe-Graph), which built on these examples, but aims for simplicity and accessibility. The goal is to be able to have constructive discussions based on a common language very early in the design process.

Description of the language

CoDe-Graph templates (figure 1) can be used to show the flow of an entire course, a single unit, or a complex learning task. It represents different levels of social interaction as identified by Dillenbourg (2015) and role distribution as well as the learning resources, activities and processes. Learning objects (LO) aside, CoDe-Graph focuses on Emerging Learning Objects (ELOs; De Jong et al., 2010; Lejeune et al., 2009), i.e. artefacts that emerge from the learning activities and hence, are produced by the learners themselves.

Course levels include: (1) the "Teacher," who can be an instructor, tutor, or even automated system; (2) the "Student," working individually; (3) the "Small groups of learners," where students work together in groups ranging from randomly paired learners to cohorts, which share a start date, and (4) the "MOOC Community," which represents all active participants in the MOOC. Five simple symbols, which can be annotated and labelled, are used to show activity within the MOOC. "Tools" indicate items such as forums, links to external resources, automated systems, and media. "Learning objects (LO)" are artefacts that are fixed; these often consist of learning resources such as videos, readings, audio, or images. In contrast, "Emerging learning objects (ELO)" include anything that is altered, or created, by course participants such as a quiz or a student produced blog entry. These ELOs may in time become LOs for other students to use as a resource. There is also the option of representing "Feedback" from peers or the instructor. Finally, arrows are used to indicate actions, including, but not limited to, the production of LOs and ELOs, participation in course discussions, integration of feedback, and sharing of resources.

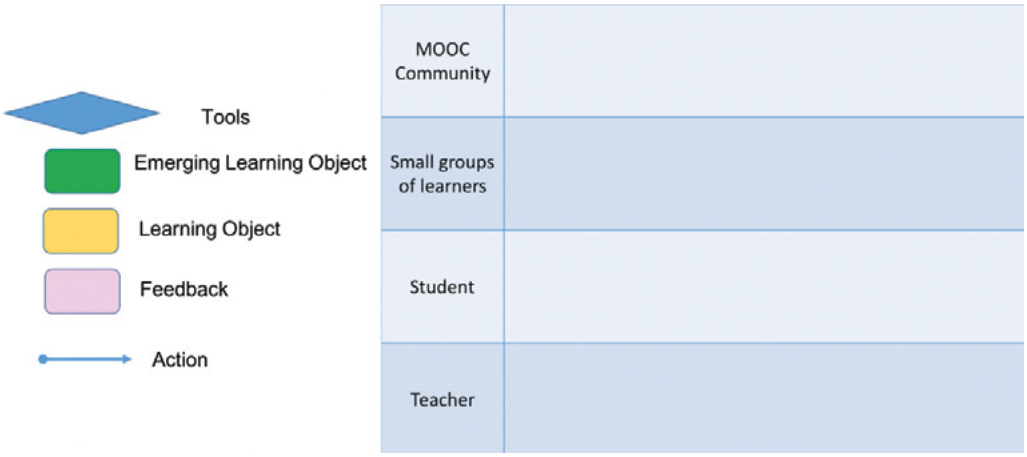

Figure 1: CoDe-Graph Template

Description of the contexts:

CoDe-Graph was implemented in the COMPETEN-SEA project in order to design highly specific MOOCs for marginalized groups. These online courses do not generally fit into the traditional structures of MOOCs as the contexts are also non-traditional.

Penang- Entrepreneurship for Single Mothers: This course aims to address women who are raising children without the support of a partner. These women often have low education levels, are not trained in a particular career, and lack access to childcare, making it difficult for them to obtain work. Most of these women live in urban or suburban areas and have access to the internet either over mobile phones or at the local community centre. The course goal is to provide participants with the skills needed to start a home business and increase their income.

Bario- Knowledge Sharing: While this course also addresses single mothers, it is open to any community member who is interested. The participants live in a remote rural village and most have reached

retirement age. Literacy levels are low and participants have little familiarity with technology, although it is accessible at the community centre. The course aims to gather and preserve local knowledge and traditions, particularly in the areas of home economics and hygiene.

Malang-Environmentally Sustainable Entrepreneurship: The Malang MOOC addresses the coastal fishing community and has two primary goals, to teach sustainable fishing practices/and marketing, and promote entrepreneurship with the field of environmental tourism. Participants are seasonal workers looking to supplement their income in the off-season. Access to internet is limited and will be obtain using a mobile server connected to the university extension office.

Manado- Entrepreneurship: The Manado MOOC addresses both local university students and entrepreneurs in the community. The target group is extremely heterogeneous in terms of age, goals, education levels, and access to technology. The course aims to impart knowledge and skills as well as build networks among local small businesspersons.

Manila-Health Care Professional Development: In Manila, the MOOC focuses on providing continuing education for health workers in geographically isolated areas. Participants have a secondary education and generally a bachelor's degree. They often have internet access at their homes or on mobile devices.

Co-Design Sessions:

The CoDe-Graph was implemented in numerous co-design sessions in Southeast Asia and Europe. The teams ranged from two people to upwards of twelve participants and took between two and four hours. Each session was video-recorded and transcribed for analysis. Additionally, the models, text descriptions, and other outputs produced in each session were collected and analysed for consistency with the video material. Each video recording was screened for episodes of convergence and consistency in design process.

Participants: Each partner university was encouraged to invite as many members of their team as possible to the design session. In addition to the instructional design team, project leads, content experts (both internal and external), technicians, and graduate students were involved in most of the sessions. The instructional design team moderated the discussion and documented proceedings. They also provided suggestions when requested. The project leads of each country provided information about what fit within the project's scope, the project status, and an overview of the projects projected progression. Content experts weighed in on the suitability of design components to their domain. Technical experts provided information about technological restrictions and possibilities. Finally, the graduate students were able to provide a student's perspective and many had extensive experience working with the target population, which helped improve understanding of the end-user context. Most participants in the co-design sessions had participated in a workshop about instructional design (ID) one to three months before the co-design session. This means that most participants had a basic understanding of ID and important ID characteristics.

Despite commonalities, there were differences in each group of participants. For example in the Penang, Manado, and Malang design sessions the content experts were mainly external partners. The Bario design session also involved members of each of the expert groups, but the session was split into two sections spread over two afternoons with different participants in each. Finally, the official Manila design session consisted of only two individuals, as most of the Manila design decisions had already been made early in the project due to logistical and time restrictions that resulted from the close partnership with local government agencies.

Structure of the sessions: Initial analysis of the video footage has shown numerous commonalities in the co-design process. Despite the heterogeneity of the contexts examined, a common co-design

trajectory can be identified. Each session consists of episodes, namely, initial idea expression, clarification from team members, and manipulation of the model. These episodes were often repeated numerous times as groups got closer and closer to converging on a single design.

Each session began by asking participants to complete a MOOC design survey. This served a dual purpose of gathering information about trends in MOOC design, and getting participants to critically reflect on their personal experiences and beliefs regarding online learning.

After having completed the survey the project leads gave a quick overview of the current state of the project and challenges that they anticipated. Then the moderator introduced the design questionnaire. The design questionnaire is a tool that systematically gathers information about the proposed course and can be used to generate a text description of the course.

Questions can be divided into the following sections: course objectives (ex. What new knowledge and skills should participants have after completing the course?), target audience (ex. What motivates the typical user to take part in the course?), course structure, (ex. How many units are in the course? How long does it take to complete a unit?) course content and tasks, (ex. Which forms of media will be used to convey information? Who will produce the content?) course assessment and completion (ex. Which tasks will be used to assess participants' learning? How will participants know they have been successful?). These questions help the group identify areas where team members have conflicting visions and where decisions still need to be made. For example, in the Bario design session members were asked when and how often a typical participant would be able to access the materials. The simple answer was at the community centre whenever they have free time, however further reflection brought up the challenge that the community centre is usually closed in the evenings, exactly when participants have free time. As a result one of the next steps is working with the community centre to increase availability.

Finally participants worked together to graphically represent the course, or a standard course unit, on the CoDe-Graph. The moderators introduced the CoDe-Graph, which participants had seen in the survey, and explained the basic elements of the tool. Participants were then shown an example of representing a LO and an ELO on the template. The moderators then separated participants into small groups with diverse backgrounds. Each group was given materials and had the chance to create a representation based on their understanding of the course. This process revealed and corrected misunderstanding that occurred in earlier planning stages. For example, in the Malang group one of the small groups focused on determining when participants would need to work individually and when in groups. Due to a lack of widespread internet access, it made since for participants to gather together to view materials and complete tasks, but it was unclear how to individually assess group tasks for obtaining certification. After some discussion, the group decided to implement an individual quiz for assessment purposes.

Once the small groups reached a consensus and final representation, each group presented their representation and then commonalities were examined and differences resolved. To continue with the Malang example, this lead to a whole group debate on the necessity of individual assessment, as well as the logistical feasibility in this context. A second small group had not included any form of assessment in order to encourage wider participation and reduce logistical challenges. Discussion led to a compromise where all active participants received a certificate, but a second higher-level certificate would be given to those participants who successfully completed an exam. This change was noted in the design questionnaire and consequently the course description. The process of representing the course visually occasionally resulted in needing to alter the course questionnaire as new ideas were discussed and visions shifted. However, more often it allowed co-design team members to add another level of detail to the description and course blueprint. In combination with the course questionnaire, the CoDe-Graph formed the foundation for the production and implementation stages.

Results:

In the COMPETEN-SEA project co-design sessions, participants made major decisions regarding critical aspects of the online courses in remarkably short time frames. Although a general course goal and vision existed in the minds of all participants, these visions did not always align with one another and they were rarely concrete enough to move to the stage of course production. Within a few hours of using the design questionnaire and CoDe-Graph representation system, all of the main decisions regarding course structure and implementation had been clarified and participants expressed confidence in their ability to begin producing course materials and structuring interactions.

The courses resulting from the co-design process share some commonalities. Each course includes some in-person elements in order to reduce technological challenges and increase community investment. In some cases, such as in Penang, these bookend the online activities, in others they run parallel to the digital course materials increasing accessibility for those without access to technology on a regular basis. Two main approaches to online learning also emerged in the co-design sessions, knowledge distribution as seen in the Philippines and Malang, and knowledge building as seen in Manado and Malaysia. In the first case, the focus is on providing high quality LOs produced by known experts. Participants interact independently with these LOs and an authority assesses the gained knowledge/skills. In the second case, the focus is on preserving and expanding existing sources of knowledge. Here the primary goal is to share knowledge within a community using ELOs, and assessments are often non-existent or highly informal consisting of recognition from peers and course leaders. Finally, in all cases the co-design process led to creative solutions to technical challenges, ranging from providing new internet access points in community centres, to mobile servers and low broadband resources that can be accessed with limited data on a mobile phone. Despite commonalities in the process, each co-design session resulted in a unique approach to online learning.

Penang Description and CoDe-Graph:

The MOOC on entrepreneurial skills for single mothers consists of three modules: fundamental Entrepreneurship and ICT skills, Well-being, and an elective to be selected from Composting, Baking Cakes and Cupcakes, Stingless Bee Honey Production and Handicraft. Although, there are differences in the structure based on the unit, generally the modules follow a similar design.

Each section begins with a kick- off event in which participants can learn about the module and make connections with other mothers in the area. The instructor provides content videos and practice activities for learners, who may work together to use what they have learned to complete the activities. After receiving feedback, individual participants work on creating a final product and showcase their work at event organized by the instructor.

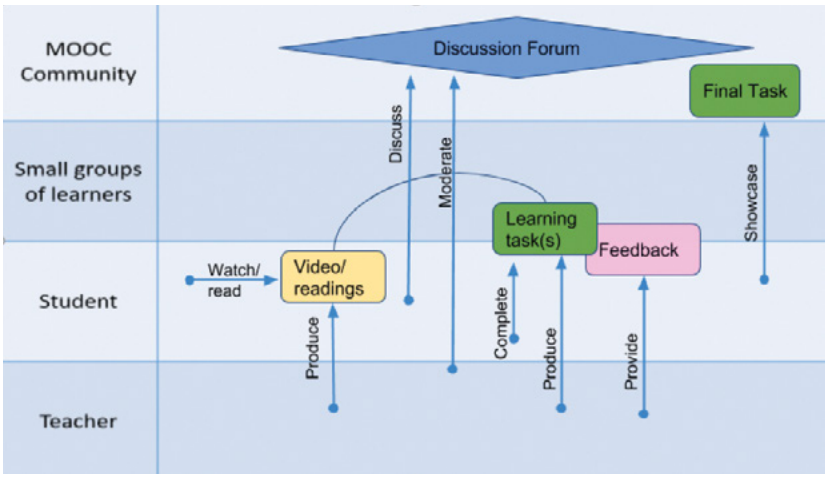

Figure 2: Penang Co-De Graph

Bario Description and CoDe-Graph:

The Bario MOOC focuses on sharing existing knowledge amongst community members. A moderator provides general topic suggestions, videos showing how to use the MOOC platform and in-person assistance with video production and platform use. Participants can choose to document knowledge they have in any number of ways, video or audio recording, taking photos, writing text etc. creating an ELO, and they can then share this with other MOOC participants. Individuals and small groups can view these items and try replicate any information/skill they find to be particularly useful, and share their results as a second version of the ELO. Both the original participant and others can offer feedback and ideas. This cycle can continue with various participants creating versions or ELOs and showcasing them in the MOOC community, thus building a virtual library of information and practices. A discussion forum is also available to talk about the information being presented, ask questions or seek support.

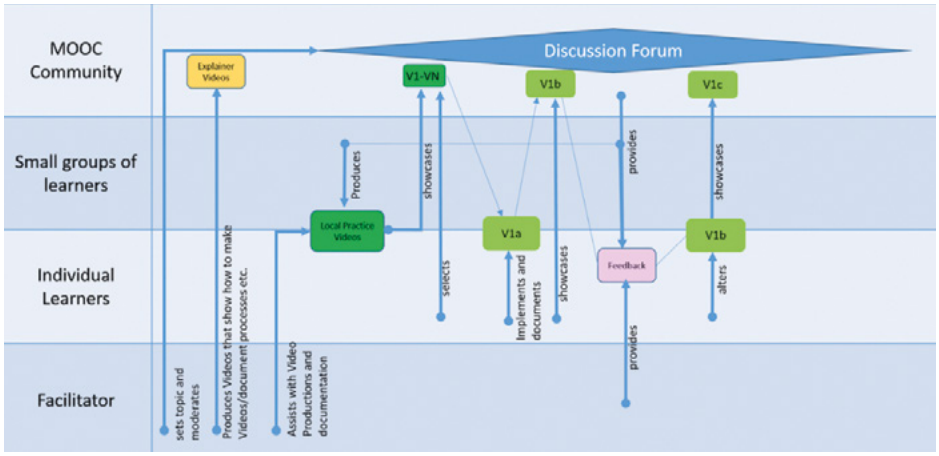

Figure 3: Bario Co-De Graph

Malang Description and CoDe-Graph:

In the figure 3, a single unit of the Malang course is represented. Here the instructor provides content videos to the individual students. The videos are accompanied by a set of questions in the discussion forum. Participants answer and discussion the questions online and the instructor provides feedback. The instructor also provides a "quiz" that checks for learner comprehension. This quiz can be taken in-person or online depending on access to technology and is completed in small groups in order to encourage further discussion and reduce pressure. The instructor provides feedback on the quiz and clarifies and misunderstandings. Once all units have been completed individual participants can choose to take a final exam for formal certification.

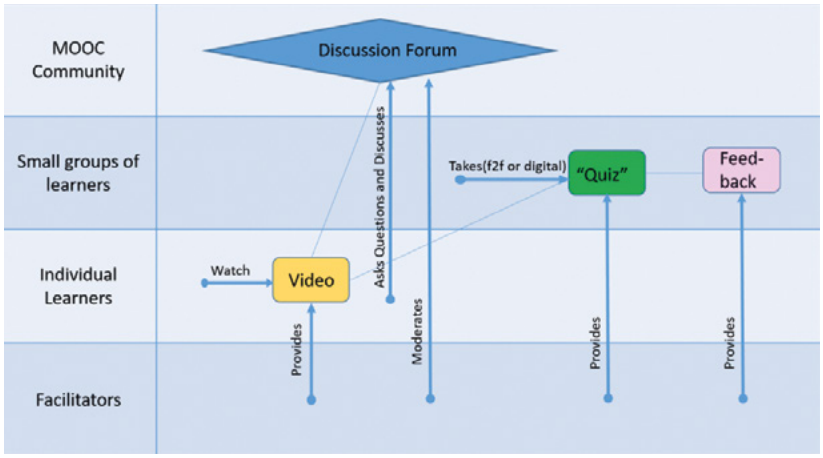

Figure 4: Malang Co-De Graph

Manado Description and Co-De Graph:

The Manado MOOC focuses on applying knowledge from experts on learning tasks. In this sample unit participants watch videos and read articles provided by the instructor on a topic. They then have the chance to discuss questions and ideas in a forum before beginning an individual learning task. Once completed the results are showcased and both the instructor and small groups of learners provide feedback. The task can then be revised and resubmitted by the participant.

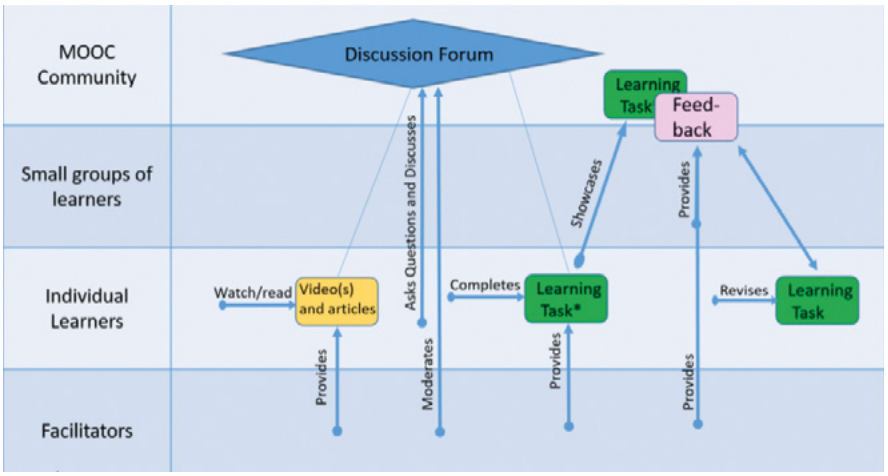

Figure 5: Manado Co-De Graph

Manila Description and Co-De Graph:

Run on the e-learning platform of the Department of Health, the course on Data Governance provides an overarching framework for health workers' training and professional growth. The course consists of three modules: (1) "Getting the Full Value of Information Systems and eHealth Technologies", (2) "The LGU Scorecard for Health", and (3) "Data Quality and Health Outcomes". The MOOC is self-paced; its modules, one of which is seen in figure 4, build on each other.

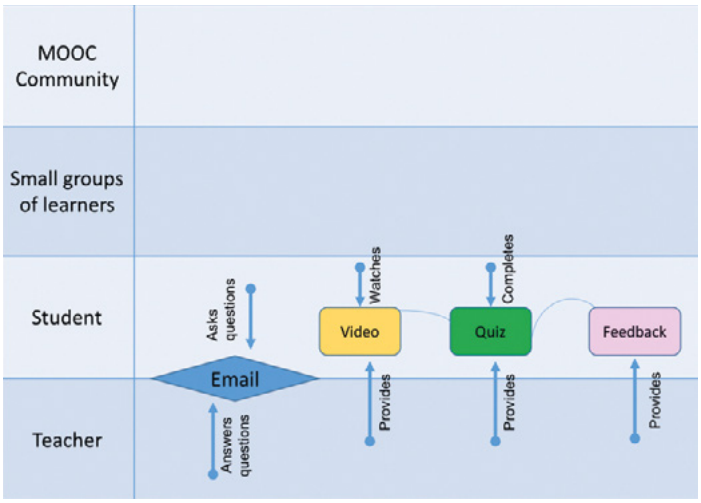

Figure 6: Manila Co-De Graph

Discussion

Within the COMPETEN-SEA project co-design sessions were remarkably successful. Multi-disciplinary teams reached consensus quickly and produced artefacts, which were needed to proceed with the next stages of course design and implementation. The co-design tools (ie. questionnaire and Co-De Graph) arguably contributed to the success of the sessions. The tools helped to reduce miscommunications among the team members and allowed for the production of a highly formalized representation that is needed for the technology team to implement the course, and a rich text description that is useful for instructors and participants in understanding the course vision. These two items complement one another and provide the blueprints for the course.

Naturally, both tools should be further refined and tested to increase their usefulness in co-design sessions. The tools were robust enough to represent an extremely heterogeneous selection of contexts and courses in the initial stages of planning. Further studies may look at how these documents are actually put into use in the production and implementation stages, in particular to what extent do the artefacts produced in early design sessions mirror the completed course. Additional investigations may include looking into process differences between groups at various stages of planning to see at which point the questionnaire and Co-De Graph may be most useful for co-design teams. Finally, participants in these sessions generally had some prior knowledge of instructional design, due to workshops they attended approximately two months prior to the design session. The extent to which such workshops influence the co-design process must be examined and further explored.

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Industry 4.0: new challenges for skills and competences of young students and graduates

- **Defining a Framework for Digital Global Collaboration Cultures**

  Sarah Kellermann

- **Industry 4.0 – The Industrial Evolution: 'An Opportunity to Empower Youth towards Education, Skills and Employability'**

  Nikhar Pandya

Defining a Framework for Digital Global Collaboration Cultures

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In our current world, globalization, technological progress and demographic change lead to changes in values and preferences on the labor market and spurred the evolution of what became known as Industry 4.0. Companies have realized that in order to stay competitive, they need to become much more flexible and agile to an increasingly complex and constantly changing environment strongly influenced by these three "megatrends" (Organization for Economic Cooperation and Development (OECD), 2017). Thus, they are continuously searching for process, product and organizational innovation (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2018, p. 21) and for employees who are capable of acting successfully under these conditions. In the light of digitalization and globalization, contact between individuals from all over the world and thus with different cultural backgrounds, intensifies. Multinational organizations, earlier posting employees abroad as short- or medium-term experts, nowadays refrain from the concept of expatriates as it involves high costs for the sender organization (Clegg & Gray, 2002). Instead, digital media can be used in an organizational context to bridge distances and work across locations as multinational teams without the necessity of travelling or even living abroad. In a study survey with more than 1,500 respondents from 80 countries, 85% of the respondents reported being member of a "global virtual team" (RW3 CultureWizard, 2016, p. 3), emphasizing digitalization's impact on the work environment. Furthermore, 48% of the respondents stated that more than half of their team members would be based outside their home country (RW3 CultureWizard, 2016, p. 3). This suggests that team members often have differing cultural backgrounds. It is this cultural heterogeneity, which is perceived as the biggest hurdle to productive team functioning (RW3 Culture Wizard, 2016, p. 4). This points towards a misfit between the skills necessary for effective job execution and the skills employees and graduates possess.

All in all, it seems that future work carries a challenge to collaborate in distributed international teams through technology enhanced collaboration scenarios while at the same time higher education might not be fit to equip graduates with the necessary skills to perform successful in these environments (Ehlers, forthcoming). Therefore, our research attempts to shed some light on the set of skills and competences future employees must be equipped with. Specifically, we ask: How do the megatrends identified above affect skill demand? Which factors have led to the skill gap? In addition, which skills are necessary for future graduates and employees to working effectively in this globalized, digitalized world?

To address these questions, this paper aims to define a basic research framework, which identifies factors that are underlying actors' abilities to act successfully in distributed work environments using technology for collaboration. Sources come from prior own and recent desk research of current state of the art research in the field. The framework will thus comprise those competences, which in a digital and global collaboration culture have important influence on successful and effective work relations and task fulfillment. In a first step, we therefore need to a) identify scenarios for 'digital global collaboration' (DGC) (Chapter 2) , and b) suggest measures for 'success' and 'effective task achievement' in DGC (Chapter 2). In a second step, we c) analyze possible factors, elements of influence, as well as competences necessary for successful achievement (Chapter 3) and, finally, d) suggest relations between them and work out their interdependencies (Chapter 4). The latter will be done through the construction of a set of propositions, which relates the previously defined elements.

Characteristics of Digital Global Collaborations (DGC) – Future Work Cultures

This chapter seeks to define Digital Global Collaborations (DGC), and elaborate on the elements that make up DGC scenarios by means of a framework. Further, we will present factors that have led to the emergence of this new working format, and provide an overview of common challenges that can be deduced from the framework, highlighting culture's impact as it has been identified as a major challenge (see previous chapter). We conclude by providing some proposals on what can be understood by "achievement" or "success" in DGC.

We define DGC as an arrangement of geographically dispersed individuals, usually with different cultural backgrounds (Taras et al., 2013) who use electronic communication media to overcome geographic, temporal and organizational boundaries to achieve a common goal (Dulebohn & Hoch, 2017; Gibbs, Siuven, & Boyraz, 2016; Hambley, O'Neill, & Kline, 2007; Powell, Piccoli, and Ives, 2004). These characteristics resemble the group's purpose in so far as it either brings together experts from different locations, organizations or professions, or a given task is short term and thus, relocation would be undesirable (Cramton, 2002, p. 192). Dulebohn and Hoch note that the central distinguishing feature of a DGC is the geographic dispersion, as co-located teams may also use technologly-mediated communication (2017, p. 572). Note that we prefer to refer to *DGC* as opposed to *virtual* or *global virtual teams*, thereby adopting Schein and Schein's line of argumentation acknowledging that the participants may pursue the same goal for a project's duration, but they may not necessarily perceive of each other as a "team" (2018, p. 83). Furthermore, it needs to be stressed that in the light of ongoing globalization processes and organization's internationalization efforts, such work collaborations become increasingly multinational (Burke, Shufler, Salas, & Gelfand, 2010). Past research has often treated multicultural teams and virtual teams separately, leading to two relatively separate streams of research that disregards this important intersection (Hinds, Liu, & Lyon, 2011). Hence, our understanding of DGC includes the assumption of culturally diverse actors, connected via some sort of information and communication media (ICM).

There is increasing relevance for DGC as demonstrated by a rising number of organizations establishing DGC (RW3 Culture Wizard, 2016, p. 3), going hand-in-hand with a growing body of literature around this topic. For instance, Gibbs, Sivunen, and Boyraz (2016) analyzed 265 articles from 15 years of research dealing with different issues common to DGC. What are benefits of this relatively new type of work arrangement? To answer this question, we need to investigate the processes in the background that have triggered the emergence of DGC. Their growth is attributable to new formats of information and communication technology that have enabled globalization, linking people from all over the world (Dávideková, Greguš, & Dávideková, 2016). Globalization has also increased the availability of products from all over the world leading to intensified competitive pressure and organizations' needs for rapid product development and innovation, as well as the necessity to improve their networking abilities across different locations, thus connecting dispersed experts (Dulebohn & Hoch, 2017). In this heavily competitive and agile environment, DGC seems to be a promising working format: Different time zones enable continuous productivity, travel costs or costs for relocation can be saved, knowledge is shared across geographically dispersed units and sites, to name only a few benefits (Dulebohn & Hoch, 2017, p. 569). In order to gain a more systematic view on the constituents and factors in the DGC context, we conducted a literature review as basis for the below framework. The framework categorizes a DGC's operational space along its actors, the task the actors are working on, the ICM involved, and factors that determine the DGC's operational space[1].

1. Note that the list below is not exhaustive. Still, we believe that the framework provides a first overview of the complex context in which DGC are embedded.

Dimensions	Components	Existing Research
DGC actors	• Actor roles • Communication styles • Cultural • background • Cultural diversity • Involvement • Knowledge • Lifecycle • Media choice • Size • Skills • Trust	Bell & Kozlowski, 2002 (lifecycle, actor roles); Dekker, Rutte, & van den Berg, 2008 (national culture); Dimmick, Ramirez, Wan, & Lin, 2007 (size); Eisenberg & Mattarelli, 2016 (cultural diversity); Hardin, Fuller, & Davison, 2007 (cultural diversity); Paul, He, & Dennis, 2018 (cultural diversity, trust); Herbsleb & Mockus, 2003 (trust); Holmstrom, Conchúir, Agerfalk, & Fitzgerald, 2006 (socio-cultural distance); Jarvenpaa & Leidner, 1999 (trust, communication behaviors); Jarvenpaa, Knoll, & Leidner, 1998 (trust, knowledge, skills); Klitmøller & Lauring, 2013 (cultural distance); Kramer, Shuffler, & Feitosa, 2017 (cultural diversity); Lauring & Selmer, 2010 (knowledge, skills); Lauring & Selmer, 2012 (communication styles, cultural diversity); Leenders, Engelen, & Kratzer, 2003 (communication styles); Lipnack & Stamps, 1999 (knowledge, skills); Maznevski & Chudoba, 2000 (communication patterns, size, knowledge; media choice); Montoya-Weiss, Massey, & Song, 2001 (involvement); Shachaf, 2008 (communication, cultural diversity); Straub & Karahanna, 1998 (media choice); Suchan & Hayzak, 2001 (communication)
DGC task	• Complexity • Coordination • Content • Interdependence	Bell & Kozlowski, 2002 (task complexity); Faraj & Sproull, 2000 (task complexity); Hertel, Konradt, Orlikowski, 2004 (interdependence); Massey, Montoya-Weiss, & Hung, 2003 (coordination); Maynard, Mathieu, Rapp, & Gilson, 2012 (interdependence);Maznevski & Chudoba, 2000 (task complexity); Montoya-Weiss, Massey, & Song, 2001 (task content)
DGC ICM	• Interactivity • Media format • Synchronicity	Bell & Kozlowski, 2002 (temporal distribution, synchronicity); Dekker, Rutte, van den Berg, 2008 (interaction); Montoya-Weiss, Massey, & Song, 2001 (asynchronous communication); Jarvenpaa & Leidner, 1999 (asynchronous and synchronous ICM); Klitmøller & Lauring, 2013 (media format); Gibbs, 2009 (types of interaction); Maznevski & Chudoba, 2000 (face-to-face communication media); Dimmick, Ramirez, Wan, & Lin, 2007 (media format); Holmstrom, Conchúir, Agerfalk, & Fitzgerald, 2006 (synchronicity, interacitivity)
DGC outcomes	• Commitment • Effectiveness • Efficacy • Goal • achievement • Knowledge sharing • Satisfaction	Alavi & Tiwana, 2002 (knowledge management); Dekker, Rutte, & van den Berg, 2008 (satisfaction, team goal achievement); Eisenberg & Mattarelli, 2016 (knowledge sharing); Hardin, Fuller, & Davison, 2007 (efficacy)Jarvenpaa & Leidner, 1999 (goal achievement, effectiveness); Klitmøller & Lauring, 2013 (knowledge sharing); knowledge creation, commitment); Massey, Montoya-Weiss, & Hung, 2003 (effectiveness, goal achievement); Maznevski & Chudoba, 2000 (effectiveness); Montoya-Weiss, Massey, & Song, 2001 (effectivenss, goal achievement); Prasad & Akhilesh, 2002 (goal achievement, satisfaction); Shachaf, 2008 (effectiveness, satisfaction)
DGC conditions	• Boundary spanning • Duration • Geographical Dispersion	Bell & Kozlowski, 2002 (boundary spanning); Cascio & Shurygailo, 2003 (duration); Dafoulas & Macaulay, 2002 (boundary spanning); Dafoulas & Macaulay, 2002 (geographical dispersion); Holmstrom, Conchúir, Agerfalk, & Fitzgerald, 2006 (temporal, geo-graphical distance); Leenders, Engelen, & Kratzer, 2003 (boundary spanning); Shachaf, 2008 (boundary spanning); Wong & Burton, 2000 (duration)

Table 1. Framework for DGC analyses

The overview further serves to identify potential fields for research as it allows to combine different dimensions and different components of the dimensions to explore the field in its complexity.

From the above dimensions, several potential hurdles arise. In the case of DGC, the common problems of co-located collaborations such as misalignment of individual team actors' goals, a lack of clear team objectives, missing skills, among others, are complemented by DGC-specific challenges (Govindarajan & Gupta, 2001). For instance, temporal asynchrony (a DGC condition component) leads to increased response times and reduces chances for real-time exchange (a DGC ICM component), thus often leading to inefficient delays (Holmstrom, Conchúir, Agerfalk, & Fitzgerald, 2006; Montoya-Weiss, Massey, & Song, 2001). Regarding the actor dimension, DGC often face difficulties creating and maintaining trust among a group of people that often do not know and have never met each

other and among whom informal conversations that would serve to establish closer work relationships take place only seldom (Herbsleb & Mockus, 2003; Jarvenpaa & Leidner, 1999). Additionally, language and communication difficulties pose another hurdle (Shachaf, 2008; Suchan & Hayzak, 2001). Yet, these latter difficulties are often deeper rooted, usually not resulting from missing vocabulary or a grammatically incorrect sentence, but reveal upon careful analysis, specificities of a DGC actor's cultural background. It is this "deep-level diversity" (Chidambaram, 2005) – differences not directly observable, such as values, attitudes and experience – that pose major challenges to DGC. We adapt Maznevski and colleagues' (2002, p. 276) understanding of culture as the set of deep level values shared by an identifiable group of people. The core element of this definition are values[2], which serve as guidelines for any human behavior, defining what is wrong or right and reducing the number of available interpretations for situations and behaviors (Baldwin et al., 2006; Kluckhohn & Strodtbeck, 1961; Flechsig, 2000). Though not directly observable, values' influence manifests in behavioral patterns, verbal and nonverbal communications, and exchange of personal information (Harrison, Price, Gavin, and Florey, 2002), thus impacting everyday business as well.[3] Although culture has been recognized as an important factor for DGC, Gibbs and his colleagues (2016) reviewing more than 260 research articles on this topic, criticize that the vast majority of studies do not directly measure it. Additionally, if culture was measured, too often a DGC actor's nationality was taken as a proxy for its culture (Gibbs, Sivunen, & Boyraz, 2016)[4]. This contradicts the notion of culture as a deep-level differentiation feature, pretending that someone's passport – some surface level element of diversity – would reveal one's inner cultural compass. Moreover, the few studies that have used more complex measures for culture, usually adapt Hofstede's approach (e.g. Decker, Rutte, & van den Berg, 2008; Hardin, Fuller, & Davison, 2007; Jarvenpaa & Leidner, 2000; Klitmøller & Lauring, 2013). Hofstede conceptualized culture in terms of different cultural dimensions (see table 2), which serve to cluster cultural groups along these, thereby revealing their differing "mental programming" (1991). Although Hofstede deserves much credit for his pioneering work, there is much concern regarding for example the dimensions' completeness, the sample of IBM employees, probably not representative for most countries, or the fact that the research was not based on theoretical conceptions (Drogendijk & Slogan, 2006; House, Wright, & Aditya, 1997). Table 2 provides an overview of culture models used in cross-cultural research to differentiate between different cultural groups. Although there are many more cultural models (see e.g. Richter (2014) for a review), the below table summarizes the three approaches that can be applied to different cultural contexts and serve for cross-cultural comparisons (Richter, 2014).

Model	Dimensions	Author
Cultural Value Dimensions	Power Distance Index, Uncertainty Avoidance Index, Individualism vs. Collectivism, Masculinity vs. Femininity, Long-term vs. Short-term Orientation	Hofstede (1980)
Cultural Business Diversity	Universalism vs. Particularism, Communitariansim vs. Individualism, Neutral vs. Emotional, Diffuse vs. Specific, Achievement vs. Ascription, Sequential vs. Synchronic, Internal vs. External control	Trompenaars & Hampden-Turner (1997)
Cultural Value Orientations	Embeddedness vs. Intellectual/Affective Autonomy, Hierarchy vs. Egalitarianism, Mastery vs. Harmony	Schwartz (1999, 2006)

Table 2. Universally applicable models of culture for cross-cultural research purposes

2. In their literature review of "key definitions" (p. 14) Straub and colleagues (2002) found that culture definitions can be categorized into three different groups: definitions based on shared values, definitions based on problem solving and general all-encompassing definitions. They concluded that the first type – definitions based on shared values – is the "most common view" in the literature (p. 14). See for example Hofstede (1980), Kluckhohn (1951), and Schwartz (1999, 2006).
3. For a comprehensive review of culture's impact on international business issues see for instance Kirkman, Lowe, and Gibson (2006).
4. For instance, see Paul, He, & Dennis (2018), Chamakiotis, Dekonick, and Panteli (2013) or Ruppel, Gong and Tworoger (2013).

As the present paper's aim is to shed some light on the emerging phenomenon of DGC culture, which, as we will argue later, is strongly infused by different types of cultures (national, organizational, work culture) and maybe other factors, these models provide a good basis for different approaches. From our point of view, however, given the critique regarding Hofstede's model and the fact that Trompenaars and Hampden Turner's model was suggested to have rather vague discriminatory power regarding its dimensions (Richter, 2014), we adopt Schwartz's view of culture as shared value orientations. His conceptualization was suggested to overcome many of the aforementioned issues surrounding Hofstede's as well as Trompenaars and Hampden Turner's conceptualizations (Drogendijk & Slogan, 2006; Schwartz, 1994).

According to the Theory of Cultural Value Orientations, culture derives from three basic human issues that confront all societies (Schwartz, 1999, 2006). These issues can be addressed in two, respectively three different ways, leading to Schwartz's culture model comprising of seven value orientations that are arranged along three value dimensions (1999, pp. 26–28; 2006, pp. 140–142). Each value dimension comprises of a different set of adjacent values, as depicted in Table 3.

Societal Issue	Value orientation	Values
Individual's relation to the group	Embeddedness	respect tradition, forgiveness, obedience, politeness, cleanliness, devotion, wisdom, selfdiscipline, social order, moderateness, honoring elders, protecting public image, family security, national security, reciprocation of favors
	Intellectual Autonomy	broadmindedness, freedom, creativity, curiosity
	Affective Autonomy	enjoying life, exciting life, varied life, pleasure
Management of social interdependencies and constraints for responsible behavior	Egalitarianism	accept my portion in life, helpfulness, honesty, social justice, responsibility, equality, loyalty
	Hierarchy	humble, authority, wealth, social power
Group's relation to the natural and social environment	Mastery	capable, successful, ambitious, independent, influential, social recognition, choosing own goals, daring
	Harmony	environmental protection, peaceful world, beautiful world, unity with nature

Table 3. Schwartz's Cultural Value Orientations and associated values.

To validate his theory, Schwartz conducted a survey with over 35,000 respondents in 49 nations (Schwartz, 1999) and 73 countries in his 2006-study, which resembled the seven cultural orientations. This lends strong empirical support for the Theory of Cultural Value Orientations, supporting the notion that different groups of people usually living in some geographical proximity share a common cultural value orientation (Schwartz, 2006).

Because of the above, we can derive that if DGC actors have different cultural backgrounds (national as well as organizational), the potential of diverging cultural value orientation's is rising. These diverging orientations can potentially lead to coordination and communication challenges and there-

fore are performance-influencing factors (e.g. Kayworth & Leidner, 2000; Maznevski & Chudoba, 2001; Sarker & Sahay, 2002), but when handled effectively, also reveal high potential (e.g. Schmidt, Montoya-Weiss, & Massey, 2001). Therefore, culture is particularly interesting in a DGC context.

Before we address the issue of necessary competences for effective DGC, we first aim at shedding some more light, and provide some proposals regarding a fuller understanding of potential forms of "successful" performance in the DGC context.

Table 1 has given a first overview on the constitutive dimensions for DGC and related them to performance indicators from the literature. It is shown that many different measures have been studied, some that focus on "traditional" performance measures such as goal achievement, whilst others are more concerned with learning processes such as knowledge creation, whereas a third category focusses on individuals' socio-psychological outcomes such as satisfaction. We intend to broaden this list taking Spitzberg's (1989) understanding of effectiveness as our starting point: For him, effectiveness refers to the achievement of valued objects. Though rather vague, this understanding serves as a good starting point for a more encompassing conceptualization, raising the question of a) what are these valued objects, and b) who values them?

Adopting an economic perspective points to three types of potential "beneficiaries": the individual, the DGC, and the organization(s) for which the DGC works. At the individual-level, satisfaction and commitment, but also perceived personal performance are among the most common positive outcomes describing successful DGC activities (Dulebohn & Hoch, 2017; Powell, Piccoli, & Ives, 2004). At the team level, outcomes such as the degree to which set performance goals were achieved is often considered an indicator for successful DGC (Dulebohn & Hoch, 2017). Additionally, from an organization's viewpoint, the success of an individual actor being committed to the organization and his work will be positive for an organization as well; the same holds true for the DGC's achievement. If the DGC meets its performance goals, the organization benefits, too, as it contributes to the achievement of organizational goals.

Adding an additional perspective, Kormos and Csizér's Intercultural Contact Theory (2007) that builds on Allport's Contact Hypothesis (1958), states that contact of individuals with different cultural backgrounds can lead to favorable changes in individuals' attitudes and behaviors towards one another, thereby reducing prejudice. We argue that apart from the rather "hard success factors" presented above, this adds another valuable socio-psychological dimension to our discussion. Reducing prejudice will promote a favorable atmosphere among DGC actors, thus increasing the likelihood for successful task completion. However, we argue that these contact situations within DGC, can also have positive effects on individual actors' skills. As DGC actors deal with individuals from different cultural backgrounds, they can develop new ways of interacting with each other, broadening their horizons by changing perspectives and amplifying the set of available interpretations. In a similar vein, one could assume that through contact situations with digital media, individuals get used to them and develop more effective ways on how to use them in a learning by doing fashion (Peters, 2000).

From our point of view and as the literature review (previous chapter) suggests, these learning outcomes and especially their subsequent consequences for future DGC and individual achievement yield a promising area for further investigation. The point we intend to make here is that outcomes of DGC and what is perceived of as successful can adopt various forms depending on the respective viewpoint as well as on what is considered a valuable objective.

Having a clearer understanding of DGC, we will proceed by firstly identifying skills necessary for future graduates and employees in general, and secondly, highlight two skills, which are from our point of view, the most important for successful DGC activity.

Factors, Skills and Competences for DGC Culture

As the present paper's aim is to shed some light on the megatrends' influence on skill demand, this chapter builds on theoretical conceptions from the literature to gain a clearer picture of systems and processes involved, which provide an explanation for the skill gap's root. In a second step, we will use our framework from the previous chapter to identify two skills, which we consider vitally important for Digital Global Collaborations (DGC).

In order to understand the influence the megatrend changes in the global systems environment have on DGC, we adopt Bronfenbrenner's (1977) ecological systems framework. This perspective allows for a multi-level inspection of the consequences on different, yet interrelated systems. Being surrounded by a variety of microsystems, such as his/ her family members, the individual forms the nucleus. The sum of micro-systems together comprise the individual's mesosystem. The norms, laws, economic structures and culture of the individual's society characterize the macrosystem. Bronfenbrenner's original model, does not allow for situating changes coming into the system, such as the three megatrends. Drakenberg (2004) added a fifth level to the ecosystems framework called the ex-macrosystem that can be interpreted as the framework's "international level" (Drakenberg & Malmgren, 2013, p. 120). Adopting this view, Christensen (2016) also locates globalization within the ex-macrosystem, understanding it as the interaction and mutual influence of political, economic, social, technological and environmental factors beyond national borders (Christensen, 2016, p. 25). We adopt Drakenberg's fifth system as it serves to represent our research context more properly, enabling us to situate the megatrends at the level of the outmost layer, which induces changes on the system levels nested within it.

Bronfenbrenner's ecological systems framework in its extended version (Drakenberg, 2004) provides a helpful approach to break down the complexity of operating interrelated systems into their respective dimensions and shed some light onto how they influence each other. However, the framework mainly serves as a static snapshot of a given system that does not provide any further explanation on how changes within one system, affect other systems. As our aim is to understand how global megatrends will affect competence demand, we adopt Ashby's Law of Requisite Variety (1956) – a basic law of cybernetics – that provides a helpful explanation for change and adaptation processes within the framework. The law states that whenever a system has to cope with highly complex and fast changing environments, the acting system must be able to organize the same complexity within it. The original state of the system is an ordered state as opposed to a state of chaos. The system will remain in this ordered state as long as internal changes and changes of the environment can be balanced by the system itself, that is, as long as the system retains its attractor. An attractor refers to stable periodical dynamics a system aims at, thus regulating the direction and intensity of a system's self-organization (Kriz, 1997). If a system can no longer manage changes by means of its current attractor, it will search for a new attractor thereby entering a state of chaos characteristic of the transition period from one ordered state to another. Leaving the status quo enables the system to adapt to external demands thereby self-organizing according to the changed environment (Ellebracht, Lenz, Osterhold, & Schäfer, 2009, p. 18).

In our concrete example of DGC and the skill gap, we argue that changes induced by the ex-macrosystem introduce new attractors at the macro-, meso-, and microsystems. For instance, digitalization has led to changes on the macrolevel, such that a new digital infrastructure becomes mandatory or new laws are required. At the mesosystem, organizations will try to adapt to the new circumstances posed by the changes on the ex-macro- and the macrosystem, which will resemble in terms of changed values, structures and management styles (Ehlers, forthcoming). This also leads to new forms of work arrangements such as DGC. On the level of the individual, these changes demand higher self-organization competences, in order for individuals to adapt fast and flexibly to the changing environments (Ehlers, forthcoming).

To understand which set of competences will be necessary for individuals to be successful in this changing work environment, Ehlers (forthcoming) conducted the "Future Skills Study". The qualitative study examined eleven advanced, networked and agile organizations[5] through in-depth interviews, revealing that organizations' needs for self-organization capabilities of their individual actors are indeed growing when the environment's complexity rises. This shifts the focus from disciplinary knowledge to another skill set in which self-organization is a major underlying element and to which Ehlers (forthcoming) refers as "future skills". These skills can be subdivided into three major categories based on their respective frame of reference (see figure 1): individual development-related skills (such as self-efficacy, self-management), individual object-related skills (such as digital literacy, agility) and individual organization-related future skills (e.g. cooperation skills, sense making). Whereas these agile organizations in an attempt to self-organize towards the changes, have designed new competence models and learning environments where future skills are actively developed, organizational representatives also report that – from their point of view – the focus of higher education institutions would remain on equipping their students with disciplinary knowledge. The consequence is visible as the earlier mentioned skill gap, further exemplified by an OECD study reporting on a significant mismatch between the demand and supply of skills (2016).

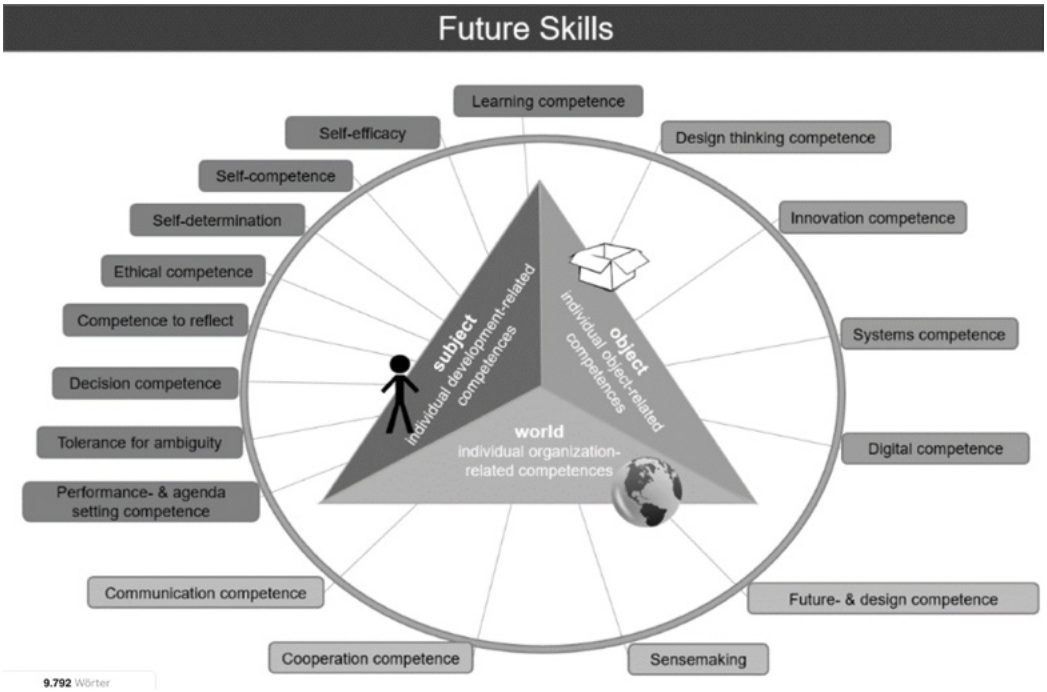

Figure 1. Future Competences (source: Ehlers, forthcoming)

Deming (2017) reports on a similar set of skills, comprising of the ability to communicate, work in teams, solve problems and self-organize. The OECD adds that digital skills will also play a key role in tomorrow's work environments (2017).

5. These companies won the "Dual Partner Award" (http://www.dhbw.de/dualer-partner-award.html), an award that prized organizations for their outstanding programs supporting their employees' competence development.

For the context of DGC, we use our framework (chapter 2) to identify competences we view as especially crucial for successful DGC achievement. To exemplify what is meant by each competence, we propose one model for each of the competences that we believe captures the main elements for successful DGC performance (see table 4).[6]

DGC dimension	Necessary Skill(s) & Competence(s)	Model
Actors	DC; IC	Ferrari (2012); Deardorff (2006)
ICM	DC	Ferrari (2012)
Task	DC; Job-related skills and knowledge, procedural knowledge	Ferrari (2012)
Outcome	DC; IC; Job-related skills and knowledge, procedural knowledge	Ferrari (2012); Deardorff (2006)
Conditions	Cannot be influenced by DGC actor's skills	

Table 4. Proposed relevant competences embedded in the DGC framework

As regards the **actors** involved in a DGC, individuals need to be aware of potential hurdles resulting from cultural diversity for instance. We have argued earlier that culture (national, organizational, work culture) specifies which values will be important to individuals, and thus influences behavior (Baldwin et al., 2006; Flechsig, 2000; Kluckhohn & Strodtbeck, 1961; Smircich, 1983). The competence necessary to deal appropriately with culturally distinct individuals is referred to as intercultural competence (IC). Deardorff defines it as "one's ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (2004, p. 194). Her Process Model of IC comprises of six main dimensions:

- attitudes (respect, openness, curiosity, discovery),
- knowledge (cultural self-awareness, deep cultural knowledge, sociolinguistic awareness),
- inter- and intrapersonal skills (to listen, observe, and evaluate; to analyze, interpret, and relate),
- internal (informed frame of reference shift) and
- external outcomes (effective and appropriate communication and behavior in an intercultural situation) (Deardorff, 2006, p. 256).

Surprisingly, none of the above studies identified IC as an important competence for the future. IC, however, accounts for communication competence by means of knowledge and external outcomes (one of the future skills), adding a cultural layer to it, which is necessary for the DGC scenario as actors have differing cultural backgrounds. Further, the abilities mentioned in Deardorff's model point to a high degree to self-organization skills. The individual will only be interculturally competent, if he/ she continuously reflects his/ her own behavior and the behavior of others and adapt his/ her attitudes, knowledge, and skills accordingly. This resembles for instance in Ehlers's future skills model in terms of the "competence to reflect" (see figure 1).

As Information and Communication Media (**ICM**) is involved in DGC activities, we argue that DGC actors need to possess digital competence (DG). DC however, does not merely refer to individual's capability of using different types of media (technical operations). A review of different DC models conducted by Ferrari for the European Commission, resulted in a model of seven different yet interrelated competence dimensions:

- information management (e.g. identify, locate, organize information),
- collaboration (e.g. link and interact constructively),

6. Though we will highlight the importance of two specific competences, it is by no means our aim to imply that the other skills and competences identified earlier would not be important.

- communication and sharing (using different communication tools, taking into account privacy, safety, and netiquette),
- creation of content and knowledge (e.g. constructing new knowledge),
- ethics and responsibility (e.g. being aware of legal frames),
- evaluation and problem-solving (e.g. solving problems through digital means) and
- technical operations (using technology to perform tasks) (Ferrari, 2012, p. 4).

This concept of DC refers to collaboration and communication competence as well, identifying them as key competences for DGC activity and providing further specification of their configuration in a setting where actors will communicate and collaborate with each other using ICM. As depicted in Table 4, we believe that DC not only plays a role for the ICM-dimension, but also for actors, which is supported by Maznevski & Chudoba's study (2000) suggesting that DC will, for example, define actors' media choices.

For a DGC's **task**, we argue that it demands DC, as ICM may be chosen depending on the respective task's complexity (Hollingshead, McGrath, & O'Connor, 1993) or its content (Shachaf, 2008). In our opinion, other necessary competences involved, will most likely not differ substantially from those skills a co-located team needs to possess, which we refer to in terms of job-related skills and knowledge, as well as procedural knowledge.

For a DGC's **outcome**, it has been shown in the context of multinational teams that higher intercultural communication competence (a competence related to IC, but focusing on the communicational aspect of intercultural encounters) can explain 20% of the variance in a team's performance (Matveev & Nelson, 2004). Thus, we assume that actors should possess IC to increase the likelihood of successful performance. However, no evidence was found that would point towards a positive effect of DC on DGC performance. Still, it seems logic to assume that when an actor lacks one or more skills identified by the DC model, successful collaboration will not be possible, as the working process is situated within a digital context.

Finally, **conditions** refer to restraining factors, which define a DGC's duration, or which boundaries (organizational, temporal, geographical) will be crossed by DGC activity. Thus we suggest that they will not demand any specific competences from DGC actors.

Given that DGC activities are a group effort, collaboration and communication competences are important skills, too. However, DC and IC both entail specifications of these competences in the special context of DGC (Berry, 2011). Therefore, we view DC and IC as the major two competences necessary for successful DGC activities, acting as meta-competences affecting communication and collaboration competences. The presented framework allows to breakdown a DGC's complex context into several dimensions. As such, it has served to relate these with competences that are – from our point of view – necessary competences for successful group performance. Still, to capture the phenomenon of DGC as the complex phenomenon it is, it will be necessary to examine other competences' influence for the respective dimensions as well.

Suggesting a Proposition Framework for DGC Cultures

In the previous chapter, we have identified the megatrends as key influence for the changed competence demand and found two competences that we believe will be key for future successful DGC activity (chapter 3). Moreover, it was argued that culture, as a phenomenon operating at various levels, deserves special attention (chapter 2). This chapter seeks to connect the framework's dimensions firstly, with Intercultural and Digital Competence (IC and DC), and secondly, with culture (see table 5). Thereby we intend to stimulate further research, exploring the intersection of these elements.

Proposition	Dimensions	Suggested interrelation
1: Actors' IC will lead to increased DGC performance	Actors & Outcome	IC + → Outcome +
2: Actors' DC will lead to increased DGC performance	Actors & Outcome	DC + → Outcome +
3: Actors' IC after the DGC activities will be higher than before	Actors & Conditions	Actor's IC_t < Actor's IC_t+1
4: Actors' DC after the DGC activities will be higher than before	Actors & Conditions	Actor's DC_t < Actor's DCt+1
5: For two DGC, the DGC with the longer duration, all other factors being equal, will perform better	Culture, Outcome & Conditions	Outcome (DGC_a) > Outcome (DGC_b), if t(DGC_1) > t(DGC_2)
6: DGC actors will value Intellectual Autonomy.	Culture & Actors	Actors → Intellectual Autonomy
7: DGC actors will value Egalitarianism.	Culture & Actors	Actors → Egalitarianism
8: DGC actors will value Mastery.	Culture & Actors	Actors → Mastery

Table 5. Framework for suggested interrelations

Competences within DGC

Though there is empirical evidence that competences in general (Moy, 1999), and intercultural competence in specific (Matveev & Milter, 2004) lead to increased performance in *multicultural* teams, to our knowledge, there is no empirical research regarding intercultural competence's (IC) impact on DGC performance. Studies so far have focused on intercultural communication competence instead, a competence related to IC, but focusing on the communicational aspect of intercultural encounters (e.g. Jarvenpaa, & Leidner, 1999; Matveev & Nelson, 2004). However, it seems logic to assume from the evidence already existent that IC will also lead to positive outcomes on DGC performance, as it fosters a group's alignment (Matveev & Nelson, 2004).

Proposition 1: Actors' IC will lead to increased DGC achievement.

We suggest the same relation for Digital Competence (DC), arguing that only if individuals are digitally competent, they will be able to use ICM effectively and for collaboration purposes, thus, contributing to higher group achievement.

Proposition 2: Actors' DC will lead to increased DGC achievement.

Further, as has been suggested (Chapter 2), achievement could also been measured in terms of other factors, such as competence increases. So far, there is no empirical evidence to our knowledge that would have tested, whether IC and DC have increased after a DGC's task completion. However, there is some evidence for students' IC increases after having been into contact with foreigners (Peng & Wu, 2016). These findings, together with the Intercultural Contact Theory (see chapter 2) suggest that actors' IC will be higher after having worked in a DGC.

Proposition 3: Actors' IC after the DGC activities will be higher than before.

However, this may be constrained by actor's previous level of IC. One could argue that if an individual has no IC at all, the mere exposure to people from different cultures will not result in higher levels of IC, if the respective actor does not have the necessary prerequisites in terms of attitudes, skills, and knowledge (Deardorff, 2006). The other extreme would be interesting as well: If there is an actor who

is already highly competent in terms of IC, is there a saturation level of IC, such that after the DGC activities he/ she will not see any further IC increases? Therefore, we ask:

Research question 1: How does an actors' level of IC before engaging in a DGC activity effect his/ her level after the activity?

The same may be true for DC, but given that there is no evidence supporting this notion, the following proposition is highly speculative:

Proposition 4: Actors' DC after the DGC activities will be higher than before.

Here, we can ask the same as for IC regarding possible saturation effects and the previous level of an actor's DC.

Research question 2: How does an actors' level of DC before engaging in a DGC activity effect his/ her level after the activity?

Moreover, it has been shown that fostering team culture increases a group's performance as team cultures ensure more efficient and effective collaboration in an otherwise very loosely coupled team (Peng & Wu, 2016). However, it takes time to build a culture (Deal & Peterson, 1990). Thus, we suggest that

Proposition 5: For two DGC, the DGC with the longer duration, all other factors being equal, will perform better.[7]

Still, we have not yet answered the question concerning the nature of a possible DGC culture. The next section proposes some options.

Competences and DGC Culture

We have seen by means of the ecosystems framework and empirical support from Ehlers (forthcoming) that organizations in an effort to stay competitive, adjust their organizational values (Ehlers, forthcoming), which leads to different competence models (Cheetham & Chivers, 1996; Sauter & Staudt, 2016) within organizations and a need for the individual to develop a different set of competences. According to Erpenbeck (2010), competence is built on knowledge, capabilities, and qualifications, but in order to be *competent*, internalized values need to be linked with it. This is down to values motivating action, as individuals perceive them as desirable goals (Schwartz, 2012). Thus, in the light of changed competence demand, it is argued that the individual will not only self-organize his/ her knowledge, capabilities, and qualifications towards the new demands, but also he/ she needs to internalize a different set of values in order to develop a certain competence. As values are the core of culture (Schwartz, 1999), and they further serve to transform knowledge, capabilities, and qualifications into a competence (Erpenbeck, 2010), we can speculate about the nature of a DGC culture given that we have identified DC and IC to be important competences for DGC. Hence, to gain a clearer picture of the DGC culture, we need to find out which values form the basis for DC and IC. Schwartz's Cultural Value Orientations of Egalitarianism, Intellectual Autonomy and Mastery seem promising in this regard. Intellectual Autonomy promotes values such as broadmindedness and curiosity – elements that have been specified by Deardorff's IC Model as important attitudes for the development of IC (Deardorff, 2006). Thus, we suggest that

Proposition 6: DGC actors will value Intellectual Autonomy.

Moreover, Schwartz's Egalitarianism value orientation is built upon responsibility and helpfulness, and demands people to "internalize a commitment to cooperate and [...] act for the benefit of others as a matter of choice" (Schwartz, 2006, p. 140–141), which resemble in Ferrari's DC model as the collaboration sub-competences to "link and interact with others in a constructive way" (Ferrari, 2012, p. 4).

7. Peng and Wu suggested similarly that "[t]he greater [...] the cultivation of a common team culture; the higher the performance of virtual teams with culturally and organizationally diverse members" (2000, p. 352).

Thus, we propose:

Proposition 7: DGC actors will value Egalitarianism.

Moreover, according to Schwartz, "ambition, success, [...], and competence are especially important in mastery cultures" (Schwartz, 2006, p. 141). This describes individual's and DGC's general motivation; they form a group of people in order to successfully achieve a prescribed task, thereby relying on their competences. Hence, we suggest that:

Proposition 8: DGC actors will value Mastery.

If there was support for Propositions six to eight, this would lend further support for the notion of values being competences' cores on the one hand, as well as cores of culture on the other hand, which would lend further support for the present paper's idea of a conceptual bridge between Schwartz's Cultural Value Dimensions and Erpenbeck's concept of Competence.

Conclusion

Our starting point was that global processes change the way in which global organizational work is structured, thus leading to new working formats such as Digital Global Collaborations (DGC). To obtain a fuller understanding of important dimensions involved, we created a framework (chapter 2) that allows for analyzing five different dimensions spanning a DGC's scope of action along its *actors*, who are working on a common *task* using *ICM* to achieve some *outcome* thereby being restrained by certain *conditions*. Though a more comprehensive literature review needs to be conducted to further enrich this first sketch, we believe that its early version provides a good starting point for future research, shedding some light on the complexity involved in DGC research. Moreover, we introduced an overview of common problems DGC need to face, and highlighted culture, which was found to be one of the major obstacles in DGC activity (RW3 Culture Wizard, 2016, p. 4). We presented a selection of culture models adequate for cross-cultural research purposes, which are specifically well suited for addressing questions in a DGC context, as they are applicable to different types of culture. Additionally, we highlighted some critique concerning the models. A separate section was dedicated to DGC's achievement, thereby proposing that further research should not only investigate outcomes from an economic or socio-psychological perspective, but also focus more attention towards the circular fashion of competence application and its parallel development.

After having gained a clearer picture of DGC's context and specific challenges, chapter 3 aimed to shed some light on the root of these challenges, the skill gap. To explain its emergence, we adopted an ecosystems perspective to gain a more detailed overview on involved systems. Ashby's Law of Requisite Variety proved to be a fruitful explanation for how the three megatrends lead to an increased need of self-organization competences as resembled in recent research findings (Ehlers, forthcoming). Having identified the megatrends as the source for the changed competence demands, the skill gap's root could be explained as a delayed reaction time of less agile organizations and institutions to self-organize towards their changing environment.

Our developed framework proved helpful for recognizing IC and DC as especially relevant competences for DGC. Dimensions of these two competences were further explicated, drawing on models from the literature.

The last chapter aimed to shed some light on the intersection of DGC, IC, DC and culture proposing avenues for further research along the actor, outcome and condition dimensions of DGC, thereby establishing a link between culture and competences through values. We hope that the present paper provides a helpful starting point for research regarding the complex phenomenon of DGC.

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Industry 4.0 – The Industrial Evolution:

'An Opportunity to Empower Youth towards Education, Skills and Employability'

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Abstract

The Industry 4.0 often termed as an Industrial evolution rather than revolution as the technology which is evolved will truly change the way entire industry works. Everyone is familiar with the digitization and its usefulness. But what makes this digitization special is the way in which the manufacturing industry turns fully automatic with zero human involvement, offering a new chance and can be called as a challenge towards every country & the continent and to the whole world.

The challenge itself is giving us a chance to get prepared towards this industrial evolution as digitisation takes hold. We are on the verge of facing a very huge transformation in almost every sectors of the country. The solution lies in the way we approach and accept the evolution. We are familiar with words like Artificial Intelligence, Internet of Things, Augmented Reality (Concept), Machine learning but the awareness of its usefulness in building the country for the decade is not known. Primarily, the industrial sector which is partially automatic and partially human involved will turn into fully automatic so the first thought will be that there will be loss of jobs creating unemployment and a huge gap between skills and employability to every youths and it will impact the country's own manpower as well as its economy. But by planning a Proper approach towards the industrial evolution and learning to face the new challenge by creating an environment through which we can empower youth towards Education, Skills and Employability so that the country will get maximum outcome.

Every country and its people (in one way or the other) will face the industrial evolution and will try to make use of it for the benefit of the country. By mutual cooperation and talks, the country will be able to get advantage by learning different ways of the approach and challenges faced by them and making use of It as an opportunity for getting the best output for the country.

It Is the education sector which shapes the future of the country. The major part of the country which will help in building the nation are the youths and the graduates. As they will be affected by the industrial evolution, we have an opportunity to learn the uniqueness of this evolution before its advancement and to empower ourselves.

We can start learning and preparing from the grass root level in the education which is schooling. The Today's generation which spends more time with the digital world so there is lack of human touch and involvement, it creates an automated integration with the technology. We should create awareness of the technology from school level and impart the skills required by them when they turn youth. We should also identify the problems faced by it and also address it further. Countries can learn the different ways of using their knowledge by sharing in education and the way they exchange the ideas of sharing the chances for boosting education.

We can Exchange the curriculum of the schools, intercontinental also we should be taking feedbacks and we should exchange the teachers at every level. We should identify the unique issues continent

wise and solving the problems faced by the country via summit or digitally by using the technology. We can establish the network of schools and organize cross country activities needed for education via digital learning. We can organize a debate or summit digitally via using augmented reality or digitally via any platform for every issues being faced for addressing the evolution. The Need of student's v/s need of country should also be taken into consideration.

The Skill is a very essential element in humans as it is the only factor which can help the country for building the economy from bottom to top. We can Include the skill based learning in every school. It will help to gain essential skills required and will be according to the interest of the seekers. We should prepare the children as well as youths for automation, machine learning, artificial intelligence at needed stages so that they became aware of the technologies and for their employability.

As most of the work will be based on automation, the youths need to get skilled to control and monitor the automation and get maximum output from the industry. Youths are responsible for the growth of every country so the employability of every youth plays a vital role in building the country.

Introduction

As the technological evolution takes place in 21st century, the industrial evolution and the empowerment of youths are facing a huge gap in form of employability. The youths are trained and needs constant training. There should be concept of self-training required in this fast-paced world. The industry can't afford to invest its vital time in training the youths so the self-training skills should play an important role in Empowering Youth towards 'Education, Skills and Employability'.

According to the BBC Reports, the Robots will overcome the humans by year 2050. So, the technological innovations need to be accepted and controlled in order to get the maximum outcome to the human mankind.

There is need of Reskilling and upskilling of the humans as the upcoming decade will be using the automation. There is a need to human Touch required in this digital era as it Is the essence of human life. So ,the youths needs to get empowered in such a way that education and employability are utilized to maximum outcome.

By establishing the cross-cultural connections the youths as well as the whole country will learn from each other so that every country will be benefitted.

Human v/s Machines – Need of Reskilling and Upskilling

Machines will rule the workplace by the year 2025, suggests World Economic Forum (WEF). According to WEF, more than 54% of Indian employees in 12 sectors needs reskilling by 2022. In less than 7 years, by 2025 , machine "Future of Jobs" report of World Economic Forum(WEF). Globally, almost half of all companies expect automation to cut their full-time workforce In the next four years; however, new jobs will still lead to a net gain in employment opportunities if sufficient reskilling is done. In India, 54% employees in these sectors needs reskilling by 2022.

The Technological changes such as high -speed mobile internet and cloud technology, artificial intelligence , robots and automation are going to lead and it will significantly shift on the frontier between humans and machines within five to seven years.

In 2018, humans performed an average of 71% of total task hours across the 12 industries spanning manufacturing, services and high tech. By 2025, that will drop to just 48% , according to WEF, machines will perform the remaining 52%.

The companies surveyed represent more than 15 million workers in 20 developed and emerging countries. An estimate indicates that 75 million jobs will be displaced by a shift of division of labour

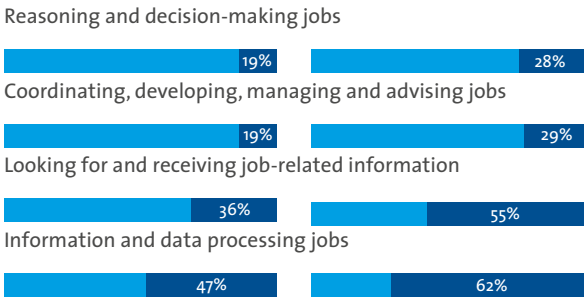
between humans and machines, while other 133 million new roles will emerge that will be more adapted to the new division of labour between humans. Machines and algorithms.

The management of these transformation will play a vital role as it is a key factor and it depends on various factors varying from country-to country and places to places. The risk of widening skill gaps, heightening inequality and raising polarization. The reskilling and upskilling of employees are an urgent imperative .

The rise of the machines

In the future, an increasing share of a company's "information and data processing work" will be taken over by machines

Ratio of human (■) - machine (■) - working hour, 2018 vs. 2022



Source: World Economic forum report "future of jobs"

Need of human touch and bringing the change

It is very difficult to learn something new, especially if the resources are the bare minimum. The youths who are going to lead the world in the next level needs to be aware of the challenges and opportunities which they are going to encounter when they will face the world of automation. In the young age, the students should not face the hurdle of the global language- English had not been the mother tongue , but who had gathered their guts , resources and wits to venture into a domain unknown -learning a language hardly used in their day by day lives. When we try to learn a new language , it gives challenges of learning a new language which is hardly used but yet one can master it.

The learning in nowadays in this digital world, driven by the technology, has been self- learnt, polished with the passage of time and experience. The teacher can bring the zest of learning and energy for living life by encouragement and inspiration. The teaching – learning will begin to open up to set of new reality and it will absorb and assimilate the experience. It is not only the infrastructure and technology available that matter, but also the facilitators aka teachers which provides the human touch, which will help transform pedagogy from mere transmission to transformation, accompanied with grit and determination will make difference to the youths.

Source: Article on " A class with a difference " IL & FS Education and technology services.

Empowering the youths for industrial evolution

Day by day the speed at which the innovations are emerging and the speed at which the population of the world also Is on the rise. Industry 4.0 as the concept says it will turn fully automatic with zero human involvement, offering a new chance and can be called as a challenge towards every country & the continent and to the whole world. Youth comprises of 40% of the total population of any country. The education of the youths can be done by using the same technology which will govern them in the upcoming years. The skills which are required for the industry 4.0 can be learnt by the youths at their own level by the use of same techniques in an appropriate manner.

We are on the verge of facing a very huge transformation in almost every sectors of the country. The solution lies in the way we approach and accept the evolution. We are familiar with words like Artificial Intelligence, Internet of Things, Augmented Reality (Concept), Machine learning but the awareness of its usefulness in building the country for the decade is not known. Industrial evolution and learning can be done to face the new challenge by creating an environment through which we can empower youth towards Education, Skills and Employability so that the country will get maximum outcome. By mutual cooperation and talks, the country will be able to get advantage by learning different ways of the approach and challenges faced by them and making use of It as an opportunity for getting the best output for the country. We should create awareness of the technology from school level and impart the skills required by them when they turn youth. We should also identify the problems faced by it and also address it further. Countries can learn the different ways of using their knowledge by sharing in education and the way they exchange the ideas of sharing the chances for boosting education.

Learning the smart way

The main objective of the school is to provide a congenial atmosphere for nurturing talent , both curricular and extra-curricular. Although the syllabus for academic work is kept similar for almost 5to 10 years. The education in absence of the technology can also be implemented. The students should work as a team there should be peer learning between them. The mutual understanding should be created between the teachers and the students. To instill the sense of honesty in childrens various role play techniques should be used. The Exchange of the curriculum of the schools, intercontinental also we should be taking feedbacks and we should exchange the teachers at every level will play a vital role. We should identify the unique issues continent wise and solving the problems faced by the country via summit or digitally by using the technology. We can establish the network of schools and organize cross country activities needed for education via digital learning. We can organize a debate or summit digitally via using augmented reality or digitally via any platform for every issues being faced for addressing the evolution. The Need of student's v/s need of country should also be taken into consideration.

Cross-cultural connections

Live stimulation models can be used to get the hands-on exposure on working in diverse , cross cultural teams, thereby developing deeper understanding and tolerance towards one another culture. Such experiential learning to which if youth gets exposed to, it will indeed help the youths to enrich themselves. The cross cultural connections for the empowerment of youths will be of vital importance as the culture represents individuality of one's life and it helps the society and the country to grow. So , a network of different cultures should be established in order to gain the exposure of different culture thereby establishing new connections for the betterment of the country.

Conclusion

The empowerment of youths towards Education, Skills and Employability can be achieved by the collective efforts of every human beings. The country plays a vital role and the way new evolutions are changing the scenario of the industry, the youths needs to get empowered to make the use of technological enabled world. The Skill is a very essential element in humans as it is the only factor which can help the country for building the economy from bottom to top so the empowerment of youth is utmost importance. The awareness regarding automation, machine learning, artificial intelligence at needed stages should be provided so that they became aware of the technologies and for their employability.

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