

# NEW MODES OF MOBILITY:

Lessons Learned 2019-2022  
Volume I



**Troy B. Wiwczarowski**  
**Dominik Winkler**

**Editors**



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*Volume I*

Edited by

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# Acknowledgement

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This first volume contains six articles written by eleven academics from the partner universities involved in the project consortium. In addition to the FHWS - University of Applied Sciences Wuerzburg-Schweinfurt, these European universities include the University of Debrecen, the Fontys University of Applied Sciences, the Seinajoki University of Applied Sciences LTD, the University of Zielona Gora and the Lucian Blaga University of Sibiu. These contributions provide deep insights into the experiences we were able to make during the project. For this we are very grateful to all authors.

However, a sincere thank you should not only go to the authors of this book, but also to all colleagues who have made many things possible within the framework of the partnership over a large period of time. Especially considering the challenging background of the CoVid-19 pandemic that broke out in 2020.

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# Preface

## **New Modes of Mobility: Lessons Learned 2019-2022, Volume One**

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This e-book is a two volume collection of experiences and lessons learned over the course of the three years of the New Modes of Mobility project. This is the first of the two volumes. In 2019, a consortium of universities applied for and received Erasmus+ funding for a Strategic Partnership project (Project No. 2019-1-DE01-KA203-005053). The project was funded for three years (2019-2022). The coordinating institution was the University of Applied Sciences Würzburg-Schweinfurt (Germany), with project partners from the University of Debrecen (Hungary), Fontys University of Applied Sciences (The Netherlands), Seinäjoki University of Applied Sciences LTD (Finland), University of Zielona Gora (Poland), and Lucian Blaga University of Sibiu (Romania).

The New Modes of Mobility project (New M) arrived exactly on time - or rather, exactly in time. I would refer to the project's beginning in the fall of 2019 as being a twist of fate - what fate actually did was to throw a somewhat poisoned fruit right into our collective laps. The reason that fruit (in this case, the eruption of COVID-19 and the resulting, immediate necessity to move all teaching and related activities at institutes of higher

## 2 *New Modes of Mobility*

education (HEIs) into the virtual world) was only somewhat poisoned is that the immediacy of the situation forced the project partners to actually face the realities of employing the contingencies of the hybrid and virtual mobility worlds we had only begun to envision as the project was being conceived.

Yet, because the New M partners had already been considering the inevitability that HEIs should prepare to develop and offer non-physical mobilities to students before the outbreak of COVID-19, we want readers to consider first all of the contributions in this e-book within the frame of the needs of the pre-COVID world, as those needs still persist and will continue to - albeit reinforced by the lessons COVID-19 inevitably forced us to take.

Up until the upheaval which would radically alter practically every facet of university life began in about March 2020, the broad initiative to realise internationalisation at universities, by i.e. promoting Erasmus student and faculty exchanges among European Union countries, was a struggle which had only shown mixed success.

True, teachers and academics had been building fruitful cooperative relationships, resulting in many contributions to pedagogy and science. Equally true, short or lengthy stretches of teaching at partner universities not only provided colleagues with new compulsions to bolster their commitments to teaching, but also opened them to new ideas and methodologies for use in their own classrooms, and thus inspired their students with those innovative concepts and methodologies that a classroom experience with a likable instructor from a different culture brings.

And yet, these successes must inevitably be viewed within the context of the reality of the social changes the project partners had been witnessing manifesting themselves across European campuses for a few years. Even before COVID-19 appeared, there had been developing a trend among students to avoid taking advantage of the many study abroad opportunities.

Participation numbers were declining, and more worrying: the number of Erasmus dropouts were on the rise.

Thus, the need for the New M project.

The main objective of the project is to develop mobility concepts using digital technologies that can be made available to

all participants of a course of study, i.e. the main target group. In order to achieve this ultimate goal, new pedagogical concepts have to be developed, tested and implemented into existing curricular to achieve an improved internationalisation at home. Since there are few real examples of those new modes of mobility, it can be difficult for an HEI to implement them. It is our hope that the contributions here will assist colleagues to ease these difficulties.

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14 June 2022

# 1

## **Maintaining balance for learners with diverse educational background and progression in a virtual teaching and learning environment**

*Dominik Winkler, University Applied Sciences  
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*The ongoing digital transformation is causing radical changes in many areas, accompanied by as many advantages as disadvantages. The Covid-19 pandemic accelerated this process tremendously and confronted unprepared educators with new challenges. The author also encountered a challenging scenario in which the already existing dynamic of international students with their different cultural and educational backgrounds became aggravated by a virtual environment that was unfamiliar to all parties. The Universal Design for Learning Framework was utilised to maintain the balance for this diverse audience, but also to support the process of course design.*

### **1.1 Introduction**

The illustrator George Evans once said, ‘Every student can learn. Just not on the same day or in the same way.’ This statement illustrates in a very picturesque way that humans always want to learn more, but are often held back from doing so due to various barriers. Simultaneously, it poses a challenge to mentors, teachers, trainers, as well as lecturers in institutions of higher education to address the reality of different learning styles. A learning style is not a competence in itself, but rather a preferred method of using one's own competences. (Sternberg, 1994) This

very influential concept of teaching and learning theory has exercised lecturers for many years and describes how individuals develop different approaches of learning due to their preferred way of absorbing, processing and internalising knowledge. Although these styles are not static and students can learn new approaches, it should not be underestimated how the gap between the prepared teaching material and the approach of the students can negatively influence the learning success (Sarvenaz, 2013).

In a local scenario with exclusively local participants, this poses a certain challenge. However, the teaching and learning environment at today's universities is rarely only local, but is enriched by both global educators and students. The integral importance of international and inclusive education for a positive global coexistence and understanding as well as sustainable growth was already specified by the participating ministers of education at the World Education Forum in the Republic of Korea in 2015 (UNESCO et al., 2015). In order to comply with this requirement, it is not sufficient to only involve international participants in all levels of the education process. Beyond that, it is imperative to address the highly diverse needs of this international learning community. In general, a connection between culture and learning style cannot be denied, and lecturers must be prepared for the unavoidable fact that students react differently to the learning scenarios provided due to their cultural conditioning and require additional support to achieve the general intended learning outcomes (Simy et al., 2009). Teachers regularly working in an international environment are constantly confronted with both challenges described. This is what makes working beyond the borders of one's own university and country so particular difficult is the heterogeneity of the students involved. This applies not only to their different cultural backgrounds, but also comes from their educational careers to date, which provides them with different skills and a knowledge. For example, international exchange students may attend a comparable study programme at their home university but not the exact same one. Another challenge arises for student who are in a completely different study cycle than the local students. Experienced lecturers have developed their very own catalogue of methods to be able to offer their intercultural audience a learning concept that promises success.

Circumstances were further complicated when in 2020 the



CoVid-19 pandemic changed the teaching and learning landscape around the world overnight, also forcing the majority of international higher education into a virtual environment. Many accustomed teaching methods could no longer be realised or lost their effectiveness. On top of that, the increased social distance also the difficulty to deal on an individual level with the different learning progress and priorities of the students.

The combination of international education, students with diverse backgrounds and a virtual environment was also the setting for teaching within the ERASMUS+ Strategic Partnership 'New Modes of Mobility'. The author of this article was involved in this initiative and on the following pages, he shares the measures used to address the related challenges in both the design and the implementation of his module 'International Marketing'.

## **1.2 Overview of the relevant conditions**

To better understand the nature of the measures, a brief outline of the learning scenario within the initiative 'New Modes of Mobility' is given next. The ERASMUS+ Strategic Partnership 'New Modes of Mobility' was originally designed with the objective of developing and testing alternative mobility concepts in the sense of virtual as well as blended mobility. As a response to the outbreak of the pandemic, it was necessary to translate this goal into a fully virtualised semester abroad. This 'Abroad@home' called programme consisted of six courses, each facilitated by one of the involved partner universities. Located in different European countries, the partner university contributed not only by providing the lecturers for these modules, but also by recruiting the target audience. Similar to traditional student exchange programmes, these international students came with a range of differences, not only in terms of culture, but also in terms of study programmes and progress. To manage this heterogeneous audience in a virtual environment, the author looked for methods to proactively counteract the additional challenges for his module 'International Marketing'. The module had the scope of 5 ECTS and was integrated into the regular Bachelor's degree programme International Management at the University of Applied Sciences Würzburg-Schweinfurt in Germany. In addition to the students from the 'Abroad@home' programme, the regular local students and other on-site exchange students were therefore brought together in this virtual classroom, increasing the number of participants to around 100.

In order to cope with this amount of students within the unfamiliar virtual setting, the author opted for a mixed concept of live video lectures, which were common at the time, with additional asynchronous components for the students to work on independently.

### **1.3 Challenges posed by a diverse, international and virtual educational environment**

The teaching constellation described so far (international education, students with diverse backgrounds and a virtual environment) comes with very specific challenges. To justify the decisions made, here is a short selection of the key challenges experienced within the scope of this ERASMUS+ experiment. Of course, this list could be extended further, but was reduced to the observations that are meaningful for this investigation.

**Challenge one - Reduced social exchange among students:** Informal interaction among students is a central part of campus life and of huge importance, especially in the context of international teaching and learning mobility (Ghosh et al., 2020). Everyday encounters even outside the classroom provide a platform for many students to converge despite their different learning styles. The virtual environment reduces this platform to a minimum or even completely eliminates it. As a consequence, the teacher can no longer rely on a dynamic among students to help each other. In addition to this missed opportunity, a feeling of isolation can arise, which can reduce individual motivation and in some cases even lead to mental health issues like depressions (Liang et al., 2020). This situation is worsened by the fact that the lecturer appears to be less accessible from a student perspective and necessary assistance is sought less often.

**Challenge two - Amplifying effects on cultural distance:** The cultural diversity in an international teaching scenario provides a significant added value and enables the practical acquisition of intercultural skills and perspectives. However, it should not be neglected that this cultural distance can also be a source for misunderstanding and misbehaviour (Ghosh et al., 2020). In the virtual context of this teaching experiment, two reinforcing effects for this potential problem were identified. First, the already mentioned social distance among students, but also towards the lecturer, reduces the compensatory potential of informal exchanges beyond the classroom. The absence of a platform for informal convergence is as harmful to the cultural

distance as it is to the situation of different learning styles. Second, another observation was a further widening of the gap created by the massive use of teaching and learning technology. Students as well as lecturers are at the mercy of the technical conditions and not everyone has the necessary equipment and skills to keep up (Dwivedi et al., 2020). The involved individuals are often so intensely preoccupied with the technical side of education that they lose sight of their fellow human beings. Cultural differences therefore not only become more difficult to overcome, but in some cases are even amplified.

**Challenge three - Amplifying effects on the different levels of education:** The negative effects on the cultural distance of the students can be transferred almost one-to-one to the educational gap between the students. This gap results from their different educational backgrounds and level of progression. Particularly in the context of group work, it was observed that this increased gap prompted individual students withdrawing. In certain cases, students were not able to keep up with the content and could not make a relevant contribution to the group. Of course, such inequalities also exist in a conventional physical learning environment, but the social distance and technical divide came with a significant amplifying impact here as well.

**Challenge four - Limited mentoring options:** Especially in Universities of Applied Sciences, lecturers have to be more than mere mediators of knowledge. The demand for interactive and practice-oriented teaching requires a certain degree of mentoring. In the context of international teaching, this is all the more important in order to be able to respond to the individual needs of the diverse audience. Intensive mentoring would also counteract the challenges already described in the previous paragraphs. That is why the fact that the purely virtual teaching environment massively limited the effectiveness of the usual and established mentoring measures is all the more serious (García-Morales et al., 2021). The aforementioned social distance that went hand in hand with the virtual learning environment often made the student anonymous and usually hardly tangible. Emerging difficulties became much more difficult for the mentor, the lecturer, to recognise compared to classroom conditions. Even if problems were recognised, the question of how to solve them remained. The students were not directly available and were able to close themselves off easier due to the anonymous setting. It must also be acknowledged, that the

additional technical challenges for the lecturer take their toll on time and resources when a certain point is reached. The usual balance of content and social interaction become imbalanced by the new element, the virtual space.

**Challenge five - Increasing self-organisation and self-learning among students:** The last challenge we would like to address at this point can also be considered as a result out of the previous limitations and amplifying effects in the context of virtual teaching. The isolation from the lecturer and this lecturer's limited mentoring options resulted in an increased necessity for students to operate autonomously in order to successfully complete a module. That can certainly be seen as an opportunity, since the students are trained in the competences of self-organisation and lifelong learning in a sustainable way. However, it is critical to recognise that without corrective measures, this enormous pressure can make students feel lost and overwhelmed (García-Morales et al., 2021). In particular, exchange students that came from an educational background that places less emphasis on independent work have considerably struggled in this regard. Furthermore, the observation made clear that this not only applied on an individual level, but also had an impact on the independent group assignments. For the teams, it posed an everyday challenge to keep the different interests and working methods of the members in line. Once again, it must be emphasised that this is also an opportunity, but additional arrangements are necessary to not leave the students overburdened.

#### **1.4 The Universal Design for Learning Framework (UDLF)**

To make the teaching within the scope of the 'Abroad@home' programme successful despite the challenges described, appropriate measures were necessary. **The Universal Design for Learning Framework (UDLF)** has proven to be a valuable tool for this purpose. The UDLF is a resource to design lessons in a way to activate and engage a diverse audience (Meyer et al., 2000). The UDLF was developed by the **Center of Applied Special Technology (CAST)**, which was founded in 1984, and has been optimised over the years for a variety of teaching areas (For more detailed information about CAST and the UDLF, please visit <https://www.cast.org/>). The framework has also been widely adopted in literature, including identifying its value for better working with culturally diverse students who

are equally diverse in their academic progress. (Chita-Tegmark et al., 2012) In addition other research has proven the added value to our third dimension, the virtual learning environment (Rogers-Shaw et al., 2018). The CAST members provide comprehensive guidelines and support for the implementation of the UDLF on their open access online platform.

The main goal of the UDLF is to transform novice learners into expert learners who not only know how to use the knowledge they have already acquired, but are also able to develop independent learning strategies and are highly motivated. To achieve this, the framework relies on three key principles (CAST 2011):

1. **Provide Multiple Means of Representation** (the '**what**' of learning). Different students need different materials to learn successfully and efficiently.
2. **Provide Multiple Means of Action and Expression** (the '**how**' of learning). Students' interaction and navigation behaviour with the content provided can also vary significantly.
3. **Provide Multiple Means of Engagement** (the '**why**' of learning). Engagement and motivation is a success factor for a teaching scenario that should not be underestimated and is very dependent on the students involved.

Each of these principles is based on the individual personality of the students, but can also be influenced by their academic progress, cultural background or any potential disabilities they might have. The realisation of these principles takes place through the elimination of 'disabilities' within a teaching scenario. These 'disabilities' are ultimately the barriers that prevent students from participating successfully within an educational scenario.

To conclude the introduction of the UDLF, Figure 1 shows the graphical organiser of the UDL framework, which serves as an overview of the elements to be considered while designing a course.

### **1.5 Applying the UDLF in the specific scenario of 'Abroad@home'**

This section provides the author's assessment of the components of the UDLF and the measures derived from it. Whenever possible, descriptive examples are also mentioned to make the

topics more tangible. At this point, it is important to mention, that this is done exclusively in the context of the educational environment realised within the 'Abroad@home' programme. This was already characterised as a trinity of cultural diversity and different levels of progress on the side of the students, as well as a virtual teaching and learning environment. In addition, it must be made clear that the components relating to physical, sensory (e.g. blindness or deafness) and learning disabilities (e.g. dyslexia) have been intentionally excluded from this analysis. However this is not to diminish the relevance of these elements in the least. Depending on the type of students involved, they can be of utmost importance. This decision merely reflects the focus that had to be taken under the circumstances of this project. The central object of consideration was the student diversity due to the aspects of culture and study background, which required an adequate selection in the implementation of the UDLF.

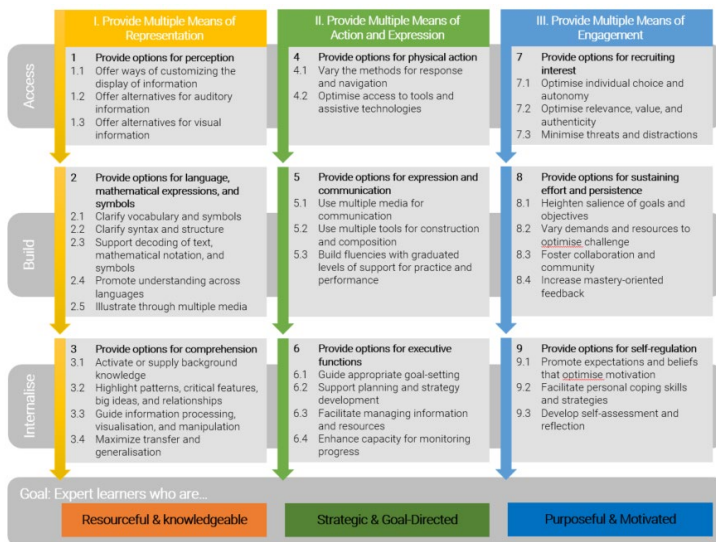


Figure 1.1 Adapted Universal Design for Learning Framework (CAST, 2018)

### Provide multiple means of Representation

At the beginning of the design process for this specific educational scenario was the fact that there is no single form of **representation**, which is equally effective for all students. The different preferences for absorbing information range from

printed text to video presentation. This is further complicated by the wide range of linguistic and cultural backgrounds of the students. As a consequence, it is necessary to use a range of different forms of representation in order to ensure sustainable learning progress for all students involved. In general, it should be noted that the use of different forms of representation also promotes the learning process and the transfer of acquired knowledge on an individual level, as the learner is enabled to independently establish links between the different perspectives (CAST, 2011).

To guarantee access to the lecture materials of the 'Abroad@home' programme, it was decided that English as the language of instruction would be the adequate common basis for all participating students. With this decision, the diversity of the representation was certainly limited, but a deviation from this language would even have contradicted with the original learning objectives of the programme. Nevertheless, it should be mentioned that it can make perfect sense to offer several languages in other programmes where the content and not the language setting is the main focus. Such an approach allows for a wider target group as well as a more individualised access to the content.

The all-English learning environment of the programme was realised on the Moodle based learning management system (LMS) platform of the host university. Particular attention was paid to the following three features:

- The controlling features of the LMS platform can be changed completely to English.
- The teaching materials and their presentation were tailored to an English-speaking audience in terms of content and language.
- All additional materials provided (e.g., articles, book chapters, videos) were available in English.

How should one build a representation that works within this all-English setting for the participating students, which naturally came with different levels and quality of English but also progress within their original study programme - especially when the virtual environment yields many situations in which lecturers are not available to consult with their students? The author and instructor decided to make relevant knowledge available in several ways. The sometimes asynchronous virtual

scenario rapidly became an advantage and enabled the intuitive implementation of various multimedia elements that went far beyond the regular options within the physical lecture hall. Here are the main features used:

- Lecture materials were made fully available for revision to support self-paced learning.
- A more than average amount of effort was put into visualisation to make the content easier to grasp.
- Regular repetition of the content in form of introductions and repetitions.

Selected multimedia materials were identified and made available for self-learning: e.g., book chapters, articles, interactive online tools, videos, TED Talks. These resources were meant to give students different opportunities to overcome potential differences in language or knowledge.

The structure described was chosen not only to provide students with knowledge, but also to support their process of understanding and internalise it. This is the crucial skill that characterises an expert learner and a considerable amount of cognitive research has shown that this transfer is not a passive process but rather an active one (CAST, 2011). Activating the existing background knowledge of the students, as recommended in the UDLF, will be an important feature in the next segment of this discussion, but already in the area of representation, some preliminary work can and has to be done. This necessity arises from the realisation of how different the strategies for absorbing knowledge can be due to cultural background. A typical example would be the tendency of 'Western cultures' to sort elements according to their category, while 'Eastern cultures' prefer to arrange them according to their functional dependency (Nisbet et al., 2001). The consideration of such inconsistencies inspired the following major structural decisions:

- In order to balance specialisation and generalisation, a global structure was implemented for each topic: The students were involved via global basics, then supplied with additional topic-relevant specialised knowledge and finally, an interactive exercise was offered at least once to deepen their understanding
- To highlight critical features and relationships, compact and simplified summaries of the key messages were incorporated



in the education material.

- Beyond the lectures, an asynchronous way of coaching via supporting material for the self-learning portion was vital to support information processing in a sustainable way: especially interactive online tools and inspiring video formats, such as TED Talks, have proven to be very effective.

To summarise, the first pillar of the UDLF was realised in such a way that the representation was tailored to the virtual scenario. In addition, the goal of resourceful and knowledgeable learners was taken further in the sense that students should also acquire these skills beyond their regular cultural and educational environment. A visual summary of this can be taken from Figure 2.

### *Provide Multiple Means of Action and Expression*

Providing knowledge in an appropriate way is only the first step in a healthy teaching environment. The next step should be to reflect on which entry points can be created to enable students to participate with **actions and expressions** in order to enrich the classroom experience for all participants. Capabilities and preferences to participate actively vary again greatly on an individual level. One learner may be better at producing text, while another may favour spoken language (CAST, 2011). In addition, the active participation requires a certain amount of experience, which naturally is heavily determined by the academic progress of each student. As a consequence of these circumstances, regular on-site teaching already shows how language barriers and different cultural habits within an international setting lead not only to a great variation in the activation potential of students, but also in the pedagogical effect on them. In order not to allow these challenges to escalate further due to the seemingly limited possibilities of a virtual scenario, it was of utmost importance for 'Abroad@home' to exhaust the inclusion opportunities of the setting and to identify possibilities, which go beyond the usual classroom scenario.

Already the design of the **access** to a learning platform can support or hinder the involvement of the students. Irrespective of their cultural background, some students are certainly quite capable in dealing with the 'new' learning technologies. However, for a considerable number, technology still feels intimidating, which can lead to a tendency to feel overwhelmed.

Countermeasures were taken to prevent this situation, which might result in the exclusion of individual students:

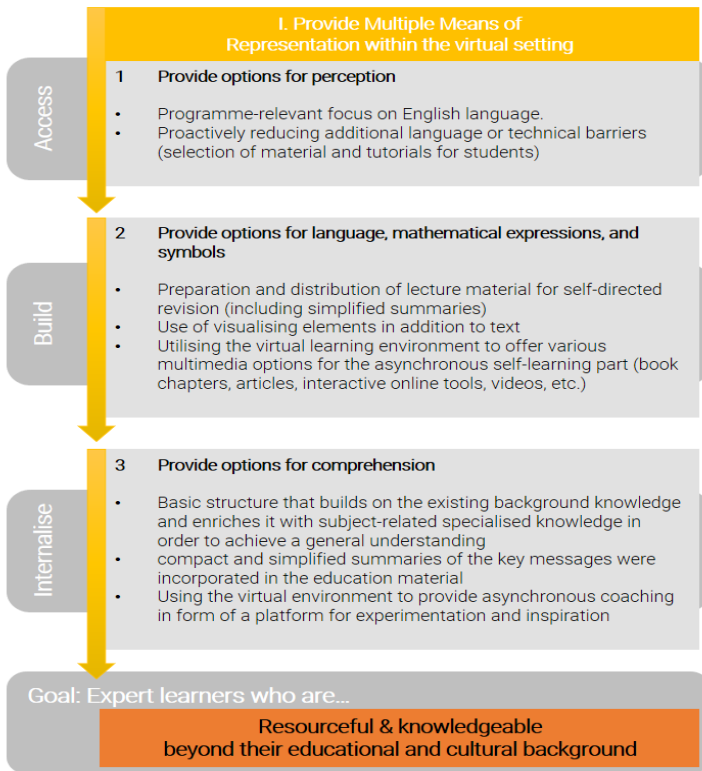


Figure 1.2 *Abroad@home* implementation of the first pillar of the UDLF

- Active Involvement in the video conferencing sessions was promoted and trained in several ways. Frequent and mandatory interaction from the student's side was mentored and supported by the lecturer.
- To ensure that all students, regardless of their level of experience with Moodle based platforms, are able to use the learning platform effectively, it was regularly demonstrated and trained via hands-on tutorials.
- On a psychological level the lecturer found it vital to openly communicate about technological difficulties and limitations to reduce the fear of the participants.

- Different variations of student involvement were provided and tailored to the various levels of student progress.

**Building** a learning environment that activates and engages as many students as possible is a constant challenge for any kind of teacher. In simple terms, it is about providing options for students to express themselves and communicate. However, in the reality of everyday teaching, this is never easy, especially considering the unfamiliar virtual setting for both teachers and students. Patterns of behaviour that had been trained over the years to participate in class were suddenly no longer valid. At the same time, the omnipresent social distance tempts students to retreat from the teacher but also from other fellow students. The resulting sense of isolation is an essential basis for the reduced motivation and lost opportunity for comparison among students (Liang et al., 2020). Traditional physical learning scenario allowed teachers to trust in a dynamic to develop among the students that causes the different participants to support each other and learn from each other in a variety of ways. In addition to the positive effects on cooperation and learning efficiency, this also improves the psychological stability of the students and usually leads to a reduction of stress and creates a counterbalance for depressive tendencies. In the context of international education, and particularly in the case of teaching and learning mobility, this became an even more important asset (Ghosh et al., 2020). The practical acquisition of intercultural skills and perspectives, both in the taught discipline but also in general, via a natural exchange with individuals from other cultures outside of the native environment, represents the actual added value of this special type of mobility. This is true for students and lecturers. In a virtual space, this potential is greatly reduced and, above all, loses its automatism.

Considering the cross-border setting of 'Abroad@home', this category of the ULF was classified as particularly crucial and treated with appropriate attention. Respectively the teaching methodologies had to simulate other essential elements of a regular semester abroad in addition to the pure content-related knowledge transfer. This resulted in a trinity of teaching, communication and collaboration. The teaching content largely corresponded to the already established content outside the digital scenario. However, the corresponding processing of this was designed in a way that students were constantly forced to exchange, express and communicate:

- Students regularly had to discuss the knowledge they had gained in virtual breakout sessions and then present their various perspectives. Focus was placed on verbal communication within a small group and in front of the entire audience.
- Asynchronous maintenance of contacts and communication via topic-related discussions in a forum, which was realised within the LMS. This technology-enabled, text-based communication was incorporated as an alternative way of activation.
- Since it is up to the lecturer to cultivate and demand this communicative exchanges, the lecturer changed his role to that of a moderator. Whenever the necessity was felt, appropriate motivation was implemented such as additional points.
- To strengthen this interaction, Learning Artefacts had to be created by the students in a collaborative way. To ensure the positive effects of intercultural project groups, the members were allocated as diversely as possible. Consisting of members from all six participating partner countries, these groups were confronted with tasks that were tailored to the respective teaching scenario. In order to facilitate and train students in different forms of expression, the required outputs were designed to cover a wider range. In our example, we are speaking of classic presentations in the virtual environment as well as video pitches, articles and reflection papers.

There is something else to internalise for the students by getting involved in such a diverse and interactive learning environment full of communication and group work. All elements of activation and expression were also planned to offer students a practical scenario close to real work life. This aims not only at the acquisition of competences in the discipline itself, but also in the areas of digitalisation and international collaboration. To reinforce this effect and - at the same time - to encourage students to act autonomously and strategically beyond their geographical and educational boundaries, it was also important to give students room to manoeuvre and freedom of choice as part of their independent work. These executive functions represent the highest capacity of the human mind when it comes to knowledge application. Giving students control and responsibility over parts of their learning journey can greatly

support the internalisation process. In particular, this involves appropriate goal setting, effective strategic planning and monitoring, as well as appropriate adjustment when necessary (CAST, 2011). However, the complex environment of 'Abroad@home' requires particular sensitivity, as the teacher needs to ensure the design of tasks in such a way that the diverse group members raise each other to a higher level and do not exclude weaker elements. Here are the essential steps that were meant to enable but also regulate the autonomy and self-responsibility of the students:

- Culturally mixed groups were maintained throughout the semester over several assignments to facilitate self-reflection and learning effects.
- The assignments were always presented with clear parameters and the expectations of the lecturer were explained. Beyond this, flexibility was given in how and with which tools the students addressed the challenges in their group.
- Both voluntary coaching options and obligatory interim discussions were implemented to meet the different needs.
- In addition to output-oriented tasks, a learning artefact was dedicated to self-reflection in order to encourage the students to monitor themselves and to elaborate on the acquired soft skills.

Again, the second pillar of the UDLF was framed by the trinity of the virtual setting, cultural differences and a diverse educational background. A visual summary of this approach can be taken from Figure 3. The goal of strategic and goal-directed learners was raised in the sense that the involvement of the audience was not only designed to deepen knowledge on an individual level. Instead, the simulation of a semester abroad was aimed at the students to support each other and to compensate for educationally or culturally related gaps in a collaborative way. The training of independent work within a virtual environment furthermore seeks to prepare the students for the rapidly changing work environment of the future.

#### *Provide Multiple Means of Engagement*

No matter how much effort went into organising different forms of representation and interaction, without a sufficient level of **engagement** on the side of students, they become ineffective

and, in the worst case, even obsolete. Every teacher who has ever tried to enthuse a larger group of listeners for the presented topic knows this challenge, which has its source in various factors. Besides the neurological determinants, the individual personality and subjectivity, the cultural origin and the already existing background knowledge and experiences must be considered (CAST, 2011). Especially the latter represent the special scenario of teaching in 'Abroad@home'.

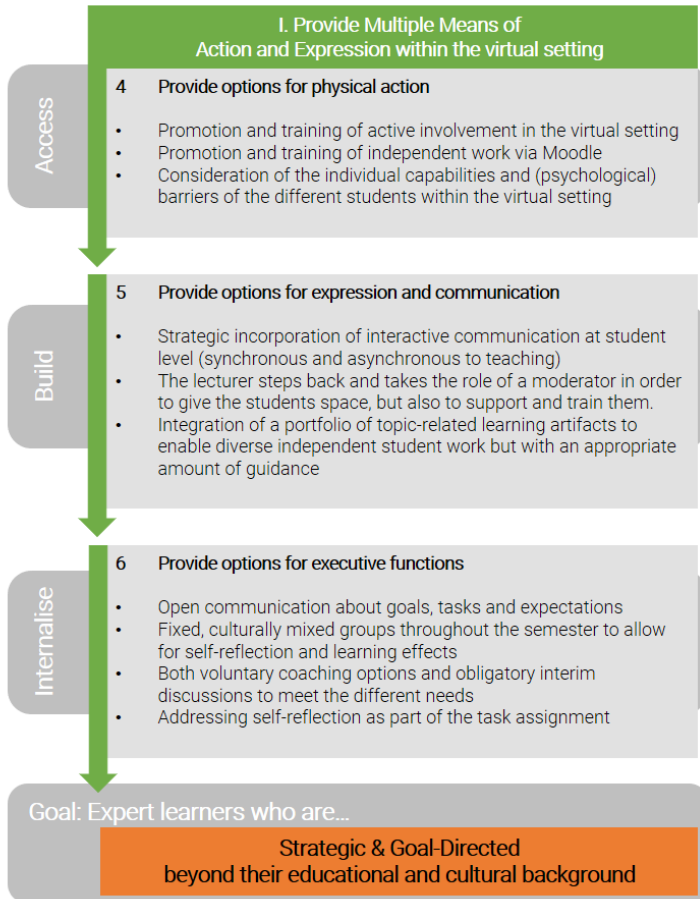


Figure 1.3 *Abroad@home* implementation of the second pillar of the UDLF

Unfortunately, the virtual teaching environment does not make this situation any easier. The social distance tempts even intrinsically motivated students to withdraw. Similarly, students tend to accept technical problems instead of seeking help, which again erodes their engagement potential (García-Morales et al., 2021). The aforementioned variety of factors for student engagement make at the same time clear that measures taken unfortunately cannot have the same effect on all learners. Once again, it is of utmost importance to identify and use different resources to meet the diverse range of requirements.

The first step to support the learner's engagement is the optimisation of **access**, which should be designed to recruit their interest. In the virtual environment, this becomes even more vital in order to bypass the reduced attention span that this setting entails. Access to the content should not be designed too passively to begin with. The more interactive and self-responsible the content is taught, the greater the chance is that students will remain engaged and active. Unfortunately, additional challenges arise from the cultural and educational differences. The design of a teaching setting varies greatly in different cultures. While students from 'Western cultures' tend to be more responsive to self-determination in the classroom, other students from 'Eastern cultures' may experience the opposite effect, as they feel overwhelmed and discouraged. Further motivation can be gained if the content and activities are designed to be relevant, valuable and authentic to the students. A connection to reality or an obvious value contribution for later working life make students more receptive. Again, it must be clear that everyone has different ideas of relevance, value and authenticity. Besides the individual personality, this is of course also rooted in the cultural and educational background. In order to optimise these two aspects of participant motivation for a broad, diverse audience, a certain scope and options were necessary and realised as follows:

- Educational sessions were intentionally planned around a mixture of passive and interactive phases to give student a variate of entry points.
- For even more entry points, the educational material was always provided with additional resources to allow the student independent research and knowledge deepening to reach the required level. (e.g., book chapters, articles, videos)
- Students exercised a lot of freedom regarding the execution

and presentation of their tasks. That applied to the regular in-class group work as well as to the examination performances.

Alongside optimising access, it is also imperative to reduce threats and distractions. While there are few physical threats in a virtual teaching scenario, the environment of 'Abroad@home' has a lot of inherent potential for discrimination. Both the specific cultures and the different abilities due to educational backgrounds might encourage students, especially in stressful and problematic situations, to blame these differences rather than seek the actual solution. It is important to understand that the challenges, resulting from this composition, and how to overcome them were planned as a central part of the learning outcome of this course and should therefore not be completely bypassed. As a result, the following measures were intended to promote a positive and fruitful experience:

- Clear and repeated communication of the structure and requirements of the teaching units with the aim of helping all participants to maintain an overview.
- The differences were constantly discussed in class and communicated as an opportunity and not as a barrier in order to create a positive attitude towards the diverse group compositions.
- The teacher provided coaching opportunities to help clarify issues or to support with internal group problems. (Fixed time slots but also approachable via various media)

Getting the attention of the students does not mean that their attention will be maintained or even converted into motivation and energy for the required work. In order to achieve this goal, an appropriate environment must be **built** in which extrinsic motivation can unfold its effect on the students in a positive way. Clarity about the actual course objectives is essential here, as are changing but also growing demands and resources for mastering the course objectives. All of this is indispensable to accommodate the different personalities and backgrounds of the students and thus keep them activated and persevering. However, the lecturer's possibilities will reach their natural limit by some point. In order to sustain student participation beyond this, it is recommended to involve fellow students as an additional motivator and support. As already described under Actions and Expression, the simulation of the conditions of a conventional semester abroad was planned as an essential part of the course



for this purpose. Various forms of teamwork formed the backbone of this collaboration and communication endeavour undertaken by the course designer. This intensive exchange between students can make a strong contribution to learning success even under simpler circumstances. Given the particular factors affecting this experiment, it was considered essential and was treated with appropriate care and supplemented with extensive feedback for the students. An appropriate setup was shaped by the following measures:

- Goals and tasks within the teaching sessions were communicated constantly and transparently.
- Assignments and resources provided were varied to expose students to different ways of working, but also to give opportunity for the diverse participation to thrive.
- Students were allowed to use different tools and media to transport their outputs.
- The learning artefact based group work was designed in such a way that students not only learn with and from each other, but also control and motivate each other.
- Extensive expectation management was practised in order to provide the students with a clear line of orientation for their self-responsible work. In addition to detailed task descriptions (including specifications of the expected content) both in class and via the LMS, a Rubrics Matrix of Expectation was used to clearly formulate which elements are crucial for earning points.
- Constant student contributions also require constant feedback from the lecturer. Special care is required for the more substantial assignments for examination to enable students to learn from their experience.

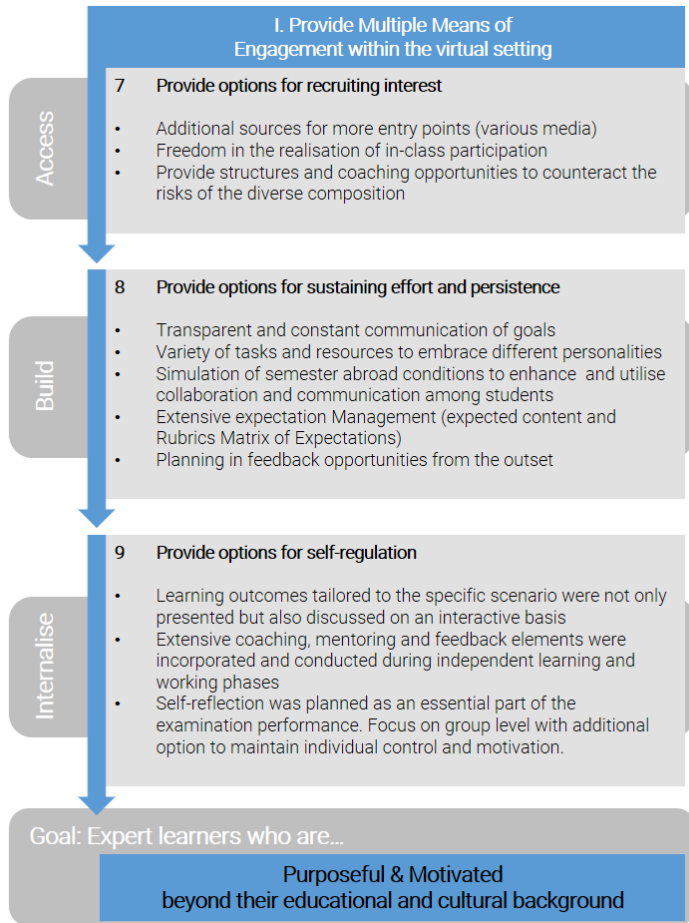
A successful teaching and learning environment requires more than extrinsic motivators do. In order for students to actually **internalise** the learning outcomes, a certain degree of intrinsic motivation is essential. Although the students are responsible for this by themselves, the teacher can take suitable measures to promote it. In the end, this intrinsic motivation again depends heavily on the individual circumstances. For example, the cultural dimension of power distance not only represents the extent to which extrinsic motivators are accepted within a cultural environment, but also the degree to which it is necessary in order to get one's actions in line. A possible over- or under-challenge due to the student's educational background

can also have a substantial negative effect on this intrinsic motivation. This individual dimension of motivation can be fostered in a positive way by the lecturer through three categories (CAST, 2011):

1. The expectations of students must also be observed (not only those of the lecturer). Learning objectives must be goal-oriented but also achievable for all participants.
2. Informing students that independent work and regulation is expected and evaluated is usually not enough. Especially since international students, with their diverse cultural and educational backgrounds, are already heavily burdened with organising their unfamiliar daily lives. The students' resources are also limited here and in order not to risk losing them, appropriate support measures are important (Chita-Tegmark et al., 2012).
3. In order to have a sustainable effect on the self-regulation of individual motivation, it is also recommended to offer and discuss various possibilities of self-assessment and reflection with the students.

The measures for 'Abroad@home' derived from these categories were:

- Learning objectives were not transferred one-to-one from the local setting, but rather tailored to the diverse audience. These objectives were not only communicated, but also discussed in the light of the optimal use of the specific scenario.
- In phases characterised by independent student work, the lecturer still provided coaching and mentoring opportunities and worked with targeted feedback. The intention was to accompany and support the students as they grew from the challenges they faced.
- While reflection took place on an individual level in mentoring conversations, the focus during classes was on self-assessment and reflection as a group. The cross-border composition of the groups and overcoming the associated difficulties was an essential part of the intended learning outcome.
- To give Students control over their individual efforts an additional peer-to-peer review was enabled via the universities LMS.



*Figure 1.4 Abroad@home implementation of the third pillar of the UDLF*

Once again, the final pillar of the UDLF was strongly affected by the virtual, intercultural as well as educational background related factors. Similar to the previous pillar, the scenario of a simulated semester abroad turned out to be a powerful tool to keep the diverse audience involved and engaged. Besides the strong compensation potential to close the gap between students and the additionally acquired competences and experiences, the collaborative interaction between students also proved to be an

incredibly effective motivator. Yet, as can be seen in Figure 4, this also requires some preparation and sensitivity to prevent this motivation from turning into demotivation.

## **1.6 Conclusion**

The 'Abroad@home' programme was an enlightening experience for both the students and the lecturers involved and concluded with the clear realisation that this journey is worthwhile but far from complete. The unfamiliar virtual space as a learning environment was accompanied by as many obstacles as possibilities. A seemingly endless portfolio of resources to support knowledge transfer (e.g., podcasts, videos, virtual and augmented reality) contrasts with the elimination of established and practiced methods. The unconventionality of the virtual setting and the additional challenge it places on all participants has an even greater impact in the context of international teaching. The diverse audience due to their different cultural and educational backgrounds already requires a great deal of adaptability and sensitivity from the responsible lecturers, even under familiar conditions. In order to meet this demand in the virtual space as well, it is recommended to use supporting methodologies. The Universal Design for Learning Framework (UDLF) has proven to be a potent tool for the author. The focus on the human being, the expert learner, is of central importance in order not to lose sight of the human dimension in such a technical environment. The UDLF helps to understand and optimally use technology as a powerful tool to meet the various needs of the participants. The right implementation by the teacher ultimately provides the basis for more accessible, open, international teaching that actively brings people together all over the world, regardless of their current circumstances. This is true not only for different learning styles and cultures, but also for people who face other barriers of a physical, health or even political nature.

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## 2

# **Methods and Tools for Motivating Students from Central and Eastern Europe to Study Abroad: A Case Study from Poland**

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*This article presents the results of preliminary research on the motivators of studying abroad (SA) for students from Central and Eastern Europe. It is especially important as a result of changes taking place in the environment, the pandemic and other threats in the geopolitical sphere. The preliminary research was conducted in Poland, among students who had not previously studied abroad. It is planned to expand the research to include students from the Czech Republic, Slovakia and Romania.*

### **2.1 Introduction**

Studying Abroad (SA) should be now treated as an integral part of higher education studies (Mitchell and Tyne, 2021). Therefore, attention should be paid firstly to those factors that motivate students to study abroad and, secondly, to be able to define what factors should be an integral part of the learning process, in order to receive increasingly more international students at universities. It is not surprising that research has been carried out to motivate students to study abroad for many years (e.g. Gardner, 1985). However, the last two years of the pandemic have shown that students are interested in participating in studying abroad, even if they are remote classes. Moreover, it

seems that in the present times of unexpected changes and events in the geopolitical sphere, it is important to re-address the topic of encouraging student mobility.

Based on the literature, the following factors influencing the decisions of students to study abroad are highlighted: namely, gaining advantages in the labour market (Waters, 2009), increasing cultural capital, globally (Kim, 2011) and achieving success in future careers (Mok et al., 2018; Bodycott, 2009; Bamber, 2014.) According to the research (Li et al, 2021), the mobility of students usually flows from peripheral to central countries due to their research infrastructure being more advanced quality.

Therefore, this article focusses on identifying the factors (F) that motivate students from Central and Eastern Europe to study abroad and is based on the outlook or viewpoint of Polish students, in the field of Management and Production Engineering. The factors which have thus been established might generate insights that could result in theoretical advances with an offer of universities from Central and Eastern Europe to encourage students to study abroad and how implementation of the methods and tools selected, for motivating students, could impact learning processes at universities.

## **2.2 Research methods**

A quantitative study was designed representing firstly the factors that motivate studying abroad and secondly the barriers to taking up studies. The area of barriers will be presented in the next stage of the authors' research. It drew on data collected by means of a standardised questionnaire in Google form, which allows generalisations to be arrived at from the results obtained. The study addressed the following two research questions:

- RQ1: What factors (F) motivate students from Central and Eastern Europe to SA?
- RQ2: How was student-initiated, motivated learning conducted before SA impacted motivated learning in a European context?

Participating in the study were students from the school of Management and Production Engineering at the University of Zielona Góra, Poland who had not taken up Studying Abroad studies at the time the data was being collected. They represented a sample of convenience and self-selecting in order



to provide the data for this study. Further research work will be carried out with students participating from other Central and Western European countries from the same field of study, namely from the University of Pilsen in the Czech Republic, the University of Žilina, Slovakia and the Lucian Blaga University of Sibiu, Romania.

The questionnaire was converted into the Google format, with the data being collected in 2022, detailing the methods and tools for motivating students from Central and Eastern Europe to study abroad. Links to the questionnaire were distributed with the help of professors from the University of Zielona Góra, Institute of Mechanical Engineering, as well as through personal networks. Participation in the study was anonymous and voluntary. The students self-selected to fill out the questionnaire. By doing so they consented to participating in the study but they could opt out at any point when providing responses. Completion of the questionnaire took approximately 5 minutes and was also anonymous. The students selected grades from 1 to 5, with 1 being the least important and 5 being the most important. 39 students participated in the study over a two-week period in April 2022.

### **2.3 Research results**

The following motivators were identified that could potentially encourage study abroad:

#### **EF: Economic factors:**

- possibility of getting a job abroad.
- opportunity to earn extra money.

#### **CF: Competence factors:**

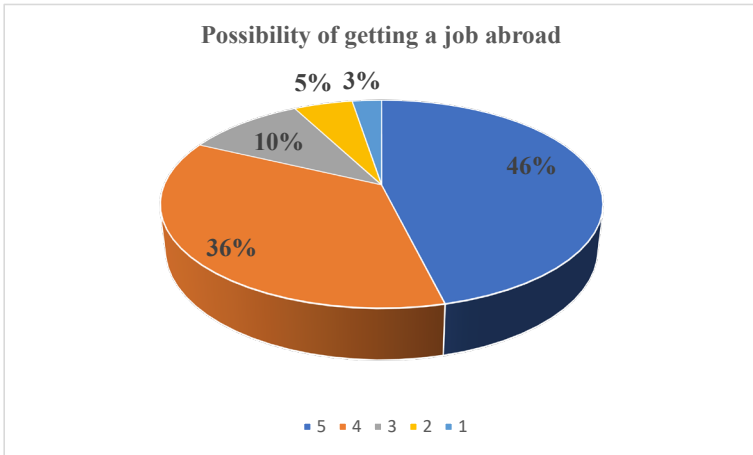
- opportunity to improve language competences.
- opportunity to improve professional competences.
- possibility of participating in foreign courses.
- increasing professional attractiveness.
- checking independence and adaptability.

#### **SF: Social factors:**

- meeting new people from abroad.
- getting to know new places.
- possibility of getting to know the social environment of the host country.

- possibility of getting to know the cultural environment of the host country.

a)



b)

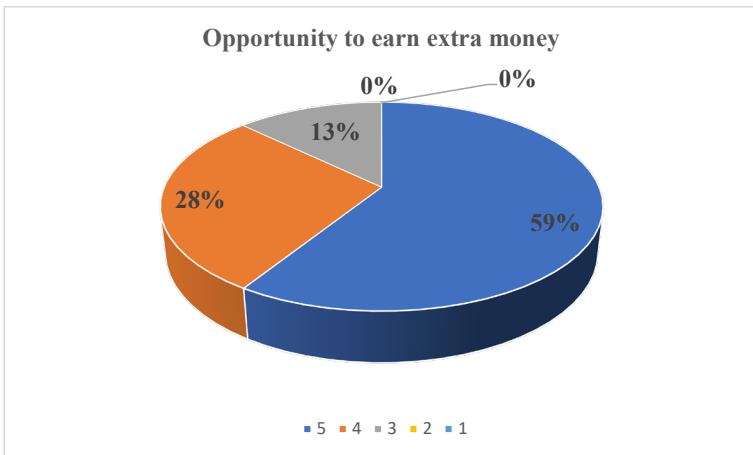


Figure 2.1 a, b EF shows the motivation of Polish students of Management and Production Engineering to study abroad: a) – possibility of getting a job abroad, b) – opportunity to earn extra money.

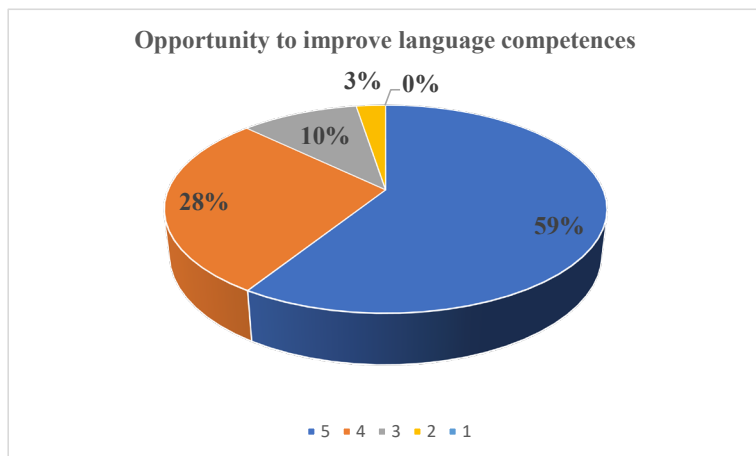
**LF: Learning factors:**

- access to modern equipment.
- learning the education methods of foreign academic centres.
- participation in classes with testimonials.
- interesting teaching offers.
- interesting student life while resident.

The research results are presented according to the defined group of motivators that could potentially encourage Polish students of Management and Production Engineering to study abroad:

The chart shown in Figure 2.1a shows that 46% of respondents consider the possibility of working abroad as most important while only 3% believe that it is the least important. The importance of obtaining additional funds as a motivator for studying abroad is confirmed by the next chart presented in Figure 1b, where 59% of respondents stated that additional money is a good motivator to studying abroad. Nearly 60% of students believe that the opportunity to earn extra money is a very important factor in studying abroad. None of the respondents considered this factor to be irrelevant.

a)



b)

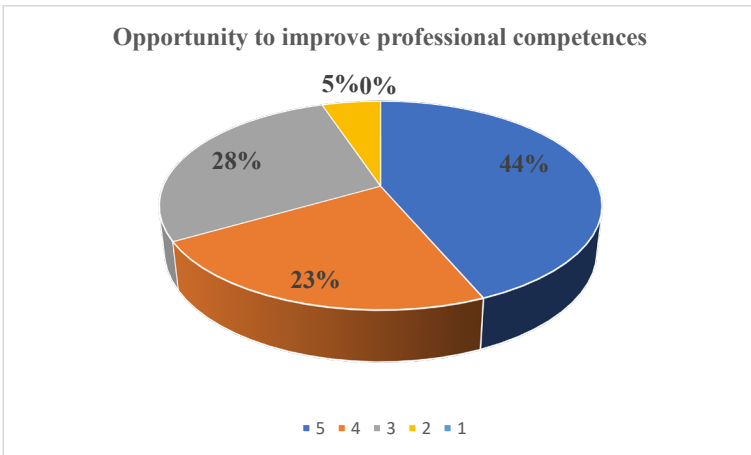


Figure 2.2 a, b CF shows the motivation of Polish students of Management and Production Engineering to study abroad: a) – opportunity to improve language competences, b) – opportunity to improve professional competences.

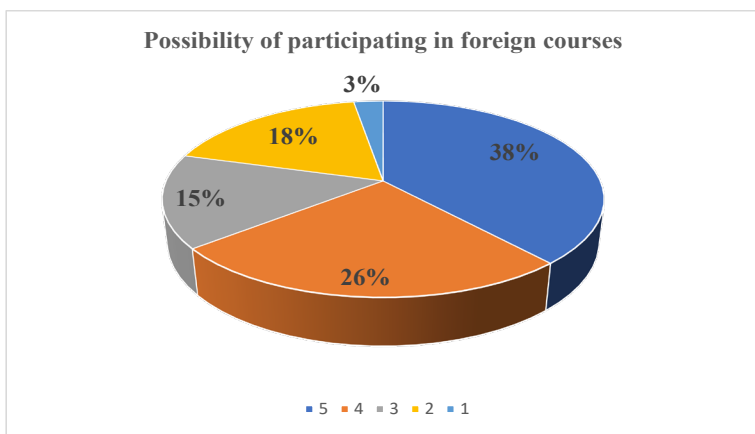
The next group of motivators were defined as the CF (Figure 2.2). For the majority of students who decide to study abroad, it is essential to improve their language competences (Figure 2a). 87% of the students surveyed stated that studying abroad is an important -or very important- opportunity to improve their language skills. It should be said that increasing language competences is the main motivator that decides a student to leave home and study abroad. Figure 2b shows that more than 60% of respondents believe that by studying abroad, they will increase their professional competences. On the other hand, almost 30% of students claim that this factor would not affect their decision to study abroad.

It was then examined whether it is important for students to participate in courses conducted abroad (Figure 2c) in order to increase the perception of self-worth, in terms of increasing professional attractiveness (Figure 2d) independence and adaptability (Figure 2.2e).

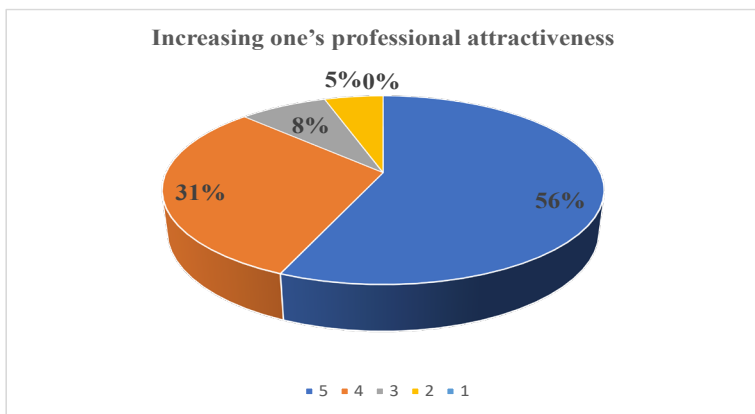
It should be emphasised that over 30% of students do not consider it important that they will be able to take part in foreign

courses. It seems that currently, in the context of easy access to on-line courses, it is not a significantly encouraging motivator to study abroad. On the other hand, the motivators regarding the possibilities of personal development in the context of improving competences are of great importance since as many as 87% of the respondents answered that studying abroad would increase their professional attractiveness. However, an interesting result of the research is the fact that students do not see that studying abroad would allow them to increase their independence and adaptability with some 70% of the respondents not considering this motivator as important.

c)



d)



e)

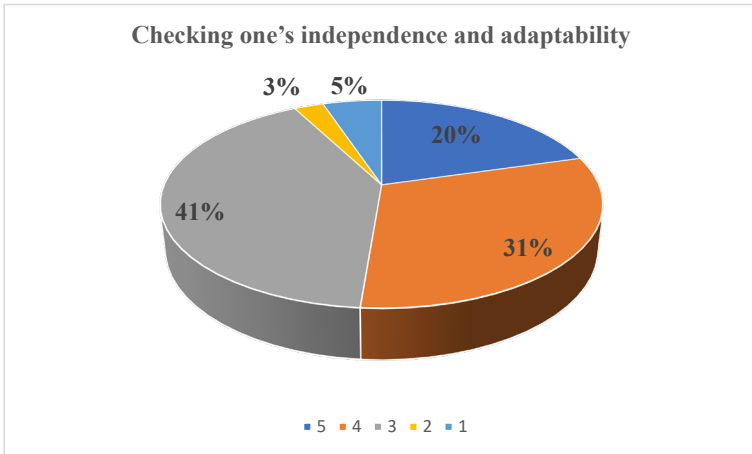


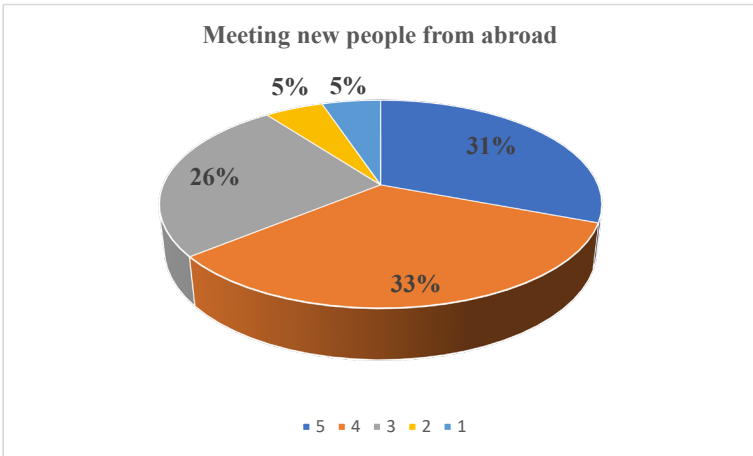
Figure 2.2 c, d, e CF shows the motivation of Polish students of Management and Production Engineering to study abroad: c) – perspectives of participation in foreign courses, d) – increasing professional attractiveness, e) – checking independence and adaptability.

The next group of motivators to study Polish students abroad is SF. The possibility of making new contacts and acquaintances as a very important aspect of foreign studies was assessed by 31% of students and important by 33% of students, respectively (Figure 2.3a). 10% of the students surveyed considered this aspect of little importance. For 26% of students, the social aspects of the trip are irrelevant and so, meeting new people is not the main motivator for studying abroad. Also, the factor getting to know new places is irrelevant in the context of the students deciding to study abroad (Figure 2.3b).

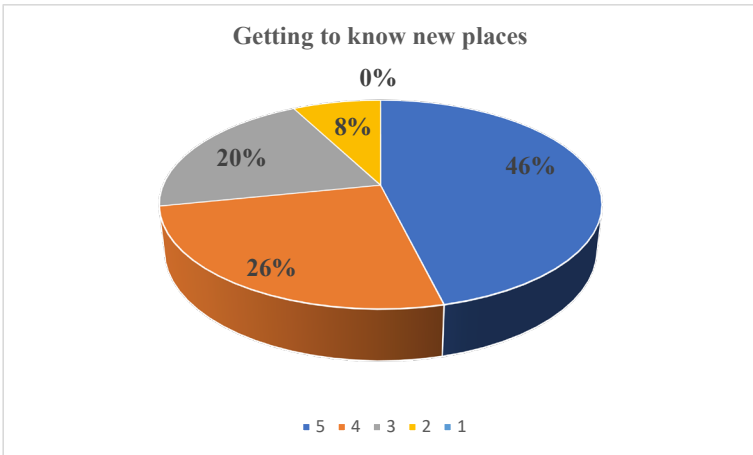
More than half of the respondents did not consider it an element important enough to encourage them to study abroad. The other two defined motivators in the SF group were also not indicated as significant in the context of making decisions about studying abroad (Figure 2.3c, Figure 3d). Over 60% of respondents do not consider this factor, namely, the possibility of getting to know the social environment of the host country as being important in the context of studying abroad.

36 *New Modes of Mobility*

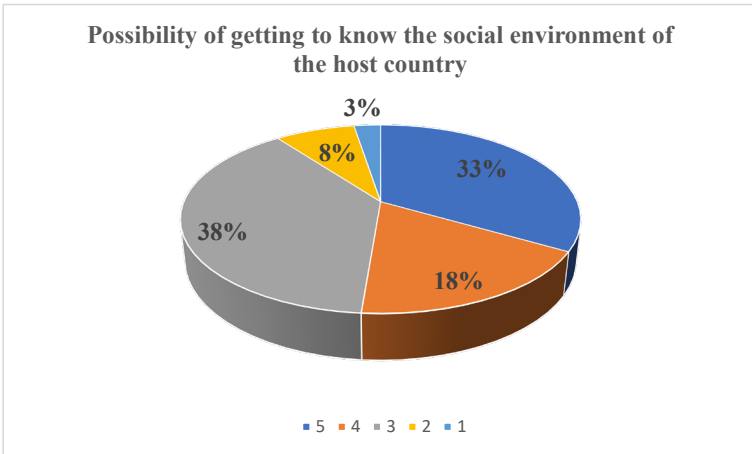
a)



b)



c)



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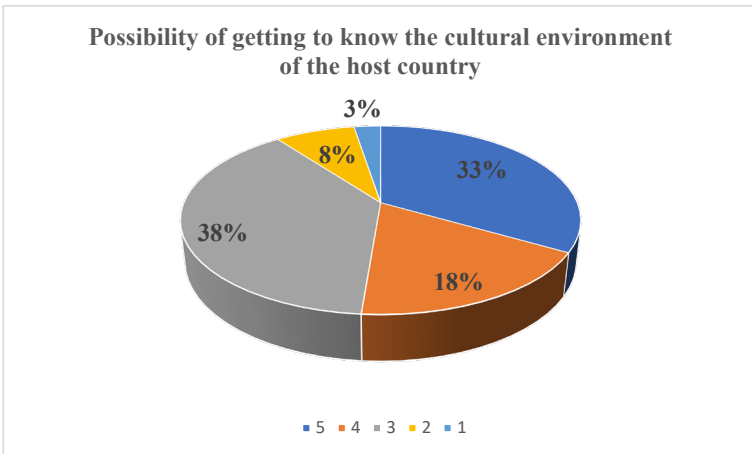


Figure 2.3 a, b, c, d SF shows the motivation of Polish students of Management and Production Engineering to study abroad: a) – meeting new people from abroad, b) – getting to know new places, c) – possibility of getting to know the social environment of the host country, d) – possibility of getting to know the cultural environment of the host country.

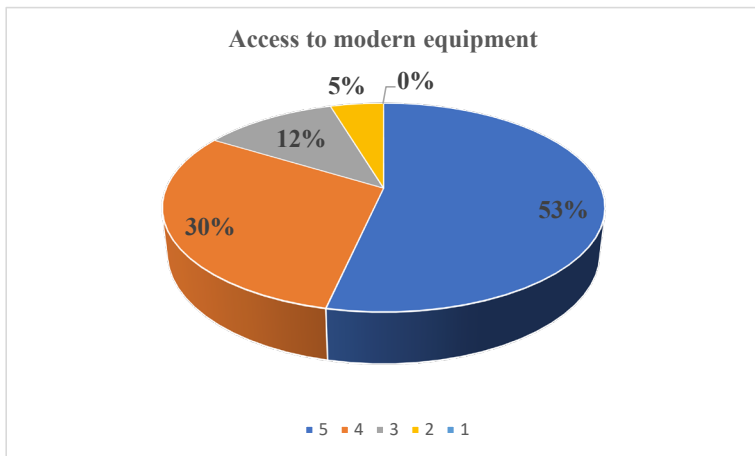
A similar position was taken by the students surveyed, in the context of the possibility of getting to know the cultural



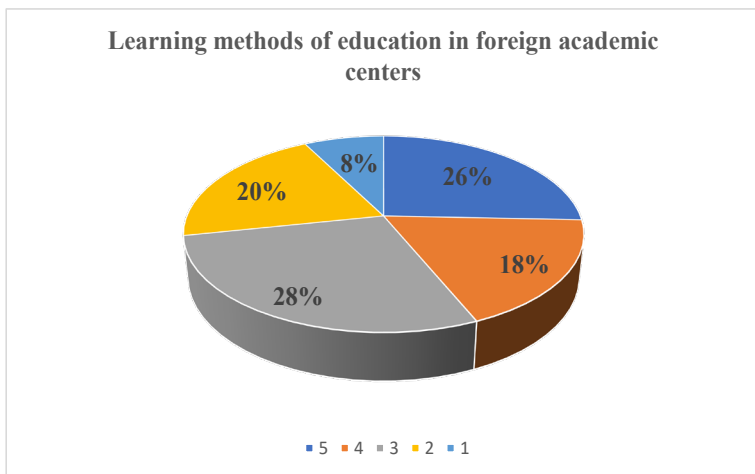
environment of the host country; over 70% of the respondents did not consider this motivator important. Thus, the group of SF factors will not affect the decision of Polish students to study abroad.

Finally, the motivators were defined as the LF. An important motivator for those students who decide to study abroad is access to modern equipment and laboratory equipment (Figure 2.4a).

a)



b)



c)

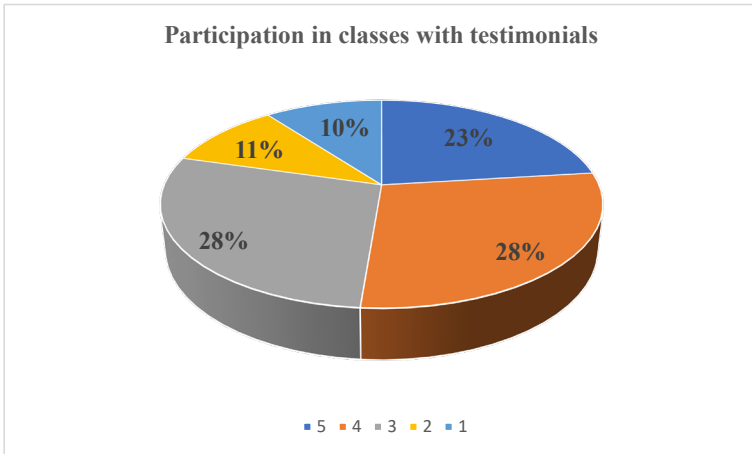


Figure 2.4 a, b, c LF shows the motivation of Polish students of Management and Production Engineering to study abroad: a) – access to modern equipment, b) – learning methods of education in foreign academic centres, c) participation in classes with testimonials.

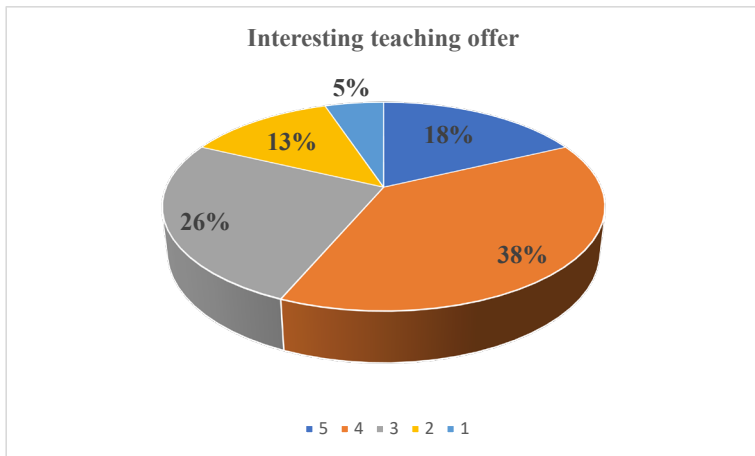
Over 80% of students found it to be an important or very important advantage of studying abroad; it should be noted that the respondents are technical faculty students.

On the other hand, in the context of the opportunity to know the new teaching methods of foreign centres, it is not a significant motivator for students (Figure 2.4b). As many as 50% of respondents claim that it is not a significant factor in the context of making decisions about studying abroad.

Similarly, it was really not important for the respondents whether the classes were provided by well-known professors or experts. Only 23% of the students surveyed indicated these as important factors. On the other hand, as many as 10% decided that this aspect was irrelevant in the context of studying abroad.

Students were also asked whether the interesting teaching offer (Figure 4d) and interesting student life, while resident and studying abroad (Figure 4e) would influence the decision to study abroad.

a)



b)

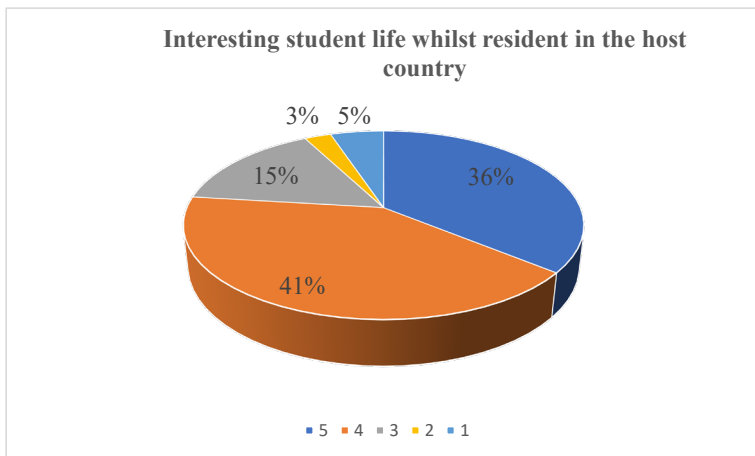


Figure 2.4 d, e LF shows the motivation of Polish students of Management and Production Engineering to study abroad: d) – interesting teaching offer, e) – interesting student life while resident and studying abroad.

It is clearly noticed that for 18% of respondents, the offer of studying is not relevant to studying abroad. This means that the students have already made a decision about the area of study

and do not want to change this field of study. However, the place of study is already important and can be a good motivator for Polish students to study abroad. Over 75% of respondents indicated that an interesting student life is an important motivator.

## 2.4 Discussion and conclusions

RQ1 concerned factors (F) that motivate students from Central and Eastern Europe to SA can be explained by the results of the research, as summarised in Figure 2.5.

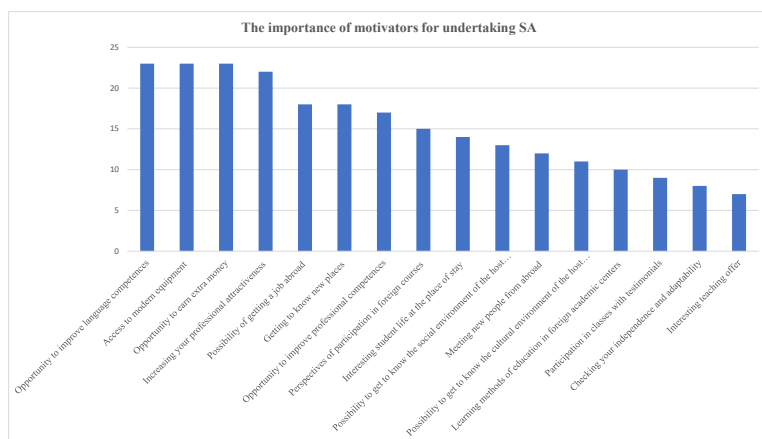


Figure 2.5. The importance of motivators for undertaking studies abroad

The research results show that two motivators from the CF group of motivators, viz., Competence Factors: the opportunity to improve language competences and increasing professional attractiveness and one factor from the EF group of motivators, Economical Factors, the opportunity to earn extra money, are the most important factors that influence studying abroad. One factor from the group of LF factors was also indicated as access to modern equipment, which is a result of the fact that the group of respondents were technical faculty students.

However, it is clear from the research results that motivators from the SF group: Social Factors, have no influence on the decision by Polish students to study abroad or not.

In order to find an answer to the second question, RQ2, namely, how did student-initiated, motivated learning, prior to SA, impact motivated learning in a European context; it can be assumed that it is necessary to emphasise and build an offer for students from Poland for SA in the context that it is part of the education process and participation in SA will have a positive impact on their further professional life. It should be formulated that SA will increase their professional attractiveness and will allow them to increase the possibility of earning more money.

The limitation of our research is that the respondents were exclusively Polish students, from one field of study, who did not participate in SA. It is therefore planned that our further research work, as previously stated, will be carried out with the participation of students from the University of Pilsen in the Czech Republic, the University of University of Žilina, Slovakia and the Lucian Blaga University of Sibiu, Romania, in order to compare results and propose actions for universities in Central and Eastern Europe to encourage students to SA.

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# 3

## **The framework of digital competence: Case Abroad@home modules**

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*The world of work is changing as the use of digital technologies is accelerating. Technological advancement creates new demand for work force and professional skills thus setting expectations for educational systems and institutions to respond to the demand.*

### **3.1 The world of work today**

In terms of 21 century professional skills, digital competence is considered the most transversal competence out of all eight key competences included in the concept of lifelong learning (Balcar et al, 2011). Some key competences such as interpersonal skills and cultural awareness, are integrated in certain competence areas of digital competence. The main focus of this text is to discuss the concept of digital competence and how it is manifested and promoted in an experimental virtual study module called Nailing it!.

### **3.2 Lifelong learning**

The Skills Matter survey (2016, p. 19) conducted by OECD in 2016 proves that the ability to use computers for managing information and solving problems is increasingly important at workplace, lectures and classrooms and even in social interaction today. Digital skills are required while keeping up with modern

societies and making the most of current structural and technological changes. Further, the survey (OECD, 2016, p. 20) reveals that information-processing skills seem to make the individual perceptions of one's health, well-being, confidence and role in political process or volunteer activities, more positive when compared to the less skilled. With the help of practicing, training, and focusing on certain competences people become more confident in their digital skills and thus may gain a more active role in labour market and citizenship activities.

The concept of lifelong learning has been developed to respond to the changing needs of working life (Towards lifelong learning, 2019, p. 5). The European commission has established a recommendation promoting the eight key competences of lifelong learning. The competences are as follows:

- Literacy
- Multilingualism
- Numerical, scientific and engineering skills
- Digital and technology-based competences
- Interpersonal skills, and the ability to adopt new competences
- Active citizenship
- Entrepreneurship
- Cultural awareness and expression.

(Council recommendation of 22 May 2018 on key competences for lifelong learning 2018/C 189/01.)

Since the changes in the world of work create demand for a variety of new competences and skills (Towards lifelong learning, 2019, p. 2), digital skills are becoming core competences not only in the working and learning environment but also in social interaction as they facilitate personal growth and education.

### **3.3 Abroad@home**

New Modes of Mobility aims at developing and testing new ways of implementing mobility in HEIs across Europe. As the operating environment changed radically due to Covid19, the partnership reacted accordingly and introduced a new concept of virtual mobility: Abroad@home. The first pilot set of online modules was developed and promoted to students in the fall semester 2020 and the second pilot round was conducted a year later, in 2021(see Abroad@home n.d.).



Abroad@home is a set of six online modules each yielding five credit points:

Module 1: Speaking Europe

Module 2: Nailing it!

Module 3: International marketing

Module 4: Management gaming in virtual cooperation

Module 5: Marketing research

Module 6: Strategic management

Each of the six partner universities is responsible for the set up and administration of a module. The modules were originally designed to compensate for the physical mobility periods that were not realized due to the pandemic, but they also serve a wider audience as they provide an attractive alternative for any student in their study path. The module reviewed and discussed in this article was the main responsibility of the writers of this article who both hold a teaching position at Seinäjoki University of Applied Sciences. Nailing it! was designed and implemented in collaboration between SeAMK and FHWS and the responsible teachers were the writers of the article and Claudia Lopes-Victorio.

### **3.4 The concept of digital competence**

New Modes of Mobility aims at developing and testing new ways of implementing mobility in HEIs across Europe. As the operating environment changed radically due to Covid19, the partnership reacted accordingly and introduced a new concept of virtual mobility: Abroad@home. The first pilot set of online modules was developed and promoted to students in the fall semester 2020 and the second pilot round was conducted a year later, in 2021. DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe (Ferrari et al., 2013), also known as DigComp, was originally introduced in 2013. The framework introduces the concept of digital competence entailing knowledge, skills and attitudes. Furthermore, DigComp provides a self-assessment grid with essential tools and concepts for reflecting and assessing personal skills and learning objectives. The detailed descriptions and examples of each competence area facilitate the individual ability to reflect, assess and self-monitor while reaching the objectives of lifelong learning. The later version 2.0 of the digital

competence framework for citizens (Vuorikari, Punie, Carretero & Van den Brande, 2016) was introduced in 2016.

The 2013 version presents descriptions of proficiency levels as well as examples of knowledge, skills, attitude and applications to the purpose (Ferrari et al., 2013). However, to respond to the needs generated by the rapid digitalisation of our society, work and education, the concepts and vocabulary of the DigComp framework were updated thus forming the main differences between the two versions (Vuorikari et al., 2016, p. 2). Each competence area can be divided into more details and totally there are 21 different competences which can be described in terms of attitudes, knowledge and skills (Ferrari et al., 2013; Vuorikari et al., 2016). The more recent document, DigComp 2.0, has a strong focus on the conceptual reference model (Vuorikari et al., 2016, p. 2). The 2016 version called digital competence framework for citizens is an all-inclusive approach catering for the five competence areas and the competences. (Vuorikari Fer., 2016). The report also provides examples of the implementation at the regional, national and European levels.

According to Vuorikari et al. (2016, p. 8 - 9) the areas of digital competence 2.0 are:

- information and data literacy
- communication and collaboration
- digital content creation
- safety and
- problem solving.

Table 1 provides a description of five competence areas which have been divided into 21 competences (see Vuorikari et al., 2016, p. 8 –9). Each of the 21 competences is further defined with the help of a list of practical measures an individual can take to maintain the particular competence. Table 1 will serve as the starting point for the discussion and analysis of the module called Nailing it!.

<b>COMPETENCE AREAS</b>	<b>COMPETENCES</b>
Information and data literacy	<p>1.1 Browsing, searching, filtering data, information and digital content: To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.</p> <p>1.2 Evaluating data, information and digital content To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.</p> <p>1.3 Managing data, information and digital content To organise, store and retrieve data, information and content in digital environments. To organise and process them in a structured environment.</p>
Communication and collaboration	<p>2.1 Interacting through digital technologies To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.</p> <p>2.2 Sharing through digital technologies To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.</p> <p>2.3 Engaging in citizenship through digital technologies To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.</p> <p>2.4 Collaborating through digital technologies To use digital tools and technologies for collaborative processes, and for co-construction and co-creation of resources and knowledge</p> <p>2.5 Netiquette To be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.</p> <p>2.6 Managing digital identity To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.</p>

<b>COMPETENCE AREAS</b>	<b>COMPETENCES</b>
Digital content creation	<p>3.1 Developing digital content To create and edit digital content in different formats, to express oneself through digital means.</p> <p>3.2 Integrating and re-elaborating digital content To modify, refine, improve and integrate information and content into an existing body of knowledge to create new, original and relevant content and knowledge.</p> <p>3.3 Copyright and licenses To understand how copyright and licences apply to data, information and digital content.</p> <p>3.4 Programming To plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.</p>
Safety	<p>4.1 Protecting devices To protect devices and digital content, and to understand risks and threats in digital environments. To know about safety and security measures and to have due regard to reliability and privacy.</p> <p>4.2 Protecting personal data and privacy To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damages. To understand that digital services use a “Privacy policy” to inform how personal data is used.</p> <p>4.3 Protecting health and well-being To be able to avoid health-risks and threats to physical and psychological well-being while using digital technologies. To be able to protect oneself and others from possible dangers in digital environments (e.g. cyber bullying). To be aware of digital technologies for social well-being and social inclusion.</p> <p>4.4 Protecting the environment To be aware of the environmental impact of digital technologies and their use.</p>

COMPETENCE AREAS	COMPETENCES
Problem solving	<p>5.1 Solving technical problems To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).</p> <p>5.2 Identifying needs and technological responses To assess needs and to identify, evaluate, select and use digital tools and possible technological responses to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility).</p> <p>5.3 Creatively using digital technologies To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.</p> <p>5.4 Identifying digital competence gaps To understand where one's own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.</p>

*Table 3.1. The updated conceptual reference model for the Digital Competence Framework for Citizens (Vuorikari et al., 2016, p. 8 –9).*

### 3.5 Nailing it!

The writers of the present text were involved in the planning, implementation and evaluation of two online modules, Speaking Europe and Nailing it! (see *Abroad@home*, n.d.). Both modules were conducted as a collaboration between two partner universities so that a specific university acted as the responsible partner in each case. Seinäjoki UAS was the responsible partner for Nailing it!, and the implementation was carried out in collaboration between Seinäjoki UAS and Würzburg UAS. Nailing it! had a clear focus on the innovation process of a new idea into a product resulting into a professional presentation of it.

The experience and feedback gained in the first round of virtual pilot module 'Nailing it!' was used to design and implement the second round. As the significance of digital competence in the overall set up and implementation became evident, it was agreed that the second round would place the focus on it. At the end of the module the students responded to a survey that was developed with the help of a self-assessment

activity (appendix 2) measuring the perception of their individual level of digital competence.

The completion of the module Nailing it! requires team skills as well as communication skills from each student. Furthermore, preparing the final task of the module requires presentation skills, especially online presentation skills. In addition, the module prepared the participating students for giving and taking feedback on a professional level. Nailing it! had 31 participating students representing five of the project partner universities. It involved six sessions running for six weeks and each partner university was responsible for providing two scheduled online sessions. The prerequisite for receiving the credit from the module was student participation in the minimum of four out of six online sessions including the first and last sessions.

The module started with a kick off lesson where the main guidelines of how to complete the module were introduced. The student workload was presented in detail with a clear introduction of scheduled contact hours, team work hours involved as well as individual reading / research hours reserved preparation and study of module topics and material assigned. After the kick off, the module was running on a weekly basis of a pre-scheduled teacher-led online session and some autonomous student team work. On the final week there was a final online seminar where student teams presented their tasks to a jury of teachers and expert guests.

### *The role of the teacher*

The role of the teacher included several duties such as lecturing, giving instructions, initiating interaction and discussions, giving feedback, supporting and coaching the students both individually and in teams. The multiple roles of the teacher further included acting as a student counsellor, administrator, and it-support person. As opposed to a more traditional role of HEI teacher the writers of the present text claim that an online teacher is facing a multitude of tasks and roles that may exceed the number of roles of an offline teacher. Illustration 1 is a representation of the multiple roles of an online teacher within the framework of a virtual module such as Nailing it!.



*Figure 3.1. Teacher roles.*

The teacher-led scheduled online sessions that the writers held were operated on Microsoft Teams environment and each session would start with a get-together on the general channel. The teachers introduced the theme and the topic of each session briefly, followed by a presentation of a task and the guidelines for doing it. The second step would include team work on separate team channels where the teachers visit. Students would collaborate, discuss, share and finalize their task input that would always be somehow introduced to the rest of the group in the closing session held at the general channel. The process of working together as a team as well as interacting and collaborating were always the core elements of each task, as opposed to focusing on the final outcome of the task.

*Assessment*

Each student received five credit points and a final grade upon completing the module. The grades were assigned on a Finnish index scale of 1-5, five being the highest grade. The grade

expectations were introduced at the first online session and were available on Moodle throughout the module lifespan. The expectations of each grade focus on the following core skills:

A) The students demonstrate having studied and practiced the key concepts and competences appropriate to the course topic: developing and presenting a concept.

B) The student is able to communicate and present an innovative concept in clear English using different communication channels.

The pedagogical choices made for the module required the students to take great responsibility and initiative for the learning process. The study process has a significant role in the completion and assessment of the module in particular when there is no final exam in the module. The student involvement in the module was strongly relying on team work and the individual ability to manage and perform in an assigned international student team working online throughout the module.

### **3.6 Digital competence review of nailing it!**

The following is an account of the student tasks included in the module. To provide an understanding of the implementation of the first pilot module, each task will be later introduced and discussed to reveal and assess which competences were implemented in it. Further, each competence area is introduced to discuss their representation in the module tasks. The module includes five tasks which are listed and described here in alphabetical order. To provide an idea and an understanding of the review, there is a table illustrating all the tasks and competences included in the module. The task descriptions have been copied from the SeAMK online learning environment, Moodle (Kivimäki & Råttis 2021).

Here is a list of the module tasks and their descriptions:

#### **TASK A: Team management.**

You and your team will be having weekly online meetings on your own. Your team will be responsible for organizing your own meetings, assigning and circulating the following responsibilities to each team member: meeting organizer and time keeper, meeting chair, note-taker and timesheet keeper following a pre-set meeting agenda, submitting team meeting



reports as instructed. Each team is responsible for assigning a student who will be keeping an attendance record / time sheet and submit it accordingly at the end of the module. The time sheet is a list of all sessions, both the ones led by the teacher and the others the teams set up for themselves. List the time, date and full names of participating students.

**TASK B: Benchmarking online learning environments.**

Search for an impressive online learning environment, share the finding in an assigned student team. The teams select one sample environment to be presented later on to the rest of the participants.

**TASK C: Summary writing on a chosen text and sharing the main ideas.**

The second task was about reading a chosen text (one out of three choices picked by the teachers) and writing a summary about it. The idea of the summary is to pick the core content of the original text and write it into a communicative yet shorter version. Further, each student prepared to discuss the text as well as present opinions and impressions of it. Completing the task requires a student to acquire and manage information in multiple ways.

**TASK D: Team innovation process.**

The main task of the module is developed in student teams using an application called Whiteboard. The task is to develop an idea into a concept. The actual idea is to come up with an online learning environment with a strong focus on the content, not the technological aspects. The process of developing the idea into a product was conducted online using Whiteboard. As a result, each team of students prepare and give an online presentation of the product.

**TASK E: Online presentation about the outcome of the innovation process: a state-of-art online learning environment.**

Each group works on their concept (ideal learning platform) and how to present it effectively to their professional audience. Your job is to design the perfect online learning environment! The whole idea of the project is to benefit from the user experiences you have gained as students so treat yourself and your team mates as experiential experts on this. The outcome of your design project will be presented in an online webinar on X. Presentation guidelines will be provided by teachers as well. Follow the method introduced to you by the teachers in the online sessions. The main objective of the task is to gain an understanding of the process of developing an idea into a concept. You will introduce the concept that meets the basic expectations such as: target group, relevant content and innovative features. Further, you will present a concept online, using effective presentation techniques. You are **not** expected to focus on technical aspects of the environment.

Table 2 provides a listing of all 21 competences and how they are demonstrated in the five module tasks of Nailing it!. Further on, each competence area will be reviewed and discussed individually from the viewpoint of module tasks (see also Table 3.1).

Competence Area	Competence	Task A	Task B	Task C	Task D	Task E
1. Information and data literacy	1.1 Browsing, searching and filtering data, information and digital content	-	x	-	x	x
	1.2 Evaluating data, information and digital content	-	x	x	x	x
	1.3 Managing data, information and digital content	x	x	x	x	x

2. Communication and collaboration	2.1 Interacting through digital technologies	x	x	x	x	x
	2.2 Sharing through digital technologies	x	x	x	x	x
	2.3 Engaging in citizenship through digital technologies	-	-	-	-	-
	2.4 Collaborating through digital technologies	x	x	x	x	x
	2.5 Netiquette	x	x	x	x	x
	2.6 Managing digital identity	-	-	-	-	-
3. Digital content creation	3.1 Developing digital content	x	x	x	x	x
	3.2 Integrating and re-elaborating digital content	x	x	x	x	x
	3.3 Copyright and licences	-	-	x	x	x
	3.4 Programming	-	-	-	-	-
4. Safety	4.1 Protecting devices	-	-	-	-	-
	4.2 Protecting personal data and privacy	x	-	-	-	-
	4.3 Protecting health and well-being	-	-	-	-	-
	4.4 Protecting the environment	-	-	-	-	-
5. Problem solving	5.1 Solving technical problems	x	-	-	x	x
	5.2 Identifying needs and	-	x	-	x	x

	technological responses					
	5.3 Creatively using digital technologies	-	-	-	x	x
	5.4 Identifying digital competence gaps	-	-	-	x	x

Table 3.2. Digital competences and how they are demonstrated in the five module tasks.

### 3.7 Review of competence areas

The following chapter is an account of the competences that were clearly demonstrated and promoted in the tasks chosen as examples. There were few competences not visible in the module tasks as illustrated in the table and they will not be discussed here. The proficiency levels of the self-assessment grid (see Ferrari et al., 2013) will be reviewed later as the focus of this chapter is the representation of certain competences in the module. The review will rely on both versions of the framework (see also Ferrari et al., 2013; Vuorikari et al., 2016).

#### *Information and data literacy*

The competence covers the acts of browsing, searching, filtering, evaluating and managing the following: data, information and digital content which are the type of skills required from all students in any field of study (see Vuorikari et al., 2016, p. 8 –9). The competence area of Information and data literacy is a prerequisite for the effective implementation of digital competences. However, such skills are significant in order to manage and complete study regardless of the mode of implementation, online or offline.

Browsing, searching, filtering, managing and evaluating data skills are all required in the following module tasks:

- B (benchmarking online learning environments),
- D (team innovation process) and
- E (online presentation about the outcome of the innovation process)

In comparison, the following two tasks required a certain number of skills:

- C (summary writing); includes managing and evaluating data
- A (team management) includes managing data

The completion of task B, for example, includes the following steps: information search, retrieval of information, evaluation and choosing information, analysing and eventually sharing the information. The task has the benchmarking aspect in it and it serves as the starting point for the further process of an environment the students themselves will be developing later on. To be able to benchmark quite often involves the following skills building up the first dimension of this particular area: browsing, searching and filtering information. Naturally, finding an environment impressive enough to be presented further includes the second dimension, evaluation of the findings. The final outcome of this task was conducted by storing and retrieving the chosen findings. This way the whole area of this particular competence; information, was covered in this task.

Developing task C accordingly enhances media literacy and academic honesty as it requires the students to provide reliable sources and references (see Ferrari et al., 2013, p. 16). All in all, the students need to be able to evaluate information to complete the module tasks. Further, they are required to manage and filter relevant information.

### *Communication and collaboration*

The competence covers communication and collaboration conducted with the help of digital tools (Ferrari et al., 2013, p. 19; Vuorikari et al., 2016, p. 14 - 15). Additionally, the ability to share, present and manage digital information is included in the competence. To be able to do that, one needs to understand the means, ways, forms as well as the role of target group in digital communication.

The following collaborative online tools were used in the module: MS Teams, Zoom, Whiteboard and Moodle. The completion of the tasks requires the ability to share information autonomously and to interact on digital channels chosen by the students themselves. The students were assigned several group tasks that were completed online, most often they were working on separate team work spaces provided by MS Teams or Zoom. The ideation work was conducted with the help of Whiteboard application. Further, the completion of the module tasks

required the ability to share information autonomously as well as the ability to interact and communicate on a chosen online channel. An example of the channels chosen by the students is the use of YouTube and MP4 for the purpose of managing and sharing the video tasks.

As the table illustrates, task A includes ten competences out of 21. Clearly the competence area that was most frequently demonstrated in this task is the second area, communication. It is quite obvious that for the student teams to get organized and kick start the team work requires plenty of communication and interaction even to cover the practicalities such as listed in the task. The students were assigned into teams in advance by the teachers. The idea was to build teams representing different institutions and countries. This way of building student teams strongly supports the implementation and development of competence 2.5: netiquette.

Interaction, team work as well as sharing and discussing ideas are widely used methods in higher education. The competence area of Communication and collaboration is automatically included in such methods. Interacting and collaborating through digital channels are significant aspects of online courses and online learning. Collaborating through digital channels has become a routine both in the field of online study but also in non-formal online communication. It is increasingly important for students to learn about online behavioural norms and to recognize inappropriate behaviour. Such rules and agreements are quite often discussed in class as the teacher may suggest agreements concerning for example the use of web cam, about how to appear online, how to address speakers and make comments.

### *Digital content creation*

Developing, integrating and re-elaborating digital content are the main elements of digital content creation as a competence defined in the framework (see Vuorikari et al., 2016, p. 8 –9). In addition, copy right and licences as well as programming are also included. It was generally agreed within the project partnership that each partner will take responsibility for setting up the legal framework to protect the copyright of the participating students representing their university. For example, the student consent of Seinäjoki University of Applied Sciences will give the partnership the permission to use, adapt and redistribute any

input which they developed for and during the NewM Abroad@home modules.

In the task assignments of the module there was a strong emphasis on the innovation process where the students developed content using Whiteboard application for this purpose. Whiteboard is a user-friendly application suitable for collaborative ideation tasks. The ideation process from an idea into a concept was conducted to come up with a virtual learning environment. The main objective of the task was to gain an understanding of the process and find out how to develop an idea into a concept, not the technical aspects of the environment. The outcome was an online presentation about the new concept, using effective presentation techniques demonstrated in a webinar. Some module tasks require use of sources. The task instructions emphasized the roles of reliable sources and academic honesty. The module was implemented with the help of Moodle and the system has a particular feature detecting plagiarism, which was applied in the submission of the module tasks. (see Kivimäki & Råttis, n.d.).

Content development, integrating and re-elaborating are all aspects of digital content creation (see Vuorikari et al., 2016, p. 8 –9). The module discussed in the present text engaged the students in innovative and creative tasks where digital content creation was automatically included. The submission of tasks, such as video tasks for example, required knowledge about copy rights and reliable sources.

### *Safety*

Safety as a competence is composed of the protection of devices, personal data, privacy, well-being, health and environment (Vuorikari et al., 2016, p. 8-9, 15-16). Ferrari et al. (2013, p. 28) points out that it is important to include the aspect of sustainable development in the concept of digital safety.

Since different online platforms and applications were used in the implementation of the modules, it is the responsibility of an individual student to manage and protect passwords and personal online profile information. The digital channels used in the modules are managed and administrated by universities and thus subject to institutional data protection. All final credits within Abroad@home were administrated by the coordinating partner who reported on the credits earned to the partner universities after the completion of the last module, module six.

### *Problem solving*

Solving technical problems, identifying needs and technological responses, creatively using digital technologies and identifying competence gaps all relate to the competence of problem solving (Ferrari et al., 2013, p. 32; Vuorikari et al., 2016, p. 8-9, 16). There were several tasks that required problem solving skills in 'Nailing it!'. The completion of the module required a variety of problem solving skills ranging from signing up into the platforms provided and managed by different universities to learning to use different digital tools and channels.

Some students were already familiar with the online tools chosen for the module. These students were able to support peers and facilitate the completion of module tasks using Ms Teams or Zoom. Solving technical challenges seems a prerequisite in a student team aiming to gain the credit together. As early as in the first schedules online sessions the students were already giving peer it support to other students for example when there were certain browser-related issues that prevented some students from entering the environment the teachers recommended were implementing on.

Regarding the main theme of Nailing it! involves a certain degree of innovative thinking to come up with new ways of implementing different tools. Problem solving skills require a certain amount of independence as well as ability to take initiative for their studies. It also means that students are able to solve technical problems and find different solutions while facing different technical problems both in connection and equipment.

### *Summary of the competence review*

To conduct the review, the framework including 21 digital competences was introduced (see Table 1). An online study module was introduced as well and as a result the writers were able to distinguish 16 out of 21 competences that were implemented in the module (see Table 2). The choices made for the module study method required the students to take responsibility and initiative for their learning process. Using a variety of applications during a study module facilitates sharing of information, learning and personal development also in relation to technical skills. In terms of lifelong learning, it is also important to recognize personal needs of development and seek ways to improve technical skills and digital competence.



Information and data literacy appears to be the most frequently used competence area and it may be considered a pre-requisite for participating and completing such a module successfully (see Table 2). The competence of browsing, searching and filtering data, information and digital content was required in three out of five module tasks: A, B and C (see Table 2). Evaluating data, information and digital content was the second competence of this particular area. The third competence, managing data, information and digital content, was the most frequently competence. The writers agree that this is particular competence bears great significance as it seems to serve the role of a pre-requisite for learning and developing personal skills in general.

Another competence area frequently required was Communication and collaboration, which also may have a universal, all-round function in the completion of a study module. The competence area includes six competences of which four are demonstrated in the five tasks of the module. The four competences are interacting, sharing, collaborating through digital technologies and netiquette. Two competences were not integrated or manifested in the module (see Table 2). Due to the content of the module, it is evident why the competence no 2.3 was not integrated. Managing digital identity, 2.6, remains a bit controversial since some elements of it such as dealing with the data that one produces through several digital tools, environments and services is embedded in the student work of the module leaving out a part of the competence which is to create and manage one or multiple digital identities, to be able to protect one's own reputation.

The core content of the module was developing digital content and problem solving, which is why competence areas number 3 and 5 both had a significant role in the module tasks (see Table 2). The writers agree that in particular competence areas Information and data literacy as well as Communication and collaboration, may be described as transversal competences. All in all, online study and team work obviously require skills such as the two competence areas discussed above. Continuous use of such skills during the life span of the module will inevitably lead into an enhanced and improved performance of an individual student.

### **3. 8 A student survey on digital competence**

The writers of the present text conducted a survey on digital competence among two groups of students. The survey includes all the areas of digital competence and it was carried out online. The responses were gathered from Nailing it! participants during the second pilot round and more specifically at the end of the module. Further, the responses among SeAMK students were collected during the same period of time.

The survey was developed using the self-assessment grid originally published in a report written by Ferrari et al. (2013) (Appendix 1). Each of the five competence areas (information, communication, content creation, digital safety and problem solving) are covered by requesting the respondent to assess their skills respectively. The respondent chose the appropriate level best describing their personal skills of foundation level, intermediate level or advanced level (see also Ferrari et al., 2013, p. 13).

At the end of the survey the respondents were given two open questions. The first question was about digital competences that were improved during Nailing it! and the second one about the examples of challenges or needs of improvement. The two last questions were addressed to only those students who took part in Nailing it! module. The number of all respondents was 29, out of which 23 are second year business students at SeAMK. All responses are attached as a table in appendix 2.

As the number of participating students in the module was relatively low, the writers chose not to discuss each survey question separately but focus on the most significant results and the corresponding questions. The results reveal that there are clearly two distinctive competence areas, Information and data literacy i.e. communication and collaboration that were also previously discussed within the framework of module task review.

The results will be visualized and discussed here with the help of paired bar charts. The lengths of the bars are proportional to the percentages of the responses. The column charts display different colours indicating the skill levels accordingly: blue indicates foundation level, orange is intermediate and green indicates advanced level. However, while responding, the students were given alternatives and the term 'level' was not used to avoid any labelling or biased responses. The student groups

are listed by the titles ‘Digital competence of students’ indicating the Nailing it! students’ responses and ‘Digital competence of LITA20 students’ indicating SeAMK students’ responses.

### *Student survey about information and data literacy*

The competence area known as Information and data literacy will be discussed in this chapter. While conducting the survey, the students were requested to choose the alternative that best describes their personal skills in this area. The alternatives provide a selection of three levels as described originally in the self-assessment grid (Appendix 1).

The alternatives are as follows:

- I can do some online searches through search engines. I know how to save or store files and content (e.g. texts, pictures, music, videos, and web pages). I know how to go back to the content I saved. I know that not all online information is reliable. (Foundation level)
- I can browse the internet for information and I can search for information online. I can select the appropriate information I find. I can compare different information sources. I know how to save, store or tag files, content and information and I have my own storing strategy. I can retrieve and manage the information and content I saved or stored. (Intermediate level)
- I can use a wide range of strategies when searching for information and browsing on the Internet. I am critical about the information I find and I can cross-check and assess its validity and credibility. I can filter and monitor the information I receive. I can apply different methods and tools to organise files, content and information. I can deploy a set of strategies for retrieving and managing the content I or others have organised and stored. I know whom to follow in online information sharing places (e.g. micro-blogging). (Advanced level)

The results reveal that the Nailing it! students consider themselves to have information skills of the intermediate (50%) or advanced level (50%) (Figure 2; Appendix 2). The SeAMK students’ results however indicate a different distribution into all three levels, the foundation level (22%), intermediate level (48%) and advanced level (30%). The distribution of responses among Nailing it! students demonstrates an even proportion between the intermediate and advanced levels. SeAMK students’

responses are distributed in a different way with half of the students assessing their level to be intermediate. The distribution between foundation (22%) and advanced (30%) levels bears a moderate difference in the percentages.

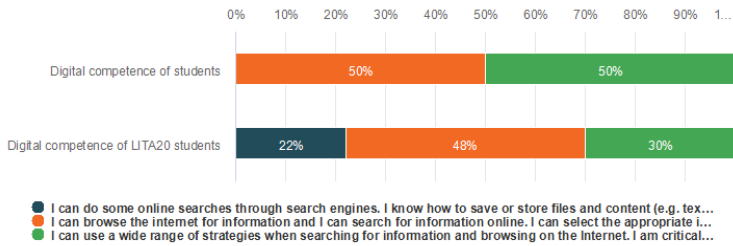


Figure 2. Survey results on Information and data literacy (Appendix 2).

As discussed in the chapter called ‘Digital competence review of Nailing it!’, the competences had a significant role in the student task completion of the module. To conclude, the writers claim that the module tasks support the development of the competence area of Information and data literacy as well as the competences included in it (see Table 3.2).

### *Student survey about communication and collaboration*

Communication and collaboration will be discussed in this chapter. The students were requested to choose the alternative best describing their personal skills in this competence area. The alternatives are as follows:

- I can interact with others using basic features of communication tools, (e.g. mobile phone, VoIP, chat or email), share files and content with others through simple technological means and collaborate with others using traditional technologies. I know basic behaviour norms that apply when communicating with others using digital tools, that technology can be used to interact with services and I passively use some. I am aware of the benefits and risks related to digital identity. (Foundation level)
- I can use several digital tools to interact with others using more advanced features of communication tools (e.g. mobile phone, VoIP, chat, email). I know the principles of online etiquette and I am able to apply them in my own context. I can participate in social networking sites and online

communities, where I pass on or share knowledge, content and information. I can actively use some basic features of online services, create and discuss outputs in collaboration with others using simple digital tools and shape my online digital identity and keep track of my digital footprint. (Intermediate level)

- I am engaged in the use of a wide range of tools for online communication (emails, chats, SMS, instant messaging, blogs, micro-blogs, SNS). I have developed strategies to discover inappropriate behaviour and I am actively participating in online spaces. I know how to get actively engaged in online participation, I can use several different online services and how to protect my digital reputation and I frequently and confidently use several digital collaboration tools and means to collaborate with others in the production and sharing of resources, knowledge and content. I can - apply the various aspects of online etiquette to different digital communication spaces and contexts. - adopt digital modes and ways of communication that best fit the purpose. - tailor the format and ways of communication to my audience. - manage the different types of communication I receive. - actively share information, content and resources with others through online - communities, networks and collaboration platforms. - manage several digital identities according to the context and purpose - monitor the information and data I produce through my online interaction. (Advanced level)

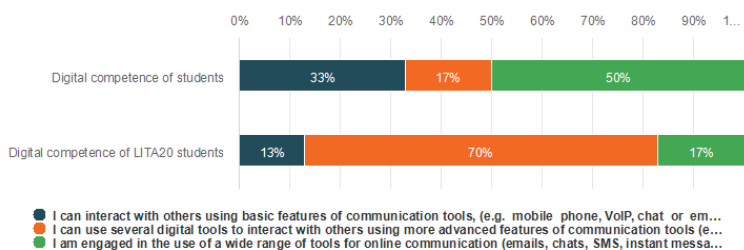


Figure 3.3. Survey results on Communication and collaboration (Appendix 2).

The results reveal that the Nailing it! students consider themselves to have communication and collaboration skills of the foundation (33%), intermediate (17%) or advanced level

(50%) (Figure 3; Appendix 2). The SeAMK students' results indicate a different distribution into all three levels, the foundation level (13%), intermediate level (70%) and advanced level (17%).

Half of the Nailing it! students consider themselves to have advanced skills in the area. By contrast, 33% assess themselves on the foundation level and the smallest percentage, 17% appears to be of intermediate level. The fact that the modules were implemented using English as lingua franca may have an impact on the responses which may as well serve as an explanation for the relatively high percentage among SeAMK students with 87% percent intermediate and advanced levels combined. SeAMK students were assessing communication and collaboration from a slightly different viewpoint, not dealing with the use of global English as a tool for communication.

Communication and collaboration seems to have a universal, all-round function in the completion of a study module (see chapter Digital competence review of Nailing it!; Table 2). Any type of work today requires soft skills, or transversal skills, and online work clearly generates communication and collaboration skills.

### *Open survey questions*

At the end of the survey the Nailing it! students were asked to reflect on the experience of having participated and completed the module (Appendix 2). The following two questions were formulated in order to invite the students to give insights into the experience.

To conclude, we ask you to think about your experience of 'Nailing it!' and give examples of the following:

- a) Your personal digital competences that were improved in the module
- b) Some challenges or needs of improvement in your digital competence

The following is a list of students' perceptions of the digital competences that were improved during Nailing it! (see Appendix 2; Table 3). The responses have been copied directly from the survey responses and have not been rephrased.

<i>I do not think that much improvement, but upgrading already knew skills</i>
<i>Collaboration, search, active participation</i>
<i>Experiencing in different online platforms.</i>
<i>Knowledge about online learning platforms</i>
<i>Data analysis, online presentation skills, digital communication, digital content creation, problem solving</i>

*Table 3.3. Your personal digital competences that were improved in the module.*

The student responses indicate that the core digital competences were clearly improved. In the same way as the competence analysis (see chapter Digital competence review of Nailing it!) proves, the evidence suggests that the most frequently required competences in the module were Information and data literacy as well as Communication and collaboration (see also Table 2).

Digital content creation and problem solving were the core content of the whole module which the students clearly recognize in the open answers. The ability to operate and manage on a variety of online platforms appears important and the prevailing circumstances of the pandemic and an overall increase in online work undoubtedly have contributed to this.

Further, in the second open question the students were asked to describe the challenges or needs of improvement (see Table 4).

<i>There is a lot of those, like working with different kind of files</i>
<i>Data protection, critical evaluation</i>
<i>Awareness matters, and there is a lot of products invented to help with people problem out there.</i>
<i>Every video platform is different, working with teams without having a paid permission is really hard --&gt; more knowledge about different platforms</i>

*Table 3.4. Describe needs of improvement.*

Based on the responses it is important to acknowledge the fact that the competence area of safety, 4, is missing from the module. The writers agree on the importance of it but admit that integrating this particular component would require yet another pilot round of online modules.

Platforms are listed in both sets of answers which suggests that they have an important role in the overall student perceptions. Nailing it! managed to enhance the student ability to manage and use online learning platforms, yet the students recognize the need for improvement in such skills. To conclude, it would be a step forward to offer such training to the students, ideally in the initial stage of the modules. Having the skills and the competence would benefit any student taking any of the modules offered within Abroad@home. The significance of safety as a competence is likely to be increasing as the worldwide scenario is rapidly changing and cyber environments are part of our everyday lives.

### **3.9 Conclusion**

According to UN (United Nations, n.d.), the advancement of digital technologies has been more rapid than any other innovation in the history. According to the writers of the text, the importance of digital competences is increasing. Furthermore, the writers put forward the claim that digital competences need official recognition in HEIs across the world and digital competences should be systematically integrated in all HEI curricula.

Along similar lines, digital competence is a significant key competence in the field of lifelong learning. Increasing use of digital technologies creates needs to adjust and update curricula and teaching methods in the field of education. The concept of life-long learning includes eight key competences out of which ‘Nailing it!’ strongly supports the following key competences:

- Digital and technology-based competences
- Interpersonal skills, and the ability to adopt new competences
- Cultural awareness and expression
- (see Council recommendation of 22 May 2018 on key competences for lifelong learning 2018/C 189/01).

As the first pilot module was conducted in fall semester 2020, it was evident that the dominating feature of the module implementation was digital competence. The fact that Nailing it! had a main focus on collaboration and interaction rather than content supports student development towards stronger digital competence. The core competence of the module is competence of Communication and collaboration and Information and data literacy. The pedagogical implementation supports the promotion and management of those particular competence and



competence areas.

The aim of the first pilot module was to highlight digital competence as one of the core professional skills improving one's employability. In the second pilot round the self-assessment grid of digital competence was used. The writers were seeking ways to exploit the existing technological resources to their full potential. The competence levels of the students were surveyed to gain a deeper understanding of the DIGCOMP framework and the significance of its practical implementation (see Ferrari et al., 2013).

The survey results prove that the Nailing it! supports the development of core digital competences among students. The implementation of the module with an emphasis on online communication and interaction via collaborative online tools supports and facilitate the student pursuits of reaching digital competence. Completing the study module was not particularly challenging to the participating students, not at least from the technological viewpoint. The successful completion record proves that in general the students have an adequate digital competence. However, drawing any further conclusions may prove challenging and biased. The students who enrolled may have a more positive attitude towards virtual study methods and thus do not present the whole student population. It should be noted that the enrolled students may have stronger digital competence and a more positive attitude towards online learning than an average student. To be able to make comparisons and draw conclusions would require a more extensive study of digital competence.

According to the writers of this article, the framework of DigComp provides tools and concepts to deal with and to improve the digital competence of the students. Likewise, teachers and students need to become familiar with the concept of digital competence. It is important for the students to understand the significance of the concept at an early stage of the study path. As a result, students may grow an understanding of their personal digital competence and eventually evaluate it to recognize needs of improvement. Further, students may grow the ability to support and help others dealing with similar issues. Since lifelong learning requires individual ability to evaluate personal skills and needs, the framework of digital competence equally supports the strategy of lifelong learning (see Council recommendation of 22 May).

The pandemic and social distancing clearly increased the amount of remote work. The individual worker's digital competence has a significant role in providing participation and success in working from distance. To manage remote work, one needs to have a certain level of digital competence. How will HEIs respond to the growing needs and challenges in the near future? Sanchez-Crusado et al (2021, 24-25) claim that there is a similar need for teachers to enhance their digital competences. The writers believe that digital competences will become core skills in both professional and private sectors. The abundance of platforms, technologies and competence areas required will generate needs for more resilient HEI learning.

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Appendix 1. The self-assessment grid.

	A - Foundation	B - Intermediate	C - Advanced
<b>Information</b>	I can do some online searches through search engines. I know how to save or store files and content (e.g. texts, pictures, music, videos, and web pages). I know how to go back to the content I saved. I know that not all online information is reliable.	I can browse the internet for information and I can search for information online. I can select the appropriate information I find. I can compare different information sources. I know how to save, store or tag files, content and information in my own way. I know how to retrieve and manage the information and content I saved or stored.	I can use a wide range of strategies when searching for information and browsing on the Internet. I am critical about the information I find and I can cross-check and assess its validity and credibility. I can filter and monitor the information I receive. I can apply different methods and tools to organize files, content and information. I can deploy a set of strategies for retrieving and storing the content and files I save, organize and stored. I know when to follow in online information sharing places (e.g. email, blogs, etc.).
<b>Communication</b>	I can interact with others using basic features of communication tools (e.g. mobile phone, VoIP, chat or email). I know basic behaviour norms that apply when communicating with others using digital tools. I can share files and content with others through simple digital means. I know how to use digital tools to communicate with others and I positively use some. I can collaborate with others using traditional technologies. I am aware of the benefits and risks related to digital identity.	I can use several digital tools to interact with others using more advanced features of communication tools (e.g. mobile phone, VoIP, chat, etc.). I know the parameters of digital communication spaces and contexts. I can create digital content. I can participate in social networking sites and online communities, where I pass on or share knowledge, content and information. I can actively use some basic features of online services. I can create and discuss content and information. I can use digital tools to shape my online digital identity and keep track of my digital footprint.	I am engaged in the use of a wide range of tools for online communication (emails, chats, SMS, instant messaging, blogs, micro-blogs, SNS). I can apply the various aspects of online etiquette to different digital communication spaces and contexts. I have developed strategies to describe my digital identity and content. I know how to use different types of communication to my audience. I can manage the different types of communication I receive. I can actively share information, content and resources with others through online communities, networks and collaboration platforms. I am actively participating in online spaces. I know how to get actively engaged in online participation and digital communication. I can use digital tools to collaborate with others in the production and sharing of resources, knowledge and content. I can manage several digital identities according to the context and purposes. I can monitor the information and data I produce through my online interactions. I know how to protect my digital reputation.
<b>Content creation</b>	I can produce simple digital content (e.g. text, or tables, or images, or audio, etc.). I can make basic changes to the content that others have produced. I can modify some simple functions of software and applications (apply simple settings). I know how to create and apply simple modifications to software and copyright. The content I find can be covered by copyright.	I can produce digital content in different formats (e.g. text, tables, images, audio, etc.). I can edit, refine and modify the content I or others have produced. I have basic knowledge of the differences between copyright, copyright and creative commons. I can apply simple modifications to software and applications (advanced settings, basic programme modifications).	I can produce digital content in different formats, platforms and environments. I can use a variety of digital tools for creating original multimedia outputs. I can mash-up existing items of content to create new ones. I know how different types of licences apply to the information and resources I use and create. I can interfere with (open) programmes, modify, change or write code. I can use digital tools to create and apply simple functions that are behind programmes.
<b>Safety</b>	I can take basic steps to protect my devices (for instance, by using anti-viruses, passwords, etc.). I know that I can only share certain types of information about myself or others in online spaces. I know how to protect my devices from malware. I know that some technologies can affect health. I know that basic measures to save energy.	I know how to protect my digital devices. I update my security strategies. I can protect my and others' online privacy. I have a general understanding of privacy issues and I have basic knowledge of how my data is collected and stored. I know how to protect my devices from malware and health risks associated with the use of technologies (from ergonomic aspects to addiction to technologies). I understand the positive and negative aspects of the use of technology on the environment.	I frequently update my security strategies. I can take action when the device is under threat. I often change the default privacy settings of online services to enhance my privacy protection. I have an informed and wide understanding of privacy issues and I know how my data is collected and used. I am aware of the correct use of technologies to avoid health problems. I know how to find a good balance between online and offline worlds. I have an informed stance on the impact of technologies on everyday life, online consumption, and the environment.
<b>Problem solving</b>	I can ask for targeted support and assistance when technologies do not work or when using a new device, programme or application. I can use some simple digital tools to solve basic problems. I can make decisions when choosing a digital tool for a routine practice. I know that technologies and digital tools can be used for creative purposes and I can make some creative use of technologies. I have some basic skills to solve problems, but I am aware of my limits when using technologies.	I can solve easy problems that arise when technologies do not work. I understand what technology can do for me and what it cannot. I can solve a non-routine task by exploring different digital tools and programmes. I can evaluate the effectiveness of the tool. I can use technologies for creative purposes and I can use technologies to solve problems. I collaborate with others in the creation of innovative and creative digital tools, but I don't have innovativity. I know how to learn to do something new with technologies.	I can solve a wide range of problems that arise from the use of technology. I can make informed decisions when choosing a digital tool for a routine practice. I am familiar with a wide range of technological developments. I understand how new tools work and operate. I can critically evaluate which tool serves my purposes best. I can solve conceptual problems taking advantage of technologies and digital tools. I can contribute to knowledge creation through technology means. I can take part in innovative actions through the use of technologies. I can make informed decisions when choosing a digital tool to produce creative and innovative outputs. I frequently update my digital competence needs.

## **Appendix 2. A student survey on digital competence.**

### **SeAMK student survey of digital competence**

Total number of respondents: 29

Dear student, you are welcome to enter the survey of digital competence.

The framework of digital competence has been developed by the European Union and you find it here:

<http://europass.cedefop.europa.eu/>.

This survey will ask you to choose the level you assess yourself to have in certain areas of digital competence.

Your responses will be used to serve the academic interests of New Modes of Mobility, a project funded by European Union Erasmus+ strategic partnerships.

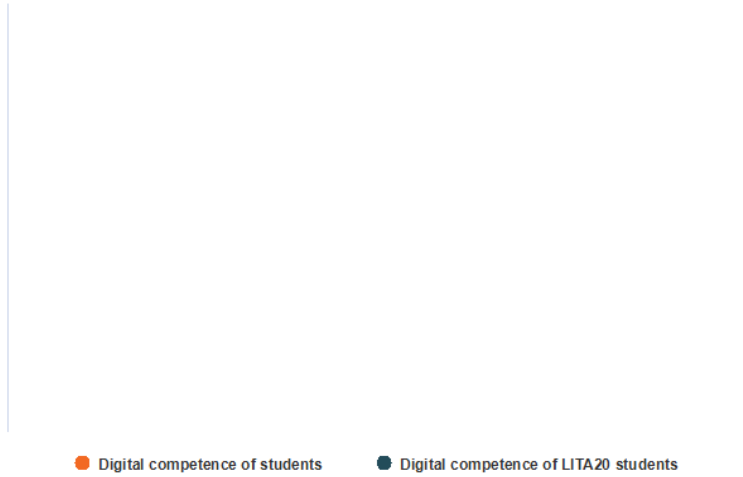
Your anonymous responses will be secure and treated accordingly.

To complete the survey may take ca 10 minutes.

Thank you for your time and effort!

Yours,

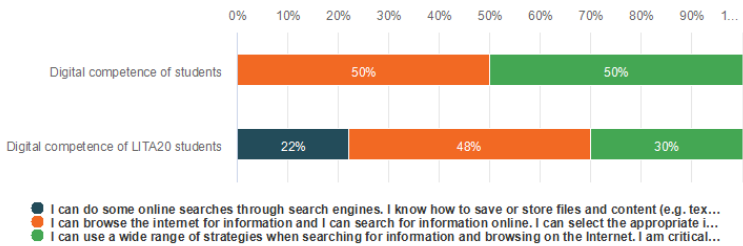
Seinäjoki university of applied sciences project team



**1. The first area of digital competence we ask you to consider is information.**

**Read the descriptions below and choose the alternative that best describes your level.**

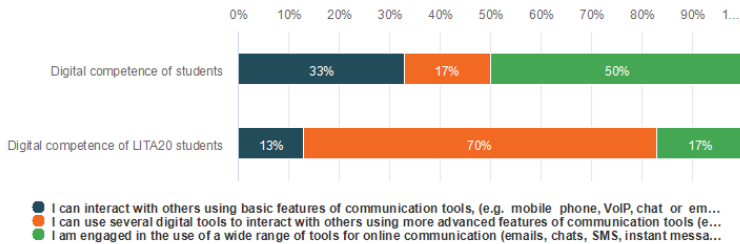
Number of respondents: 29



**2. Next we ask you to read the descriptions about communication and choose the most suitable alternative.**

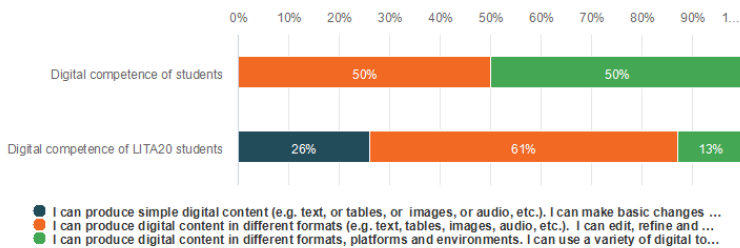
Number of respondents: 29

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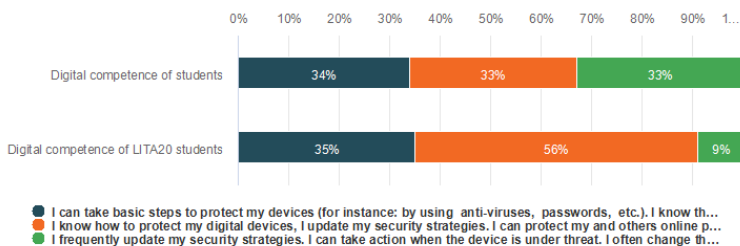
### 3. The third area is called content creation. Look at the alternatives below and pick the one that best describes your level of competence.

Number of respondents: 29



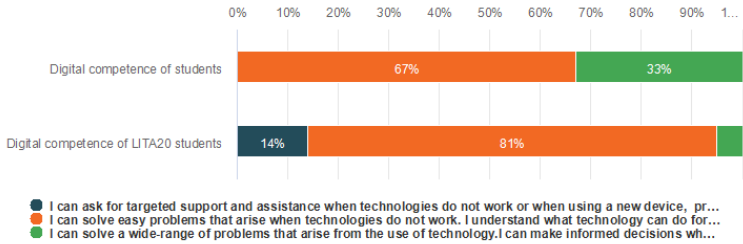
### 4. Choose the best alternative to describe your competence in the area of digital safety.

Number of respondents: 29

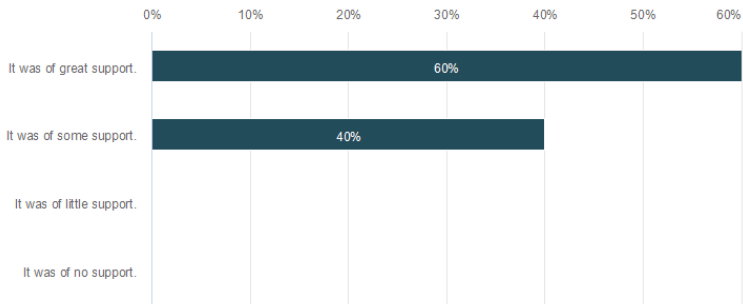


### 5. Next you will assess your level in the area of problem solving.

Number of respondents: 27



**6. Did the virtual module 'Nailing it!' support the development of your digital competence? Choose the alternative that best describes your experience.**



**7. To conclude, we ask you to think about your experience of 'Nailing it!' and give examples of the following:**

**a) Your personal digital competences that were improved in the module**

Responses
I do not think that much improvement, but upgrading already knew skills
Collaboration
Search
Active participation



Experiencing in different online platforms.
knowledge about online learning platforms
data analysis, online presentation skills, digital communication, digital content creation, problem solving

**b) Some challenges or needs of improvement in your digital competence**

<b>Responses</b>
There is a lot of those, like working with different kind of files
data protection critical evaluation
Awareness matters, and there is a lot of products invented to help with people problem out there.
every video platform is different, working with teams without having a paid permission is really hard --> more knowledge about different platforms

# 4

## Life style and other issues of Gen Z and the impact on virtual modules

*Jack Keulers, Fontys University of Applied Sciences  
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*This chapter describes the impact of the Generational Issues of the learners that participated in our modules. It shows that this generation is expecting fundamentally different types of performance from business and hence also from education. At the end the requirements for future virtual modules like simulated business games are described.*

### 4.1 What is/who are Generation Z?

A countries population can be divided into so-called generations. Although different authors use different time buckets (the author of this is in some cases a boomer, in others GenX, this chapter follows the definition as published by the PEW Research centre pictured below. (Kim Parker, Nikki Graf, Ruth Igielnik, 2019).

There is one generation missing in the picture, however. The children born after the year 2010 are labelled as Generation Alpha. This label has been very recently adopted.

So, although it is good to know that we expect a new generation, the core topic of this chapter is GenZ.

*A few anecdotal differences*

A few anecdotal differences between them and the Millennials, their predecessors are:

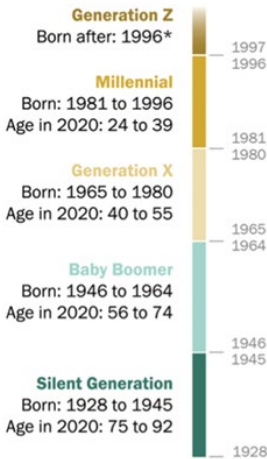
- The first fully digital natives: the internet and smart phones

have been around all their lives.

- They find social media a basic part of life and find it for instance fully acceptable to use Instagram or Facebook for job applications.
- Patience is not their strongest virtue! If that company that they approached does not reply within hours, they lose interest. “Apparently they are not eager enough for me?!”

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### The generations defined



\*No chronological endpoint has been set for this group.  
“On the Cusp of Adulthood and Facing an Uncertain Future: What We Know About Generation Z So Far”

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Figure 4.1: Definition of Gen Z

- Also, when starting their jobs, they want to see results soon. If it does not feel right from the start, they might just not show up the next day. Formal procedures for quitting their job are ignored.
- They are, in comparison with Millennials very action oriented. They do make a difference, when the later ones only talk about this. So, it is important to keep challenging them and they show the willingness to keep developing.

- They have a larger preference for fixed contracts or starting their own company. This provides them with a larger sense of control.
- Part of this, is being able to define their own working hours. Taking a vacation whenever they feel like it, making their own schedule and not being too attached to weekends or evenings off gives them flexible control of their calendar.

#### **4.2 What is the current situation in education, due to the pandemic?**

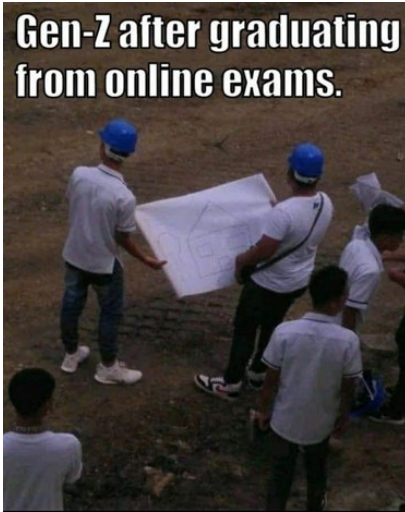
Before we dive into the characteristics of this generation, let's take a look at the current situation of the educational landscape and more specific where the COVID-19 pandemic has taken us. According to McKinsey (Bryant et al. 2021) the pandemic has taken a substantial toll on students' academic progress and on their mental health. Later in this chapter the issue of mental health will be dealt with in more detail.

- On average across the globe students are eight months behind where they would have been without the pandemic.
- There's a lot of variation to this, depending on pre-corona levels and income.
- It has increased inequalities and widened gaps between color and urban compared to rural communities.
- It also has impacted on social and emotional levels, rising mental health issues, increased levels of domestic violence, obesity, absenteeism and dropping out of school.

In summary, the corresponding loss of future earnings potential, due to lower level education, is estimated to reach 1.6 trillion \$ by 2040! When reading the remainder of this chapter it is paramount to remember that Gen Z was in the crucial phase of development into adults, the years where friendships are forged, norms and values are established and the social fabric of their life develops. They were hit the hardest by all this and assuming an almost PTSS type of impact is not beyond imagination.

#### **4.3 Generation Z: what are their fundamental characteristics?**

Statistics compiled by the Pew Research Centre (Tyson, Kennedy, Funk, 2021) paint a clear picture. Here's what we know (most statistics are based on the population of the USA!):



*Figure 2: Gen-Z visualisation*

*Diversity is their norm.*

One of the core characteristics of Generation Z is racial diversity. In the USA this Gen Z will be the last generation that is predominantly white.

Many Gen Zers, witnessed the first Black president in the USA and the legalization of gay marriage in many countries across the world. They are more likely to have grown up amid diverse family structures — whether in a single parent household, a multiracial household, or a household in which gender roles were blurred. As a result, they are less worried than previous generations over differences in race, sexual orientation or religion. It has become quite normal.

*Again: they are our first “digital natives”*

Another characteristic of Generation Z is their native use of technology. Whereas Millennials were considered “digital pioneers,” who bore witness to the explosion of technology and social media, Gen Z was born into a world of peak technological innovation — where information was immediately accessible and social media increasingly ubiquitous.

These technological advancements have had both positive and negative effects on Gen Z. On the plus side: an abundance of information is at their fingertips, allowing Gen Zers to broaden

their knowledge and be proactive in their learning. The downside is that too much screen time can lead to feelings of isolation and underdeveloped social skills. Technology will be at the base of the most important skills as they enter the workforce (see paragraph 4).

*They are pragmatic and financially-minded.*

Financial mindedness is another core characteristic of Generation Z. Many Gen Z-ers grew up watching their parents take huge financial hits during the economic crisis of 2008. Having witnessed their parents' struggles, this generation is driven by pragmatism and security. They value the stability that comes with conservative spending, stable jobs and smart investments. A good education is considered as a prudent investment in the future!

*Many factors contribute to their mental health challenges.*

This forms a sad characteristic of Generation Z. They have been described by some as the "lonely generation," as their endless hours spent online can foster feelings of isolation and depression. Social media can be a ruthless platform where shining role models confuse them with a pretty picture that does not reflect reality.

The current state of the world doesn't help either. As political activism among Gen Z has increased, many of them have adopted increased levels of stress. The term "doom-scrolling" is a new phenomenon.

The American Psychological Association identified in their research in 2018 (4), that Gen Z reports the lowest percentage of possessing good mental health (45 %) and the highest percentage in receiving help from a psychologist or other mental health professional (37 %)! They exhibit higher stress levels on topics like work, money and health related concerns.

*They are clever and well-informed consumers.*

As consumers, Gen Z's act according to their values. They rely on tech skills and peers to make well-informed purchasing decisions. Their pragmatism leads them to explore and evaluate all options before deciding. Reviews are an essential element, influencers play a role although friends and neutral peers are more important.

Their purchasing decisions are considered to be an expression of their values and identity. They are drawn to sustainable products and brands — and more than other generations they are willing to pay a substantially higher price. They value brands who share their point of view on political and social issues, but are aware of possible green washing or in name only behaviour by companies.

*They tend to be politically progressive.*

All generations tend to be more left-leaning than the previous generation, and Gen Z is no exception. They resemble Millennials on many key issues, and are the most politically progressive generation yet. In the USA they have the lowest approval rate of the previous president even when voting Republican. As for civil rights they are most likely to see the advancement of Gender, Race or LGBTQ+ rights as logical. In a significant higher level, they expect the government to take a greater role in solving problems. They also consider climate change to be impacted by human activity.

*Summarizing.*

Gen Z still has to develop into adults, and the saying: “When you’re 18 and do not vote left, you do not have a heart; but when you’re 40 and do not vote right, you don’t have a mind!, might still play a role in their development. However, the core values and beliefs are very stable and look lasting. They will become engaged, firm independent thinkers that realize that it is up to them to take responsibility for what’s happening in this world.

#### **4.4 What now, are the most relevant issues for Generation Z in view of education?**

*Higher Education is one of the top issues Generation Z cares about.*

When compared to older peer groups, members of Generation Z are the least likely to drop out of high school and the most likely to go to college, according to the Pew Research Centre.

As learners, Gen Zers are interested in acquiring career skills. They are creative, hands-on and tech-savvy students who prefer immersive, active educational experiences versus passively

sitting and listening to professors' lecture for hours. This will be discussed in more detail in paragraph 4.

The pandemic forced many students to embrace remote learning. It also knocked a significant share of lower-income students off their academic path. For instance: In October 2020, more than 40% of households reported that a prospective student was cancelling plans to attend community college, according to data from the U.S. Census Bureau. And, among current college students in the USA, 41% credited the pandemic with derailing their plans to graduate on time.

*Economic security matters to Gen Z.*

They want to have stable, well-paying jobs and to avoid crippling debt. The high costs of a college degree in some countries and the long-term financial toll associated with taking out educational loans are of particular concern.

Not surprisingly, students select their college majors accordingly. In a survey of 2017 graduates — the first class of Gen Z college graduates — 88% said that job availability informed their choice of major, according to the World Economic Forum.

When it comes to earning money, Gen Zers are interested in forging their own path. They have an entrepreneurial mind-set and are open to challenging the traditional rat race. An overwhelming majority of these youth — 75% — also believe that college isn't the only path to a good education and 50% have an alternate source of income of some kind.

In 2020, Gen Zers — the rookies of today's workforce — saw their nascent financial foundations begin to crack. Roughly a third said COVID-19 had an extreme or very negative impact on their financial security.

*Members of Generation Z are passionate about advocating for social change.*

As stated before Gen Zers believe that the government should be more active in addressing problems.

Gen Zers are also comfortable driving change. Using platforms like Snapchat, Instagram, Twitter and TikTok, these youth have helped move activism into the digital age. And, along the way, they've offered the world a master class in harnessing the power of social media to spotlight a specific cause or an issue



that they want to see change.

Some examples that everybody knows about: Swedish teen and environmental activist Greta Thunberg used social media to captivate the world and challenge leaders to take action against climate change. Malala Yousafzai, at age 23 blogged about her right to education, kicked off a movement and ended up winning a Nobel Peace Prize.

In America, most young people think their voices are more powerful online than offline, and nearly all members of Gen Z, report using at least one major social media platform.

*The threat of climate change is impacting the lives of Gen Z.*

Pre-pandemic, Amnesty International asked 10,000 18- to 25-year-olds in 22 countries to identify the world's most pressing issues. Global warming topped the vote with 41% of respondents. In America alone, an overwhelming majority of Gen Zers report being worried for the environment and the planet.

So, in line with this more than 90% of Gen Zers surveyed say that brands have an obligation to take a stand on sustainability issues.

Beyond expecting companies to fall in line, young people are also committed to leading by example. They exhibit the highest willingness to pay a premium for products and brands that do so.

#### **4.5 How characteristics translate in their needs and wants from education.**

Barnes & Noble (4) did research into the choice process of GenZ for college education. Their main findings relevant to our topic, are as follows:

*A means to an end, not a goal as such:*

For members of Generation Z, higher education is not just about four years of experience and having fun with your mates. It is a means to an end: the path they take to their future careers and something that needs to be done to succeed in life. So, they tend to be very practical about choosing an education.

As previously stated they genuinely worry about future financial stability. They are willing to dig in hard in order to get that higher education certificate.

*The search for immersive educational experiences:*

A majority of the members of Generation Z prefer active, immersive learning experiences. They don't want to spend their time listening to someone lecturing them. They want to get hands-on—and it impacts the way they chose their programs. Generation Z students want to go where they can:

- Get their hands dirty as they dive in with research.
- Also engage body and mind through sports, hobbies and associations.
- Spend time on socially relevant activities.
- Engage in active learning opportunities.

The shift from lecture-based classes to project based learning, hybrid learning, field labs, authentic cases is becoming more and more visible: hands-on assignments, online modules that allow them to explore deeper, and practical assessments, not results from written tests.

*Collaborative learning:*

Generation Z has also learned that learning should not be a solo thing. They're embracing collaborative learning opportunities, working together with their peers and achieve the results they're after. They value group work, both giving and receiving help in the effort to complete projects, work on real life assignments. Technology: connecting through Teams and Zoom, using shared Google Docs to collaborate, communicating in What's App groups helps them in establishing easy workflows and plan and execute their work. However, it is important that lecturers keep face-to-face communication part of the system: even digital natives chose it as their #1 form of communication when asked.

*Authenticity matters:*

Every lecturer will claim to care about their students, but they will see right through it when they actually do not. Generation Z students are looking for authenticity: lecturers and staff who are open and honest, make sure they learn what they need to know, and genuinely care about their educational progress.

*The importance of technology:*

As seen before, members of Generation Z have grown up as digital natives. They're perfectly comfortable with technology, have been using it all their lives, and have a specific set of

expectations when it comes to making use of it. They are picky about the way technology is used, both throughout general communication through websites and portals, workflow management systems in administrative issues and as part of the educational toolbox.

*E-Learning steps to the stage:*

Many members of Generation Z have already attended online education the past couple of years, due to the pandemic. Some of them might favour the option to attend a higher education program online in a way that never requires them to set foot on a campus. They're looking for online learning opportunities that will allow them to get the same immersive experience they would receive inside the classroom, and without being tied to a fixed schedule. E-learning also provides students with the option to lead a "normal" working life during office hours while pursuing a higher education in the time off. The time needed to be spend on education can be fully asynchronous. They tend to be self-motivated enough to take on those e-learning challenges. They'll switch from a mediocre lecturer in school to a first class online course in a heartbeat. The success of for instance Kahn academy for math relate topics is not by coincidence.

*Skipping higher education altogether: The Gen Z trend:*

Many members of Generation Z have observed that going the classical routes leads to a postponement of their careers until graduating and in some countries to a heavy level of debt because of student loans. In the USA there is talk of a student debt crisis not unlike the housing crisis in 2008. A lot of graduates will not be able to pay off their loans. So, Generation Z is considering other options. Obtaining job experience, acquiring certifications through self-study (in the EU also called micro-credentials), workshops, all become options in a life-long learning path that will get them to the desired level.

**4.6 What are some relevant design requirements for future online modules such as simulated business games?**

Having obtained all these insights into the new generation in our institutions today and entering the labour market soon, it is obvious that the classical approach of education will not suffice. In this project new modes of mobility have been researched and tested in 2 rounds of running virtual modules of learning.

Although the intention from the beginning was to mix this with hybrid mobility (at least a short stay with some of the partnering universities), the final result may have helped the consortium in even better learning what the positives and negatives of strictly virtual mobility are.

In this concluding paragraph we will describe some recommendations or design requirements from the previous insights for future virtual or hybrid modules. This chapter has specifically the modules that resemble simulated management games in mind. These have shown themselves as very useful for distant lecturing, but in general will show some shortfalls when comparing them with the needs and wants from Generation Z students.

Without weighing them in order of importance, this author considers these shortfalls to be the following:

#### *Finding*

Most business games are based on a competition where the pure aim is to beat the competition. The parameter to do so, is mostly by profit earned. The poorly designed ones even allow cannibalizing the company by sacrificing the company's existence (for instance selling of machines). The one used in the module in this project at least looked at the balance sheet and was aimed at a sustainable future of the company. However, not even in this well constructed game the win or lose criteria went beyond financials.

#### *Recommendation*

It is obvious that for Gen Z it cannot just be about profit and defeating the competition! Some of the critical elements in today's world, like supply chain issues or global warming need to play a role! A really good game would incorporate some of the UN's SDG's!

#### *Finding*

Most business games are based on very straightforward algorithms that calculate the outcome of playing a round in them with set parameters of price and promotion sensibility. They do not fully allow to incorporate items like branding and ways of targeting audiences that have specific needs. It is all budget-based with perhaps some shifting parameters as the game continues. It

is clear from the previous research that brand recognition and core values of companies play a paramount role in buying decisions from Millennial and GenZ consumers.

### *Recommendation*

A better constructed business game would allow the participating teams to choose more than just a promotion budget and or pricing strategies. The game played in this project did allow for choices in channels and whether or not be the fast innovator. It lacked however the options for corporate identity and making the core values of the company part of the marketing strategy. For GenZ is it important who they are buying from!

### *Finding*

The one thing, desired by GenZ, being usually well delivered, is the need for flexibility in working hours. The so-called asynchronous part of playing a business game is usually large in comparison with classical types of education. In the game played in this project, the only time required to be available in the virtual class room was limited to a few introductory lessons in the beginning and the feedback sessions after receiving the results from rounds played. And even these can be scheduled flexible per team. The only hard deadline each week is the point in time where the input needs to have been delivered and the game processes the results for the new round.

### *Recommendation*

So, not so much the game itself plays a role in the desired level of flexibility! The most important design parameters in this are: firstly, the academic schedules of the participating universities: we only had a bracket of about 10 weeks per semester where all universities were conducting classes; and secondly the size of the teams. A team that consists of more than roughly 4 people tend already to run into scheduling issues for their team meetings. Some will have classes, others have their side jobs.

### *Finding*

Most business games keep the algorithms that calculate the results to themselves. They are a black box to lecturers and students. Even the shifting parameters throughout the games are kept a secret and tend to sort of jump out at the teams. It can be very frustrating for participants when they do not know how to interpret certain result, information or statements in the

handbook, Even as the coordinating lecturer one can be surprised by the way the developers have constructed this. The game used in this module was already much better in giving future market information and providing the teams with the option to buy additional market information. This feature is of course already much more authentic than most games in the market.

### *Recommendation*

A very excellent business game, however, will allow these digital natives to build their own intelligence structure. It would be great to just give them a huge database of correlated information and challenge them to build their own prediction algorithms. The future market intelligence departments in companies definitely will use Big Data, A/B testing and predictive AI.

### *Finding*

All business games are constructed on a gaming platform where the participating companies operate on the same level of the business column. They are all straight competitors from each other and the only choices relevant are directly comparable with each other. The game used makes a good distinction between the operational functions within a business. Sales, production, logistics and finance are dealt with on a very decent level with a lot of information on performance and such

### *Recommendation*

The people with experience in the real world of course know that this is a very isolated bubble where all companies are in the same position initially and encounter the same issues. Real life is much messier and outcomes are results, sometimes, from fluke incidents and unknown unknowns! A better designed module would at least incorporate some of this messiness by installing different level playing fields. What are the results of your team would also depend on your negotiation skills with the suppliers or customers, who are also participants in the game??? So, it's not just about finding agreements with your team members but also with people with adversary agendas?

## **4.7 Conclusion**

The limited amount of experience institutes of higher education have had with GenZ students will lead to a lot of mistakes still being made by us.

But, the characteristics of the members of GenZ make this a truly challenging time!

For the right reasons! If one thing is totally lacking from the previous paragraphs, it is cynicism!

GenZ members do not play the blame game; they know it is up to them to change things around and just want to be helped with this to the best of our ability. In my opinion, definitely a good reason to be or become part of their educational system.

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# 5

## Online Co-Teaching Experiences in Virtual Mobilities

*Simona Vinerean, Lucian Blaga University of Sibiu, Romania*

*With online learning on the rise, teachers have to explore various teaching approaches to maintain students' engagement. To this effect, co-teaching is often described as the practice that involves two or more instructors working together with students and sharing the labour of a module or course. In online learning experiences, co-teaching offers many advantages for teachers who can co-plan and collaborate with each other. Additionally, students benefit from co-teaching since they are exposed to varied ideas and a wider range of knowledge. This chapter aims to enhance existing literature on the topic of 'co-teaching' in virtual mobilities.*

### 5.1 Introduction

Internationally, higher education is undergoing a number of changes. The COVID-19 pandemic has dramatically impacted education and learning experiences of students. In this context, collaboration is becoming increasingly important in the educational sector, in the form of university collaborations for different partnerships, teacher collaborations, and student collaborations in international projects and module implementations. To this effect, education is frequently viewed as an important context for students to develop collaborative skills before entering the labour market. Additionally, teacher collaboration is important in creating core competencies for students because “teachers model cooperative learning for students by working together as a team” (Coke, 2005; Vangrieken et al. 2015). To promote teacher collaboration, the



concept of ‘co-teaching’ is increasing in popularity, both in practice and in theoretical assessments (Bacharach et al. 2011; Rytivaara and Kershner 2012; Eriksson et al. 2020).

Previous research has mainly focused on co-teaching practices in face-to-face physical learning environments (Bacharach et al. 2011). However, with online learning on the rise, there is a need to enhance the knowledge on co-teaching frameworks in virtual settings. As a result, more information about teachers’ experiences with co-teaching in an online learning environment and in virtual mobility contexts is necessary to discuss and develop in relevant studies. To tackle these research gaps, this study aims to address the benefits and challenges of co-teaching in online courses.

## **5.2 The Premises of Co-Teaching**

Collaboration among teachers is a topic that is gaining research interest, as teachers focus more on gaining student engagement with their courses. Teacher collaboration is a broad notion that encompasses many elements of instructors working together, not solely related to teaching (Vangrieken et al. 2015). There are several notions that have been employed to investigate this topic, including teacher cooperation (Vangrieken et al. 2015), team teaching (Vesikivi et al. 2019), and co-teaching (Rytivaara and Kershner 2012).

Eriksson et al. (2020) have concentrated on the concept of ‘co-teaching’ and described it as two or more instructors working together with students and sharing the labour of a module or course, i.e. designing, organizing, delivering, and assessing student performance. For the purpose of this chapter, this study uses this particular definition to explain and understand the practice of co-teaching. According to Kelly (2018), “the effectiveness of a co-teaching delivery style relies on mutual respect and appreciation for varied teaching and learning strategies”.

There is a limited set of previous research on teacher experience with co-teaching in an online learning setting. This paper aims to amplify existing literature on this matter by addressing co-teaching approaches in virtual mobilities. With the upsurge of online learning, virtual mobilities have gained momentum especially during the COVID-19 pandemic. Undoubtedly, technical advancements have aided remote mobilities and have enabled flexible learning (Eriksson et al.

2020). In online settings, virtual mobilities create collaboration opportunities for students and teachers, alike.

According to existing literature (Bacharach et al. 2008; Eriksson et al. 2020; Chizhik & Brandon, 2020; Steele et al., 2021), several co-teaching approaches can be identified based on the roles, responsibilities, and duties of instructors. These co-teaching approaches are explained in the following paragraphs.

**One-Teach/One-Observe.** This co-teaching technique indicates that one instructor is in charge of the majority of the teaching while the other is watching certain actions.

**One-Teach/One-Assist.** To promote equal access and participation among students during face-to-face learning experiences, one instructor lectures while the second teacher aids students who are struggling or who seem preoccupied throughout the class. In a virtual context, guaranteeing fair participation might be even more difficult because students are studying from a variety of home circumstances. Furthermore, when students join in, some may choose to participate in online classes or modules with their webcams turned off. Thus, the assisting teacher can engage with students in the chat, to mute/unmute certain students, and overall engage students in their online learning experience.

**Station Teaching.** The instructional content is organized into portions for this station teaching technique, and each instructor teaches one group of students, which subsequently rotates from one teacher to another. The same class structure may be created in the virtual realm by employing breakout rooms. Depending on the independence of each group of students, the teacher can join in and out of breakout rooms as required and as requested by each team.

**Parallel Teaching.** In this case, the students are separated into groups and each instructor teaches one group with similar instructional material. These virtual classes may be presented concurrently or sequentially in breakout rooms.

**Alternative Teaching.** This co-teaching approach implies that one instructor teaches most of the students, while a second teacher gathers a small group for an alternative or adapted lesson.

**Team Teaching.** Team teaching is often regarded as the best form of co-teaching because it exhibits parity between the participating instructors (Scruggs & Mastropieri, 2017). This co-teaching approach encourages all participating teachers to engage equally in a session as well as to be equally accountable for the material and students' learning process. Two or more teachers can take turns delivering sessions under the team-teaching technique (Dugan & Letterman 2008). This tag rotation technique, also known as the theme-based co-teaching strategy (Eriksson et al. 2020), enables teachers to align information based on their professional competence and knowledge base.

The typical co-teaching method sees instructors in one of two ways: either one is more informed on the topic and the other teacher assists, or one is a general teacher and the other teacher is a specialist teacher (Bacharach et al. 2008). The theme-based co-teaching technique assumes that teachers are either at the same level on the same topic or at different levels on various topics or even fields (Eriksson et al. 2020). Nonetheless, teachers typically share leadership and duties in the class preparation and student assessment (Thousand et al. 2006). As presented by Thousand et al. (2006) "co-teachers who team teach divide the lessons in ways that allow the students to experience each teacher's strengths and expertise".

Various studies have emphasized the advantages of co-teaching for instructors. Co-teaching enables teachers to "develop their knowledge base, expertise, and pedagogical skills" (Eriksson et al. 2020). Moreover, engaging in co-teaching techniques can help enhance collegial relationships, foster mutual respects, and offer the prospect of professional growth (Su, 2022; Eriksson et al. 2020; Vesikivi et al. 2019; Alsarawi, 2019; Bacharach et al. 2008; Thousand et al. 2006).

These positive outcomes extend to online teaching experiences. Co-teaching in an online environment aids in meeting the needs of the "online learners in a more timely and efficient manner, and provides greater satisfaction to both students and teachers, alike" (Eriksson et al. 2020). Competent co-teachers can support each other by providing students with more insight and the opportunity to understand topics from multiple viewpoints. Moreover, students gain from being exposed to a variety of ideas and pedagogies (Steele et al., 2021).

The difficulties encountered when teaching together are underreported in existing literature. However, we can assert that team teaching necessitates teamwork skills and more planning than individually taught courses (Eriksson et al. 2020). Moreover, Steele et al. (2021) reported the extra time needed for instructors to prepare the coordination of the course, adding that there was a struggle to “carve out enough co-planning time, and as a consequence, grappled with course and content coordination, applied co-teaching models unevenly, or experienced tense moments in their relationships.” Similarly, Thousand et al. (2006) acknowledge that “collaborative planning and teaching is intellectually and interpersonally demanding; it does not occur spontaneously or naturally”.

Based on these theoretical perspectives, the next section presents certain instructors’ co-teaching experience for the NewM ‘Abroad@home’ Project in virtual mobilities.

### **5.3 Co-Teaching Experience for the NewM ‘Abroad@home’ Project**

“New Modes of Mobility” (NewM) represents an Erasmus+ European strategic partnership with six Higher Education Institutions from Europe, namely University of Applied Sciences Würzburg-Schweinfurt, Germany (FHWS); Fontys University of Applied Sciences, Netherlands (Fontys); Lucian Blaga University of Sibiu, Romania (ULBS); Seinäjoki University of Applied Sciences LTD, Finland (SeAMK); University of Debrecen, Hungary (UNIDEB); and University of Zielona Gora, Poland (UZ).

NewM aimed to develop innovative methods for engaging students in virtual mobilities and offering them the opportunity to enhance their digital abilities in a multicultural environment. The learning strategies developed within the NewM project were also innovative. For certain modules, the modules were implemented based on co-teaching practices. To better understand the experience of teachers with co-teaching, we collected primary data from instructors who implemented this approach in the NewM ‘Abroad@Home’ Project. To assess their perspectives, we used a semi-structured set of questions that meant to enable teachers to raise a variety of issues they deemed important in relation to co-teaching and their experience with this practice in an online environment.

For this research, we gathered responses from four teachers who engaged in co-teaching practices during the implementation of NewM 'Abroad@Home' Project. Their perspectives on co-teaching are described below, based on five main questions:

1. How did you establish the division of labour among your co-teachers for the online module that you were a part of?
2. What have you benefited from by collaborating with one or multiple teachers?
3. What difficulties did you encounter while co-teaching in an online setting?
4. Would you recommend an online co-teaching experience to your colleagues?
5. Please, share with us any other ideas related to the co-teaching in the virtual mobility environment that you consider relevant.

The following subsections address these research questions.

#### *Division of work for the online co-teaching experience*

As a general observation, most of the participants mentioned a form of 'theme-based co-teaching'. This co-teaching strategy involved teachers agreeing on the content and curriculum planning and segmenting the subject matter according to each teacher's expertise on different parts of the course. The majority of the themes associated with a module were coordinated around weekly lectures, so each teacher was responsible for a particular number of lectures, for a certain number of weeks. As mentioned by several of the teachers, they established the division of work and course materials based on "topic and teacher experience" and "teacher expertise" in a particular subject. Another teacher reported that:

*"It was a 50-50 separation between the topics."*

For other modules, the division of work was not exactly 50%-50%, however the co-teachers managed to establish a clear labour division based on the course's syllabus:

*"The teaching itself was not done together (we taught on separate weeks, and made this division of labour clear in the course syllabus, scheduling for all students) except for the final student presentations and their discussion."*

*Benefits and difficulties encountered in online co-teaching experience for virtual mobilities*

This study also approached the benefits and the newly gained experience of teachers involved in virtual co-teaching experiences. By discussing the newly gained perspectives of teachers involved in this form of collaborative teaching in virtual mobilities, one respondent emphasized the need to focus solely on the licensed programmes available in a university:

*“Understanding that online teaching should only be attempted using one’s own university’s licensed programmes, as only this allows the teacher full access to all the possible tools.”*

This aspect is important to address, especially since NewM included modules that were co-taught by teachers from multiple partner universities. Thus, co-teaching across universities also provides new perspectives and new experiences gained by participating instructors.

By engaging in such shared teaching circumstances, teachers had the opportunity to enhance their perspectives based on “variation in perspective on the related topic”, as noted by one of the respondents. As a complementary insight on various perspectives on a subject, one of the respondents also appreciated a key advantage in co-teaching practices, i.e. division of the workload among peers. Thus:

*“shared responsibility also involved sharing the workload associated with managing an online course.”*

By engaging in co-teaching practices, the course preparation is shared among co-teachers and this means that one single teacher does not have to prepare everything on his/her own.

Moreover, in co-teaching virtual mobility modules, students also benefited from “more intensive mentoring options”. By engaging with co-teachers within a module learning experience, students had access to multiple teaching strategies and benefited from multifaceted insights from various perspectives, while avoiding boredom in virtual setting.

Tables 1 presents a summary of the main benefits experienced by the co-teachers who engaged in this practice in the NewM ‘Abroad@home’ virtual mobility project.

### Benefits

- variation in perspective on the related topic that was taught in the module
  - sharing the workload associated with course preparation and student assessment (task and final evaluation)
  - more intensive mentoring options
  - minimizing students' monotony with a particular subject based on different perspectives offered by multiple teachers
  - new knowledge in the field of other teaching methods and techniques
  - the opportunity to exchange knowledge about the activities and interests of students
- 

*Table 5. 1. Teachers' perceived benefits of co-teaching in virtual mobilities*

In discussing the benefits of an online co-teaching experience, it is also important to address the challenges. Thus, one of the participating teachers mentioned:

*“One of the most prominent issues, especially in online settings, was finding extra time for communication between the teachers and synchronizing the course materials, as well as the tasks for students. There were different meetings for various purposes. Moreover, at the end of the module, we, as co-teachers, had to have another meeting for student evaluation.”*

This challenge relates to the complexity of the co-teaching experience and the additional amount of time that is needed to be allocated among collaborating teachers. Thus, a co-teaching experience involves participating in various meetings related to course preparation, division of work, exchanging feedback among co-teachers after lecture sessions, tasks for students, evaluation of students' work, and so on.

On a similar note, another instructor highlighted the obstacle of finding materials that fit the syllabus taught by multiple co-teachers:

*“It is not always easy to come up with a fitting case study that works for both course parts.”*

Another important issue to manage in online co-teaching experiences for virtual mobilities was related to developing a seamless learning experience for students. Implementing a continuous and integrated co-teaching experience might provide certain difficulties of adjustment for students and their evaluation process. One respondent stated:

*“The transition from one lecturer to another comes with some changes in how the student work is monitored and evaluated.”*

Furthermore, in a virtual mobility setting, co-teachers also had to adjust to using new technological platforms which provided various issues in its implementation. Particularly in using MS Teams, teachers and students found various issues in terms of the platform’s friendliness, abilities, and excessive use of notifications. Another teacher emphasized this challenge by stating that a key issue was establishing a common tool to provide students with the course materials.

Table 5.2 provides summary notes on the difficulties experienced by the co-teachers who engaged in this practice in the NewM ‘Abroad@home’ virtual mobility project.

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#### Difficulties

- allocating extra time for communication among co-teachers
  - finding materials that fit the syllabus taught by co-teachers
  - developing a continuous and seamless learning experience for students
  - challenges with using a particular technological platform that supported online teaching in the virtual mobility
  - challenges in establishing student participation in online classes (using their web-cams and microphones)
- 

*Table 5. 2. Teachers’ perceived difficulties of co-teaching in virtual mobilities*

#### *Recommending online co-teaching experiences to other colleagues*

The participants in this study provided various types of positive feedback in relation to recommending co-teaching



experiences to their peers. Based on their insights, teachers would recommend this collaborative teaching strategy because it provides inspiration for all the involved teachers; it diversifies teaching methods; it provides a more transparent and objective student assessment process; it overcomes boredom among students and teachers in virtual setting; it helps with the labour division in course preparation; it offers opportunities for professional growth; and it provides the possibility of teaching students from different universities, especially in terms of virtual mobilities. Table 3 presents a summary of these reasons mentioned by the participants for referring other teachers the co-teaching approach in a virtual mobility.

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#### Main reasons

- Mutual inspiration
  - More variation in working methods
  - Helpful to overcome the monotony of online teaching
  - Labour division in preparing an online course/module
  - Generating professional growth for teachers through co-teaching
  - Peer assistance in the students' assessment process
  - Opportunity of teaching students from different universities
- 

*Table 5.3. Reasons for recommending an online co-teaching experience to other colleagues*

#### *Other helpful insights in managing online co-teaching experiences in virtual mobilities*

In relation to the topic of this study, the respondents also had the opportunity to mention any other relevant aspects associated with online co-teaching experiences in virtual mobilities. To this effect, one of the respondents mentioned the bureaucratic elements associated with the implementation of a coordinated co-teaching practice among partner universities. A key bureaucratic issue was related to the registration of guest teachers and students on a university's platform:

*“Bureaucratic hurdles to registering guest teachers only cooperating online still needs to be smoothed over.”*

For this teaching strategy to gain more popularity among teachers, one this study's respondents recommended that:

*“The EU needs to go beyond ECTS credit recognition and make the student/teacher registration process uniform across the EU.”*

This recommendation should be explored in future studies that would address changes in the bureaucratic aspects for virtual mobilities.

## **5.4 Conclusion**

In this study, we examined university teachers' experiences with co-teaching in terms of their perceived benefits and challenges associated with this collaborative form of teaching in an online learning environment. The vast majority of NewM modules used a theme-based co-teaching strategy in which teachers distributed their teaching responsibilities by topics. This study's participants appreciated this co-teaching practice with multiple benefits and advantages. Positive interactions, sharing the workload, and integrated perspectives on teaching a particular subject are only a few examples of co-teaching practices that may be reinforced in the future. Nonetheless, certain aspects, such as allocating extra time for communication among co-teachers, finding materials that fit the syllabus taught by co-teachers, and developing a continuous and seamless learning experience for students, should be regarded with extra caution for future co-teaching practices.

Considering the new insights provided in this study, future research could focus on the benefits of co-teaching, particularly as they relate to growth opportunities for the teacher, to enhance this practice in various learning environments.

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# 6

## **Bureaucratic Barriers to closer Cooperation among HEIs (Higher Education Institutions)**

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*This paper is primarily based on secondary sources. Inter-university collaboration benefits the participating institutions in several ways; however, it also generates many new administrative and organizational duties. Out of these additional difficulties related to cooperation, the paper details the recognition of qualifications and learning outcomes, the importance and lack of institutional support, and also the way these problems can be alleviated. The identification and occurrence rate of bureaucratic barriers, measure decision-makers used to mitigate them and two projects where minimizing bureaucracy was a precondition are also presented.*

### **6.1 Introduction**

Several decades of globalization have affected all fields of life, including the world of labour and the education system. Mobility, typical only in the case of products and services for a long time, has become more and more accepted or rather expected in the case of organizations and employees as well as teachers and students. Due to this, people searching for jobs, business organizations and educational institutions have also had to face fierce competition. Another inherent characteristic of the twenty-first century is the upgrading of knowledge. Success lies in fast accession to knowledge and its effective adaptation

(Hajdu, 2008).

Cooperation and collaboration among educational institutions can enhance the accumulated knowledge of the participating organizations, generate new research or educational results, and above all by meeting and involving outside experts; collaboration opens up new perspectives, new ways of looking at goals or processes. All this definitely contributes to augmenting the competitive advantage of the engaging organizations. Lawson (2004) categorized the further benefits as effectiveness gains (e.g., improved results; enhanced problem-solving competence); efficiency gains (e.g., eliminating redundancy); resource gains (e.g., more funding); capacity gains (e.g., weaknesses are covered; workforce retention improves); legitimacy gains (e.g., power and authority are enhanced; jurisdictional claims are supported); and, social development benefits (e.g., social movements are catalysed). Out of these factors, higher education institutions can especially exploit the effectiveness and resource benefits. Wagner (2006) highlighted other advantages, such as increasing visibility, sharing project costs, acquiring access to expensive or rare physical resources or upgrading creativity by exchanging ideas; all of these are relevant for higher education institutions.

To contribute to the international competitiveness of European universities and students, and to put emphasis on the excellence of tertiary education, research and innovation, the European Council proposed the strengthening of strategic partnerships between higher education institutions of the EU. Furthermore, as part of a vision of an innovative, globally competitive and attractive European Education Area and European Research Area, and in complete synergy with the European Higher Education Area, the Council encouraged the emergence of some twenty “European Universities” by 2024 which will allow students to obtain a degree by combining studies in several EU countries. The “European Universities” with their transnational alliances are aiming to become the universities of the future, supporting and spreading European values and identity, and at the same time revolutionizing the quality and competitiveness of European higher education. To assist in implementing this large-scale project, the EU initiated multiple cooperation models, including a wide range of universities and a broad geographic scope. To date, 850 universities in 48 European countries are members of the European University

Association (EUA), which is a high number, however, the final goal is that all European universities have access to the achievements produced by the “test-bed alliances” (Mitchell, 2022). Having examined the advantages and benefits of higher education cooperation, one can establish that these are goals worth working for despite all the setbacks.

## **6.2 The Occurrence Rate of Barriers**

Based on the results of a pioneering investigation on barriers impeding collaborations, 85 per cent of the responding scientists stated that international collaboration was important to them; however, 30 per cent of them perceived some obstacles in their international cooperation. Interestingly, some respondents who had very little international cooperation also considered it important, which probably indicates that they have been facing some kind of obstacles to it. The fact that on average 30 per cent of the participants experienced barriers also means that most scientists have not encountered any. Among the 9,422 scientists in three continents, funding proved to be the most common problem, as on average more than 75 per cent of the scientists mentioned it as a setback (Matthews, Yang, Lewis, Vaidyanathan, & Gorman, 2020). In a similar European Union survey of 169 university partnerships, called *The Mapping of European Transnational Collaborative Partnerships in Higher Education*, the figure related to the lack of sustainable funding was 66 per cent, which was the highest figure associated with a hindrance to collaboration. All other impeding factors proved to be somewhat less serious (Karvounaraki, Subramaniam, Hristov, Ojala, Jonkers, Huisman, & Goenaga, 2018). Although funding appeared to be the major impediment to collaboration, several other setbacks, including bureaucratic barriers, have been revealed by recent examinations.

## **6.3 Bureaucratic Barriers Hindering Collaborations**

### *Recognition of Qualifications*

Obtaining a dual or double degree has multiple labour-market benefits for a student; as it often involves a semester in another country where they improve their foreign language skills and also experience another culture. This is one of the reasons why harmonized accreditation of degrees and training programs is essential. However, a major issue providing a barrier to collaborations is the difference in standards and systems.

Coordinators of joint study programs or joint degrees have a hard time when they have to harmonize curricula, credit systems or training and completion requirements. Although acknowledging higher education degrees, diplomas or other qualification documents is in the scope of national level authority, collaborating institutions' countries or group of countries may enforce special international agreements which regulate one another's degrees or certificates or at least give directions in their acknowledgement. In Europe, the main legal agreement on credential evaluation in higher education is the Lisbon Recognition Convention of the Council of Europe, which has been ratified by most Council of Europe member states, except for Greece and Monaco. The most important out-of-Europe countries which ratified the agreement are: Australia, Canada, Israel, Kazakhstan, Kyrgyzstan, Tajikistan and New Zealand. The United States signed but not ratified the convention. The Convention, which became effective in 1999, says that degrees and periods of study must be acknowledged unless the recognizing institution can prove substantial differences, i.e. automatic recognition is not compelled, but the framework and mechanism of the recognition procedure are determined. International networks and information centres, such as the European Network of Information Centres and the National Academic Recognition Information Centre have been established to give guidance and assistance on the questions of recognition. The convention also has equivalents in other continents (Dobos, 2021). Numerous achievements have been completed with the aim of harmonization since the enforcement of the convention, but there are still many unsettled issues. Conferences and meetings have been organized to tackle the obstacles. Based on a report on a conference called *Removing Obstacles for Cross-border Cooperation* held in Zagreb on removing barriers to cross-border cooperation, accreditation continued to be a problem even years after the European Council convention had become effective (Tempus, 2016). The conference and the related project aimed to generate proposals to launch joint training programs with particular attention to their accreditation. The example and problems of Croatia are worth observing. Based on the proposals in 2016, Croatian higher education institutions can be accredited by agencies that are registered by the European Quality Assurance Register for Higher Education and operate in line with the Croatian rules of law. The high fees of some agencies and their lack of information

about the special problems of the Eastern European region may cause difficulties (Tempus, 2016).

The above mentioned European Universities Initiative aims to simplify the launch of joint programs. In order to help and develop the European Universities Initiative, the Education, Youth and Culture Directorate General of the EU conducted a survey of 169 partnerships on their accumulated experience on international collaboration (Karvounaraki, Subramaniam, Hristov, Ojala, Jonkers, Huisman, & Goenaga, 2018). Apart from other questions, the respondents were asked about the obstacles hindering their cooperation. Besides general categories like administrative or legal barriers, more concrete obstacles such as the “lack of common accreditation standards” and the difference in the academic calendars were also asked about. Looking at Table 1, one can see that 46 and 44 per cent of the responding institutions were concerned about these problems, respectively. On the whole, respondents identified administrative and legal barriers as the second most important obstacle to closer cooperation, with funding being the first. Different academic calendars seem to hinder cooperation on other continents also, as in the above mentioned research of more than 9,000 scientists, about 30% indicated that it caused difficulties for them.

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Lack of sustainable funding	66.3%
Administrative barriers	58.6%
Complexity of the funding instruments	55.6%
Legal barriers	53.3%
Need to apply to multiple calls every year	47.9%
Lack of suitable funding instruments	46.7%
Lack of common accreditation standards	45.6%
Lack of incentives for universities' staff involved	44.4%
Different academic calendars	43.8%
Students' visas	36.1%

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*Table 6.1. The Top 10 barriers of inter-university collaborations (based on the proportion of “agree” and “totally agree” answers) Source: Figures are from a JRC Survey “Mapping of European Transnational Collaborative Partnerships”, 2018.*



### ***Alleviating the problem regarding accreditation***

Easier accreditation and quality assurance processes were considered major hurdles that are hindering collaboration. As shown in *Table 2*, a surprisingly high level (14%) of the participants thought it was the job of the national governments to find a solution. Some even worded comments like “accreditation is made complicated at the national level”. Even more respondents (18%) called for EU intervention, but almost half of the participants (48%) regarded that joint actions of the EU and the national authorities would only be able to provide results saying that “easier and EU-wide accreditation standards would motivate future educational collaborations”, i.e. rules and procedures should be simplified. Some participants believed that common rules for accreditation and quality assurance could initiate more collaborations. Representatives of the Una Europa alliance, a pilot of the European Universities Initiative have reported about their varied experience. They have a joint degree program approaching accreditation, however some other members of the alliance are struggling to obtain accreditation as the operation of quality assurance system is different in different countries. They are proposing a common European approach and “full implementation in all member states without further national requirements” and “a single European quality assurance register” (Mitchell, 2022).

	European level	National level	Both levels
Easier accreditation and quality assurance procedures	18.3%	13.6%	47.9%
Recognition of learning outcomes	15.4%	16.0%	41.4%

*Table 6.2. Options to alleviate barriers at different levels of administration Source: Figures are from a JRC Survey “Mapping of European Transnational Collaborative Partnerships”, 2018*

#### ***Recognition of Learning Outcomes***

Learning outcomes are statements of what a learner understands, knows, has to know, or is able to demonstrate or do at the end of a learning period or process. They are explicit

assertions about the outcomes of learning, and usually defined in terms of knowledge, skills, abilities, attitudes and understanding. Educational institutions often describe their qualifications in terms of learning outcomes. European countries are increasingly relying on learning outcomes when determining and defining the objectives of their training systems and qualifications (Adam, & Expert, 2008).

### ***Alleviating the problem of recognizing learning outcome***

The European Credit Transfer and Accumulation System was introduced to provide convergence, transparency and comparability and thus foster the mobility of students and teachers in Europe's higher education system (Wagenaar, 2020). If it works well, it eases mobility and joint programs, makes research results and teaching materials and methods more easily available. However, if it does not operate smoothly, it can even have a deterrent effect on mobility and cooperation. Respondents in the survey mentioned above were also asked about whose responsibility it would be to have control over the acknowledgement of learning outcomes in order to help more frequent or deeper international cooperation. Considering the fact that the recognition of learning outcomes is solely a national competence, what is more, it is obligatory in the Erasmus+ program, the relatively high figures indicating that it should be EU level responsibility (15%) and both EU and national level responsibility (41%) show that this rule is not observed or at least not executed; therefore it needs further regulation in order to facilitate inter-university collaboration. One of the respondents worded it in a more expressing style "the European Credit Transfer and Accumulation System is working rather well, but suffers from local interpretations" (Karvounaraki, Subramaniam, Hristov, Ojala, Jonkers, Huisman, & Goenaga, 2018).

### ***Lack of Institutional Support***

Departments and institutions within a university require a commitment from the staff, and it can suffer if a staff member spends too much of the working hours with projects involving other institutions. Despite the obvious but usually long-term benefits of collaborations, each participating member of a

partnership or consortium takes time away from the daily tasks. Institutional acceptance and management's support gain particular importance when financing organizations require the support or commitment of university administrators or department heads to develop an application (Kuhn, 2000). In the above mentioned transcontinental survey, Turkish, Indian, Italian and Taiwanese scientists referred to the lack of institutional or investigator's support most often, 10 out of 684 responses in Turkey, 27 out of 1763 responses in India, 9 out of 1411 in Italy and 6 out of 892 in Taiwan (Matthews, Yang, Lewis, Vaidyanathan, & Gorman, 2020). Management's support to cooperation projects does not only provide the necessary resources but also convinces colleagues about the importance of the collaboration (Elmuti, & Kathawala, 2001).

### ***Alleviating the problem concerning the lack of institutional support***

Carefully worded and detailed job descriptions can help avoid tensions deriving from this situation. It is also beneficial if staff members not participating in the joint project are fully aware of what gains a collaboration can bring to their department or institution. This can also help obtain the approval of the institutions involved and that of the management (Kuhn, 2000).

Further bureaucratic barriers mentioned in the examinations: bureaucracy in the administrative system, intellectual property rights, material and data sharing - controls banning the sharing of data, samples and equipment, difficulties with obtaining (student) visas (Karvounaraki, Subramaniam, Hristov, Ojala, Jonkers, Huisman, & Goenaga, 2018; Matthews, Yang, Lewis, Vaidyanathan, & Gorman, 2020).

## **6.4 Identifying Obstacles in International Cooperation**

In 2013 the Council of Europe and the Istituto di Sociologia Internazionale di Gorizia published a manual on removing obstacles to cross-border cooperation. Although inter-university collaborations are not typically cross-border projects, the way they work is similar. Obstacles to cross-border cooperation only emerge after activities have started and reached a certain stage. Usually, several causes contribute to a certain barrier, which has several impacts later on. The guide mentioned above provides a framework as the first step to identify a barrier. Out of the four dimensions presented in Table 3. the stakeholders' and the

institutional dimensions are worth examining by higher education institutions. Local stakeholders' low level of participation or willingness to cooperate often leads to barriers in the cooperation. Still discussing the institutional dimension, it is worth asking if the local actors and the central authorities work as partners. When detecting obstacles, it is expedient to find out if the competences and the authority of the actors in the cooperation are clearly defined. The manual also suggests that the capacity and expertise of the participants should be analysed to see whether the capacity is available to implement the cooperation. Another question is whether the actors are ready to invest their time and resources into the project, or if they have the necessary expertise. It is helpful to check if the activity is in harmony with the daily tasks of the stakeholders. Surveying if the stakeholders of the parties have the same mission and vision is also beneficial when hurdles are identified. Further issues to be investigated are the following: maybe it is difficult to obtain information about the bureaucratic requirements, or they are too elaborate or lengthy, or there is no administrative protocol for a certain case.

STAKEHOLDERS' DIMENSION	SOCIOCULTURAL DIMENSION
- Institutional actors	- Stereotypes
- Socio-cultural actors	- Level of mutual trust
	- Language
INSTITUTIONAL DIMENSION	ECONOMIC DIMENSION
- Local	- Competition
- Regional/state	- Cooperation
- International	- Integration

*Table 6.3. Four dimensions for the identification of obstacles Source: Manual on Removing Obstacles to Cross-border Cooperation. Istituto di Sociologia Internazionale di Gorizia – Council of Europe (2013)*

## **6.5 Measures Taken by Decision and Policy Makers to Mitigate the Barriers of Collaboration**

The 17 May 2021 Council Conclusions confirm that stronger cooperation of universities enhances the competitiveness of the EU and all university missions should be covered in the Initiative. At the same time, they declare that barriers do exist, and on-going financial and political support is needed to eliminate or mitigate them. However, political purposes should not be allowed to overshadow the primary, university missions of collaborations or impair university autonomy or academic freedom. To keep all important principles in balance, the Association encourages a bottom-up approach when organizing collaborations, i.e. changes should be initiated by the institutions (European University Association, 2021). In a January 2022 meeting of higher education stakeholders and policy-makers, Michael Murphy, the president of EUA expressed his concern about European universities still facing unnecessary obstacles to collaboration because there are varying levels of autonomy and public investment in the countries of the EU. To alleviate this problem, the European Commission's Directorate General for Education, Youth, Sport and Culture submitted recommendations to the Council of Europe:

- ⇒ Member states should grant their higher education institutions more autonomy in terms of international education regarding admission and enrolment criteria.
- ⇒ More autonomy is needed over the language of instructions and sharing online learning, which also needs more flexible routes.
- ⇒ Virtual learning has to be supported.
- ⇒ Accreditation should also involve institutions and not only programs (for joint degrees).
- ⇒ Different forms of mobility need to be provided (Mitchell, 2022).

## **6.6 Examples for Overcoming Bureaucratic Barriers to Cooperation**

A remarkable example for cutting bureaucracy and administration to the minimum necessary level to facilitate collaboration has been the EUCOR university alliance in the Upper Rhine whose trademark has been the quest for lean administration. At the same time high volume mobility was set as another primary goal. The combination of the two objectives

resulted in the introduction of a single document verifying registration, attendance and examination results, which allowed all the students of the participating universities to enrol in any course of the whole university complex. It has to be noted though that measuring mobility and overall impact is onerous when data is not available regularly.

Another example for a collaboration where minimizing bureaucracy was a starting requirement is the Öresund University Consortium of 14 participating universities, which all contributed an annual amount based on their size to the joint project. Collaboration was carried out at faculty or departmental level. When the consortium was established in 1998, two goals were set to be achieved: the free movement of students in the regions of Öresund (Southern Sweden) and Zealand (the Copenhagen region of Denmark), and the exploitation of the research capacity of the universities to help the economic progress of the region. Joint structures like the Oresund Entrepreneurship Academy and, above all, four platforms of innovation and business-research cooperation (health and biotechnology, business-education-research, food and environment) were created. Although the Oresund University Network finished its activity in 2012, several collaborations carried on their activities.

Concerning bureaucracy several problems emerged: the two countries' differing university systems and traditions, problems with converting grades or lack of information for cross-border students. These difficulties provided some of the reasons why student mobility from Sweden to Denmark started to decline. As the experience in other cross-border projects show, defined joint study programs provide fewer hindrances than generic cross-registration systems (Osborne, 2006; Nauwelaers, Maguire and Marsan, 2013).

## **6.7 Conclusion**

Cooperation and collaboration are key drivers of innovation, they provide new knowledge potential, effectiveness and efficiency gains for the participating institutions or even for the surrounding region, and on the whole enhance their competitiveness. Therefore, it is worth overcoming barriers if an institution would like to utilize the benefits. Mitigating bureaucracy should start bottom-up, from the point of activity in the form of proposals that decision and policymakers could

investigate and decide about in the next stage. However, analysis needs to be thorough, as some regulations may seem excessive, but eliminating them could lead to unexpected problems. Even though the political, economic and financial circumstances are constantly changing, coordinators and managers of collaboration programs can learn most from past examples. The lessons gained from good or bad practices should be disseminated to participants of future projects.

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## Editors



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