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EDITORIAL MESSAGE

I would like to extend a very warm welcome to the readership of the GiLE Journal of Skills Development (GJSD). It is with enthusiasm and anticipation that we celebrate the launch of this international scientific journal that focuses on research examining the increasingly complex topic of competency (skills) development.

In line with the mission of the publisher, the GiLE Foundation, we "support young people's pursuit of a successful and meaningful life by developing their competencies and through research and advocacy" and we aim to improve more lives and, consequently, our communities. I am convinced that you can fail if you are working for yourself, but you cannot fail when you have committed to giving to others, which view leads us in our mission in devoting our time and efforts to help bridging the soft skills gap. Together we are working towards making the journal an influential publication that makes an impact and a difference.

The co-creators of the GiLE Foundation are committed to leading our passionate team of more than 40 innovative individuals from all over the world, including those who are directly involved in the journal's editorial and operational processes that collectively possess a high-level of expertise and experience in academia and industry. I would like to take this opportunity to express my sincere gratitude to all of them for their hard and dedicated work.

I would like to thank the authors who have chosen our journal to disseminate their research. The first issue of GJSD features eight selected articles in different categories, including potential ways of assessing and measuring soft skills, how the labour market needs can be met, the cultural competencies, the importance of analytical and cognitive skills, and the role of teachers and teacher education. You can read a fascinating article about systematic development and application of workplace mentoring and the utilisation of the skill set of individuals. Other papers focus on how skills for employability and career development can be measured, or how the competences of students entering university can be analysed so as to help universities prepare students for meeting the labour market's needs. We will find out how universities can future-proof student's career paths as students move from being graduates to digital marketing professionals. We will look at whether there is a gender gap in learning strategies and the level of digital competence and whether a relationship exists between the two concepts. There are papers that study how pre-service teachers promote 21st Century skills and how student teachers and mentor teachers in Myanmar collaborate. Finally, the flip side of the mystery of human beings and the puzzle of homo economicus will also be addressed.

GJSD intends to help researchers to reach audiences beyond their usual target. We expressly encourage authors to experiment with innovative, fresh dissemination styles, and to invite audience engagement and participation. For this reason, we are more than happy to receive novel research papers, work-in-progress reports that open up discussions and debates, best practice reports written by industry experts, videos, speeches, and any other formats that advance our field and at the same time can help to achieve greater public understanding.

Our team is dedicated to continuing to work hard and help the journal in offering authors a publication opportunity in a journal which is fully open access and adheres to the technical Plan S implementation criteria. Our double-blind review procedure and the entire publication process will continue to be fast, flexible, and free of charge.

We hope that you enjoy this first issue as much as we enjoyed working on this project.

With best wishes to all readers, researchers and visitors of our website,

Judit Beke

Editor-in-chief

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GiLE Journal of Skills Development

Educational and Economic Aspects of Mentoring - How Mentoring Can Contribute to the Development of Soft Skills

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Abstract

The OECD's skills strategy and policy highlights skills ahead of formal qualifications and draws attention to the importance of work-based learning (apprenticeships). In the economy, given the utilisation of the skill set of individuals at the workplace level, the conscious management of the knowledge and skills of the organisation now appears to be an efficiency-increasing factor. One way to do this is to involve and mentor economically inactive groups (students / new entrants, low-skilled social groups and pensioners) in the labour market. Mentoring should be treated as a discrete area, but one that is still a part of the organisation's strategically defined human resource management and knowledge management system, in which the goals, roles, processes, responsibilities and benefits, as well as the possibilities for development, are clarified. This study analyses the educational and economic context of mentoring, the nature of mentoring and the possibility of its application; its conclusions provide an appropriate framework for developing a mentoring programme.

Keywords: education, low-skilled workers, mentoring, skilled professionals, skills-set

1. Introduction

The first version of the European Union's skills strategy and skills policy, developed around 2011 and then published in 2019, represents a new paradigm for education policy thinking that distinguishes between formal qualifications and actual skills. Formal (school) graduation is not the same as the actual knowledge that is utilised in the labour market, and higher education and / or higher skills do not automatically lead to increased productivity and competitiveness in the economy. As the labour market increasingly focuses on skills over qualifications, the colourful world of adult learning, including non-formal, in-work and informal learning, is gaining in value. Viewed this way, not only the creation of abilities, but also their disappearance, degradation, and cessation can be observed.

According to the skills strategy, the employee and supply side means the creation of skills (skill formation) and, as a result, the sets of skills accumulated by individuals. However, the source of the skill set is not only the qualifications obtained in the field of formal education and training, certified by a certificate or diploma, but also the constantly changing, enriching areas of knowledge and skills acquired in the fields of non-formal and informal learning. An individual's skill set appears in the given labour market as skills matching demand, a skills deficit, or a skills surplus. Cumulatively, all this manifests itself in the economy as an ability balance or imbalance (Halász, 2013; Tribble, 2020).

The emergence of the capability strategy has brought the resource-based approach to the forefront of successful businesses, focusing not primarily on market requirements but instead on the internal strategic resources of companies that can form the basis of lasting competitive advantage. Competence-based organisational theories emphasise the need to change traditional approaches and value judgments related to knowledge, to consider individual motivations, as well as to develop learning and teaching competencies, to formulate new methodological procedures, and to foster an organisational environment that supports learning. Nicholls' (2007) competency model is based on the assumption that the competencies needed to cultivate an area are in fact a predeterminable set. In other words, it is clear what skills, abilities, knowledge are needed for what the given field requires. In this case, the mentor's task is to support the related competence development, primarily through observations, feedback and monitoring of progress.

On-the-job mentoring, as part of organisational knowledge management, can be an important element in the internship training of career starters, representing the key to both retaining talented, proven young people and the knowledge transfer and re-employment of older workers as mentors. Mentors are familiar with the organisational culture, and the whole process of working in each area. At the same time, it is very important that they carry out their work consciously with their personal competencies and the pedagogical-andragogical skills and knowledge that they have gained through mentoring.

2. About mentoring in general

Mentoring, as an increasingly popular form of support, is a kind of collective concept that has spread in many areas in recent decades. It is used in public education, higher education, vocational training and adult training, but is also used to support integration and learning in the workplace. Nowadays, the content of the concept and the nature of mentoring tasks are

becoming increasingly clear. Different mentoring abilities and skills come to the fore in many areas, but in each case the main goal is to support and develop the mentored person.

Putting a mentoring programme into practice in the workplace has many organisational benefits, with positive impacts on both the new entrant and the mentor. Through on-the-job mentoring, the new employee gets to know the corporate culture and the organisation sooner, and their role and responsibilities become clearer, so they become a productive member of the organisation in a shorter time. For the mentor, this task can have prestige value. This is because the mentoring task can be rewarded by management, an incentive which can increase the mentor's loyalty and thereby reduce the turnover rate, as well as contribute to the faster development of the organisation's network of contacts and the more effective functioning of communication in the workplace (Kozák, 2016).

The original meaning of the word "mentor" is derived from Greek mythology; it means "educator", which was later used with the meaning of "teacher", "counsellor", "paternal good friend". This term appeared in the Hungarian adult education literature at the time of the change of regime, when - under Western influence, primarily following international cooperation to help renew teacher education - it began to be used in higher education for the general designation of professionals assisting students in pedagogical internships. In teacher education, the goal of mentoring is to support and develop children's progress.

Mentoring support systems usually focus on three areas: professional support, personal support in the development of professional identity, and the promotion of institutional and professional community integration. Mentoring is an activity that can be integrated into the knowledge and competence systems of many occupations and professions. Support and counselling methods can be learned, and the ability to take personal care and attention of individuals can be developed through training for anyone working in any field.

In line with the diversity of mentoring and its potential, the following mentoring models can be outlined (quoted by Gatti, 2017):

1. Humanistic model: here, the focus of mentoring is mostly on emotional support and motivation, with a particular emphasis on interpersonal and psychological characteristics of the relationship. According to this model, the aim of mentoring is to develop the mentee's self-confidence and awareness in a positive way, in order to strengthen the so-called coping strategies and tools, with the help of which it will be easier to take on the obstacles in the future.
2. "Situational learning time", when for the mentee the mentor is a kind of role model where the latter shares his / her own knowledge.
3. In case of a model based on competence, expertise, the task of the mentor is to support the related competence development, primarily through observations, feedback and monitoring of progress.
4. Reflective model, in which the mentor instructs much less, takes on the role of an inquirer, researcher and tries to support the reflection with his critical attitude and questions.

3. Mentoring in education

We could meet the conscious and well-defined use of mentoring in the field of public education in the early 2000s in the so-called Employment Embedded Training (Foglalkoztatásba Ágyazott Képzés, FÁK in Hungarian) programme. For disadvantaged students, this meant employment-embedded training that sought to help drop-out students get a high school diploma. To this end, employment has been linked to education and training, and a protection incubator has been set up in each workplace and training place. Thus, the target persons could not only get a job, but also a real chance to stand up in the labour market. This required dedicated and specially trained educators who were considered mentors based on the indicated criteria.

Nowadays, mentoring - in connection with the introduction of dual training - has again come in the spotlight in the field of vocational training and higher education, and it already has a well-developed system in several fields and higher education institutions. The experience of higher education has a long history, so they can enrich the practice of workplace mentoring. Dual training provides students with personal experience gained in a work environment in parallel with the acquisition of theoretical knowledge, thus establishing and significantly developing labour market and professional competencies. As an economic entity, the organisation ensures the foundation and development of the professional skills and competencies necessary for the given profession, supported by mentoring; meanwhile, as a deliverer of training, it creates the institutional, personal and material conditions that are necessary for effective training to take place. The training institution benefits because students in dual training perform better and have better academic outcomes compared to students in traditional training. It is useful for the business organisation, because this form of training increases the overall awareness of the company and provides an opportunity to train employees who also meet their own needs (Mészáros, 2007). Dual training is learning- and learner-oriented; it is more than traditional internships, as learning support takes place in a workplace environment. This provides a way to develop an educational culture that focuses on teaching, research, and experience, a key element of which is the application of the mentoring system (Derényi, 2017; Alston et al, 2020).

The successful implementation of a complex system of mentoring tasks in dual training greatly contributes to the value of a certificate or diploma. Of course, the companies undertaking the training must be prepared and provide significant resources for receiving dual students, dealing with them, mentoring their learning process, their professional preparation, and dealing with their personal problems outside of learning. In this respect, there is a significant difference between organisations entering dual training, especially between large companies with a human resources department and well-trained HR professionals, and small and medium-sized companies.

When selecting mentors, two aspects should be considered: the motivation of the mentor candidate and the development of his / her existing competencies. The mentor must be committed to preparing the learner, be able to give an overview of the operation of the company, the given work process. The most important areas of knowledge and competences are the right expertise, as well as interest and openness to young people and good communication skills, leadership skills, sufficient sensitivity and patience.

The mentoring task can be performed by both young and old workers. For a young corporate professional, it can be a personal development, the first step to becoming a leader. Young mentors usually find it easy to connect with their peers, are happy to take care of them, work

with them while gaining leadership experience. It develops the attitudes and personal qualities needed for mentoring, such as flexibility, adaptability, and stress tolerance.

Companies more often appoint retiring professionals, important corporate knowledge carriers, who are happy to pass on their knowledge and experience to members of the younger generation. Re-employment of pre-retirement or retired professionals is an important and useful solution for both the organisation and the employee.

The preparation and training of mentors is very different from company to company, the possibilities of large companies and small and medium-sized companies are different. HR departments in large companies usually have detailed mentoring training plans and programmes. Mentoring training is even more differentiated if the company employs multiple mentors in the training of mentees. In higher education mentoring, it is common for the company to appoint a supervisor for the whole mentoring of the learning process, who is responsible for the student's development. In the case of SMEs, due to limited resources, there is usually no way to operate differentiated support roles. Here, the mentoring task is usually performed by a (project) manager, and the supervisor task is performed by the company manager. Mentors are trained by the university in the case of smaller companies and by the HR department of the given company in the case of large companies.

A mentoring relationship basically means the individual accompanying of the mentee. The mentoring role, like the pedagogical and andragogic roles, is a complex activity in which the roles can even conflict with each other. The basic question is the definition of the mentoring role, the limits of the mentoring identification competence. A mentor is not a social assistance person and is not a psychologist or a psychiatrist. The main role of the mentor is to help, but this can be well distinguished from other helping roles (counsellor, parent, teacher, friend, older sibling, etc.). The mentor can be described by the metaphor of the “guidance board”, i.e. in case of a given problem, he / she shows, suggests a kind of solution, but it is up to the person being helped to decide and walk the path.

The process of mentoring is fortunately nourished by the needs of the mentees and its content is outlined based on the joint activities of the two parties, and can be divided into stages (Merlevede et al, 2006):

- Making and accepting contacts. The first encounter is when a mentor and mentee get to know each other and accept the relationship.
- Establishing the rules of cooperation, when the rules of the emerging relationship and cooperation are jointly outlined. The mentor initiates and suggests, always considering the needs of the mentee.
- Defining the starting point: it means planning specific actions. The mentor assesses the prospective employee's prior knowledge, experience, attitudes towards the profession, and his / her attitude towards work tasks.
- After that, the tasks are discussed, operationalised and monitored together.
- Closing your mentoring is the decision to end. Mentoring work ends when the frequency of discussions decreases, the co-worker is integrated, and the mentoring relationship is increasingly reclassified as a professional exchange. One of the great difficulties of mentoring is that mentoring is not a “main occupation”, i.e. the mentor must perform

the mentoring tasks in addition to and in parallel with their professional work (Shenkman, 2005).

4. Mentoring in the workplace

Companies with a successful HR culture welcome a newcomer with a well-developed integration plan after a successful job interview, salary negotiation and signing of an employment contract. The new employee will receive a handbook from the HR manager of the organisation as part of the orientation programme for smooth integration and adaptation. The manual contains information about the company's organisational structure, the position held, the company's values, habits and employment. Another important element of the integration programme is the appointment of a workplace mentor, who is carefully selected from among the employees. A workplace mentor is an experienced, reputable employee of the company who performs a personal support role to help newly hired or newly relocated employees to successfully integrate as soon as possible. Mentoring is often characterised by the competencies to be developed or by the activities that take place in the process. Mentors use characteristics, skills and abilities that are partly brought about, but partly learned and developed during mentoring, such as: active attention, the ability to guide, support for the setting of goals and setting priorities with their practicality, being open to learning and to using their own experience. Mentors have a supportive attitude but are also sufficiently critical and specific in their feedback (Caldwell, Caldwell, 2016; Maksymiuk, 2017; Jeong, Park, 2020).

In the mindset of the European area, the mentor is an “older, more experienced” worker who contributes to the newcomer’s professional and organisational integration in the first weeks or months. Overseas, on the other hand, they believe the mentor should also have “good interpersonal and professional skills” to help the new member of the organisation feel at home with the company as soon as possible. If we start out from the American way of thinking, it is not certain that a pre-retirement mentor should be chosen alongside a twenty-year-old person, and the professional experience and abilities of a mentor should not be considered alone. A person who has good communication and conflict resolution skills, knows the channels and the methods for building an organisational network should be selected for the mentoring task. In addition to all this, it is also important that the leader communicates the mentoring assignment in such a way that the mentor senses their duty and as a consequence, performs it responsibly.

Several international studies focus on the labour market situation of young people (Cook et al., 2015; Kluve et al., 2016; Balan, 2017; Furlong et al., 2017). Both international and Hungarian studies (Cseh-Papp, 2007; Varga, 2010; Makó, 2015; Cseh-Papp, et al., 2017; Héder, Dajnoki, 2017) highlight that one of the biggest barriers to young people's participation in the labour market is the lack of a transition between education and the labour market.

For young people, there is a shortage of internships and traineeships that fit the field of study. This would make it much easier for young people and career starters to enter the labour market. The study of Czeglédi and Juhász (2015) showed that the level of negative prejudice towards career starters is very high among companies. However, if companies are willing to invest energy in educating their young people and employ appropriate mentoring programmes in connection with internship positions, young people will be significantly more motivated and loyal in the short term, and the corporate culture will be shared. This is how “quality culture” can be established. Quality culture is a corporate environment where a certain approach, behaviour and attitude are prevalent, which is accepted by all the participants and which makes

everybody be responsible for quality (Bencsik and Horváth-Csikós, 2018). Internships are one of the most effective sources of talent supply because they can be used to try and prove employees. The importance of traineeship programmes to facilitating the transition between education and the labour market is widely recognised, yet they are rarely implemented. A study by Gault et al. (2010) also showed that high internship performance also increases the value of the employer, in addition to strengthening the young person's marketability.

The emergence of generations Y and Z in the labour market poses a challenge to employers. Despite their different values, habits and expectations than the older generations, young people can easily integrate into the world of work, and their creativity and drive can be of good use to companies. It is up to employers to create a work environment for members of Generations Y, Z and Alpha in which they can be successful with their mentality and become committed employees. In their case, however, the concept of motivation needs to be placed in a different context. The younger generations can only be motivated and won to perform the given tasks if the task or activity also serves their own goals and they can do the work responsibly independently. In their case, a cross-section of company and employee goals needs to be found. The mentor helps to show young people the value of work so that it is not a compulsion but an experience for them.

For companies participating in the internship programme, the mentoring programme is an advantage, because commitment to the organisation grows rapidly, communication between the generations improves, and the learning / development culture develops. Surveys (DuBois et al., 2011; Brady, 2015; Dong, Deng, 2016) have shown that employees stay at least 25 percent more often at a company that uses mentoring than where they do not mentor. Mentoring has a positive effect on the desire to apply and helps to retain young people in the long run. Graduates are enthusiastic about the new challenges, respecting those who sacrifice their knowledge, time and energy for their support. Over time, a good mentor becomes an example to whom his mentors look up. Graduates are enthusiastic about new challenges, with respect for those who sacrifice their knowledge, time and energy to make them better too.

Western countries are looking for a way to involve middle-aged people in the economy in larger numbers, as the labour reserves hidden in this age group are huge. Those aged 55-64 were already young at a time when many had at least a secondary education, and most of them had acquired the digital competencies needed to work from the early 1990s. Age group activity has increased significantly in the labour market in recent years, not only in Hungary but throughout Europe. In addition, the higher the level of education, the more it requires them to remain active, so many people in this age group would be happy to work even in retirement. Large companies in Germany and Japan are the best examples in recruiting, retaining and re-employing older workers, including mentoring. Representatives of the older age group are suitable for this role due to their experience and patience. Mentors can play a counselling role in a young person's professional life, while preventing the social exclusion of the elderly.

5. Summary

The importance of mentoring and the various mentoring programmes is undeniable, and its popularity today is no accident; as it proves to be an effective form of support that is constantly evolving, its methodology is being refined and differentiated. The study found that mentoring has an indisputable value in educating newcomers as well as in adult education or intergenerational education, internship training for new entrants, and the re-employment of

older workers. For all this, the systematic development and application of workplace mentoring is essential. The study reviews the main concepts and contexts of mentor and mentoring, as well as the main features of its areas of application, and draws attention to the importance of training and systematic use of mentors. That is to say, it is not enough to train mentors; it is better by far to introduce a complete mentoring system where roles, processes, responsibilities and benefits are all clarified.

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Can a Skill be Measured or Assessed?
6-Level Skills Development Approach to Skill Assessment

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Abstract

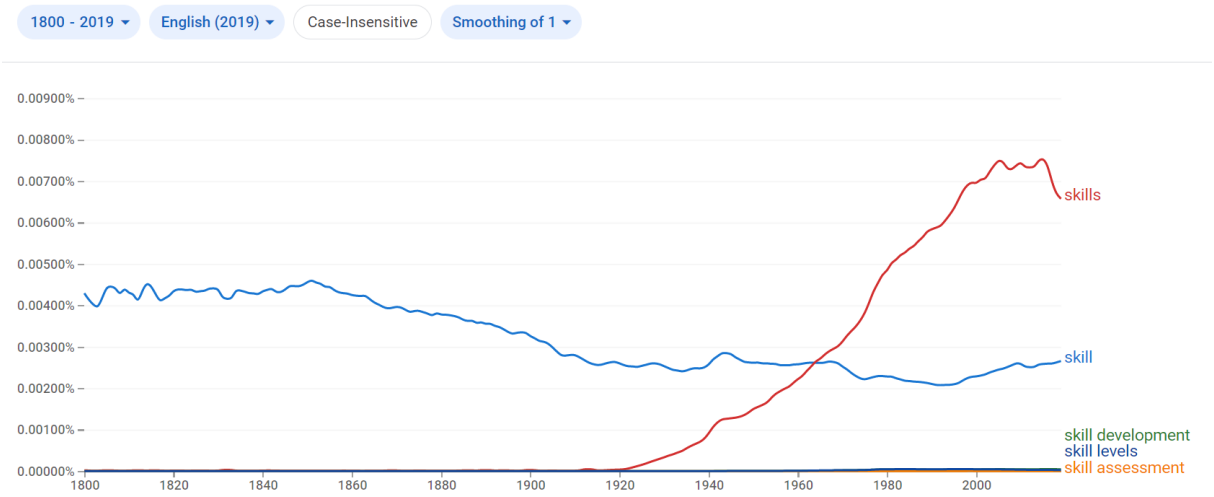
This paper reviews historic and current definitions of skill as a concept, as well as frameworks that have been applied to analyse levels of skills development across the academic and professional spectrum. The author proposes a 6-level chart of skill development based on the "can-do descriptors" approach by CEFR, also known as the ability assessment approach, for further discussion, development, and application. The proposed chart is based on six levels. These are organized into two Entry levels, two Operational Use levels and two Strategic Vision levels. Further debate on the typology of skills by Deloitte, LinkedIn Research and World Economic Forum is presented as of 2020 documentation. Its dynamic manner of paradigms changing the importance of a wide array of skills (alternatively denominated as employability skills, soft skills and/or 21st Century skills) are analysed, both for educators and employers.

***Keywords*:** skills development, skills assessment, soft skills, 21st century skills

1. Introduction

In recent decades, lack of talent's skill capacity has been viewed as a critical precursor for creating economic growth in the knowledge economy worldwide (Deloitte, WE Forum, Bersin, LinkedIn Research). Interpersonal and intrapersonal competencies that are hard to measure, are commonly referred to as soft skills in comparison to hard skills to as "hard-to-assess" skills. Since the 2000's, a variety of groups have bombarded professional and academic arenas with concepts regarding which skills are and are going to be essential to obtaining and retaining employment. This includes domain-general and domain-specific skills, upskilling and reskilling and controversial calling to democratize educational curricula to teach skills rather than classic university subjects. Research has touched off fears relating to the need to develop AI-resistant skills in order to survive what is being called the fourth industrial revolution. Experts project that 47% of labour will be automated (WEF, 2020) and that 50% of employees will need reskilling by 2025 (WEF, 2020) to remain employable. Even though the "skills" N-gram got impressive attention, the ideas of skills levels, skills assessment and skill development are still used in a very limited number of professional books and research. The following graphs show the occurrence of the N-gram skill, skills, skill Development, skill Assessment and a phrase (*) skill, meaning any adjective used before the word skill as a part of an adjective-noun phrase in a distribution through the timeline up to 2019.

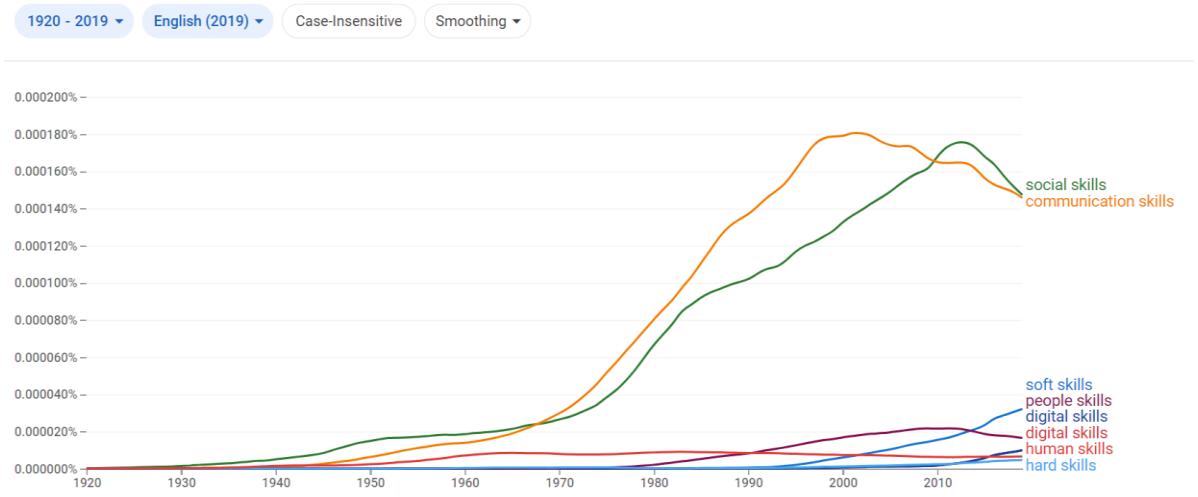
FIGURE 1. THE OCCURRENCE OF THE 5 "SKILL" PHRASES IN A CORPUS OF ENGLISH-LANGUAGE GOOGLE BOOKS OVER 1800-2020 BY GOOGLE BOOK N-GRAM VIEWER



http://books.google.com/ngrams accessed 07/12/2020

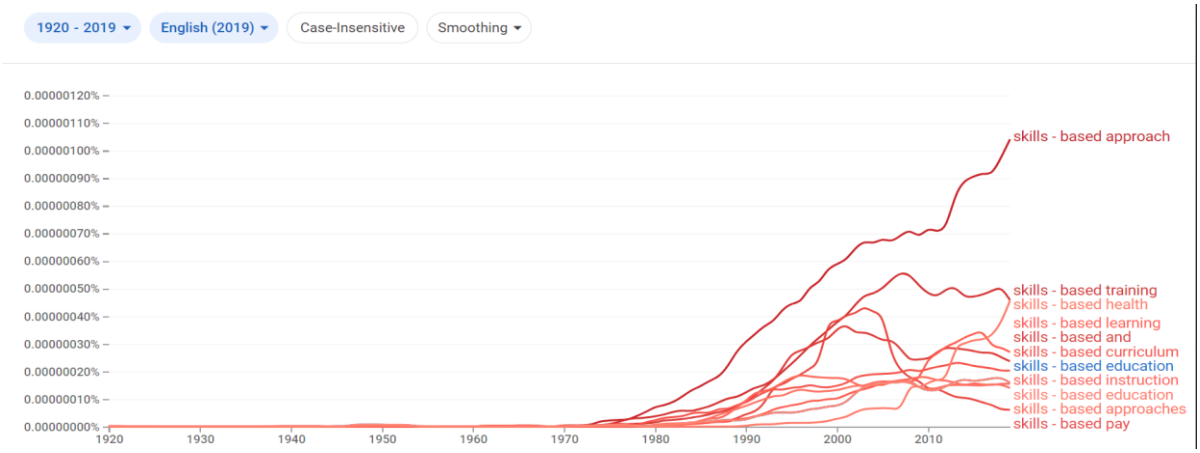
The very idea of a skills-based learning and education as well as of a skills-based portfolio has only reached its frequent use since the 1980's. However, even now in the 2020's, many applicants avoid including skills in their CV's, perhaps in part because objective assessment methodologies are virtually non-existent.

FIGURE 2. THE OCCURRENCE OF THE "* SKILLS" PHRASES IN A CORPUS OF ENGLISH-LANGUAGE GOOGLE BOOKS OVER 1920-2020 BY GOOGLE BOOK N-GRAM VIEWER.



http://books.google.com/ngrams accessed 07/12/2020

FIGURE 3. THE OCCURRENCE OF THE "SKILLS-BASED" PHRASES IN A CORPUS OF ENGLISH-LANGUAGE GOOGLE BOOKS OVER 1920-2020 BY GOOGLE BOOK N-GRAM VIEWER.



http://books.google.com/ngrams accessed 27/12/2020

The research question of 'how a skill can be measured' comes from the intersection of several areas of expertise, including skills-based adult education, teaching English as a foreign language, teaching communication and business, learning multiple languages, concept analysis research, and HR as well as career consultancy, both for the applicants and recruiters. Below are the anonymized excerpts from the CV's mentioning the skills. Even with corpora of CV's the results might look quite similar. Some applicants just mention the skills, sometimes adding the subjective quantifiable adjectives as good, great, extensive, excellent, strong, etc. Some avoid mentioning skills at all, claiming that just putting a skill name into a CV does not add value or any specific objective information about their skill levels.

FIGURE 4. ANONYMIZED EXCERPTS OF SEVERAL CVS SKILLS RUBRICS IN 2020

Source: own compilation

Despite these reservations on the part of so many job applicants, Deloitte associates (Bersin, 2017; Hagel, Schwartz, Bersin, 2017) have claimed soft skills to be the first among four trends transforming the workplace in multiple reports and other publications. Common techniques used in soft skills assessment include (in descending order): behavioural questions, reading body language, situational questions, projects and tech-based assessments (Chanler, 2019). According to LinkedIn Research, 57% of talent professionals say they struggle to assess soft skills accurately (Global Talent Trends, 2019).

Even in 2020, the skills development interdisciplinary debate is far from reaching consensus on the definition or concept of a "skill", "skill development", how to categorize skills and how to name categories. Soft and Hard Skills, Digital and Personal, Interpersonal and Social, People Skills and Labour Skills, Business Skills and Employability Skills, Tech Skills and Data Skills - this is a never-ending list of inter-related, overlapping synonyms and opposites. More consensus is needed as to a situational sum of lower-level skills and higher-level skills and competencies reformulated for each industry, role, seniority, etc. However, whenever the set of the skills for a certain goal, project or a role is needed, rather than just presenting a list to the examinee/applicant, it might be more transparent and visually comprehensive to show what proficiency level is expected in which skills. In this manner, the tested applicants should be able to demonstrate their ability to perform under certain (job-bound) conditions and whether they can do so at a level that meets or exceeds the aforementioned expectations. Even anonymized portfolios of the applicants showing their strongest skills can be a reasonable way to reflect unique personality traits through the skills clusters presented in the portfolio.

In a similar manner, students can try to visualize their skill set level-wise, and choose disciplines, internships, extracurricular activities and mobility programs while having certain skill sets in mind long before they finish university. In this way they will not only increase their employability levels, but also better evaluate, and value, the diversity and uniqueness of each person in a team/group. An analogy here might be taken from computer games, where the characters are used according to their unique skills clusters and to which extent characters advance in each skill and choose to put time and effort to advance further in skill development to compete or accomplish the goal.

2. Methodology

In order to support the rise in skills development, the interdisciplinary investigation of the existing bottlenecks in the current research is generally seen as a challenging, but crucial step. Along with the rapid increase in the number of academic and corporate research publications concerning skills development, concept analysis, article review, and evaluation methods are proposed for this research stage. For further topic elaboration a more thorough and adequately funded interdisciplinary research is needed, including the systematic review methods, such as the rapid review, the scoping study, and the meta-analysis that focus on investigating the contents in the articles on skills levels in various domains with established skill levels classification.

The methodology behind this article comprises academic information classification and summarization method (Loures et al., 2017). Firstly, it will classify the academic and corporate research information on skills development and skills assessment from the collected academic articles. It will then use this result to generate a chart summarizing skills development from different perspectives within an academic faculty, identifying gaps and blind spots in structure. It will also unify the levels across the existing classifications to six levels in accordance with the CEFR chart methodology, the most extensively used in language skills assessment. The methodology workflow is divided into three main phases: the collection phase, the classification phase, and the summarization phase.

3. What is a skill level?

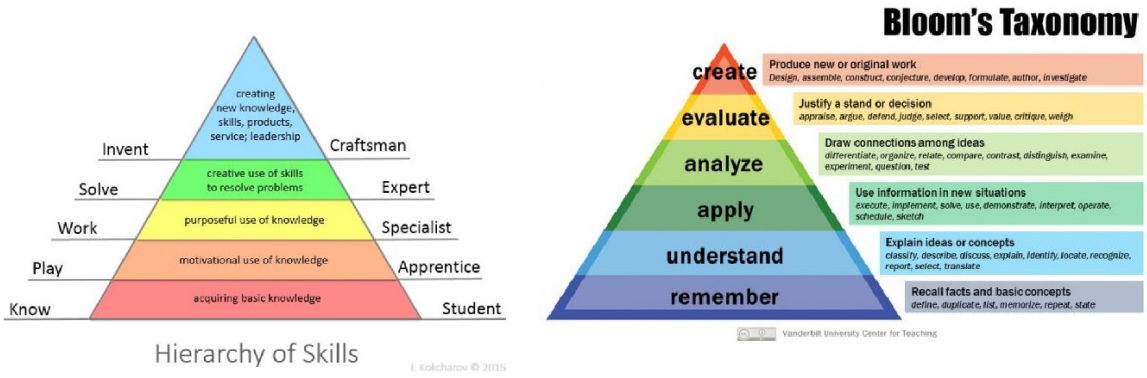
According to Welford, who derives his notion of skill, social or otherwise, from the man-man or man-machine interactions of the 1960's, it is "the use of efficient strategies to relate the demands of tasks or situations to the performer's capacities" (Welford, 1980). This can be traced back to the idea of an "information processing approach to human performance" from the study of automation by Crossman (1960). The idea of skill as an "upgrade-able" asset to brighten "employability perspectives" emerged in research in the 1980s (Adler, 1986; Hirschhorn, 1984; Vallas, 1990). It results in the pyramidal visualization of any skill development as having an attainable point, starting from the fundamental idea of being aware of the skill's existence. Skills are thus allegorically described as a tool in the craftsman's arsenal that eases the hardships of the job itself.

A second definition is frequently attributed to Maslow's pyramid, but adapted from Noel Burch by Igor Kokcharov (2015). It is illustrated in the pyramid in figure 5, which implies an upgrade, both in mastery and payment, per level: student > apprentice > specialist > expert > craftsman. The parallels can also be seen with Bloom's Taxonomy (1969) of the Educational Objectives, revised into "A Taxonomy for Teaching, Learning, and Assessment" (2001) by a group of renowned cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment specialists (Anderson et al., 2001). The revised Bloom's taxonomy retains the basic structure, adding Factual, Conceptual, Procedural and Meta-cognitive knowledge at each stage, forming a grid of 24 operations according to Oregon State Campus Extensions (2005).

The ability to create/produce new or original work could be aligned with the "artist" or "master" level, missing in the initial pyramid (Figure 5). The difference between these concepts has been debated for centuries and implies an almost sacred value given to what is seen as a unique and

rare ability to create/produce new and original work. The notion of a "Master" is also seen by some as adequate to suggest extending this classification further.

FIGURE 5 & 6. (LEFT) HIERARCHY OF NEEDS ADAPTED BY I. KOKCHAROV (2015) (RIGHT) THE REVISED BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES (2001)



Source: Kokcharov (2015) and Anderson et al. (2001)

A third paradigm worth mentioning relates to the path of becoming an expert using a matrix rather than pyramidal framework. Noel Burch developed "the Four Stages of Skills Development" in the 1970s within his Conscious Competence Ladder (Burch, 1970), a concept later adapted by Bartlett. It represents a 2x2 matrix of (un)conscious (in)competence as the skill path to the expert level through intuition and analysis. An individual starts from complete unawareness of how little they know and being unconscious of their incompetence. From there they may grow into Unconscious Competence. At this point, they are able to play with the skill, which has become like second nature, and develop the ability and expertise to teach this skill to others.

4. Frameworks in Skills Research

In the early 2000s, more focus was given to skills self-assessment. The REFLEX project was funded by the EU 6th Framework Program (Contract No: CIT2-CT-2004-506-352) and several national funds. The project involves partners from sixteen countries (Austria, Belgium/Flanders, Czech Republic, Estonia, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK). It is coordinated by the Research Centre for Education and the Labour Market from Maastricht University, advising more research into "measures of the acquired and required level of different skills" and formulating the skills level assessment as "the level of skill actually possessed by individuals using the same basic yardstick as is used to measure the level required to perform adequately in a given situation" (Allen & van der Velden, 2005).

The REFLEX project differentiates between (a) assessment, "usually carried out in specialized centres, where subjects are confronted with real life" or simulated problems, and such (b) testing methods for school-leavers as The International Adult Literacy Survey (IALS) and its successors, the Adult Literacy and Life Skills Survey (ALL), The International Association for the Evaluation of Educational Achievement (IEA) Trends in Mathematics and Science Study (TIMMS) and the OECD Programme of International Students Assessment (PISA). Another two major skills assessment tools for adults and employees mentioned by the REFLEX Report are (c) job analysis, as a "classical instrument for personnel managers to assess the requirements

of individual jobs and to relate these to reward systems;" and (d) employer surveys. The latter concentrates on "most relevant skills for the present workforce or what skills employers think will become most important in the future" (Allen & van der Velden, 2005). Both are based on regional employer feedback. When aggregated, these 4 assessments are summarized as Employability skills in demand in the area. Thus, they focus either on school-level "carpet-bombing" skills assessment or making the lists of the skills for the employability (for the job, industry, or area) rather than describing the degree to which this skill might be required for professional roles.

The Common European Framework of Reference for Languages, or CEFR, has been using this 6-level grade successfully for 20 years now to assess the proficiency in Reading skills, Writing Skills, Listening and Speaking skills (Communication Skills). It was created with the purpose to provide "a method of learning, teaching and assessing which applies to all languages in Europe" (CEFR, 2001). The "can-do descriptors" charts devised for each skill and for each level have notably promoted methodological innovations and new approaches to designing teaching programmes according to the A1-A2-B1-B2-C1-C2 levels of communication skills. By performing the placement tests and exit tests, thus by identifying language needs and eventually the progress in acquiring the skills, they are able to pinpoint the knowledge and know-how required for attaining this communication threshold.

Global scale - Common Reference levels (CEFR, 2001) provided teachers, learners, assessment centres and employers with a simple and visual structure of the phenomenological path of learners reaching the next level/milestone in their journey to skills proficiency. Thus, they provide a clear 'global' representation of the system to non-specialist users. They also empower teachers and curriculum planners with orientation vectors and a comprehensive self-assessment table (CEFR, 2001) to track achievement. It celebrates the reaching of a certain point in learning any European language, for each of the skills: Listening, Reading, Writing and Speaking (speaking production and interaction). Qualitative aspects of spoken language use of the Common Reference levels (CEFR, 2001) are a section that focuses on different qualitative aspects of language skills and assesses the speaking skills of RANGE, ACCURACY, FLUENCY, INTERACTION and COHERENCE. It also introduces ways to assess the control and the range of the instruments used to perform to demonstrate the skills level.

5. Suggestion

In a similar manner, the assessment of learning and teaching of a wide range of skills, based on the linguistic skills reference and according to previous research on skills development may be performed. Thus, placing the Revised Bloom's Taxonomy for learning assessment, Burch's (Un)conscience (in)competence matrix and extending the 5-level pyramid in the same grid with the CEFR levels might open another page of discussion within the skills development interdisciplinary debate. We suggest calling these 6 levels of skills development from basic to high proficiency as follows: AWARENESS, ACQUISITION, APPLICATION, EXPERIMENT, EVALUATION and CREATION. It is organized into entry-level/Basic skill use (in yellow), operational level/Independent skills use (in green) and strategic level/Proficient use (in purple) of skill development and skills assessment.

TABLE 1. 6 LEVELS OF SKILLS DEVELOPMENT CHART FROM BASICS TO PROFICIENCY (BOTTOM-UP)

	Adapted after Bloom/Revised	Adapted after Burch/Bartlett	Adapted after Burch/Kokcharov	CEFR
CREATION	Create Generating, Planning Producing	Unconscious Competence The individual has had so much practice with a skill that it has become "second nature" and can be performed easily. As a result, the skill can be performed while executing another task. The individual may be able to teach it to others, depending upon how and when it was learned.	(Artist? Master?)	C2 - Proficient User Reaching Mastery or proficiency
EVALUATION	Evaluate Checking Critiquing choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate		Craftsman inventing new knowledge, skills, leadership, (extrapolating not only his own professional expertise to difficult cases requiring problem-solving)	C1 - Proficient User/Advanced Reaching Effective operational proficiency or advanced skills level
EXPERIMENT	Analyse Differentiating Organizing Reorganizing Attributing Improvising Adapting	Conscious Competence Gaining an understanding of how things work, through concentration is able to find and apply necessary elements /steps. Knowing where to focus and what to train to minimize mistakes. can perform it reliably at will, need to concentrate and think in order to perform the skill can perform the skill without assistance	Expert - (Experienced in applying in various contexts) creative/improvised use of skills to solve the problem	B2 - Independent/ Competent User Reaching Vantage or upper intermediate skills level
APPLICATION	Apply Executing Implementing Classifying, categorizing analysing, illustrating		Specialist (Confident) purposeful use of knowledge	B1 - Independent User Reaching Threshold or intermediate skills level
ACQUISITION	Understand Interpreting Exemplifying Classifying Summarizing Inferring Comparing Explaining	Conscious Incompetence Having recognized the deficit and the value of a new skill, the individual searches for the source of learning, become a learner/beginner and goes through mistakes and hardships	Apprentice (Knowledgeable) motivational use of knowledge, know how and when to use learnt elements	A2 - Basic User Reaching Waystage or elementary skills level
AWARENESS	Remember Retrieving, recognizing concepts and elements, recalling relevant knowledge from long-term memory	Unconscious Incompetence From the complete unawareness or denial of the skill use/help, individuals do not understand or know ow to do something and do not necessarily recognize the deficit	Student (Learner/ Novice) acquiring basic knowledge	A1 - Basic User Reaching Breakthrough or beginner skills level

Source: own compilation

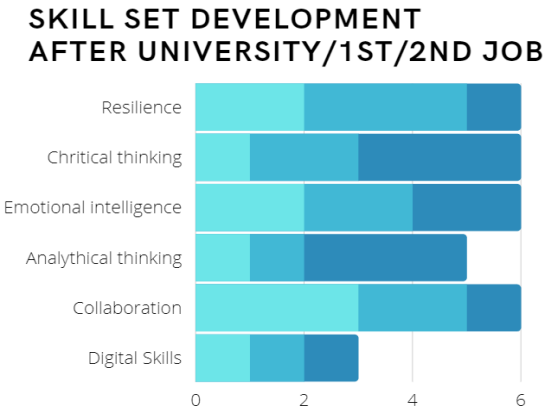
6. Application

Applying the established model from the Council of Europe and Cambridge English Language Assessment and used by millions of people in 130 countries to take CEFR exams every year, could help solve the problem of the skills proficiency and assessment. It could provide all key stakeholders, including learners, job applicants and employers, with a comprehensive and clear self-assessment model for placement testing. It would lead to greater understanding of progress made and recognize specific strengths and weaknesses within a skill set. Additionally, it would lead to more accurate assessment regarding one's possible fit for an advertised position or career move. This could potentially enable a specific gradation of skills within the CV (Figure 8) rather than simply a general mention of their existence (Figure 4).

FIGURE 7. POSSIBLE SIMPLIFIED WAY OF REPRESENTING THE INDIVIDUAL SKILLS SET BASED ON THE PROPOSED 6-LEVELS OF SKILLS DEVELOPMENT CHART AS A CV EXCERPT

Source: own compilation

FIGURE 8. POSSIBLE MORE COMPLEX WAY OF REPRESENTING THE INDIVIDUAL SKILLS SET BASED ON THE PROPOSED 6-LEVELS OF SKILLS DEVELOPMENT CHART AS A CV EXCERPT



Source: own compilation

For employers and their HR departments, such a framework would provide a more accurate snapshot of an applicant's skills across the company, industry or area. Being able to measure degree of skill also means being able to improve and track its development. This may lead to the design of more targeted programs for upskilling and reskilling staff. It would also clarify expectations to all parties involved. The potential for using this grid stretches to the initial HR applicant screening processes t, reducing the potential for bias in the hiring process. According to LinkedIn Research, 57% of talent professionals say they struggle to assess soft skills accurately (Global Talent Trends, 2019). Employing the proposed grid could potentially increase this efficiency.

Educators are another group that may benefit from using the proposed chart to broaden the scope of skills-based education in a user-friendly and recognizable form. With it, they could provide a more transparent, coherent and comprehensive basis for the elaboration of skills-based syllabuses and curriculum guidelines (including placement tests, self-assessment tests and exit tests). This would facilitate educational and occupational mobility. Bringing educational curricula into alignment with industry needs is one of the most ambitious and disputed goals of the 21st century. Attention to skills development allows for and even encourages "a wider range of learning approaches and its variations provides a sustainable and successful development and expansion of the standard understanding of education" (Shtaltovna, 2018) and therefore gives a chance for the education to democratize in the notion of "access to ..." as a causal manifestation of educational concepts and the creation of a (European) area without borders". Just as most universities align their language teaching plans with CEFR, they could factor in the desired final degree of skill level to their course development considerations.

The Centre for Learning and Life Chances in Knowledge Economies and Societies debates in its "What is Skill? An Interdisciplinary Synthesis" research (Green, 2011) that the universality of skills in psychology, economics, pedagogy and in business realm bring in the untranslatable notions and systems of skills across these sciences and the interdisciplinary dialogue lacks the skilled global facilitator. According to Green, whether skills are addressed as cognitive (in education psychology as an equivalent to learning), interactive (communication/collaboration) or physical, the deficiency of all of the above has been noted across a wide variety of industries. This skills gap, or shortage, in the 21st century has led a number of think-tanks to create persuasive infographics on what specifically is missing.

7. Which skills to assess and skill set to form?

In 2015, the World Economic Forum proposed what it calls a New Vision for Education (WEF, 2015). It proposes 16 skills needed by students in the 21st century to succeed in a job market marked by frequent disruption. The WEF further discusses the existence of education gaps between economies and their outcome on 21st Century skill performance. New Vision for Education postulates these literacies, competencies and qualities as key sub-skills:

- Foundational literacies represent literacy and numeracy, scientific literacy, ICT literacy, financial literacy and cultural and civic literacy.
- Competencies comprise critical thinking/problem-solving, creativity, collaboration and communication.
- Character qualities including curiosity, initiative, persistence/grit, adaptability, leadership, social and cultural awareness.

In the Future of Jobs Report 2020, the World Economic Forum maps the jobs and skills of the even more immediate future, tracking the pace of change within the skills panorama, bringing in emerging and declining skills influenced by the COVID-19 disruption. and with the idea to leverage human potential. It delineates 15 skills and skills to be increasingly in demand until 2025. Its top 10 are categorized into four groups: Problem-solving, Self-management, Working with people (Collaboration), Technology and Development skills. The WEF also predicts declining demand in three more: Core literacies, Physical abilities, and Management and communication of activities.

Top 15 skills for 2025 which employers see as rising in prominence in the lead-up to 2025, according to WEF Report (WEF, 2020):

1. Analytical thinking and innovation
2. Active learning and learning strategies
3. Complex problem-solving
4. Critical thinking and analysis
5. Creativity, originality and initiative
6. Leadership and social influence
7. Technology use, monitoring and control
8. Technology design and programming
9. Resilience, stress tolerance and flexibility
10. Reasoning, problem-solving and ideation
11. Emotional intelligence
12. Troubleshooting and user experience
13. Service orientation
14. Systems analysis and evaluation
15. Persuasion and negotiation

The WEF report sets a new bar for skills categorization based on the industry demands. However, there is almost no mention of assessment or evaluation, in terms of what constitutes a basic, sufficient or advanced skill level. It also fails to mention "skills development" or "skill level" even once on its 163 pages of otherwise impeccable analysis. Recently, researchers seeking for unification of the skills set suggested finding a correspondence between the WEF's 21st Century skills framework, the competencies 2020 framework and the newly devised Global Skills framework (WEF, 2020). The chart below was devised by experts in digital skills development and assessment for university staff members and students. In it, overlaps in the concepts defining skills from 3 frameworks were coordinated into semantic blocks to find the common ground and perspective to address different frameworks as described in Table 1.

TABLE 2. 21ST CENTURY SKILLS VS. COMPETENCIES 2020 VS. GLOBAL SKILLS

21st Century Skills	**Competencies 2020**	**Global Skills**
critical thinking and problem solving	complex problem solving critical thinking argumentation and decision making	critical thinking and analysis
learning and innovation flexibility and adaptability ICT-literacy	cognitive flexibility creativity	creativity, originality and initiative active learning and learning strategies
communication/ collaboration skills	integration negotiation teamwork	leadership and social influence coordination time management
initiative and drive	emotional intellect human resources management	attention to detail trustworthiness self-management
social skills and cross-cultural skills	emotional intellect service orientation	emotional intelligence coordination time management reasoning and ideation

Source: Makhachashvili et al., 2020

By using the proposed 6-level chart for skills development and assessment, the qualities required for a given job, project or goal are more accurately described, giving the reader a clearer sense of whether the degree required is achievable or not considering their individual current abilities. With this added information, students can set SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals and practice their time management when achieving their goals for skills development, understanding their KPIs (key performance indicators) and tracking progress in achieving short and long-term goals. As management consultant Peter Drucker once (allegedly) said: "If you can't measure it, you can't improve it." Using degree-sensitive rather than simplistic evaluation measures can help students and staff track their own progress toward a desired outcome. Asking students to reflect on which skills they improved during the semester, and how much they used certain learning opportunities to do so in their SMART-defined goals through levels can dramatically improve their performance, intrinsic motivation and reflection skills, compared to such an increase in language learning path using CEFR levels and "can-do descriptors" according to CEFR's Companion Volume with New Descriptors (Council of Europe, 2018). Using degree-sensitive self-assessment instruments to track skill development can also provide a way to stay focused on the correspondent level, choosing manageable materials and relevant courses, as well as to celebrate achieved milestones with certification or level completion, just as language learners benefited from CEFR implementation into worldwide curricula as reported by Council of Europe.

In this article we have discussed applying the CEFR level identification structure for language skills to a broader set of skills as 21st Century skills, soft skills, social skills. In addition, we have considered the necessity of "can-do descriptors" for the skills level identification and the possible implications of such use in both academic and professional arenas. It is hoped that experts in the evolving areas highlighted will join forces to expedite the development of a 6-levels grid for skills.

Summary

This paper has focused on the potential value of even an imperfect chart of skills levels. It can increase understanding of how skills are assessed at any given moment, as well as be used to track skill development over time. A degree-sensitive chart format can be used in CV's, in job descriptions and career development plans in corporate Human Resources. They can be used as a tool for self-assessment, education planning and in final vocational study evaluations. Obviously, more in-depth interdisciplinary research should be undertaken to identify its potential and limitations. No method of measuring skills is without its flaws. However, the benefits of using such charts will almost certainly outweigh the possible disadvantages.

NLP-based linguistic research on the concept of "skill" is necessary to achieve greater consensus regarding hierarchy, typology, classifications and procedures to assess current and developing skill levels. Interdisciplinary research on more nuanced methods for ability-based dynamic evaluation is long overdue, especially in societies and economic systems so prone to AI- and environmentally related disruptions. The success of business models that rely on a workforce that is not only skilled, but able to be upskilled and reskilled, depends greatly on a shared understanding of the key terms involved in assessing status quo and progression. The proposed skills development chart is a draft, and an invitation to discussion and further research

and development to achieve a functional, accurate assessment framework applicable across a plethora of skill areas within both academic and professional settings.

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Digital Marketing Soft Skills and University Students' Perceptions of Employability

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Abstract

Over the past several decades, the digital transformation of businesses has revolutionized the role of the digital marketing environment within organizations. Consumer behaviour has also fundamentally changed, affecting important requirements for marketing professionals, and therefore, new hard and soft skills are needed to become successful. In digital marketing, basic soft skills are increasingly becoming more valued by employers and are relevant factors affecting employability. Business graduate students need to develop appropriate skills to succeed in their career and to have a right balance of skills.

The aim of the study is to explore the gap between the most relevant digital marketing employability skillset and the perceptions of graduate university students based on the analytics of previous managerial quantitative research and the findings of the current research. A quantitative study was conducted to explore the perceived importance of soft skills related to employability and the difference between students work experience. The demand of soft skills courses focusing on Massive Open Online Courses (MOOCs) demand was examined focusing on the most relevant soft skills in digital marketing.

Key findings of the research explored categories of the perceived importance of soft skills and differences between working students and their perceived skills and the usage of MOOCs. Implications of the results for further academic research is to explore gaps between students' perceptions of soft skills according to employability research on managerial requirements.

***Keywords*:** competitiveness, digital marketing, digital skills, employability, soft skills

1. Introduction

Soft skills have become a field of increasing interest in the past decade in lifelong empowerment and lifelong learning. Skills are critical factors for competitiveness and employability for graduated students and wherever employees are on their carrier paths. Structural changes such as globalization, technological progress, digital processes and automatization require relevant new skills from marketing professionals. Participation in adult lifelong learning in a population aged 25-64, is a key indicator in the EU workforce strategy. In long term employability, the focus is on transversal skills, that may be the core success factor in the carrier path (EC, 2016).

Soft skills are described as skills "used to indicate personal transversal competences such as social attitudes, language and communication capability, friendliness and ability of working in team and other personality traits that characterize relationships between people" (Cimatti, 2016). In hiring situations, companies often like to hire employees who possess soft skills that relate well with the rest of the team, considering them to be a good cultural fit for the department or company (Schlee and Karich, 2010; Kenton, 2020). The research papers focusing on marketing soft skills have been published in journals dedicated to education in the past decade, and they have revolved around employability factors and desired skills in various marketing fields (Walker et al., 2009; Finch et al., 2013; Gregorio, 2019).

The basic theory of 21st Century Skills is based on the four Cs identified as basic skill categories: Critical thinking, Collaboration, Communication, and Creativity (Chiruguru, 2018), where the focus, in the case of the marketing professional, is mostly on Critical thinking (Osmani et al., 2015). In terms of marketing soft skills, Robles (2012) explored executive perceptions of the 10 most relevant soft skills, as perceived to be the most important by business executives: integrity, communication, courtesy, responsibility, social skills, positive attitude, professionalism, flexibility, teamwork, and work ethic. As the minimum skills required for a digital marketing job, Doyle (2019) listed the following skills: technical skills, MS Office skill, knowledge of statistical software, database analysis, meta skills by online marketing, oral communications, written presentation, team/leadership skills, time management, creative problem solving, statistics and quantitative analysis. In these lists, hard skills (technical skills, Software knowledge) are also highlighted as basic hiring skills for employers.

Bennett (2010) developed a list of 14 attributes to become successful in a marketing career and found that initiative, motivation, communication, IT, and presentation skills were the most demanded competences in the field of marketing. Other studies identified the relationship between technical aspects of hard skills and related soft skills (Alpert et al., 2009; Ackerman et al., 2003; Kerr and Kelly, 2017), and found soft skills effective to enhance hard skills. Basic soft skills were examined in the research of Chamorro-Premuzic et al., 2010 and Finch et al., 2013, which are highly valued by employers and are important predictors of employability. Wellman (2010) found work planning and prioritization, general and written communication, and office ICT applications the mostly searched attributes, while creativity and innovation, as well as attention to detail, are the top desired personality traits for marketing professionals. Based on this study, Gregorio et al., (2019) identified five employability skill categories and 29 skills and capabilities through a content analysis of job advertisements and a cross-country survey of marketing professionals (see Table 1). The five identified factors were listed in order of factor contribution of the factor structure, and basic soft skills were described as the most relevant employability factor.

TABLE 1. THE EMPLOYABILITY SKILLSET OF MARKETING GRADUATES IN IMPORTANCE

Type of soft skill	Soft skills
Basic soft skills	Flexibility, Teamwork, Interpersonal skills, Initiative, Motivation, Oral communication and presentation skills, Stress resilience
Digital and technical skills	Knowledge of social media, Knowledge of Mobile, Knowledge of E-commerce, Knowledge of Analytics and real time practices, Knowledge of Internet & software knowledge, SEO & SEM
Core marketing skills	Planning, organization and time management, Content creation across channel, Creative thinking, Precision and attention to detail, Sales knowledge and management skills, Ability to manage multiple marketing tasks
Analytical skills	Data-driven/data-oriented, Good conceptual and analytical skills, Statistical knowledge, Problem-solving, Critical thinking, Ability to synthesize information into meaningful and actionable reports
Customer insights skills	Knowledge of company and of its customers, Knowledge of research methods, Knowledge of customer touchpoints and journey, CRM and relational skills

Source: own compilation based on Gregorio (2019)

Because of the increasing number of versatile data sources, digital marketers seek employees being able to handle multiple digital tools. Bobbitt et al. (2000), Gonzalez-Padron and Ferguson (2015) and Key et al. (2019) found that teaching innovations, such as in-depth experiential learning projects, provide a way to accomplish learning experience and at the same time, they bridge the gap between theoretical knowledge and practical application in case of marketing students. The most frequent digital marketing skills (see Figure 1.), mentioned in job advertisements are: Google Ads, Google AdSense, Customer Segmentation, Differentiation, Ability to Meet Deadlines, Adaptability, Collaboration, Conducting Meetings, Decision Making, Multitasking, Organizational, Presentation, Problem Solving, Taking Initiative, Teamwork, Thriving in a Results Driven Role, Time Management, Verbal Communication, Working Independently, Omnichannel Marketing, WordPress, HubSpot, Moz Pro, SEMrush, MailChimp, Synup, Yext, Directory Listings, PPC Bidding (thebalancecareers, 2020).

Examining open education initiatives such as MOOCs (Massive Open Online Courses) and OERs (Open Educational Resource), Word Economic Forum compiled the most in-demand hard and soft skills of 2020 according to LinkedIn global database. The 15 hard and soft skills that are most likely to get employees hired in 2020 are in parallel with the 4Cs. The most in-demand soft skills in 2020 according to LinkedIn data are creativity, persuasion, collaboration, adaptability and emotional intelligence (WEF, 2020). Staboulis and Lazaridou (2020) found the reason for the high demand for MOOCs soft skill courses was "… they offer the ability to form strong network aspects of connection between people and institutions in terms of creating, sharing and enhancing knowledge, services and skills in effective ways".

FIGURE 1. THE MOST IMPORTANT DIGITAL MARKETING SKILLS

Source: own compilation based on thebalancecareers (2020)

2. Methods

In this research study, the demand for digital marketing professional skill development courses were examined on three global MOOCs platforms. Data collection was carried out on soft skill course demand, aiming at compiling important soft skill course categories and the number of enrolled students in October and November 2020 on LinkedIn, Coursera and Udemy. The annual data are based on the 2019 and 2020 impact reports of the three platforms.

A quantitative survey was distributed, aiming to measure the perceptions of the importance of soft skills related to employability. The scale of skills was based on the one created by Gregorio (2019). The self-administered questionnaire consisted of three parts: First, the work experience, second, the 29-item skill scale based on the study of Gregorio (2019) using open ended questions. The awareness and attendance on MOOCs platform's courses were examined in the third section. The research was conducted in December 2020 among university students in Budapest. The limitations of the paper include the use of convenience sampling as a sampling method as well as the geographical and age limitation of the respondents. The respondents belong to the age group of 18–24 years. Thirty one percent of the respondents work full or part time. Another twenty two percent conduct casual work while 19 percent undertake internships. Twenty eight percent of the respondents are students. The sample of 96 respondents was analysed with the SPSS Statistics program using descriptive statistical methods.

3. Results

3.1. MOOC's global demand

The most popular and inexpensive options available today for soft skill development are the following: Coursera Udemy, LinkedIn and EdX offer academic courses from the top universities globally. Udemy offered over 80 000 video courses on different business skills, and LinkedIn Learning had more than 8 000 courses related to business skills and more than 10 000

business language courses in November 2020. In MOOCs, demand for online courses for soft skills has shown an increasing demand in the last years.

In October 2020, 648 results for soft skill filtering were found on Coursera while in November, 653 soft skill courses were available. The TOP courses on Coursera in November 2020 are listed in Table 2.

TABLE 2. THE TOP COURSES IN NOVEMBER 2020 ON COURSERA

Course	**Enrolled students**
Learning How to Learn: Powerful mental tools to help your master tough subjects	2 642 061
Successful Negotiation: Essential Strategies and Skills	944 423
Creative Thinking: Techniques and Tools for Success	124 220
The arts and science of relationships: understanding human needs	115 632
Teamwork Skills: Communicating Effectively in Groups	108 075
Business English Communication Skills	77 050
Leading People and Teams Specialization	70 391
Presentation Skills	61 046
Converting challenges into opportunities	53 409

Source: own compilation based on Coursera (2020)

On Udemy, more than 10 000 soft skill courses were available both in October and November 2020. The most fragmented and popular categories were leadership, with 321 courses and communication with 291 courses in November 2020. There were versatile industry specific courses for both topics. Interviewing skills, negotiation and emotional intelligence were also in the TOP category during these months. Entrepreneurship and conflict management were very popular as well, with more than 50 000 enrolled students per month. Within leadership courses, 321 courses were available most of them with high ratings. The most popular leadership course had 1 777 enrolled students. In terms of communication skills, the most popular was “speak confidently and be from the elite” course, which counted 11 178 students.

On LinkedIn, where online courses are led by real-world professionals, within the 16000 online course soft skill categories, the “Leadership developing program”, the “Master In-Demand Professional Soft Skills” course, and the “Developing your emotional intelligence” course were the most popular ones with 376 513 viewers.

“Building resilience” and “Critical thinking for better judgement and decision-making” were also highly rated with 192 123 and 96 490 viewers respectively. In terms of communication, “Communicating with Confidence Course General”, “Influencing others”, and “Public speaking” had outstanding demand.

FIGURE 2. DEMAND GROWTH FROM SEPTEMBER 2019 TO SEPTEMBER 2020

Source: Coursera Impact Report (2020)

Coursera was founded in 2012. In 2020 Coursera has 59 million enrolments globally, and altogether there have been more than 13 million learners in Europe in 2020, which reflects a 137% increase (see Figure 2). EdX, the world's largest MOOC platform, had 25% increased certificate rates and 17% increased pass rates in 2020.

3.2. Perceptions of soft skill importance

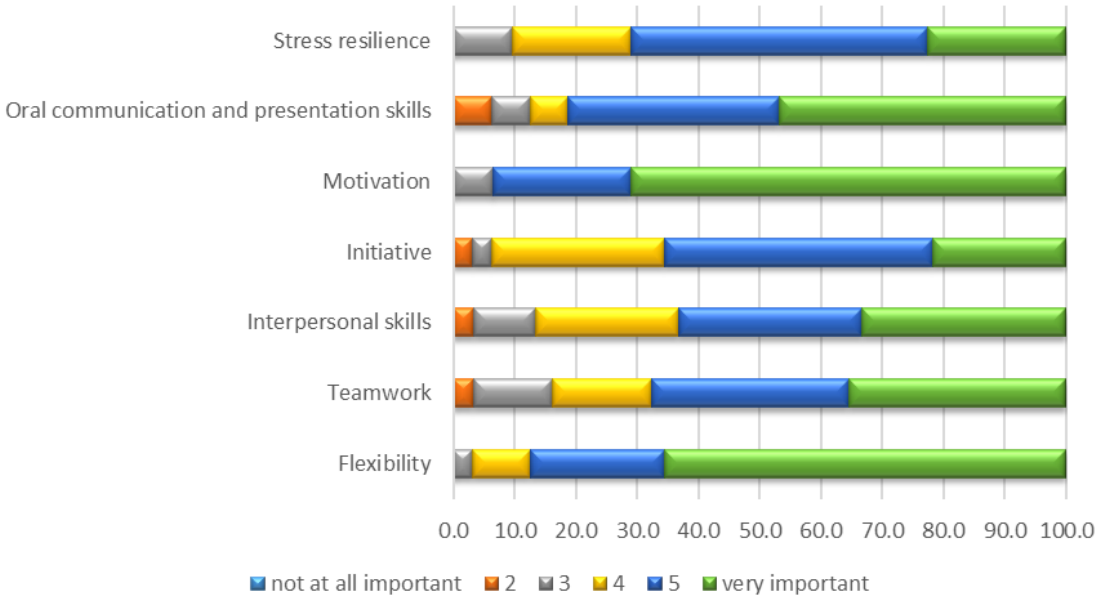
A survey was conducted in 2020 to investigate the perceptions of soft skill importance among university students. In the sample, 31.2% of the participants had regular work experience (full time 15.6% part time 15.6%), 21.9% had casual work experience, 18.8% took part in internship programs and 28.8% were students without former work experience.

In the first section of the analysis, the results are presented based on university students' perceptions on employability within the five skill categories. In the second section, the significant difference between students with regular work experience and casual or no former work experience, is described. The difference between the two segments in usage of MOOC platforms is shown in the third section.

3.3. The importance of basic soft skill perceptions on employability

The survey results (Figure 3.), suggest that motivation, flexibility, oral communication, and presentation skills are the most important soft skills, while stress resilience, teamwork, initiative and interpersonal skills, seem to be less important factors of employability for the respondents.

FIGURE 3. THE IMPORTANCE OF BASIC SOFT SKILLS

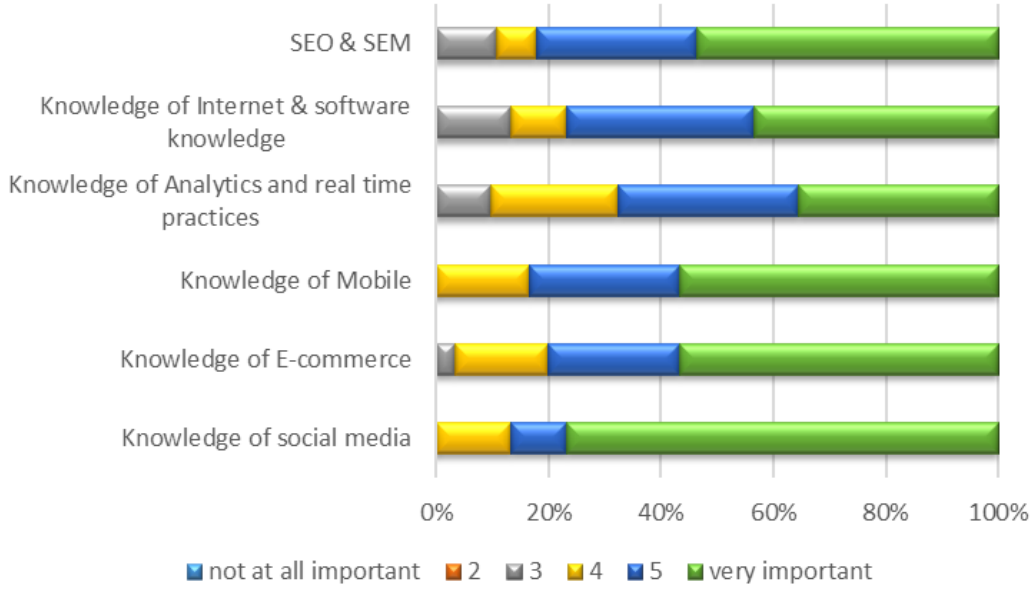


Source: current research

3.4. The importance of digital and technical skill perceptions on employability

The most important digital and technical skills were the knowledge of social media and mobile, SEO & SEM, knowledge of E-commerce and Internet & software while the knowledge of analytics and real time practices were less important. Seventy two percent of the respondents believed the knowledge of social media to be very important (see Figure 4.).

FIGURE 4. THE IMPORTANCE OF DIGITAL AND TECHNICAL SKILLS



Source: current research

3.5. The importance of core marketing skill perceptions on employability

Among the core marketing skills (see Figure 5.), creative thinking is thought to be the most important employability skill for 91% of the respondents, while precision and attention to detail seem also very important or important for 81% of the respondents. Precision and attention to detail were also considered to be very important or important factors of employability. Sales knowledge was mentioned as the least relevant skill with 30% "not important" or "less important" answers (Median 4, Mean 4.45 on 6-point Likert scale). Precision and attention to detail also seem to be less relevant skills for employers; roughly 53% perceived it to be very important skills.

FIGURE 5. THE IMPORTANCE OF CORE MARKETING SKILLS (%)

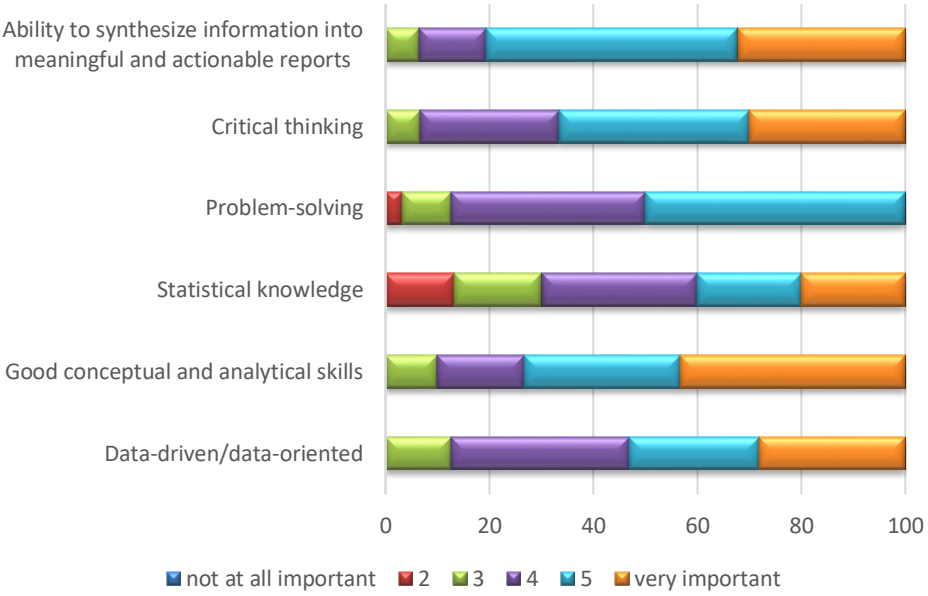
Source: current research

3.6. The importance of analytical skill perceptions on employability

The ability of synthesizing information into meaningful and actionable reports, good conceptual and analytical skills and critical thinking, were the most important skills for the respondents. Problem solving and data driven/data-oriented thinking were rated less important (see Figure 6).

The analytical skills were valued at a lower rate compared to the other groups of skills. Especially, only 18% of the respondents rated the statistical knowledge to be important and 18% very important.

FIGURE 6. THE IMPORTANCE OF ANALYTICAL SKILLS (%)

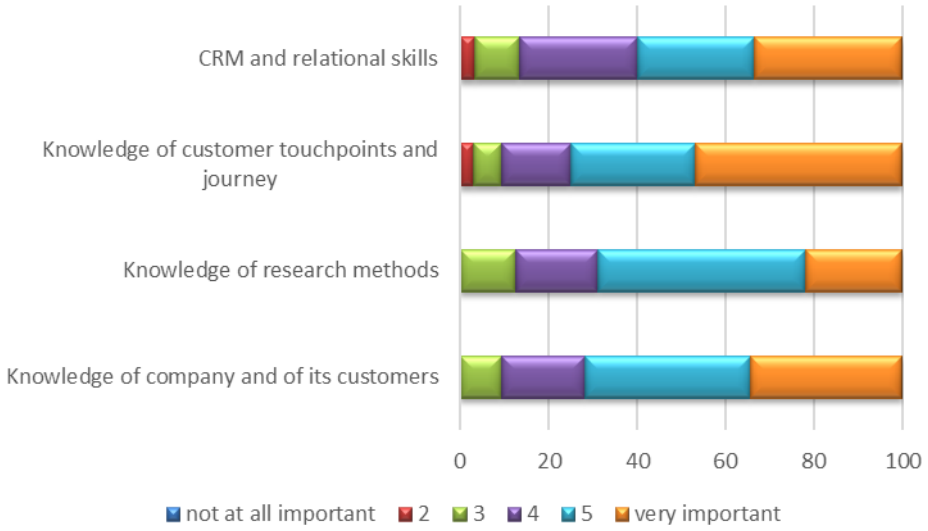


Source: current research

3.7. The importance of understanding customer insights

Among the customer insight skills, knowledge of a customer's touchpoints and journey, of the company and its customers and research methods, were almost equally important skills for the respondents. While CRM and relational skills were rated lower (see Figure 7.).

FIGURE 7. THE IMPORTANCE OF CUSTOMER INSIGHT SKILLS (%)



Source: current research

The ratings of those respondents who work was significantly higher than those who did not, for the following skills: creative thinking, statistical knowledge, sales knowledge and management skills, CRM and relation skills and initiative.

An outstanding result of the study describes that knowledge of customer touchpoints and journey, statistical knowledge and good conceptual and analytical skills show a significant gap between previous managerial research of Gregorio et al., (2019) on employability and the perceptions of university students on employability skills.

3.8. Difference between the perceptions of the respondents with or without working experience

A correlation study was performed on the differences between the responses of the respondents with working experience and the ones without former working experience. Twenty-nine soft skill categories were analysed with crosstabs.

A significant difference between the group with working experience in the categories 'important' and 'very important' was detected for the skills listed in Table 3.

TABLE 3. SIGNIFICANT DIFFERENCES BETWEEN STUDENT SEGMENTS

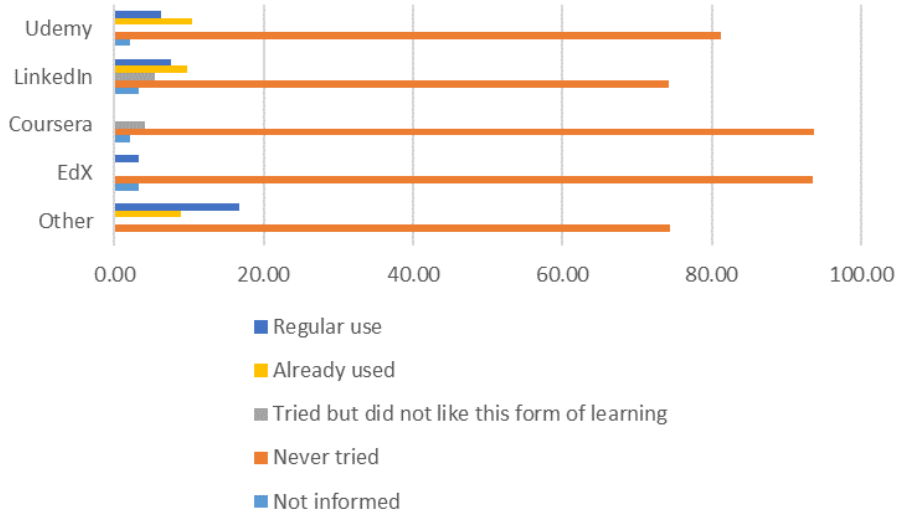
Soft skill	Gamma value	Significance
Motivation (basic skill category)	0.437	0.006
Stress resilience (basic skill category)	0.287	0.038
Content creation across channel (core skill category)	0.444	0.004
Precision and attention to detail (core skill category)	0.313	0.034
Knowledge of research methods (customer insights skill category)	0.268	0.036
Knowledge of customer touchpoints and journey (customer insights skill category)	0.378	0.003

Source: current research

3.9. Usage of MOOC platforms

The respondents of the research were asked about their habits of using MOOC platforms. Figure 8 summarises the results of the survey. Among Hungarian university students, LinkedIn and Udemy are the most popular platforms.

FIGURE 8. USAGE OF MOOCS PLATFORMS



Source: current research

There were several references to other platforms; these are mainly offline courses on software. Different software categories were mentioned: Piton, data-visualisation, Photoshop courses were popular mostly in the segment with regular work experience.

4. Conclusion

Soft skills are more difficult to quantify than hard skills and it is more difficult to predict how these skills will affect the suitability in the workplace. In the field of digital marketing, employability has become an issue since there are broad mismatches between the acquired graduate skills from university and the required skills by employers. The process of transition from university undergraduate to marketing professional is a crucial stage in the development of a digital marketing career and soft skills are key factors to become successful in their entire career path.

The first main finding of the research is that the transition from marketing graduate to employee is based on transferable soft skills, because digital marketing professionals face different technologies and multiple marketing fields in their carrier. There is a gap between previous managerial the research results and the current findings in the importance of analytical and core marketing skills and its impact on employability.

There is a significant difference between student segments with different work experience in predicting soft skills related to employability. Students with regular work experience found motivation, stress resilience, contents creation across channel, precision and attention to detail, knowledge of research methods and knowledge of customer touchpoints and journey, the most relevant soft skills of employability.

The demand for developing soft skills is emerging globally in the past few years on the most popular MOOCs and OERs, which offer specific industrial knowledge for the fields of business and engineering. It seems that respondents of the current survey did not utilize various platforms to develop their soft skills; less than 10 % of the students use MOOC platforms regularly for developing personal skills. Mostly, students with work experience attended courses on analytical or visual software.

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Getting closer to the needs of the labour market: a system measuring soft skills at a Hungarian rural university

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Abstract

A key measure of higher education's success is the extent to which it can provide the labour market with graduates that excel not only in terms of their professional training but also in terms of their soft skills. To that end, the competences of students entering university must first be diagnosed. This paper presents a pilot study of such a measurement system, together with first-year results obtained by a rural university faculty. Equipped with better information about its freshman students, such a university can begin to address the revealed competence deficiencies actively, and, over the course of an entire training cycle, further improve the labour market value of the young people when they come to graduate. Provisional recommendations are made at the end of this paper; however, further data analysis, once undertaken, may lend further support to the practical approach outlined here.

***Keywords*:** competences, competence development, employability, soft skills, student success, training needs diagnosis

1. Introduction

In order to deliver a competitive higher education system in today's knowledge-based world economy, a higher education **action plan for 2016-2020** was introduced by the Hungarian government (1359/2017: Mid-term Policy Strategy of Gear Shift in Higher Education, Action Plan 2016-2020). One of the key pillars of this plan has been to **support the success of students**. The top targets have been to improve the competence level of enrolled students, and to **urge the adoption of programmes aimed at reducing dropout,** e.g. extracurricular courses aiming at language and professional skills improvement (Action plan, 2016-2020). Thus, in line with the trends of a rapidly changing world, higher education institutions face an ever-increasing challenge concerning soft competency development that goes beyond boosting students' employability and labour market value by the development of professional (hard) competencies.

In response to the Mid-term Policy Strategy of Gear Shift in Higher Education, the shift to 'a Higher Gear' in higher education was elaborated in the Hungarian Human Resources Development Operative Program Application (EFOP in Hungarian) titled EFOP 3.4.3-16 'Innovative Solutions for Improving the Quality of and Access to the Higher Educational Training Courses of Budapest Business School'. Within its framework - as a pilot study - the following actions were taken at the Zalaegerszeg campus of Budapest Business School that is a faculty located in Western Hungary:

1. diagnosing the existing competences of first year full-time students and preparing personal competence maps for them;
2. recommending **improvement programmes** to the students based on the diagnosis; and
3. measuring the competences of full-time students directly before graduation.

The programme provides opportunities for the students to improve their competence levels and in addition, it increases their chances of graduation, their labour market prospects and potentially, also their labour market value. It is not without reason that the smallest faculty of the university has been selected to develop and test the measurement system, as the whole range of the first-year students are more easily accessible and could be involved in the study at such a small faculty. As part of the pilot programme, the last query was conducted in 2020-2021.

This study presents both the system approach and the results of competence measurements of students entering university taken in Academic Year 2017/2018. This paper will now present a "best practice" competence measurement framework, one informed by both the researchers' practical experience and known labour market expectations.

Within the framework of a pilot programme, we have developed measurement instruments that focus on the soft skills of students in one higher education institution, with a view to assisting companies' recruitment, selection, competence, and career management activities. Key competences such as creativity, problem solving, stress management etc. have been analysed using these instruments. Following completion of the pilot research, data will be collected for all five years, after which a final measurement system and methodology will be extended to all faculties of the university. A further widening of the research will involve studying the way soft skills are measured by both domestic and international universities.

2. Methods & Materials

2.1. Models and systems forming the basis of a questionnaire focusing on the soft competences

Before establishing the framework system of competence measuring, we studied international and domestic trends and reviewed various models and assessment systems which are not primarily related to the Detailed Project Reports (DPR-based career tracking practices of universities) which focus less on soft skills. In developing the pilot system, we relied on solutions that are in line with the expectations of the labour market and within that, are increasingly focusing on soft skill competencies.

a) In this section, we present the most important of the sources that we used to develop our own measurement system that can be used by our university faculty.

b) The key factors of emotional intelligence that were presented in the book of Stephen R. Covey titled 'The 8th Habit: from Effectiveness to Greatness' (Covey, 1999). These key factors are summarised in Table 1.

TABLE 1. FIVE KEY COMPONENTS OF EMOTIONAL INTELLIGENCE THROUGH THE SEVEN HABITS

Key components of emotional intelligence	Habits
Self-awareness	1. Be proactive
Personal motivation	2. Begin with the end in mind
Self-regulation	3. Put first things first 7. Sharpen the saw
Empathy	5. Seek first to understand, then to be understood
Social and communication skills	4. Think win/win 5. Seek first to understand, then to be understood 6. Synergize

Source: own compilation, based on Covey, 2004, p. 346

c) The soft skills cube of André Moritz (Moritz, n.d.), **containing 6 competence fields**, within which there are 26 key competences. We chose to highlight the following factors from the cube model: empathy, resourcefulness, moderating and visualisation skills, presentation skills, self-promotion skills, knowledge of human nature, persuasion skills, conflict management skills, critical thinking, motivation skills, creativity, decision-making skills, and time management.

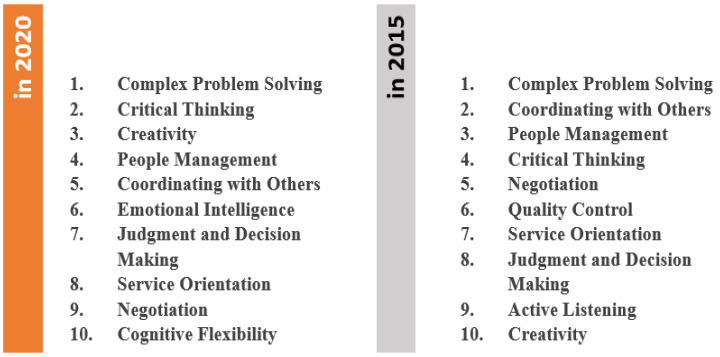
d) Thomas-Kilmann conflict mode questionnaire containing 30 statement pairs (Thomas and Kilmann,1970).

e) The mindset model of Carol S. Dweck published in 2015, in which she suggested that **if we look at ourselves and the world with a growth mindset**, it will motivate us to hunger knowledge and be steadfast, due to which we will be accomplish more in every area of our life. The growth mindset therefore means that despite the difficulties (actually more in a difficult situation) we are determined to grow and develop. (Dweck, 2015, p. 19) This new approach also highlights the role of **creativity, perseverance** and **flexibility**.

f) The 2014 competence system of digital citizenship, which "incorporates the **model of digital communication and use of equipment in harmony with the 21st century**, value creating activity performed on online forums and its impacts, as well as the ethical, legal, mental and physical health status related aspects of the activity performed with digital equipment." (Racsko, 2016, p. 46.).

g) The most important skills published by the World Economic Forum in 2017 can be seen in Figure 1.

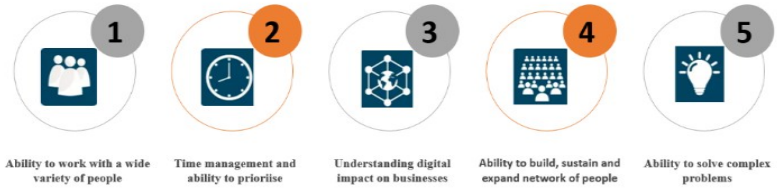
FIGURE 1. TOP 10 SKILLS



Source: World Economic Forum (2017/3)

h) In August 2017, the **Financial Times** published the results of the research in which the labour market participants attempted to identify the key skills expected from those with MBA qualification. Figure 2. presents **the five most important skills**.

FIGURE 2. TOP 5 MOST IMPORTANT SKILLS



Source: Financial Times, 2017

i) The self-assessment tool regarding key competences used by the University of Victoria, which, with the help of a 1-5 scale also examines student competences in more dimensions[1]. The key competence categories here are: personal efficiency, commitment to quality, change management, communication, building fair relationships and teamwork.

j) The survey of Erasmus+ regarding competences, which provides a starting-point to the identification of digital skills[2].

k) The questionnaire of OECD regarding global competence also based on self-assessment provided a good point of reference in issues concerning social sensitivity and global thinking (OECD, 2016).

l) The most required labour market competences that the university offers in the course of the entire training cycle were collected from job search sites such as https://jobline.hu/, https://www.jobinfo.hu/ and https://www.profession.hu/ to see what is relevant and needed on the employer's side.

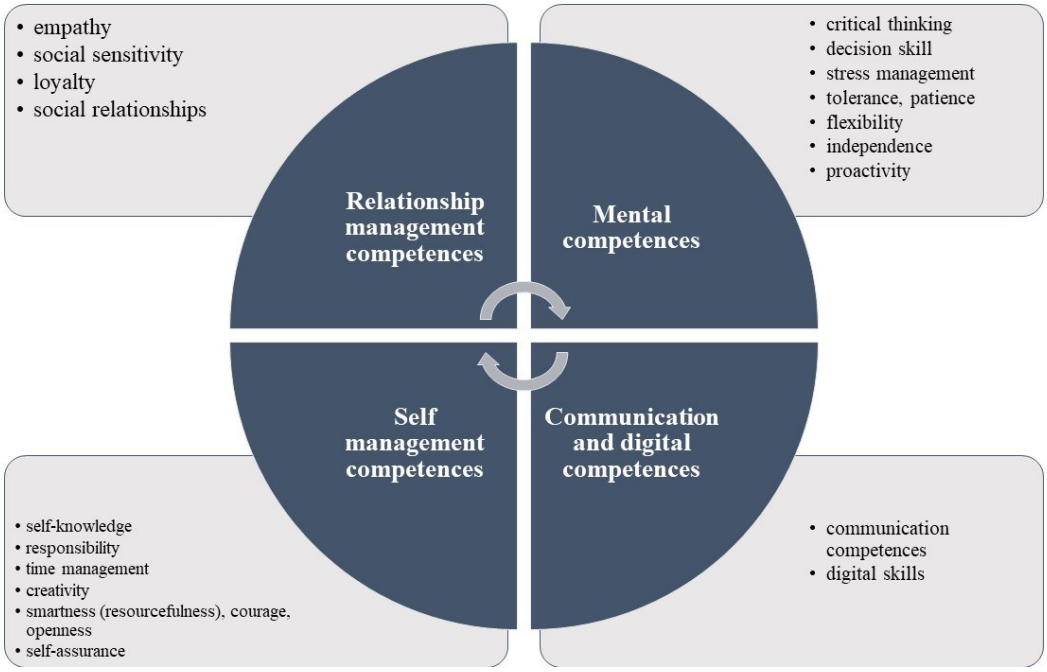
[1] Please refer to https://www.uvic.ca/hr/assets/docs/od/core_self%20assesment.pdf for the questionnaire, and for further categorisation to https://www.uvic.ca/coopandcareer/career/build-skills/core/index.php on the website of the university.

[2] Please refer to https://tinyurl.com/y8cx9d9n for the Erasmus+ questionnaire.

2.2. Focal areas of the competence measurement system

We established the competence measurement system after having revised the above detailed studies in which we focused on the **soft skill factors.** These include all skills, which, in addition to the professional knowledge (hard skills) fundamentally specify the adapting, motivation, manageability and creativity characteristics of the employee. We indicated **four focal areas** for the **pilot competence measurement**, such as relationship management, mental, self-management as well as communication and digital competences.

FIGURE 3. FOCAL AREAS OF MEASURING SOFT SKILLS COMPETENCES



Source: own compilation

2.3. Statistical methods

The questionnaire is completed by first-year students at the beginning of each academic year at an online interface (kérdőívem.hu). The first survey was conducted in September 2017, when all the first-year students at our Faculty (102 people) completed the questionnaire. Due to the very small number of students and the strict deadlines dictated by the project, we did not have the opportunity to test the questionnaire: we are practically still at the beginning of the testing phase. The constraints of the project and the need to compare the results with later results do not allow us to modify the original questions of the questionnaire, so we can correct the questionnaire only after the project is closed. The questions (statements to be assessed on a scale of 1-6) were compiled with the help of the books and studies listed above in this section.

It is important to note that during the pilot period the sample size could not exceed 100, because the target value of the project application was set at 100. Furthermore, the maximum number of first-year students entering university at our rural faculty is just around 100. Due to the small size of the sample, the number of statistical methods that can be used is correspondingly limited, however, the sample was excellent for testing.

We did not find any studies looking at the soft skills of higher education students, so we do not have the opportunity to reflect on existing international or even specifically Hungarian experiences in our research. In this article, we can only present the results and connections we discovered in the case of the first-year students of our faculty. During the compilation of the questions and the development of the analysis methodology, it was a limitation that we did not find any description or existing questionnaire specifically related to the assessment of soft skills, and the project is primarily about analysing students' individual competencies (this specifically means soft skills). This means that a short description was prepared for each student individually, based on their answers to the questions of the questionnaire. The general analysis and assessment of the questionnaire is an additional benefit of the project implementation. Based on the 21st century expectations and labour market trends described above, we finally created a questionnaire of 147 variables, 30 of which examine the student's demographic background and progress to date, and 117 statements relate to soft skills. We hope that as the number of items increases getting closer to the end of the project, we will get more accurate and generalizable results. This study describes our experiments and the results of the analysis for one single group of students started their studies in 2017.

In addition to this, our main aim was to identify the impacts of the different factors that have an influence on first year students' competence levels. We found that these influencing factors are: the impacts of previous studies, family background and certain character traits;

The questionnaire has two parts. There are questions regarding the background variables in the first part and questions examining the competences in the second part.

The background variables can be categorised in five groups:

- basic demographic data;
- questions regarding previous studies, existing professional competences;
- questions regarding family background, parents;
- questions regarding activity, attitude in community.

We provided a total of 100 items for the examination of competences, which the students had to assess in a scale of 1-6. The scale used in the questionnaire has the following characteristics:

- we used a balanced scale;
- we established an even scale to avoid there being a middle value;
- compelling scale: we did not provide 'I do not know' or 'I do not remember' options.

In the interest of achieving the research targets we used one-, two- and multiple-variable statistical methods.

2.3.1. One-variable statistics

Among our tools used for the presentation of the changes in the background variables there is only the calculation of the distributions and mode, as the majority of these variables are not of metric measurement level (e.g. residence, qualification, post). A smaller number of variables are metric: here, in addition to the distribution and mode it is also possible to calculate averages and dispersion indicators.

In the course of competence examination, we calculated competence indexes in order to clean the analysis and make it clear: the four examined competence sets each include different numbers of partial competences and items.

In the interest of balancing the examination we worked with average scores within the different categories, which actually means the following averages:

- 19 partial indexes for the top competence areas (empathy, social sensitivity, loyalty);
- 4 complex indexes for the competence factors: average of the competence areas belonging to the different competence sets (relationship management, mental competence, self-management, communication and digital competences);
- 1 summary index: the average of the four competence sets.

The value of the partial indexes thus calculated can be between 1 and 6 points. Based on the 19 partial indexes and the 4 complex indexes the following factors can be examined:

- What points were scored by the majority of the students within the different categories?
- What average score is typical of the first-year students?
- Do the majority of the students have over or under average skills?

The answer to these questions requires mode, average and asymmetry calculations in the different areas. In the analyses, the given year is also worth examining with quantiles, with the partial indexes taken into account. Based on the terciles, the typical point values scored by the lowest third of the students showing a very weak performance, the points scored by the 'average' third and the top third of the students can be established providing a more overall picture of the attitude and skills of the examined year.

2.3.2. Two- and multiple-variable statistics

To test the statements of the questionnaire and to reduce the present variable set of relatively large number, we performed exploratory factor analysis. In addition to this, the purpose of the analysis is also to establish the competences with the biggest influence on the final, composite competence index. To establish it, we also used multi-variable regression analysis.

Factor analysis is a method, the essence of which is to produce factors from the original variable structure, which do not correlate with each other. The data are standardised as the first step to allow factor extraction based on the principle of the unweighted least squares. The advantage of this method is that the distribution of the variables is unimportant in this case. (Sajtos-Mitev, 2007).

To meet the KMO conditions and achieve 60% explanatory force, the low communality variables were eliminated in the first step, after which the low factor weight variables were discarded. We used the Varimax method in the course of factor rotation, thereby maximising the variance explained by the factors. The advantage of this method is the better separation of the factors during the rotation, by which the interpretation of the factors becomes easier (Sajtos-Mitev, 2007).

While categorising the students it must also be considered that if in the case of any partial index a student has 'average' skills in total, however, his/her answers given to the different items are more scattered. This problem can be managed with cluster analysis, where grouping is performed on the basis of several variables, by which a more realistic picture can be received

about the different student groups. The procedure is performed with the C-centroid method. With the help of this relations, connection or even contradictions may be revealed between the different questions.

Further purpose of the analysis is to reveal the social factors, which may influence the students' competences, i.e. it must be examined whether there is any relation between the background variables and the different competences. We performed $\chi 2$ tests with the help of cross tables in this interest, where the independent variables were given by the background factors and the dependent variables by the competence partial indexes. If we find significant connections, we calculate the strength of association appropriate for the scale of the variables. In addition, the analyses also include variance analysis to compare the average competence scores of student groups of different background and characteristics. We calculate with 95% reliability level in the course of analysing the connections between variables.

3. Results and discussion

The results gained from the answers given by the full-time students entering university and enrolled in autumn of the 2017/18 academic year are summarised in this section.

3.1. Key characteristics of the students involved in the survey.

The questionnaire was completed by 102 full-time first year student, 60 females and 42 males. The majority of those filling in the questionnaire live in towns, among them nearly **50% in the county seat town**, 12% in other towns in the region or county that are not a county seat, one person resides in the capital, and **40%** of those filling in the questionnaire **live in settlements or villages**. Only 25.5% of the students involved in the questionnaire live in boarding. 31% of the first-year students filling in the questionnaire study in higher educational vocational training and 69% are in training leading to university degree. 11 persons of the latter group attend the business informatics faculty. **19 persons (18.6%)** of the 102 interviewed students **participate in the dual-training system** (the so-called dual training is a special form of training in higher education. Our University is part of this system where the student has a job at a company that has a contract with the university. In this way, the student receives academic and corporate training in parallel).

The averages were between the value of 4 - 4.5 in every examined competence group, which is a clear indication of the need for competency development or improvement. The interviewed students mostly found their following competences the **weakest**, requiring most development:

- Relationship management: work in team, social relationships, contact building, corporate and management skills.
- Mental competences: stress and conflict management, stubbornness, self-control, problem solving, analysing skill, patience, calmness, resoluteness, punctuality, memory, solid power of conception.
- Self-management competences: resourcefulness, forgetfulness, self-assurance, scheduling, sense of time, time management, self-assessment, creativity, diligence
- Communication and digital competences: communication, command of language, public performance, written communication, composition, English language, information technology and digital skills.

3.2. Impact of the student background on the competences

In the case of students who started their university studies in 2017, we found differences originating from some socialisation and demographic phenomena, factors in four particular competency areas. These differences appear in the area of proactivity, social sensitivity, empathy and flexibility.

3.2.1. Proactivity

Difference in the area of proactivity (statements of question No. 34) were shown in two background variables: on the one hand, the women typically described themselves with higher scores in answer to the questions regarding mental competence proactivity. There was even more significant difference among the students in connection with a question regarding the future (In what job can you envisage yourself?): the relatively realistic self-assessment of the students is indicated by the fact that those preferring to work in the background have lower level if initiative and reaction skills, than those more willing to work in the front line.

3.2.2. Social sensitivity

Between the average of the points scored to statements regarding social sensitivity within the relationship management competence (statements of question No. 29), there are significant differences based on two demographic factors: type of residence and the highest education of the mother. On the basis of the averages, it can be established that the social sensitivity of our only one student from the capital is significantly higher than that of the rest of the students, followed by the students coming from other towns, settlements, villages, and finally from the county seat (mostly from Zalaegerszeg) with the lowest sensitivity level.

This conclusion definitively deserves attention as nearly 50 per cent of our students are from Zalaegerszeg. In the course of the training and development it would be worth paying attention to this area to be improved, too. It would not be rejectable to make sure that these students participate in some sensitising training. It is interesting to note that the highest educational achievement of the mother is also influential, insofar as that the children of less educated mothers have been shown to be more sensitive than those whose mother has higher level of education.

Social sensitivity - based on the calculations - is also influenced by the pass mark of the students. As opposed to our previous assumptions higher mark does not automatically mean a higher level of social sensitivity. Although the students enrolled with the highest marks were proven most tolerant, they were followed by students with average and lower performance.

There have been further differences in the social sensitivity based on the training the student presently participates in: it is interesting that the highest points were scored by students in the higher educational vocational training in the business administration and management faculty, and the finance and accounting faculty students in training leading to university degree. It is less surprising, though, that the least sensitive students study business informatics.

3.2.3. Empathy

We found significant differences in three areas of empathy (statements of question No. 28). According to this the pass mark and the sports activity affects empathy and the degree of empathy also differs according to the envisaged work area of the person in the future. Data did

not cause surprise in terms of the work area to be chosen: the more empathic students and those more sensitive to others would like to work with people in the front line.

It is an interesting result that based on the regularity of the sports activity and the deepness of the commitment to sports there are significant differences among the students. Professional sportspersons and those who regularly go in for sports are more empathic, pay more attention to their fellow beings than those who do not perform such activity. This confirms the ideas concerning sports related personality development. As before, the results based on pass mark are not wholly unequivocal, and we cannot specify a 'rule of thumb' for this connection: a higher level of empathy is not the result of either an outstanding or a low pass mark. However, it can be observed that the students with very low and outstanding pass marks are the most empathic ones.

3.2.4. Flexibility, independence

Within mental competence, in the statements regarding flexibility and independence (question No. 33), we can observe that the extent to which a student is active in the community and/or undertakes study tasks in addition to the mandatory ones has a large impact on these characteristics. The students often participating in academic competitions and willing to perform community tasks assessed themselves as more flexible, independent than the more passive students. In connection with the work area to be chosen, the "more resourceful" students would – by nature – be more willing to work in the front line, where independent decision-making and adaptability are important.

3.3. Latent structure and student groups

The questions on digital skills were treated separately from the soft skills, and the result of the reliability calculation calculated for the remaining 97 variables is as follows (Table 2.):

TABLE 2. RESULTS OF RELIABILITY STATISTICS

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
.930	.941	97

Source: own calculations

Based on Cronbach's alpha value, the questions in the questionnaire have an internal consistency, but based on their high value, the questionnaire contains unnecessary statements, so their number needs to be reduced later.

In the case of the questions including 97 items, we managed to reduce the number of variables to achieve explanatory force higher than 60%, while the value of the KMO indicator was 0.756, and the result of the Bartlett test also shows a significant relationship between the variables.

TABLE 3. RESULTS OF KMO AND BARTLETT'S TEST

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
Bartlett's Test of Sphericity	Approx. Chi-Square	1805.308
	Df	528
	Sig.	.000

Source: own calculations

The questions "remaining" in the course of the procedure and the factors defined by us on this basis were the following: Flexibility and adaptability, Firmness, consistency, Self-confidence, resoluteness, Purposiveness, consistency, Stress management, tolerance, and Time management, punctuality.

With the help of the established factors, we examined the student groups, which could be differentiated based on the seven new competence categories, for which we used cluster analysis. We used C-centroid method in the course of the procedure and requested the establishment of three groups. Table 4. and 5. present the results:

TABLE 4: CLUSTER CENTRES IN THE DIFFERENT COMPETENCE CATEGORIES

Final Cluster Centres			
	Cluster		
	1 (19 persons)	2 (44 persons)	3 (39 persons)
Resoluteness	4.40	5.30	4.50
Flexibility	3.39	5.15	4.69
Self-confidence	3.65	5.07	4.01
Purposiveness	4.20	4.70	4.20
Stress management	4.21	4.49	3.49
Punctuality	4.50	4.80	4.40
+ Digital	4.24	4.59	4.09

Source: own calculation, based on the 2017 competence survey

We can see from the data that the method created three groups relatively proportionally. Let us have a look at the characteristics of the different clusters (see Table 4.).

Based on the cross-tables prepared on the basis of clusters and demographic data the different groups can be described by the following background characteristics:

The '**Indecisive**': mostly male from settlements or villages, from grammar school in general, attending training leading to university degree, finance and accounting faculty.

The '**Courageous**': mostly female from technical college attending business administration and management faculty (half of them within the framework of higher educational vocational training, and half of them attend training leading to university degree).

The '**Sensitive**': mostly female with low pass mark, mostly from vocational high school, students attending training leading to university degree (half of them are at the finance and accounting faculty and half of them at the business administration and management faculty).

TABLE 5. PERSONALITY TYPES OF THE DIFFERENT STUDENT GROUPS

1. cluster	2. cluster	3. cluster
• less resolute • less flexible • moderately target oriented • less stress resistant • relatively punctual and precise • with moderate digital knowledge	• very resolute • largely flexible • with high self confidence • purposeful • stress resistant • most punctual • with relatively deep digital knowledge	• relatively low resoluteness • moderate flexibility • moderate self confidence • lower level of purposefulness • not stress resistant • least precise • lower digital knowledge
The Indecisive (Introverted, 'phlegmatic" type)	**The Courageous (More extroverted, stronger self-assessment, sanguine/irascible type**	**The Sensitive (gloomy type)**

Source: own calculation, based on the 2017 competence survey

4. Conclusion

The changing environment presents new challenges to both the educational institutions and the labour market participants in a modernised economy; as a result, it was not by chance that the **requirement of competence measuring in higher education** became the focal point of the implementation of the Hungarian government's "1359/2017 Mid-term Policy Strategy of Gear Shift in Higher Education, Action Plan 2016-2020" strategy, which could provide a good basis for the following:

- knowledge of the competence set of incoming students,
- definition of the competences to be developed and specification of the directions of individual development, recommendation of developing courses,
- elaboration of innovative training methods and solutions aimed at quality improvement,
- follow-up of the students, as the survey of the output competences of those leaving education can be compared to the results of the input measuring,
- establishment of career cooperation between universities and labour market participants, within the framework of which the student can be recommended with more detailed background information,
- strengthening the labour market value of the students.

We tried to adapt the pilot competence measurement system primarily to the expectations of the labour market, but we also studied several theoretical models and survey methods to design a soft skill-cantered system of competence measurement. We indicated four focal areas for the pilot competence measurement: relationship management, mental, self-management, communication and digital competences. We presented the results of the first measuring year in this present study.

We plan to present the experiences of all the four years in further publications, as well as ultimately, a fine-tuned final version of the survey and its attendant methodology. This measurement system can be a key link between the university and the labour market actors, and it can support the value-creating activities of both parties.

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Cultural Intelligence (CQ) and Cultural Exposure Through Mobility Programs: An Exploratory Study

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Abstract

As a result of globalisation, a significant proportion of companies operate across borders and in many cases, work communities are also organised from workers with diverse cultural backgrounds. Due to the intensive flow of services, goods and labour, and cultural differences, conflicts can arise, and these tensions can negatively affect people and organisations' well-being and performance. Nowadays, cultural knowledge and intercultural competencies are more appreciated and highly requested by most employers.

The younger generations (Generation Z and Millennials) were born into cultural diversity and have broad mobility possibilities to deepen their intercultural competencies, but the older generations in Hungary had more limited mobility opportunities. Cultural intelligence (CQ), which is the ability to adapt to different intercultural interactions effectively, can be developed effortlessly by spending extended periods abroad. High CQ results in better interpersonal relationships and work performance in culturally diverse environments. Cultural intelligence is a widely researched field within the managerial studies, but most studies focus on international students, young business students and sojourners. Thus, our primary goal was to explore not just the adolescents and young professionals, but the middle-aged and seniors as well.

This quantitative study aimed to explore Hungarian generations' cultural intelligence and find possible connections between cultural intelligence and overseas exposure/mobility program participation. To answer our research questions, we analysed the total and dimensional CQ scores of 329 Hungarian respondents and compared the results based on participation in different mobility programs, length and frequency of cultural exposure.

***Keywords*:** cultural competences, cultural exposure, cultural intelligence, CQ, Erasmus, mobility, generations

1. Introduction

Managing cross-border work teams, working effectively in a multicultural environment, or adjusting to a foreign culture while delivering the same work performance is a challenging life situation. Due to the effects of globalisation, more and more international companies employ culturally diverse teams, and due to technological advancements, these groups often no longer even work physically in the same space, making it even more challenging to cooperate (Distefano and Maznevski, 2000; Han and Beyerlein, 2016). Different habits, value systems, or even rules for expressing emotions can make cooperation significantly more difficult and cause many conflicts (Ayoko and Konrad, 2012). However, cultural differences between people can also lead to innovation and creativity based on broad perspectives and problem-solving solutions (Ting-Toomey, 1999). For this reason, it is essential for companies seeking leadership in the global market to pay significant attention to the intercultural skills of prospective leaders in the selection process (Kanter, 1995; Morley et al., 2010). As Gupta defined "cultural competency and cultural adaptability are foundational skills vital to the success of anyone working in a cross-cultural environment, domestically or internationally… (and) all leaders today must possess these skills due to the tremendous diversity found in many working environments" (Gupta, 2019 p.147, cited by Amstrong, 2020). These competencies help leaders function effectively across cultures, collaborate and communicate with people with different cultural backgrounds, and most importantly, think and act appropriately (Leung, Ang and Tan, 2014). As a result, the necessity of Generation Z and Millennials' intercultural skills is unquestionable. Understanding culture and global perspectives are the critical element of their success (Reiche et al., 2017).

Educational institutions encourage students to participate in mobility programs in order to prepare them to culturally complex working environments and develop intercultural competences (Niehaus and Wegener, 2018). These programs do not cause "brain drain" within Europe (Gérard and Senna, 2017; Holicza, 2018); they typically focus on shorter periods (2-6 months) and after the program, the participants come back to their home county. These individuals are called sojourners, who live temporarily abroad and try to achieve satisfactory goals in their academic life or career (Cox, 1988). Mobility programs can be offered by educational institutions (e.g. Erasmus+ semester abroad or internships), volunteering organisations, cultural exchange program sponsors (e.g. US J-1 visa programs such as Camp Counselor, Work and Travel, Traineeship), private cultural exchange agencies (e.g. Work Experience programs or short-term language courses combined with employment) and language schools as well. Based on previous research, these programs have a positive impact on cultural sensitivity and intercultural competences (Medina-Lopez-Portillo, 2004) and willingness to interact with people with a different cultural background (Gaia, 2015); offer "life-changing" transformational experiences (Roman et al., 2018; Nguyen Luu, 2019) and significant development of intercultural effectiveness (Amstrong, 2020). Extended periods abroad (longer than a holiday) help to develop Cultural Intelligence (CQ) as well, which is the ability to successfully adapt to different cultural interactions (Earley and Ang, 2003; Ang and Van Dyne, 2008; Crown, 2008). Cultural exposures can moderate the effect of CQ on cultural adjustment (Lee and Sukoco, 2010). Previous international work experiences also impact the CQ (Moon, Choi and Jung, 2012; Lee and Kartika, 2014), and cross-cultural adaptability (Huff, Song and Gresch, 2014) positively. Cultural intelligence is a widely researched field in managerial studies and intercultural psychology. Most of the studies in Hungary focus on international students (Nguyen Luu, 2019), university students (Balogh, 2011; Balogh, Gaál

and Szabó, 2011) and university communities, included senior academic staff (Kővári, Pásztor and Raffay, 2021).

Nowadays, students and young professionals can choose from many mobility opportunities to gain work experience, study abroad or strengthen their foreign language skills. Despite this, even twenty years ago, mobility opportunities were limited, which affected the older generation's cultural exposure. Are the representatives of X Generation and Baby boomers less culturally competent due to their historical background? During the era of socialism, Hungarians have not been allowed to travel easily. Studying, working or living abroad was a privilege. In comparison, nowadays, due to the European Union, every individual has the right to work, move to and live in another country. Do free movement, and the increase of cultural exchange and mobility programs help the young generations to expand their cultural competences? This study aims to explore the cultural intelligence of each generation and prove that mobility may help individuals become more culturally competent.

2. The world we live in - through the eyes of individual generations

The growing number of people born after World War II created the Baby boomer generation born between 1946 and 1964. This age group is accustomed to being surrounded by stable conditions in society and in their workplace, so they are the ones who, at the turn of the century, found it hardest to find their place in the new and increasingly digitalised world. This generation felt these significant changes as a loss of security and predictability. With the emergence of a more global world economy (and the expansion of countries' borders), the necessity to learn and to continually regenerate has gained ground, so this age group experienced the greatest disappointment when they had to face recent changes in the labour market by being quickly replaced by others (Wallace, 2006; Tari, 2010).

People born between 1965 and 1975 were named the Generation X. They were born into an intensely competitive world and discovered, through their parents' example, that job acquiring and retaining is a challenging process in which only the development of their abilities and values can provide relative security (Wallace, 2006; Levickaité, 2010; Tari, 2010). This generation had many new opportunities, but for this reason, has also embraced constant anxiety regarding their performance.

Generation Y or Millennials, are born between 1980 and 1995 into a digitalised world (Cheung, Harker and Harker, 2008). Its members feel at ease with computing and moving freely in the internet world. They are no longer afraid of increased workplace competition, but they have to compete for jobs, and they see it as a venue for their own goals. Workplace security, as known from their grandparents' and parents' stories, does not mean much to them, and they choose opportunities instead of the desire for stability (Tari, 2010; Levickaité, 2010).

Generation Z, also known as Zoomers (born between 1995 and 2010), is the youngest on the labour market. It is the first age cohort with widespread access to smartphones from an early age. They are called digital natives, but it does not mean that they are digitally literate as well. Compared to the previous generation, in some countries, Generation Z seems to be well-behaved, risk-averse and better in gratification delaying, but more prone to mental health problems (Protczko, 2020; Chandler-Wilde, 2020).

The differences between the generations are significant, and technological progress plays a major role. The older generation's experiences are already unimaginable for the younger

generations (e.g., the drastic change in dating and forming relationships). This phenomenon is called the generation gap in the literature, which faithfully reflects the differences between generations (Ságvári, 2008). The Y and Z generations no longer have the "old world" value system; the "anything you want, everything is available to you" is the new norm. At the same time, these new world's participants are experiencing a paralysing fear.

3. Cultural intelligence

Nowadays, preparing the younger generation for the international labour market, working effectively in a multicultural environment, and often digitally connected (virtual) workgroups, the development of students' cultural skills has become essential. While emotional intelligence (EQ) helps us to recognise, understand, and influence our own and others' emotions, cultural intelligence (CQ) goes one step further by placing every situation in a cultural context and thus aiding interpretation (Pásztor, 2020). Our culture, into which we were born, becomes a part of our lives almost "unnoticed" through the process of socialisation. This process is called enculturation (Berry, Kim and Boski, 1988). We do not question our habits, and our value systems (for example, what is good-bad, moral-immoral, beautiful-ugly) which automatically shape our point of view according to Hofstede, who hypothesised that culture could be perceived as the primary "programming" of the mind. Our cultural patterns can be seen as a kind of scheme of action, as they assign a specific emotional charge and action to our responses to certain environmental stimuli. When we have to thrive effectively in a culture different from ours, our cultural differences become accentuated and cause innumerable difficulties in both communication and the process of integration (Hofstede, Hofstede and Minkov, 2005). Learning, accepting, and integrating another culture is called acculturation. Several indicators have measured the success of this process, one of the best known is Cultural Intelligence (CQ), which first appeared in the literature on intercultural psychology, management and communication. The essence of becoming culturally intelligent is for the individual to be prepared and flexible to learn about cultures and gain knowledge from ongoing interactions (Thomas and Inkson, 2003). In contrast, simple theoretical, cultural knowledge can lead to generalisation and stereotyping. The transformation of thinking is a holistic approach because it includes knowledge and abilities, intention, and behaviour. Accordingly, CQ is also an individual's ability to effectively recognise, understand, and interpret different cultural situations (Karma and Vedina, 2009). Based on Early and Ang (2003), CQ is composed of four dimensions.

The Motivation dimension shows an individual's level of interest and confidence in how well they think they would perform in intercultural situations. Motivational CQ shows the ability to direct attention and energy to learn/experience something new from cultural differences and function appropriately in intercultural situations. Those with a high motivational CQ have an intrinsic, natural interest in other cultures, accompanied by intercultural self-confidence (Bandura, 2002). These individuals are not only interested but also confident that they will function effectively in the new culture.

The Cognitive dimension indicates the extent to which an individual knows cultural differences. Cognitive CQ shows the level of knowledge we have about the norms, values, legal and social systems, practices of cultures other than our own, either through learning or personal cultural experiences. Those with high cognitive CQ find it easier to understand any cultures' similarities and differences (Brislin, Worthley and MacNab, 2006). Its subdimensions: general cultural

knowledge and specific cultural knowledge (Rockstuhl et al., 2011). General cultural knowledge covers a macro-level body of knowledge that promotes an understanding of how cultures work and the existence of cultural norms. Specific knowledge helps the individual to identify the foundations of intercultural differences (Hofstede, 2001).

The Metacognitive dimension shows the level of awareness and planning ability. Metacognitive CQ helps to apply existing cultural knowledge. It includes planning, control, and the ability to overwrite our cultural knowledge when we interact with a new cultural medium. Individuals with high motivational CQs consciously pay attention to others' cultural preferences before and during interactions and seek to adjust their way of thinking accordingly (Brislin, Worthley and MacNab, 2006).

The Behavioral dimension captures practical adaptability to intercultural situations. Individuals with high behavioural CQ can adapt their verbal communication (speech tempo, intonation) to the situation and can apply nonverbal signals appropriately. Behavioural CQ shows how well an individual can communicate with an appropriate set of verbal and nonverbal tools in intercultural situations. Accordingly, cultural knowledge and the intention to apply it alone are not enough; the behavioural dimension must also be associated with it in order to succeed. Behaviour is successful if we can respond to culture-specific situations with appropriate verbal and nonverbal tools. Those with a high behavioural CQ can adapt their verbal communication to the situation (change the tempo of speech, intonation) and use their nonverbal cues appropriately (use gestures and facial expressions appropriate to the situation and culture). Behavioural CQ is one of the most critical elements, as verbal and non-verbal behaviour is one of the best observed in social collaboration (Ang and Van Dyne, 2008).

Motivation is the basis that leads to the acquisition of knowledge and then its organisation, and later manifested as appropriate behaviour in intercultural situations. The cognitive dimension is knowledge itself, the metacognitive dimension is the strategic use (planning) of this knowledge, and then the behaviour dimension is the action itself. CQ dimensions do not necessarily correlate with each other, but through their combination, we can get an excellent picture of the individual's level of cultural intelligence, which is otherwise excellent as a unidimensional construct. Overall, the development of each dimension can contribute to an increase in an individual's CQ level. As one of the essential elements of cultural intelligence, motivation impacts employment, workplace adjustment and job performance (Chen et al., 2010). CQ also has an impact on the integration opportunities of foreign workers into the host society. The cultural intelligence of people living in the host country shows how they can accept workers from foreign countries (Dagher, 2010).

CQ levels are higher in those who have been exposed to more foreign experience. It is most significantly developed by more ongoing foreign activities (such as studying or working), while holidays or shorter trips abroad do not significantly impact it. Researchers have observed that staying abroad increases cultural intelligence (CQ), but the number of trips abroad is more important than the length of stay (Takeuchi, Tesluk and Marinova, 2006; Kim, Kirkman and Chen, 2008). Crowne (2008) emphasised that superficial knowledge can be easily expanded by reading or travelling, but a deeper understanding of cultures requires a closer examination of values and norms. He found that CQ is higher in those who have travelled abroad and can be improved primarily by studying and working abroad, i.e., vacation or shorter travel, for example, does not have such a strong effect on cultural intelligence. Cultural intelligence can

be related to global leadership skills and how well a leader can work effectively and efficiently in a multicultural environment (Alon and Higgins, 2005). The interaction of CQ and emotional intelligence (EQ) affects the so-called development of a global mindset and plays a role in developing a sense of global citizenship (Lovvron and Chen, 2011). Several studies have found that multicultural experiences significantly influence certain aspects of cultural intelligence (Tay, Westman and Chia, 2008; Lee and Sukoco, 2007). Stereotyping, leadership problems, and conflicts perceived in diverse cultural groups can be traced back to low cultural intelligence levels (Alon and Higgins, 2005); hence, CQ development is also a priority from a management perspective.

Regarding CQ, the following research questions have been formulated:

1. What is the level of cultural intelligence in Hungary?
2. Is there any difference between the cultural intelligence of generations?
3. Is there any difference between the cultural intelligence of males and females?

4. International mobility and the "Erasmus phenomenon"

For members of the Y and Z generation, crossing a border is already a part of everyday life, it does not have the same sensation as for the generations before them, since they have virtualised the world several times, and global information is continuously streaming from the internet. They use foreign languages confidently and are not afraid of cultural differences, as through the media (including social media) they have access to others' everyday lives and receive information about other countries. Young people are more courageous, tolerant and understand the specialities resulting from the internet's penetration (Yi et al., 2015). They need new experiences and novelty, and their experiences are advertised on social media platforms (Pendergast, 2010). Their common feature is to enjoy life, escape from constraints, the "boring daily robot" and more and more they want to experience the world. Because their purpose is cognition, therefore, their need for mobility is essential. A visited destination becomes one of the personality building symbols, as they can "check it off from their bucket list" and it can influence their social judgment as well. Travel is also a community experience for them as they can easily handle relationships abroad through technology development and community media usage.

Europe is the most diverse continent of the world if we take cultural, economic or geographical differences (Lazányi, Holicza and Baimakova, 2017). However, with their language skills and easy-to-understand information, young people are more likely to visit the EU Member States to extend their horizons. The Erasmus program launched in 1987 has given an enormous impetus to the target group's mobility, with more than 3 million students in higher education being awarded scholarships to support travel and learning abroad. The purpose of the Erasmus program is to nurture the intercultural skills of participating young people (understanding different cultures) and thereby strengthen the sense of community involvement in the EU. The program has been structured to encourage participants to return to their home country. It does not cause "brain-drain" and does not animate well-trained young workers to migrate within the continent (Feyen and Krzaklewska, 2014).

Through the Erasmus program, the feeling of travel and freedom, which is one of the Y generation's basic needs, has become a combination of studies and socialising (Holicza and Fehér-Polgár, 2017). For the majority, this is the longest time spent abroad when they leave the parental home or their usual comfort zone (Málovics, Prónay and Kincsesné, 2015). During the

semester, they work at their own pace, adapt to the host environment and culture, develop their lifestyle, cultural and communication skills, perform job tasks or subjects and projects in English or the host country's language, gain international experience, build friendships and useful links between nations. (EC, 2014; Van Mol, 2014). Erasmus + regulations were adopted at the end of 2013 and set a budget of almost € 17.7 billion. This new program has already combined existing European education, training, culture and sports programs (Erasmus Mundus, Tempus, Alpha, Edulink). Within the Erasmus + program framework, more than 4 million Europeans can participate in mobility opportunities through transnational partnerships (education, training, student organisations) that connect the worlds of education and internships (EC, 2016). The EU's budget for 2021 through 2027 is € 26 billion (EC, 2020).

In terms of internships and work experience, the Erasmus + program enhances the value of young people in the labour market, while allowing them to gain work experience in an international environment, get to know another culture, develop their language skills, and acquire new skills. The preparation itself is an integral part of the process of cultural and linguistic preparation in practice (via Erasmus + Online Linguistic Support) (EC, 2016). According to Parey and Waldinger (2008), young people in the Erasmus program increase subsequent employment abroad by 15–20%. This result shows a strong interaction between international labour market mobility and the student mobility that preceded it. Qualitative evidence suggests that, in addition to career plans, so-called soft factors (such as an individual's attractiveness to foreign cultures) are both important drivers of employment abroad and are likely to have the same motivations behind study abroad plans.

Other mobility programs, such as the American J-1 Cultural Exchange Programs allows full-time students to gain professional experience at an American company (typically in the hospitality sector) during the summer break (Bowman and Bair, 2017). This program has strict entry requirements, and just a few agencies have the legal background in Hungary to recruit students to the program. Adolescents and young adults can spend a semester (or more) outside the EU (with Campus Mundi scholarship or another grant), can apply to language schools around the world (which comes with strict visa restrictions as well), or sign up for volunteering. Erasmus+ semesters help students study at another European university, while Erasmus+ internship program offers 2-12 months long professional experience placements (Holicza and Pásztor, 2016). Within the EU, due to the right to free movement and employment, thousands choose to work abroad and apply for seasonal or permanent positions.

Regarding the mobility programs, the following research questions have been formulated:

1. Is there any connection between CQ and the cumulative time spent abroad?
2. Is there any connection between CQ and participation in mobility programs?
3. Is there any connection between the CQ and the frequency of participating in mobility programs?

5. Methodology

To reach the most comprehensive age range within the shortest possible time, an online questionnaire in Hungarian was shared on Facebook. This nonprobability sampling technique is called virtual snowball sampling (Baltar and Brunet, 2012). Due to the lack of financial means and the research's exploratory focus, the online survey was not promoted as a Facebook Ad.

The questionnaire contained 95 items grouped into four main blocks. The respondents' age, gender, nationality, educational and employment background were asked in details in *the first*, *demographic block*, which contained ten questions. The *second block* measured the level of cultural intelligence with the Cultural Intelligence Scale (CQS). The scale contained 20 items (Ang et al., 2007) and was adapted into Hungarian in 2011 (Balogh, 2011). Respondents had to decide regarding each statement whether it was applicable for them, or not. A seven-point agreement scale was used, where 1 = totally disagree, 7 = totally agree. The internal consistency (Cronbach's alfa) of CQS was .909. The behavioural dimension (α = .879) contained five statements (e.g., "I change my verbal behaviour (e.g., accent, tone) when a cross-cultural interaction requires it."), the cognitive dimension (α = .879) contained six items (e.g., " I know the rules for expressing nonverbal behaviours in other cultures."). Metacognitive dimensions (α = .816) contained four statements (e.g., " I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds."). The motivation dimension (α = .853) contained five items (e.g., " I am sure I can deal with the stresses of adjusting to a culture that is new to me."). The *third block* included fifteen questions regarding the respondents' cultural exposures and their frequencies. Seven dichotomous questions examined the type of mobility programs (Erasmus+ semester, Erasmus+ internship, J-1 American Cultural Exchange, Volunteering, Summer job, Language school, Non-EU semester). Respondents were asked about participation (e.g. "Have you ever participated in Erasmus+ Internship program?", "Have you ever studied at a language school abroad?"). They were asked how long they have been abroad altogether in their lives and the purpose of these travels (holiday, business, studies, employment). The *fourth block* contained 50 items based on Malota and Berács's research on ethnocentrism (2007). This part examined the following latent factors: patriotism, superiority, nationalism, cosmopolitan identity, national identity, alienation and additional variables about cultural attitudes. Due to the space limitations, the results related to this part will not be analysed in this paper.

423 respondents started to fill in the questionnaire, but 15% (n = 64) dropped out before its end because they did not answer the fourth block's questions. The total number of filled in questionnaires was 359 (84.8%) before data cleaning. From these 359 answers, careless responses (2.5%, n = 9) were excluded due to the answers' pattern, which painted straight vertical lines on the seven-point Likert scale of CQS. It is called "straight-lining" (Meade and Craig, 2012; Schonlau and Toepoel, 2015). These respondents chose the same score for each item; in this case, only 1 or 7. Thus, their CQ score's standard deviation was zero. Individuals younger than 14 years of age were also excluded due to the lack of parental consent (5.8%, n = 21). After cleaning the database, which resulted in the removal of 21 answers (8.3%), the final (not representative) sample contained 329 persons.

Different statistical tests and methods have been applied (correlation and analysis of variance) to answer the research questions with SPSS 26 software. Due to the need for robust techniques, ROPStat software also helped the analysis (Varga, Torma and Bergman, 2015).

6. Results

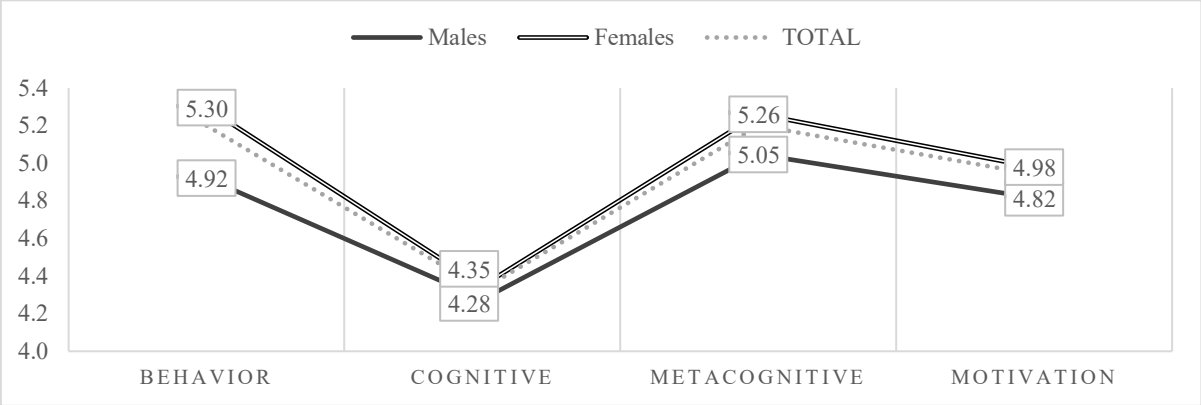
The average age of the 329 Hungarian respondents was 49.22 (SD = 18.770, min = 14, max = 86). The gender distribution was quite unbalanced, males represent 26.1% of the sample (n = 86, M_{age} = 51.41, SD = 18.806), while females 73.9% (n = 243, Mage = 48.31, SD = 18.819). 14.3% belongs to Generation Z (n = 47, M_{age} = 20.28, SD = 2.998), 25.2% Millennials (n = 83,

M_{age} = 32.69, *SD* = 4.381), 22.2% Generation X (*n* = 73, M_{age} = 53.22, *SD* = 5.633), 38.3% Baby boomers (n = 126, M_{age} = 68.33, SD = 4.803). In regard to the social status of the respondents, 37.4% reached the retirement age, 12.2% had part-time or full-time student status, 74.2% had part-time or full-time job. Every respondent lives in Hungary, 37.4% in Budapest (*n* = 123), 42.6% in a county seat (*n* = 140), 16.4% in town (*n* = 54) and 3.6% in a small village (*n* = 12).

6.1 General CQ results

The CQ total score can range between 20 and 140. The respondents' average CQ score was 97.47 (*SD* = 20.004, min = 39, max = 140). The four dimensions of CQ are shown in Figure 1. The respondents' weakest CQ dimension was the cognitive dimension (*M* = 4.33, *SD* = 1.270), which indicates that the respondents' cultural knowledge causes the most uncertainty, but this dimension can be developed easily. The second strongest dimension was motivation (*M* = 4.94, *SD* = 1.224), which shows a good willingness to get to know other people with different cultural backgrounds and be open about living in other cultures. The metacognitive and the behaviour dimensions were similar (M = 5.20, $SD_{behavior}$ = 1.44, $SD_{metacognitive}$ = 1.224). They represented the respondents' strongest CQ dimensions, which indicates that they can modify their behaviour in intercultural situations most of the time and can utilise the cultural knowledge to succeed in intercultural interactions.

FIGURE 1. STRENGTH OF CQ DIMENSIONS



Note. The mean score of each dimension ranged from 1 to 7

Source. Own data

In order to test the CQ score differences between males and females, an independent t-test was conducted. This test results indicate that males (M_{CQ} = 94.53, *SD* = 18.847) and females (M_{CQ} = 98.51, *SD* = 20.33) do not differ significantly, *t*(326) = -1.586, p = .114. Regarding the CQ dimensions, Welch t-test was conducted. This test was statistically significant at the behavioural dimension, *W*(140, 8) = -2.010, *p* = .046, ω2 = .013, which means females have higher behaviour CQ scores than males. The effect size for this analysis was small (Cohen, 1988).

6.2 Generational differences in CQ

Table 1. displays the average age of each generation, their total and dimensional CQ scores. No significant differences have been found regarding the total CQ scores of the generations, *W*(3, 151.4) = 2.585, *p* = .0553, except the behaviour dimension, *W*(3, 150.4) = 2.714, p = .0470, ω2 = .011, where generation Z had a significantly higher score than Baby boomers (*p* < .05).

No significant correlation has been found between age and CQ; thus, correlations were checked by conditional grouping as well. No significant correlations have been found regarding the age and CQ level of Millennials, Generation X and Baby boomers. Within Generation Z (minage = 14, maxage = 25) the older the individual, the higher their total CQ score (r = .368, p < .05) the metacognition dimension score (r = .331, p < .05) and motivational dimension score too (r = .424, p < .01).

TABLE 1. CULTURAL INTELLIGENCE CHARACTERISTICS OF EACH GENERATION

Generations	*n*	Age	CQ	Behaviour	Cognitive	Metacognitive	Motivation
Generation Z	47	20.28	103.85	28.26	27.59*	21.54*	26.49
Millennials	83	32.69	97.41*	25.39*	26.69	20.67	24.66*
Generation X	73	53.22	97.04	26.38	25.42	20.62	24.62
Baby boomers	126	68.33	95.48	25.33	25.25	20.76	24.14

Note. * indicates significant (p < .05) differences between males and females. Total CQ score range: 20-140, Behaviour CQ: 5-35, Cognitive CQ: 6-42, Metacognitive CQ: 4-28, Motivation CQ: 5-35

Source: own calculations

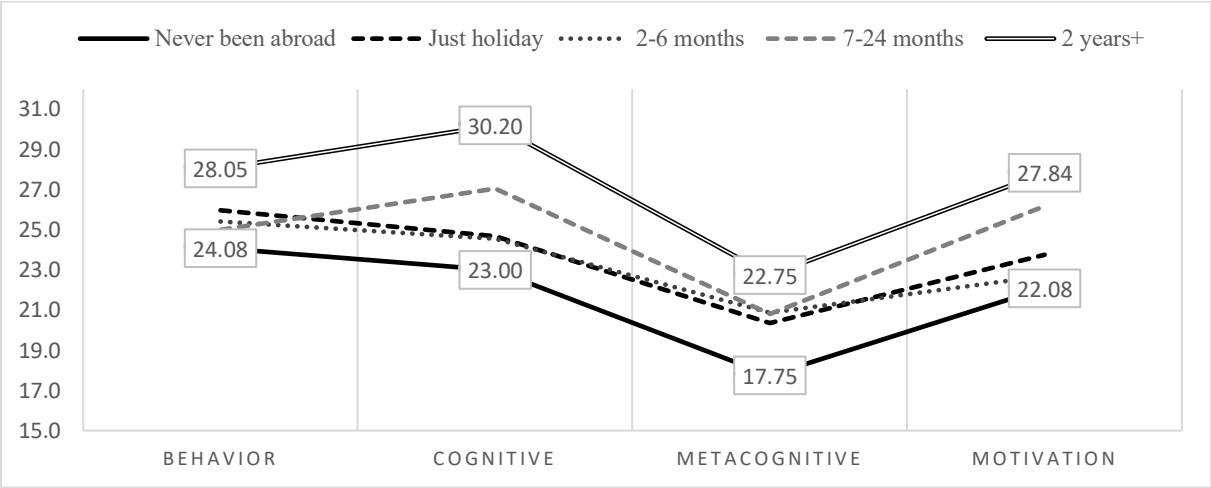
In order to identify possible significant total CQ score differences between males and females of each generation, Welch t-test was conducted. No significant differences were found, except in case of the Millennials, W(34, 6) = -2.055, p = .0475, ω2 = .037. It indicates that 25-40 years old females have higher total CQ scores than males at the same age. Millennial females had significantly higher behavioural and motivational dimension scores too (p < .05), than the males. The size effect was medium (ω2behaviour = .042, ω2motivation = .065). In Generation Z, significant differences have been found as well; 14-25 year old females had higher cognitive and metacognitive scores (p < .05) than males. The effect size was large in case of the metacognitive dimension (ω2 = .114) and medium in the case of cognitive dimension (ω2 = .067).

6.3. Connection between cultural intelligence and overseas exposure

Previous findings prove that individuals who have been exposed to more foreign experiences have higher CQ (Crowne, 2008). Based on our sample (n = 328), the amount of foreign experience significantly correlated with CQ (r = .252, p < .001). At the dimensional level, a similar pattern has been found, the more time spent abroad, the higher the score of each dimension (rcognitive = .258, p < .001, rmetacognitive = .179, p < .001, rmotivational = .251, p < .001) except for the behaviour dimension which did not correlate to overseas exposure (r = .073, p = .187).

Based on the summarized time spent abroad, significant differences have been found in the respondents' total CQ score, W(5,67.3) = 5.718, p < .001, ω2 = .067. Respondents who spent more than two years abroad (n = 55, MCQ = 108.84, SD = 18.43) have significantly higher total CQ than those who have never been abroad (n = 12, M_{CQ} = 86.93, SD = 23.10, p < .01), those who had just holidays (n = 153, M_{CQ} = 94.75, SD = 18.79, p < .01) and those who spent less than 6 months abroad (n = 46, M_{CQ} = 93.54, SD = 17.74, p < .01). The dimensional scores are displayed in Figure 2.

FIGURE 2. DIMENSIONAL CQ SCORES COMPARED BY THE INTENSITY OF OVERSEAS EXPOSURE



Source. Own data

Welch's *t*-test has been applied for the CQ dimensions as well, and there were significant differences between the dimensional CQ of the respondents, except in the *Behavioural dimension*, $W(5, 69.2) = 2.300$, $p = .0542$.

In the *Cognitive dimension*, significant differences have been found, $W(5, 68.9) = 5.980$, $p < .001$, $\omega^2 = .067$. Post-hoc tests show that respondents who spent more than two years abroad have significantly higher Cognitive CQ scores ($M_{CogitiveCQ} = 30.20$, $SD = 6.932$) than anyone who spent less than six months abroad ($p < .05$). There were no significant differences in the cultural knowledge of those who have never been abroad, who make international holidays or spent less than half a year abroad.

The *Metacognition dimension* shows differences regarding the scores, $W(5, 68.2) = 2.972$, $p = .0174$, $\omega^2 = .030$. The respondent with two years foreign experience has significantly higher Metacognition CQ scores ($M_{MetacognitiveCQ} = 22.75$, $SD = 4.419$) than the group who have never been abroad ($M_{MetacognitiveCQ} = 17.75$, $SD = 5.594$, $p < .05$) and who spend only the holidays abroad ($M_{MetacognitiveCQ} = 20.35$, $SD = 4.918$, $p < .05$).

Welch's *t*-test proved significant differences in the *Motivation dimension* too, $W(5, 67.2) = 5.056$, $p < .001$, $\omega^2 = .061$. Individuals with two or more years foreign experience have significantly higher Motivational CQ ($M_{MotivationalCQ} = 27.84$, $SD = 6.330$) than those who spent just a holiday abroad ($M_{MotivationalCQ} = 23.74$, $SD = 6.198$) and those who spent less than six months abroad ($M_{MotivationalCQ} = 22.72$, $SD = 6.642$). Previous research found a significant correlation between CQ and openness to experience (Ang, Van Dyne and Kohl, 2006) and CQ is a determinant of the perceived value of a destination (Frías-Jamilena et al., 2018).

6.4 Connection between mobility programs and cultural intelligence

Two independent groups have been compared regarding each mobility program (participants and non-participants). One respondent has been excluded from this analysis because her age did not fit to the maximum age limit of the Erasmus program she has chosen. The groups' results are displayed in Table 2. To compare two independent samples, researchers commonly used Student's t-test, which can be severely biased because of the assumptions of normality and homogeneity of variance. Welch's t-test provided better control of Type 1 error rates and

preferred in case of small sample sizes (Derrick, Toher and White, 2016; Delacre, Lakens and Leys, 2017); thus this test has been applied.

TABLE 2. PARTICIPANTS' AVERAGE CQ TOTAL SCORES COMPARED BY MOBILITY PROGRAMS (N = 328)

Mobility program	**Participants**			**Non-participants**			
	n	***M*CQ**	***SD***	***n***	***M*CQ**	***SD***	***ω²***
Erasmus+ semester	13	107.38*	14.93	315	97.06	20.10	.007
Erasmus+ internship	10	113.10**	13.20	318	96.97	20.00	.016
J-1 American Cultural Exchange	4	115.50*	8.89	324	97.24	20.01	.007
Volunteering	16	110.44***	8.60	312	96.8	20.20	.019
Summer job	71	103.38**	20.37	257	95.83	19.63	.021
Language school	21	109.62**	19.39	307	96.64	19.81	.022
Non-EU semester	9	113.89**	12.42	319	97.00	19.99	.016

Note. * $p < .05$, ** $p < .01$, *** $p < .001$ (significant differences between participants and non-participants)

Source: own calculations

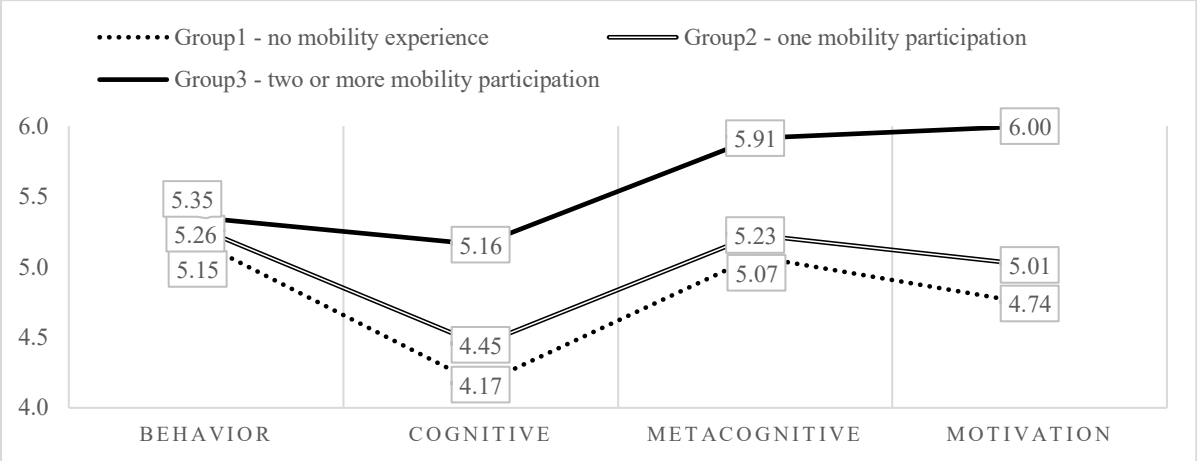
Omega squared estimates which proportion of variance in the CQ total score is accounted for by an effect in the entire population, and it is a less biased estimator than eta squared (Winkler and Hays, 1975). The effect size of each analysis (ω2 between .007 and .022) was not found to be exceeded for medium effect. Thus, the ω2 is small but makes the different mobility programs' size effects comparable.

Participants who studied a minimum of 2 months long at a *language school* abroad had higher CQ (M_{CQ} = 109.62, SD = 19.39) than that respondents who did not (M_{CQ} = 96.64, SD = 19.81), $W(22;9) = -2.965$, $p = .007$, $\omega^2 = .022$. These language courses have culturally diverse students who have to work effectively together on different team assignments. Based on the literature findings, teachers regularly create culturally diverse groups and avoid mono-cultural grouping (Rienties, Alcott and Jindal-Snape, 2014). In the case of *working abroad during the summer* (Work and Travel and Work Experience programs), significant differences have been found. These programs focus on professional training, and the participants work for a company during their summer break and have to work together effectively with colleagues with a culturally diverse background. The challenges of internships and summer jobs lie in the parallel requirement of quick cultural adaptation and work performance. Many companies provide onboarding for the new starters, but generally, the intern has to face most of the adversities alone due to the lack of social support from the same nationalities. Participants have higher CQ scores (M_{CQ} = 103.38, SD = 20.37) than non-participants (M_{CQ} = 95.83, SD = 16.63), $W(108, 6) = -2.786$, $p = .0063$, $\omega^2 = .021$. *Volunteering abroad* is an emerging way for Hungarians to gain cultural and work experiences abroad; the number of participants is growing each year. During these programs, volunteers work together to implement a project while cooperating with culturally diverse workgroups. Respondents with volunteering experience have significantly higher CQ scores (M_{CQ} = 110.44, SD = 8.602) than others (M_{CQ} = 96.80, SD = 20.20), $W(24, 6) = -5.598$, $p < .001$, $\omega^2 = .019$. Respondents who spent one or more *semesters outside the EU* have significantly higher CQ than non-participants, $W(9, 2) = -3.936$, $p = .0033$, $\omega^2 = .016$. Erasmus interns have higher cultural intelligence scores as well, $W(10, 3) = -3.730$, $p = .0037$, $\omega^2 = .016$. The elevated CQ is proven in case of *J-1 cultural exchange programs*, $W(3, 4) = -3.985$, $p = .0225$, $\omega^2 = .007$, and *Erasmus+ semesters* as well, $W(13, 9) = -2.406$, $p = .0306$, $\omega^2 = .007$. Based on the size effect, the two last groups had the weakest differences.

28.9% of the respondents have a mobility program experience. Three groups have been made based on the frequency of participation. *Group1* contained participants with no mobility program experiences (n = 234 (71.1%), M_{CQ} = 94.75, SD = 19.86), *Group2* contained respondents who have been partaken in mobility programs once (n = 54 (16.4%), M_{CQ} = 98.94, SD = 18.86) and *Group3* contained respondents who partook in mobility programs twice or more (n = 41 (12.5%), M_{CQ} = 111.35, SD = 16.43). The total CQ score of the groups differs significantly, $W(2, 87.025) = 16.883$, $p < .001$, $\omega^2 = .067$. The respondents who were involved more than once in mobility programs have significantly higher CQ than who tried the experience just once ($p < .05$).

Figure 3 displays the differences regarding the mean of each CQ dimension for these three groups. The Cognitive dimension is the weakest, followed by Motivational and Metacognitive dimensions, while the Behavioural has a higher mean in each group's case. The significant increase in each dimension between the respondents with one mobility experience and those who joined in more programs was also proved on the dimensional level (except the *Behavioural dimension*, W (2, 77.2) = 0.419, p = .659, ω^2 = .003).

FIGURE 3. CQ DIMENSIONAL SCORE COMPARISON BASED ON MOBILITY PROGRAM PARTICIPATION



Source: Own data

The *Cognitive dimension*'s score differs significantly, $W(2, 88.9) = 14.047$, $p < .001$, $\omega^2 = .057$. The respondents who partook in more mobility programs (Group3) have 6.49 point higher Cognitive CQ than Group1 ($p < .01$), and 3.77 points higher than Group2 ($p < .05$). The *Metacognitive dimension* shows significant differences as well, $W(2, 86.5) = 11.55$, $p < .001$, $\omega^2 = 0.047$). Group3 is 6.01 points higher in Metacognitive CQ than Group1 ($p < .01$) and 4.06 point higher than Group2 ($p < .05$). The *Motivational dimension*'s score shows the strongest differences, $W(2, 84.2) = 21.319$, $p < .001$, its effect size is the medium ($\omega^2 = .08$). Group3 is 7.96 points higher than Motivational CQ compared to Group1 ($p < .01$) and 5.08 points higher than Group2 ($p < .01$). Based on these results a slight increase can be seen on the three dimensions with the first mobility program participation, but those respondents who partook more times in such programs have significantly higher scores especially for the Cognitive Metacognitive and Motivation dimensions (with stronger size effect).

7. Conclusion

The aim of this study was to fill in the gap in the research regarding the average CQ level of each Hungarian generation. The Cognitive dimension was found to be the least strong, which indicates that each generation should deepen their cultural knowledge. No significant differences were found between the total CQ score between the genders, except in the behavioural CQ dimensions, where the females scored higher. Regarding the generations, no significant differences were found. There was no correlation between the age and CQ, except at the generational level. Within Generation Z (14-25 years old adolescents), CQ and age are positively related. The results proved a significant positive connection between the length of cultural exposure and CQ. The respondents who spent two years or more abroad have higher CQ, while regular international holidays did not affect the CQ level. The frequency of participation in mobility programs significantly correlates to high CQ, and each kind of mobility program resulted in higher CQ. The effect sizes were small but made the different programs comparable. The study has limitations due to the sample size of the mobility program participants and was not representative regarding the Hungarian population, but confirmed our previous assumptions, that developing CQ depends more on cultural exposure than age.

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Preparing Pre-service Teachers for 21st Century Skills Education: A Teacher Education Model

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Abstract

This study examines the efficiency of a model aimed at teaching 21st century skills to preservice teachers at Damascus university. Two fundamental aspects were explored, firstly, promoting the teaching of 21st century skills; and, secondly, incorporating 21st century skills in the educators' pedagogical training. Quantitative data was collected from 106 student teachers, and 34 teacher educators through two survey questionnaires. Results from the teacher educator's survey data showed that the model to promote all 21st century skills in student teachers was efficient. The student teachers felt that the pedagogical training of this model was efficient in terms of promoting cognitive skills, but only average when considering information literacy and problem-solving skills and performed poorly in fostering communication skills. Thus, even though the model is efficient in promoting 21st century skills for future teachers, it lacks a training framework that places equal emphasis on applying the skills during teacher training.

Keywords: 21st century skills; preservice teacher; teacher education; teacher educator

1. Introduction

The "Reform Movement" in education calls for a shift from traditional education, based on transforming knowledge to the learner, to a new educational pattern that cultivates learner's skills and abilities (Ananiadou & Claro, 2009). Central to this movement emphasis on the development of critical and creative thinking skills, reflective thinking, problem-solving, reasoning, decision-making, and the ability to use digital technology to overcome unprecedented challenges (Bransford & Jossey-Bass, 2006; Osman, Tuan Soh, & Arsad, 2010; Trilling, Fadel, & Partnership for 21st Century Skills, 2009). Skills development is thus a cornerstone in the proposed educational change. it implies incorporating 21st-century skills (21st CS) into all aspects and levels of the education structure (Coutinho & Mota, 2011; Gibson, 2005; Lowther, Inan, Strahl, & Ross, 2012; Thomas, Ge, & Greene, 2011; O'Sullivan & Dallas, 2010). The shift towards adopting 21st CS is both a distinctive feature of sustainable education and an influential trend that has implications for the education system at all levels - from kindergartens to universities - including teacher education. To enact the reform, teachers need to develop, model, and assess 21st CS in their students. As such, there is a call for teacher education programmes to develop student teachers' personal and professional development of these skills alongside their pedagogical training with a view to their later applying these skills in educational settings (Michaels, Truesdell, & Brown, 2015).

Qualified teachers play a core role in promoting 21st CS through their exemplary instructional practice, integrating a focus on these skills into their teaching activities and assessment practices. To achieve this, teachers must be equipped with the values, knowledge, and skills needed for implementing 21st-century education (Välijärvi, 2005). Hence, teacher education programmes should develop plans to prepare preservice teachers to meet the demands of 21st CS education. The nature of teacher preparation – in respect of promoting 21st CS – is thus dual-layered. It involves promoting pedagogical and personal skills and the cultivation of 21st CS skills in student teachers, while at the same time training them and giving them sufficient experience to be able to apply the skills in the classroom settings (Valli, Perkkilä, & Valli, 2014).. As a consequence, preparing student teachers to teach 21st CS requires that their teachers model 21st CS in their teaching practice, so as to develop student teachers' knowledge base concerning these skills: further, student teachers should be provided opportunities to put this new knowledge into practise in real-life situations (Häkkinen et al., 2017).

In the teacher preparation process - goals, curriculum, and training approach - teacher educators play a key role in preparing student teachers for applying 21st CS in the classroom. Besides building the student teachers' knowledge base in respect of 21st CS, educators also use these skills in their pedagogical practice, which is an important reference for the prospective teachers (Mestrinho & Cavadas, 2018).

The literature concerning this topic raises many issues: Bransford & Jossey-Bass (2006) found that practitioner teachers perceived incorporating 21st CS into their teaching practice as a demanding process. This may explain their tendency to prefer traditional teaching methods; meanwhile, Norrena et al. (2011), in their study of Finish teacher education, further highlighted that many teacher educators do not have sufficient knowledge of 21st CS and furthermore lack the competencies to integrate 21st CS into their teaching. These issues reflect shortcomings in the design of preservice teacher training as well as in teacher educators' knowledge base in connection with teaching 21st CS. Many aspects of the teacher preparation process have been

the subject of a number of research articles, for example, teachers' incorporation of 21st CS into their classroom practices (Valli et al., 2014); teachers' perceptions of efforts at incorporating 21st CS in teacher education (Manik & Shareef, 2014); and the evaluation of 21st CS (Silva, 2009). The scope of the current study focuses on pedagogical preparation— an area of the overall model that deals with preparing preservice teachers to cultivate the 21st CS. Hitherto, the effectiveness of teacher preparation programmes in terms of preparing prospective teachers to teach 21st CS, has not yet been investigated in the Syrian and Arabic research context. Consequently, the current study explores the effectiveness of the Teacher Education (TE) programme in preparing preservice teachers to teach 21st CS. It fills a gap in the teacher education literature as it identifies how educators across initial TE programmes have developed 21st CS with preservice teachers in the Syrian context. It also identifies the extent to which teacher education programmes promote 21st CS to preservice teachers.

2. Research aims and questions

Given the need to build 21st century skills, the current study aims to examine the effectiveness of a Syrian teacher education programme in preparing prospective teachers to teach 21st CS from both the teacher educators' and the student teachers' perspectives. Therefore, the study explores two areas: firstly, teacher educators' efforts to promote the use of 21st CS by their student teachers—this part outlines both the teaching strategies and techniques employed, and student teachers' perceptions concerning the integration of 21st CS within the overall scheme of TE. Secondly, student teachers' evaluations of their trainers' efficacy in teaching 21st CS, plus their perception of the trainers' knowledge base and relevant experiences, are explored. Accordingly, the study addresses the following questions:

- To what extent do teacher educators promote and model 21st CS in their teaching practice?
- To what extent are preservice teachers pedagogically prepared to incorporate 21st CS in their teaching practice?

3. Research background

3.1. 21st century skills in the educational context

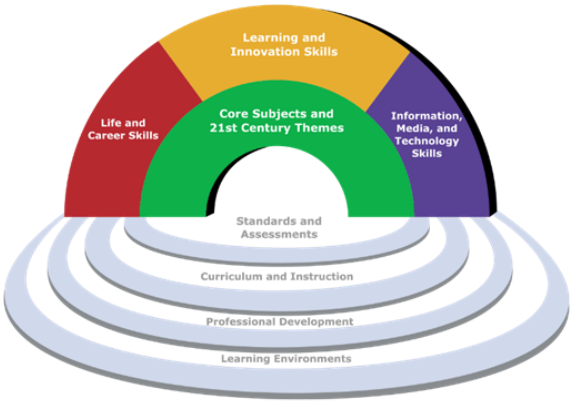
Although there is no universal consensus on a certain definition of 21st CS, diverse perspectives describe a spectrum of future skills. The term 21st CS refers to a blend of knowledge, skills, and expertise that is significant in daily and professional life. These skills primarily involve thinking skills and complex cognitive processes, including skills such as critical thinking, creative thinking, problem-solving, collaboration, communication, as well as concepts such as information and communication technologies literacy (Partnership for 21st Century Skills [P21], 2015; Pellegrino & Hilton, 2012). Whereas some of these skills have been deeply immersed in education history, others have recently emerged as a result of technological advances. Thus, these skills have growing significance in teaching and learning in 21st Century education.

Relevant education literature indicates several frameworks that focus on skills (learning skills, literacy skills, life skills) required for 21st Century education and life. These frameworks have been developed worldwide, and include the OECD framework, the partnership of 21st Century

skills in teaching and learning, and the key competencies for lifelong learning framework proposed by the European Commission. Voogt and Roblin (2012) conducted a comparative study to analyse the necessary frameworks in the education field. They indicated that frameworks shared a consensus on the importance of competencies such as communication, cooperation, ICT, and cultural awareness, and of cognitive skills such as critical and creative thinking and problem-solving.

The framework of the partnership for 21st CS describes the skills, knowledge, and expertise students need to succeed in their education. Simultaneously, it provides teachers with guidelines for integrating skills into the teaching of core academic subjects. The framework consists of four elements: learning and innovation skills; information, media, and technology skills; life and career skills; and the core subjects and themes. The framework also includes subsystems that help teachers ensure student mastery of the skills: 21st Century Standards; Assessment of 21st Century Skills; 21st Century Curriculum and Instruction; 21st Century Professional Development; 21st Century Learning Environments (Trilling & Fadel, 2009). See Figure 1.

FIGURE 1. P21 FRAMEWORK FOR 21ST CENTURY SKILLS



Source: Trilling & Fadel, 2009

Adopting an educational policy to which integrates 21st CS into the education system requires all aspects of policy to be in a high level of cooperation and harmony. The reform policy implies changes in education goals, standards, curriculum, assessment, learning environment, and professional development to support 21st century skills (Bellanca & Brandt, 2010). Moreover, teaching 21st CS brings a change to the traditional role of teachers. Teachers in 21st century schools should take the role of facilitators and counsellors who support student development, guide students during their learning to achieve the goals, and provide them with constant feedback on their progress (Flem et al., 2004). In order to perform their role, teachers must be prepared for incorporating 21st CS. They must know their students' characteristics, plan teaching activities accordingly, and encourage them to engage in the instructional activities (Melvin, 2011; Churches, 2008). In addition to their role as facilitators and counsellors, teachers should be experts and guides who help students develop their 21st CS.

Teachers should be competent in designing and managing the classroom learning environment to support collaborative work within groups which can work independently of each other (Trilling & Fadel, 2009). Managing an active learning environment that promotes collaboration and effective communication between students demands teachers themselves to be effective

and accessible communications (Churches, 2008). They must have skills in observation, management, monitoring students to organize learning environment (Gökçe, 2000). Moreover, teachers who provide learning experiences to their students are expected to use 21st CS in classroom activities (Burakgazi et al., 2019). This matters since, according to Sanders and Rivers (1996), teachers' competencies and skills significantly impact student learning and motivation. Using these skills in the classroom happens through several approaches; of these modelling is a prominent one. In modelling, teachers act as role models in exhibiting 21st CS in the course of their teaching. For instance, teachers use digital tools and resources to present their knowledge, skills, and experience. Further, teachers should use appropriate teaching strategies to promote student cognitive skills such as asking higher-order thinking questions. To conclude, integrating 21st CS demands a change in the traditional role of teachers. The characteristics of the required teachers can be summarised as follows:

- Being able to model the use of 21st CS in the classroom.
- Being able to assess and evaluate student progress to acquire 21st CS and provide them with constant feedback about their progress.
- Organising the learning environment to engage students in productive activities that aimed to promote 21st CS.
- Employ innovative technologies and teaching approaches that are student-centred such as inquiry-based learning and problem-based learning, which can improve learning outcomes and prepare students for the rapidly changing demands of the 21st century.
- Being a knowledgeable and long-life learner who constantly advances their professional knowledge and that of their profession.
- Has an active role in the curriculum development process.

Given the significant role of teachers in 21st century education, it is necessary to incorporate 21st CS education into the teacher preparation process. Thus, it is necessary for teacher education programmes to renew, change, and update the training model to meet 21st century education needs.

3.2. Teacher education for 21st century skills

Incorporating 21st CS has profound implications for teacher training. In 21st century education, learners are at the centre of educational interest. As a result, the teaching and learning process tends to personalise educational experiences, identify individuals' learning patterns and foster novel forms of educational and teaching strategies (Schleicher A., 2012).

In this respect, teachers are expected to translate theory into reality. This means that they need to gain and develop appropriate competencies throughout their initial training in order to be able to promote 21st CS in their own classrooms. In the preparation programme, teacher educators facilitate preservice teachers' personal development of these skills at the same time as delivering pedagogical training, and teach them about the way to teach 21st CS. Preservice teachers are supposed to receive training on how to teach complex ways of thinking, educate lifelong learners, and embrace diversity with differentiated pedagogical practices (Schleicher A., 2012). Other preparation aspects might include training in the use of digital tools.

Teachers also need to practice collaboratively in designing learning environments, developing curricula, discussing the learning needs of students, and teaching with others in teaching

approaches. An OECD (2009) comparative study summarised teachers training needs as follows:

- Teachers need to know the nature of the learning process, individual patterns of learning, student motivation, and emotions.
- Teachers need a rich knowledge base of instruction methods and assessment approaches and must use them innovatively.
- Teachers need to be knowledgeable about the subject matter of the course they teach. This will help them to use to optimise student learning by using the best teaching approaches and methods.
- Teachers need to be skilled at designing, leading, managing and planning learning environments.
- Teachers need to have opportunities for teamwork with other teachers, for a network of professional communities.
- Teachers need to use their cognitive and metacognitive skills efficiently, in order to reflect on their practices and learn from experience.
- Teachers need to be proficient in using technology as an effective teaching tool, using digital resources and platforms, and information management systems.

3.3. Models of preparing teachers of the 21st century.

In order to integrate 21st CS in teacher preparation, teacher education programmes must develop or adopt a training model. The literature provides an example of visions or projects which imply that their models aim to reform the current teacher education process to integrate 21st CS.

Darling-Hammond (2000) indicated that teaching problem-solving, creative and critical thinking, and practical knowledge application requires teachers to be equipped with in-depth and flexible knowledge of subject matter and with prior knowledge base, in addition to training them to organise a productive learning process, assess student learning, and adapt instruction to different learning approaches. In their book titled *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do,* Darling-Hammond and Bransford (2007) introduce a framework that recommends that teachers new to teaching 21st CS have a basic understanding of the science of learning, diversity in learning, classroom management, language acquisition, it also implies that they must use innovative assessment methods, and have the ability to use advanced technology in the classroom.

In the same context, Korthagen et al. (2006) proposed a simple yet thought-provoking vision of teacher training designed to prepare teachers to continuously strive for their students' success while at the same time embodying 21st CS. The vision is based on six principles for preservice teacher training and aims to shift the teacher's possibly traditional mindset to a more flexible perspective that suits teaching in the 21st century.

The principles are:

- Learning about teaching and learning in teacher education involves continuously conflicting and competing demands;

- Teacher training should view knowledge as a subject to be created rather than as a created subject;
- Cultivating future teachers can be enhanced through student-teacher research;
- Teacher preparation requires a meaningful relation between school, university, and preservice teachers;
- Teacher educators modelling of learning and teaching approaches advocated in the programme is important to enhance teacher preparation;
- And, promoting a student-research approach can enhance teacher education (Korthagen, Loughran, & Russell, 2006, pp. 1025–1038).

The National Institute of Education (NIE) in Singapore (2009) introduced an innovative and transformative teacher education model for the 21st century that aims to revamp the teacher education system to incorporate 21st CS, values, and professional development into teacher trajectory. The model is based on the understanding that "students' development of 21st CS emerges as a result of competent 21st-century educators" (Durgesh, 2020, p. 64). The model identifies the intended student outcomes, which include (1) learning and innovation skills, (2) knowledge, information, media and technology literacy skills, (3) life skills, and (4) citizenship skills (NIE, 2009). Preparing teachers for these skills requires teacher education programmes focus on three areas in teacher training: knowledge of how to support learning communities that offer students opportunities to implement 21st CS in classroom settings and real-world contexts; effective instruction in 21st CS that supports innovative instruction and the use of high order thinking skills; and proficiency at the intersection of information and digital media (Durgesh, 2020).

Partnership for 21st CS and the American Association of Colleges of Teacher Education (AACTE) proposed a vision of reforming teacher education that focuses on skills and knowledge in educators' preparation programmes. The model is informed by the need to prepare qualified teachers who are capable of teaching in the 21st century's complex environment. Three main areas of teacher preparation identify the new model's characters: aspects of interventions, competencies of qualified teachers, and principles that guide teacher education programmes to achieve the desired outcomes. The proposed model maintains the balance between the 21st century knowledge and skills needed for students, the ways in which educator preparation programmes can leverage those skills, as well as the desired outcomes for programme graduates. Exploring the model dimensions would give a more detailed understanding of the model's nature. Aspects of intervention are represented by five distinct areas which together represent the foundation for teacher success at cultivating students' skills, namely:

- Outcomes quality: programme graduates should be able to model and teach different subjects with an interdisciplinary awareness of 21st CS.
- The assessment: prospective teachers should understand and use a wide variety of assessment strategies to evaluate 21st CS.
- Curriculum and instructional methods, prospective teachers are expected to design lesson plans and curriculum and use instructional strategies that promote critical thinking, problem-solving, productive communication, and collaboration.

- Lifelong learning: prospective teachers should embrace lifelong professional learning opportunities and act as peer coaches and mentors to colleagues in an ongoing collaborative endeavour.
- Learning environment: prospective teachers should be able to create a safe environment for student learning by understanding and advocate for the varied emotional, physical, and educational needs of students (Greenhill, 2010, p. 21).

The model adopts a set of teaching competencies that are adopted from Darling-Hammond and other scholars (Darling-Hammond, 2006a, 2006b; Darling-Hammond & Baratz-Snowden, 2005; Darling-Hammond & Bransford, 2007):

- The innovative use of instructional technology to meet student learning needs implies aligning current and emerging instructional technologies with content and pedagogy, creatively using instructional technology to meet student learning needs.
- Strategically balancing direct instruction with performance-based, project-oriented learning experiences.
- Competence in using and employing a range of evaluation strategies, including formative, portfolio-based, curriculum- embedded, and summative assessments.
- Actively participating in collaborative learning communities.
- Embracing career-long learning opportunities to continually update knowledge and skills (Greenhill, 2010, p. 19)

Some 21st CS training models focus on the professional development programmes of teacher education. Such models aim to reform the existed TE programmes in order to harmonise their syllabuses with 21st CS goals. Massachusetts Department of Elementary and Secondary Education project of professional development proposes a set of standards and indicators for effective teaching practice and professional excellence which six aspects of the teaching profession:

- Skills in curriculum design, lesson planning, and assessment are required to support student's growth. This involves the teacher's ability to use research-based best practices in implementing the curriculum, knowing, and applying cognitive education.
- Skills in using a variety of assessment methods and strategies. Teachers are expected to assess students' growth using different spontaneous, formative, and summative assessment methods; analysing the results of student assessment to be employed in revising instructional plans; and providing students with regular feedback on their advance base on the assessment results.
- Skills in using multiple instructional and class management strategies. Teachers should use strategies that boost student engagement in learning activities; they should use high-quality materials adapted to learners' needs; they should be aware of students learning difficulties and misconceptions; and they should help students cope with those misconceptions and confusion.
- Skills conducive to constructing a safe and collaborative learning environment. An active learning atmosphere, where students play an active role in developing, caring relationships with fellows and adults, strengthens a sense of appropriate behaviour. Teachers should also acknowledge students' cultural backgrounds and use what they know to guide students towards dealing with and overcoming life's challenges.

- Skills in communication and cultivating society entities that benefit and support students. These skills imply family outreach, cultural awareness, and accessing community resources. Teachers are supposed to encourage families to be engaged in students' academic life (DESE, 2011, pp. 78–82).

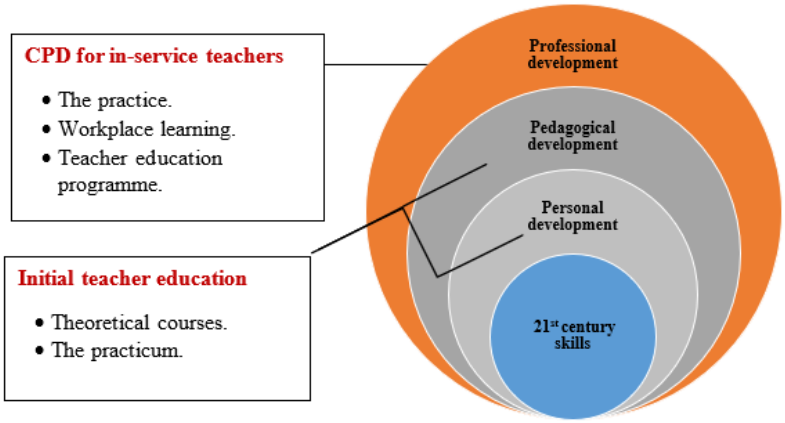
The previous models and related literature refer to a trajectory of three phases or dimensions in which teachers receive the needed training to teach 21st CS. The first two phases of the preparation process happen in initial teacher education for preservice teachers. In contrast, the third phase happens within the continuous professional development of the in-service teacher. Hence, Figure 2 covers:

a) Personal development: in this phase, preservice teachers, through initial teacher' training, improve their capacity to understand and apply these skills in multiple contexts, not limited solely to educational settings.

b) Pedagogical development: in this phase, preservice teachers receive training to build a knowledge base and acquire experiences that help them facilitate the skills development within their students. The training is through supervised teaching fieldwork (the practicum) and theoretical courses.

c) Professional development: here, in-service teachers pursue their development of these skills through their practice with students, colleagues, and administrators or by enrolment in professional development programmes in teacher education.

FIGURE. 2. DIMENSIONS OF TEACHER EDUCATION MODEL FOR 21ST CENTURY SKILLS



Source: own compilation

3.4. Preservice teachers' knowledge base

Successful teaching requires competency in applying different forms of pedagogy and content. One of the key assumptions of teacher training is that teachers have the required knowledge and capacity to integrate 21st CS as envisaged in educational policies. Thus, developing preservice teachers' knowledge base with a view to promoting 21st CS is a crucial of teacher pedagogical training. The training framework and teacher education model guide the process of developing student teachers' knowledge base. Although there is a body of literature that deals with this issue, the need for a single unified framework for such a knowledge base is still an unmet demand in teacher education. Several frameworks have been proposed for each group of skills. Kadir (2017) introduced a framework for teacher's knowledge base of critical thinking, which implies several overlapping types of knowledge: teachers' critical thinking knowledge;

critical thinking pedagogical knowledge; critical thinking content knowledge; and critical thinking pedagogical content knowledge. The study identified teachers' experience, knowledge domains, and understanding of critical thinking as factors influencing the construction of such a knowledge base. Mishra and Koehler (2006) proposed a framework to understand teacher knowledge in educational technology − technological pedagogical content knowledge (TPCK). The framework entails the incorporation of technology knowledge (TK) into pedagogical content knowledge (PCK) that results in a new knowledge domain called Technological Pedagogical Content Knowledge (TPCK). Approaching the topic from a different angle, Zohar studied preservice teachers' pedagogical knowledge of teaching higher-order thinking skills (HOTS), which includes creative and critical thinking. She identifies the essential elements of the knowledge base: the teacher's perception of teaching thinking; the active role of the teacher; provoking student's thinking strategies; cognitive demands of a thinking task; diagnosis of students' reasoning difficulties; and following a diagnosis of students' reasoning difficulties (Zohar, 2004; Zohar & Schwartzer, 2012). Recently, Csíkos & Szitányi (2020) found that, in order to teach problem-solving, teachers need to use direct– either paradigmatic or narrative-oriented – approaches when introducing simple, routine word problems to students.

The aforementioned literature presents a variety of frameworks that deals with teachers' knowledge base to promote 21st CS. However, these skills' heterogeneous nature can be conceived as an obstacle to developing a transdisciplinary knowledge base framework for teacher preparation.

3.5. The role of teacher educators

Teacher education teaches student teachers about teaching the student. Accordingly, this makes the role of teacher educators more complex. They are expected to model in their practice what they teach (e.g., teaching strategies), and not only to teach a subject (e.g., a methods course) (Lunenberg & Korthagen, 2005). Therefore, teacher educators need to be aware of the concept of modelling and adopt it in their teaching practices (Swennen et al., 2008, p. 531), and consider the correspondence between their teaching practices and what they preach to students, in addition to explaining the purpose behind their modelling (Loughran & Berry,2005). Student teachers develop their pedagogical beliefs and awareness based on teacher educators' explanation of their pedagogical choices and the way they model their pedagogy. Guilfoyle, Hamilton, and Pinnegar (1997) indicated that "in teaching future teachers, teacher educators are committed to model the work we expected from them" (p. 183). According to Fourie (2015), teacher educators should model in their teaching practice what they expect their students to do in their future classrooms; otherwise, the students would fail to fulfil their duties and roles as teachers. This is also relevant to the case of teaching 21st CS. Vygitsky (1987) pointed out that modelling the teaching of thinking skills influences the development of students' thinking. In the same context, Dewey (1997) indicated that modelling requires a high cognitive level on the part of learners, including a cognitive process of observation, inference, reasoning, and experimentation. During teacher education, student teachers will gradually internalise these processes and ways of thinking. In this respect, modelling 21st CS provides student teachers with opportunities to observe the teaching of these skills in real learning situations. The real experience gained by prospective teachers carries utmost importance because it helps them become familiar with new educational innovation methods (Griffin, 1999; Russell, 2005; Stofflett & Stoddart, 1994). Lieberman and Wood (2003) found that when teachers have

opportunities to interact with the subject in ways they aim for their students to do, student teachers are more likely to absorb these practices and apply them in their future classroom.

On other hand, besides familiarizing student teachers with 21st CS, modelling is also essential to reshaping student teachers' beliefs about incorporating these skills into their classroom practice and enhancing their self-efficacy. Urbani, Roshandel, & Michaels (2017) meanwhile found that student teachers lack the self-efficacy necessary to teach 21st CS. Segall (2002) illustrated that unless an alteration of deeply held views occurs, prospective teachers cannot recognise and challenge their assumptions. The "folk theories" of Banner (1996) explain that any new innovation in teaching and learning that teacher educators attempt to implement, will inevitably compete with, replace, or otherwise modify such folk theories.

The efficacy of teacher modelling depends on teachers' beliefs and attitudes towards the very idea of modelling. In some cases, teachers may model something in one way without believing it fully. This inauthenticity might lead to negative implications for modelling effectiveness. According to Brookfield (1987), the ineffectiveness results from the lack of authenticity in teachers' actions. Students interact best with genuine behaviours of teachers that are authentic, and pervasive (Jane, 2015). In conclusion, modelling the practice of 21st CS is important because the explicit explanation of the pedagogical practice provides student teachers with the opportunity to experience learning and teaching situation with 21st CS integrated into activities and make judgments about its effectiveness (Loughran, 2006).

4. The Syrian context

In 2003, the National Centre of Education Development proposed a policy document called "developing education sector: from the kindergarten to the university". The document presented a reform vision of the education sector, including teacher education. One of the main goals indicated in the vision was to adopt a skills-based approach and integrate technology in education. Later on, in 2005, the association of teacher education took the policy document as a basis for reforming teacher education and adopted its goals in the standards and goals of teacher education of the leading five universities in Syria, Damascus University, Aleppo University, Tishreen University, Alfurat University, and Albaath University.

Accordingly, teacher education has two programmes: initial teacher education, and continuous professional development for in-service teachers. The initial teacher education for preschool and primary school teachers lasts four years while teachers in other specialization must have two additional years called "the special pedagogical preparation." In initial teacher education, training focuses on the personal and pedagogical development of students. The training involves seminars on instructional methods, assessment and evaluation, classroom management, the psychology of education, digital learning tools and other subjects, in addition to an intensive school practice (the practicum). Preservice teachers receive support for the questions and issues that teachers meet in their daily work. Preservice teachers work with their tutors and university teachers to determine the practice period's aims and content. The tutors are senior qualified teachers who have the necessary experience and training to guide student teachers in acquiring relevant experiences during the practice period. Student teachers should have a one-term extended agreement with a school to work with the tutor. At the beginning of the training, student teachers, with help from tutor and teacher educators, develop a teaching plan for the first month. The tutor gives daily feedback while the teacher educator sends weekly feedback.

On the other hand, in the new reform, the Continuous Professional Development programme (CPD) for in-service teachers is completed through a two-year training programme of seminars and workshops. This programme is obligatory; it targets in-service teachers according to their age and career level, and prioritizes young teachers. CPD programmes have a significant role in improving teachers' digital, communication, and life skills.

Teacher education goals are derived from the general education goals indicated in the reform vision. The goals refer to educating future citizens to think critically, compete in the age of technology and globalization, and collaborate to build the society (Musatfa Aboshahen, 2018). Thus, Teacher education programmes introduce 21st CS in different aspects. For example, Vision 2030 of education at Damascus university's teacher training programme requires teacher educators to assess students' critical thinking and ability to use digital tools. Several courses deal with components of 21st CS, such as how to teach and improve creative and critical thinking. Another course is dedicated to life skills, such as collaboration and productive communication with students. Cultural awareness is also addressed: the course Education for Equity aims to introduce student teachers to diversity in cultural traditions in diverse ethnic groups in the country and train them in how to consider this in their teaching practice, as well as how to maximize academic achievement of people from different traditions and groups. The use of digital tools is integrated into the curriculum and key requirements for students in the practicum.

Nevertheless, teacher education faces many problems. Hannoun (2016) noted that there is a gap between what preservice teachers prepare for and reality in schools. Comparatively speaking, teacher education programmes do not reflect on the reality of school in the curriculum nor in seminars. Though this gap is commonly found in education, these kinds of problems are aggravated in Syrian teacher education programmes.

5. Methods

In order to achieve the study aims, the study investigates Damascus university teacher educators' perceptions on their teaching practice in promoting 21st CS and the extent they model teaching of these skills in their teaching practice. On the other hand, the study examines student teachers' readiness to teach 21st CS by exploring their efficacy in teaching 21st CS. The study draws on the participants' perception of who the primary sources of the data are.

5.1 The participants

The study has recruited two sub-samples: the first sample has chosen from students of initial teacher education programme. It includes students from programmes of primary school education and special pedagogical preparation. The total number of students who joined the two programmes in the autumn semester of 2019 was n=137. The active status students were n=106 they were selected to be the sample of the study. Different disciplines are represented in the sample: mathematics (n=15) students; languages (n= 12) students; sciences (n= 17) students; social science (n=23) students; and primary school (n=39) student teachers (see Table 1).

TABLE 1. SAMPLE OF STUDENT TEACHERS

Student teachers' discipline	N	Percentage
Mathematics	15	14%
Language	12	11%

Sciences	17	16%
Social Science	23	22%
Primary School	39	37%
Total	106	100%

Source: own calculations

The second sub-sample represents educators. Of a total number of n=42 educators, n=34 teachers have been chosen as a representative sample. Teachers represent the faculties of education, primary school education, science, and human science took part in the study (see Table 2).

TABLE 2. SAMPLE OF TEACHER EDUCATORS

Teacher Educators affiliation	N	Percentage
Faculty of Education	13	38%
Sciences	6	18%
Humanities	6	18%
Primary School	9	26%
Total	34	100%

Source: own calculations

5.2. Data collection

Data collection took a place between November and December 2019 at Damascus university. Quantitative data was collected using an electronic survey.

5.3. Measurements

As the study deals with two aspects of teacher education model (the practice of teacher educators and the student teachers' readiness to teach 21st CS), but also because the two groups of study participants were expected to have different perspectives and roles in the preparation process, it was considered necessary to use an appropriate data collection instrument with each group. Consequently, the study employs two survey instruments to investigate student teachers' and teacher educators' perceptions.

The first self-report scale instrument developed by Jia et al. (2016) is used to examine preservice teachers' knowledge base and experiences relevant to cultivating 21st CS, which partially covers two aspects of the teacher education model: personal development and pedagogical development. The survey determines the extent of student teachers' efficacy in teaching 21st CS. It has the following dimensions: information literacy, collaboration, communication, innovation, creativity, problem-solving, and responsible citizenship. The scale consists of 16 items, reports student teachers' views of their efficacy in teaching 21st CS, and it has a Likert scale type of weights (1-5). The questionnaire's pilot study shows a very good level of reliability (Cronbach's alpha > 0.82). Since the questionnaire is valid, there was no need to pilot it to the sample anymore (Jia, Oh, Sibuma, LaBanca, & Lorentson, 2016). A demographic classification question (specialisation) was added to this questionnaire in order to fulfil the study goals.

The second instrument is the Survey for Measuring 21st-Century Teaching and Learning: West Virginia 21st-Century Teaching and Learning Survey [WVDE-CIS-28]. The study uses a modified version developed by Ravitz, J. (2014). The purpose of using this survey is to

investigate educator perception about their practice in the modelling of 21st CS in their teaching practice. This survey explores the personal development aspect of the teacher education model. It consists of 34 items in Likert scale type of wights (1-5) and includes the following themes of 21st CS: critical thinking skills, collaboration skills, communication skills, and creativity, and innovation skills. The questionnaire shows a particularly appropriate level of reliability, extremely reliable overall measures for each skill (standardized alpha > .90, inter-item correlations > .58). Since the questionnaire is valid and reliable, there was no need to pilot it to the sample anymore.

5.4. Data analysis

The quantitative data (descriptive statistics) obtained has analysed using the statistical package SPSS (V21) for Windows. Namely, total score and mean value were employed to analyse the teacher educators' responses to determine the level of the practices that prompt 21st CS. The same statistics were applied to the student teachers' responses to the questionnaire to measure student teachers' confidence in teaching students about 21st CS.

6. Findings

6.1. Findings from the survey of teacher educator

The quantitative data (descriptive statistics) obtained were analysed using the statistical package SPSS (V21) for Windows. This means that total score and mean value were employed to analyse the teacher educators' responses to determine the level of the practices that prompt 21st CS. The same statistics are applied to the student teachers' responses to the questionnaire to measure student teachers' confidence in teaching students about 21st CS.

TABLE 4. LEVELS OF TEACHER EDUCATORS' PRACTICE OF 21ST CS

Themes of 21st-century	S. N[1]	Mean	Std. Deviation	M. R	The level
Critical thinking and problem-solving	9	32.38	1.51	3.60	high
collaboration	9	32.59	1.24	3.62	high
communication	8	24.18	1.01	3.02	average
Innovation and creativity	8	33.62	1.41	4.20	high
Total	34	122.76	2.21	3.61	high

[1] S. N= number of statements in the dimension
Mean of response (M.R) = Mean ÷S.N
Source: own calculations

As shown in Table 4, teacher practices that promote students' critical thinking problem-solving are at a high level (M=32.38, MR=3.6, SD= 1.51), for collaboration skills (M=32.59, MR=3.62, SD=1.24), and innovation and creativity skills (M =33.62, MR=4.2, SD=1.4). while communication skills were at an average level (M =24.18, MR=3.02, SD=1.4). The total perception of teacher practices is at a high level (M = 122.76, MR=3.61, SD=2.2).

Findings from the survey of student teachers

In this subsection, the second research question is answered: To what extent are student teachers pedagogically prepared to incorporate 21st CS in their teaching practice? Table 4 resents the

means and standard deviation values of student teachers' responses of their pedagogical preparedness to teach each skill of the 21st CS.

TABLE 5. LEVELS OF STUDENT TEACHERS' PERCEPTION OF THEIR EFFICACY

Themes of 21st-century	S. N[1]	Mean	Std. Deviation	M.R	The level
Information literacy	2	6.55	1.58	3.28	average
Collaboration	2	6.04	1.08	3.02	average
Communication	3	6.72	1.31	2.24	low
Innovation and creativity	2	6.83	1.30	3.42	high
Solving problem	3	7.86	1.52	2.62	average
Responsible citizenship	4	12.4	2.48	3.10	average
Total	16	46.44	2.98	2.90	

[2] S. N= number of statements in the dimension.
Mean of response (M.R) = Mean ÷S.N.
Source: own calculations

The data in table 5 show that student teachers perceive the efficacy of their pedagogical training for information literacy skills to be at an average level (M =6.55, MR=3.28, SD=1.5), and view it as being of the same level for collaboration skills (M =6.04, MR=3.02, SD=1.08), solving problems (M =7.86, MR=2.62, SD=1.5), and responsible citizenship (M =12.4, MR=2.48, SD=2.48). However, the efficacy of communication skills training is perceived to be at a low level (M =6.73, MR=2.24, SD=1.31), but that for innovation and creativity skills is perceived to be at a high level (M = 6.83, MR=3.4, SD=1.3). The overall perception of the pedagogical training and its efficacy stands at an average level (M =46.44, MR=2.9, SD=2.98).

7. Discussion

7.1 Teacher educator

The findings show that teacher educators express a high level of exemplary practice to model 21st CS through their teaching practice. Existing studies on teacher educators found some supportive findings. Andin (2014) found that teacher educators model the teaching of thinking skills implicitly and explicitly. Hannoun (2016) reported comparable results from science teacher educators of using instructional practices to promote critical and creative thinking. Teacher educators' perceptions of their role in cultivating 21st CS in their students is supported by many factors. Vision 2030 explicitly refers to critical and creative thinking as a goal of education, and recommended teamwork activities to build these thinking skills. Furthermore, teaching in teacher education demands educators to apply collaborative learning approach towards achieving different tasks such as planning and executing micro-teaching and seminar activity. In addition, training preservice teacher to use technology requires teacher educators to model that for students. Teacher education requires teacher educators to design and conduct learning programmes which facilitate teamwork and collaboration with peers, which can have a powerful impact on educators' confidence, capacity for professional growth, and willingness to share their practices with others (Clark, 2001). However, the low level at which communication skills is perceived receives less attention from teacher educators; this result corroborates AlMaalouf (2018) suggestion that due to the large number of students enrolled in teacher education and higher education, teacher educators pay little attention to improving student teachers' communication skills. Moreover, teacher educators lack awareness of the importance of allowing their students to scaffold their presentation skills (AlMaalouf, 2018).

7.2 Student teachers

On the basis of the research results, we conclude that student teachers perceive their efficacy and capacity to teach 21st CS to be at a mid-level. The existing studies on student teachers' capacity to teach 21st CS found some supportive and some contradictory results. Goksun and Kurt (2017) found that preservice teachers perform some 21st CS and their knowledge of teaching the skills was above mid-level. Valtonen et al. (2017) found that preservice teacher perceived themselves to be skilled in terms of teaching methods used in 21st CS. Besides, they exhibited this capacity in collaboration, group work, and presenting their teamwork using digital platforms, which are 21st CS. Nuangchalerm (2017) indicated that preservice teachers perform and possess high levels of 21st CS. Contrastingly (and contrary to the current study findings), Putri et al. (2017) found that student teachers perceive their capacity for teaching 21st CS to be at a low level. The contradictory finding can be attributed to the programme which was investigated and context (such as the country of the study).

Preservice teachers' capacity for teaching for 21st CS implies their ability to implement their pedagogical knowledge and the experiences they gain during the personal development and pedagogical development phases of teacher education model, in addition to the 21st CS they acquire through personal development. However, the results from teacher educators show that teacher educators reported efficient efforts to promote 21st CS through modelling and the direct teaching of these skills. Consequently, student teachers develop their 21st CS as a result of personal development training.

This conclusion is supported by the study of Abdelkarim (2018) whose doctoral study at Damascus University found that student teachers show creative practices in the projects they conducted and high ability in solving problems. Zaidan (2017) meanwhile found that senior student teachers possess a good level of critical thinking and problem-solving skills. This confirms the efficiency of the training programme in building capacities of preservice teachers in terms of 21st CS. Therefore, the mid and low levels of preservice teachers' perceptions relating to their ability to teach 21st CS might be attributed to difficulties or deficiencies in the pedagogical development phase of teacher education. This can result in a deficient knowledge base or a lack of experiences to apply their knowledge base. However, in many courses, student teachers study the nature of thinking skills and problem-solving and teaching methods of cognitive skills. For example, in the course titled "Teaching and Learning Higher-Order Cognitive Skills," students study theories, teaching and assessment methods of thinking skills. They also receive training on digital education, during which they are expected to use different digital sources to prepare essays or other requirements of the course. In a course such as Teaching for Equity, student learn about the value of multiculturism and diversity in society. Moreover, student teachers develop their skills collaboration and communication skills in small groups, in various courses, and for various purposes. For instance, developing lesson plans for a case study student; communicating with administrators, and other school personnel, and using technology to present their work to the class. The practicum phase of teacher education contributes to preservice teachers' experiences. However, although educators emphasize incorporating 21st CS in the practicum plan, they do not observe the application of this plan. In addition, student teachers gain much of their experiences by observing tutors in real classroom settings. Therefore, if tutors do not teach for these skills or do not discuss the teaching these skills with the preservice teachers, it is likely that these student teachers would not acquire the experience necessary to incorporate them in their own teaching.

8. Conclusion

The study presents a mid-level of harmonization between personal development and the pedagogical development phases of preservice teachers for teaching 21st CS. While teacher educators promote and cultivate student teachers' capacities for 21st CS to a high level, student teachers' preparedness to teach these skills stays at mid-level. The successful role of teacher educators can be attributed to the educational policy that emphases on 21st CS in higher education. The study concluded that difficulties related to the pedagogical development of student teachers hinder them from acquiring the necessary experience. The unique and complex nature of teacher preparation, and its multiple aspects and layers of training for 21st CS contribute to student difficulties in developing the competencies necessary to teach 21st CS. Identifying the exact difficulties can be a subject of further research. The results of the study support the importance of adopting a training framework and training model to incorporated 21st CS in teacher education to avoid ill-prepared graduates.

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School-university Partnerships in Teacher Education: Tension Between Partners and How They Handle It

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Abstract

Myanmar, a country of developing status, is facing many challenges in reforming its education system. This article investigates the current practices of school-university partnerships from the perspective of student teachers and mentor teachers in Myanmar, where there is an ongoing process of teacher education reform. The aim of this article is to investigate the practices of school-university partnerships and the tension between partners in the training of pre-service teachers within the context of teacher education. A qualitative research method is applied in this study where six candidates were interviewed individually. Participants include three student teachers from educational universities and three mentor teachers from basic education high schools in Myanmar. The results showed that, except for student teachers' practice teaching, there is no intensive collaboration between schools and universities. Trust is a major problem between student teachers and mentor teachers. Different opinions and perspectives towards teaching and learning are also causing tension between partners. Although there is tension between mentor teachers and student teachers, they handle this through alternative collaboration activities and negotiation between partners.

***Keywords*:** Myanmar education reform, school-university partnerships, teacher education

1. Introduction

Compared to the past, the demands of society on education are increasing gradually around the world during this century. According to Hargreaves (1999), the expectation of politicians, parents and employers on the achievements of students have been rising and this leads to new needs for professional knowledge creation in education. The need to update professional knowledge has become a major theme in many areas, including teaching, teacher education and teacher knowledge creation (Hargreaves, 1999).

Where there is a need for professional knowledge, there is a call for collaboration. Especially in the area of teacher education where there is a need to strengthen the connection between research, innovation and practice, collaboration cannot be neglected (Halasz, 2016). As a tool to connect these three poles, teacher collaboration has become the keystone of educational architecture and policy making in today's education systems (McLaughlin, 2008).

Myanmar, a country of developing status, is facing many challenges in reforming its education system (Walailak University & Ulla, 2018). Currently, the production of knowledge, its application, as well as the qualification of teachers in Myanmar are not suitable for improving the whole education system in the country, where 25% of teachers are not relevantly qualified (UNESCO, 2017). In this reform stage, paying attention to collaboration between universities and schools is a key priority since it provides the bridge to connect the academic world with the practitioners' world (theory-practice nexus) and it offers a special opportunity to see what is lacking and what is needed to improve in education (Hardman, 2013).

2. Theoretical framework

2.1. The origins of school-university partnerships (SUP)

To trace the origin of school-university partnerships, teacher education should be considered as the main source for its beginning. School-university partnerships were given more attention by scholars when the quality of school teaching decreased (Tsui et al., 2009). Since teacher education was identified as one of the least developed research areas in education, several scholars tried to analyse and investigate this field. Cochran-Smith and colleagues (2008) investigated teacher education in the United States and outlined four dominant approaches to understanding and studying this field. They observed shifts between the 1920s to present time between these approaches. The four dominant approaches include (1) teacher education as a curriculum problem during the 1920s to 1950s, (2) teacher education as a training problem from the 1950s to the 1980s, (3) teacher education as a learning problem from early 1980s to the early 2000s, and (4) teacher education as a policy problem from mid 1990s to the present time (Cochran-Smith et al., 2008). The focus on school-university partnerships was increasing, particularly between 1980s and 1990s, when Cochran-Smith and colleagues identified the teacher training and learning problem as the dominant approach. With the growing concern for teacher education, school-university partnerships for the all-round development of education became a major tool in the education field for promoting the quality of teacher education.

The popularity of school-university partnerships started with criticism of the quality of teacher education (Tsui et al., 2009). In the United States, criticism of teacher education and the decline in the professional development of school teachers led to the establishment of the Holmes Group in 1987 - a group of academic officers from universities across the US (Holmes Group, 1986). The collaboration and agreement between these academic officers led to the birth of

professional development schools, which improved the quality of education of initial teacher education, continuous professional development, and research and development in teacher education. School-university partnerships for initial teacher training has become popular and strategically supported in the United States (Rowley et al., 2013).

Before the creation of professional development schools, American educational experts set goals for reforming teacher education (Holmes Group, 1986). Five goals were set by the Holmes Group experts that focused mainly on encouraging the qualification of teachers and to call for well qualified prospective teachers in the teaching profession. Among the five goals, one was focused on the establishment of school-university partnerships, "to connect our own institutions to schools" - the explanation of this goal showed a growing attention to the role of schools in educating teachers, "schools must become places where both teachers and university faculty can systematically inquire into practice and improve it" (Holmes Group, 1986).

1.2. Broader concepts of partnership

In this section, some broader concepts supporting a better understanding of school-university partnerships are discussed.

1.2.1. Knowledge triangle

The knowledge triangle is seen as an important tool for enhancing innovation processes through connecting the key drivers of the knowledge-based society, namely, education, research and innovation (Groumpos, 2013). According to Sjoer (2011), the knowledge triangle is conceived as the conceptual tool in which research, education and innovation are linked together with their respective processes on its three sides. According to him, the knowledge triangle renovates the flow of information among actors. In the traditional approach, the information only goes from research to education and from educators to students. In contrast to this traditional way, knowledge triangle considers interactive flow of information between three partners: research, education and innovation.

Halasz (2016) utilized this knowledge triangle concept in teacher education. In his issues paper on school-university partnership, he applied the knowledge triangle model to education sector where innovation takes place in schools supported by educational research and teacher education (Figure 1).

The issue paper proposed the knowledge triangle of teacher education model. In this model, three areas are seen as essential to be connected and to interact for promotion of teacher education. In this model, the universities stand as the centres for educating teachers and doing research where schools stand as the centre of innovation (Halasz, 2016). According to him, knowledge and learning can only be created effectively if there is partnership between schools and universities.

FIGURE 1. KNOWLEDGE TRIANGLE OF TEACHER EDUCATION

Halasz, 2016

1.2.2. Horizontal knowledge sharing: Joint Practice Development

With the increased emphasis on teacher professional development during last four decades in the United Kingdom, there was a shift from a knowledge model of professional development to a practice model where the latter focuses more on shared professional practices and the former on the cognitive change through the acquisition of academic knowledge (Hargreaves, 2011). This reflects the broader trend of using horizontal knowledge sharing networks of schools to support educational development.

Hargreaves (2011) termed this kind of professional development as joint practice development (JPD). Joint practice development is a process where peers are sharing practices and interact in a learning process. This is not a one-way process, rather, it is an interactive process where the useful and valuable practices are shared by doing and are transferred from person to person. This joint practice development is different from the old model of professional development process where most of the knowledge comes from academics or authorities giving lectures or training courses. Hargreaves (2012) observed that the traditional model of professional development is not effective when success rate is measured for teachers who were participating in this old model. The teachers reported that the success rate is low when they listen and attend the training programs following traditional model of professional development (Hargreaves, 2012). Hargreaves explained the reason why the success rate is very low:

"The reason is so obvious: implementing the new practice in one's school or classroom often proves to be a much more difficult task than it appeared to be in the oral or written account of it. The practice was shared, certainly, but not actually transferred" (Hargreaves, 2012, p. 8).

On the other hand, joint practice development offers the most efficient and effective way of professional development by its three different features, including:

- It is a joint activity, in which two or more people interact and influence one another, in contrast to the non-interactive, unilateral character of much conventional 'sharing good practice'.
- It is an activity that focuses on teachers' professional practice, i.e. what they do, not merely what they know.
- It is a development of the practice, not simply a transfer of it from one person or place to another, and so a form of school improvement. (Hargreaves, 2012, p. 9)

According to the authors, the third feature of development is the most important because two or more people are interacting and collaborating in a practice where the new practices go beyond the transfer from person to person. JPD is an effective development of practice for two reasons. In the process of mentoring and coaching of JPD, the coach has to push himself to think in different ways and different perspectives because of the recipient's questions. At the same time, both coach and recipient have to reflect themselves to learn from their own practice to support, help and explain to each other. In this way, "sharing practice ends up as a co-construction of practice that entails incremental innovation" (Hargreaves, 2011, p. 11).

The single community itself becomes a very small unit to learn from various sources in the knowledge-based and networked world. According to (Stoll & Louis, 2008), collaborative and network-based learning is needed to reach learning sources outside the single community and from different communities.

1.2.3. The triple helix model

The triple helix model is created by Etzkowitz and Leydesdorff by highlighting the need of collaboration between universities, industry and government for innovation (Etzkowitz & Leydesdorff, 1995).

The triple helix model can also be applied in the sector of education with the assumption that universities and research agencies should cooperate with schools and this should be supported by governments. From the perspective of the triple helix, the university is responsible for research and teaching and schools are conceived as industries and spaces of innovation, and the government is supposed to provide appropriate regulatory environment for their cooperation.

2. Contextual background

Myanmar which is strategically located between the economic hubs of China, India and ASEAN countries is also the largest country in mainland Southeast Asia (The Government of the Republic of the Union of Myanmar, 2016). At the end of the colonial period in 1948, Myanmar's education system was recognized superior to many other neighbouring states, with adult literacy rate around 60%. However, the country's education system turned into long-term decline for many decades and went down to the bottom of the league table of ASEAN countries for educational enrolment, achievement and investment after the military coup in 1962 (Borg et al., 2018).

As a developing country, Myanmar is facing many challenges in its education system. As the country is at the beginning stage of an ongoing process of building democratic education, new criticism and judgments are continuously emerging (Borg et al., 2018). Educational reform in Myanmar has a major focus on teacher education due to the recognition of the fact that improving school education depends mainly on strengthening the quality of teachers (Walailak University & Ulla, 2018)

For teacher training, there are three universities of education (UOE) and 25 teacher education colleges. Universities of Education (UoE) provide a five-year B.Ed. qualifying teachers to teach in high school. Education Colleges (ECs) provide a four-year B.Ed. qualifying teachers to teach in primary and middle school; the ECs are affiliated to a UoE (UNESCO, 2016).

3. Research questions

The aim of the study is to investigate the current school-university partnership practices and to explore the sources of possible tensions between partners in initial teacher training. To understand these phenomena in depth, two main research questions were developed; (1) what are the tensions between mentor teachers and student teachers? (2) How do the mentor teachers and student teachers handle and negotiate the tension?

Answering these research questions will increase knowledge about the current practices of school-university partnership in initial teacher training and might lead to a better understanding of the nature of collaboration. Within the context of partnership, these research questions aim to explore situations in which tensions might emerge, the factors influencing them, and also the ways partners handle and solve problems to reduce tensions.

4. Research methodology

4.1. Participants

There are three teacher training universities in Myanmar. This study only includes one teacher training university in the country. Six participants participated in the study, representing three student teachers from a teacher training university and three school teachers from Basic Education High Schools. All three student teachers had two-week practice teaching experiences at Basic Education High Schools.

4.2. Data collection and analysis

The main data collection method was semi-structured interviews. Under the careful guidance and suggestion of experts, an interview guide and protocol before the data collection was developed. Interviewing phase took place in Basic Education High School and one University of Education. Each interview lasted about 30-40 minutes. The researcher followed the interview guide and protocol however additional questions were investigated when interesting and relevant events emerged during the interview processes.

Data were collected through face-to-face interviews. Three student teachers (ST) were interviewed individually by the researcher. Three mentor/school teachers (MT) who were the subject deans of the school where student teachers did their practical teaching were interviewed individually by the researcher. All the interviews were recorded and transcribed. All the recording had been deleted after the transcription was done. Interview data were analysed through coding. Coding procedures were done by careful coding of the transcribed data.

Before starting the coding process, a first version of codebook was developed by the researcher. After careful analysis of the interviews transcripts, the researcher revised the codebook. Based on the second version of the codebook, the coding was repeated. The codebook was left open throughout the coding process, making it possible to include new items. In order to achieve reliability in data analysis, documents were coded at least two times by the researcher at different times.

5. Findings

This section will present the findings about the problems or tensions between partners and the way they are negotiated to solve tensions between them. Results revealed that there are three

major sources which cause tensions, namely, trust, different opinions and beliefs and disconnection among partners. On the other hand, different ways to reduce and solve the tensions include observing the source of tension, accepting and negotiating different ideas and beliefs, common participation in the school activities and intensifying collaboration with each other.

5.1. Trust issues

One of the factors that can challenge collaboration between schools and universities is the lack of trust. Trust does matter. A lack of trust has been revealed as a major obstacle in the school-university partnership literature and research (Burton & Greher, 2007; Walsh & Backe, 2013). In this study, the lack of trust becomes not only the "obstacle" for collaboration; it is also the manifestation of "the tension" between partners.

In case of practice teaching, student teachers are allocated to classrooms on the basis of their specific subject. On the first day of student teachers' practice teaching at schools, mentor teachers have given them the full authority to manage and teach classrooms. From this day, student teachers took full responsibilities for the classroom relating to teaching and learning.

According to interview results, mentor teachers feel that it is not correct to give student teachers the whole classroom to manage alone during this two-week practice teaching. Mentor teachers thought that student teachers could not handle the classrooms and the lesson because they are still too young and do not have experiences in teaching and managing classroom.

"*I think they are still too young and have no experiences of teaching. I am so afraid to give them the whole classroom*" (MT1)

"*Different student teachers always come to our school every year, at this time. And the lessons for these two months are very important and difficult. So, I don't like to give the whole class to the student teachers because these lessons are very important and concepts are needed to be well explained. This is one problem*". (MT2)

Trust seems to be a key factor of the relationship between partners. On the other side, student teachers felt that the mentor teachers didn't have trust on them. This became the burden for them in teaching and learning. They felt like they didn't have the privacy for teaching and managing the classroom.

"*Mentor teacher gave us her notes about the lesson and told me to teach according to the notes. This made me feel frustrated. I have my own styles and don't want to follow her notes*." (ST2)

"*Some of my friends have experienced that mentor teachers are watching and coming to see them while they are teaching. Sometimes, during the lesson, mentor teacher came to the classroom and tell the students to pay attention to us (our teaching). But I think this is not necessary. We can manage the classroom*." (ST3)

The situation between partners is tensed because of lack of trust on each other. However, these tensions were handled by both partners. The tension was solved when school teachers directly asked student teachers and they negotiated the situations. Another handling method for a mentor teacher was to observe the student teachers teaching in the classroom and expressing her satisfaction towards them.

5.2. Different beliefs and attitudes

When two different entities collaborate, it is very common that they have different perspectives, beliefs and attitudes. The important thing to handle this situation is to try to accept and negotiate the different perspectives. According to our interviews, different beliefs and attitudes also led to tension between partners in a school-university partnership.

During two week of practice teaching, mentor teachers wanted student teachers to finish more than two chapters of a given subject. For them, this is important because they are also teaching according to the course schedule. Therefore, mentor teachers asked student teachers to finish teaching at least two chapters during two week of practice teaching. For the mentor teacher, finishing the given work (teaching two chapters) was in the focus of mentor-mentee relationship and a key factor of practice teaching.

"*During these two weeks, we mainly asked them to finish two chapters. We are teaching according to the schedule and it is important to finish in time*." (MT3)

On the other side, student teachers dislike the idea of rushing in teaching. They wanted to teach using different teaching aids, and to explore how new or specific new teaching methods work in practice. Student teachers wanted to take time to prepare lesson and to teach lesson carefully and slowly to give the required concept.

"*Mentor teachers want me to teach two chapters to finish during these two weeks. I followed her advice, and tried to finish in time. But, because of this, I can't teach really well. I am just rushing to finish the lesson, and it made me stressed. I was worried all the time for not finishing the lessons in a given time. I regret that now. I couldn't concentrate my teaching and couldn't teach so well. My focus was on finishing, not on perfect teaching*." (ST2)

"*But two weeks practical teaching is not enough for us. We can't know and learn everything very well. This is a very short period. There are three things I always follow in my mind whenever I plan my lesson to teach. (1) To check the nature of examination, for example, which part of lesson is important for students to sit the exam, which notes should I give for the exams, etc. (2) To connect the content and the practical, I always try to connect the lesson and how to apply this lesson in the daily life and practical life. (3) Happiness of the child, how to teach the children to enjoy the lesson, etc. But, they said that "this is what you have to teach during these two weeks*" (ST1)

Another different belief between mentor teachers and student teachers is about communicating with children.

"*My mentor teacher told me that 'not to be very friendly with children'. But I don't understand this. She may refer to something else. May be she is afraid that children won't respect us if we are too friendly with them. But, this is a very strange advice. From my point of view, if we communicate with the children in a proper way, friendly, it is good. We can be friendly with our children in a proper and correct way*". (ST1)

"*When I was in my practical teaching, it is really difficult to communicate with teachers. I found that school teachers rarely give compliments to children*" (ST2).

This differing opinion is the tension which was not solved during the practice teaching of the student teachers. All the three student teachers mentioned that they were pushed to teach to

finish several chapters during their practical teaching. On the other hand, mentor teachers also had a huge burden for teaching and finishing lesson in time according to national curriculum schedule. This is one of the major tensions which need to be handled.

5.3. Disconnection

Learning can be more effective when there is an interactive learning environment in the organization.

On the based on the results of this study, student teachers and mentor teachers had no real collaboration and they were disconnected from each other. A group of student teachers were given a private room and this led to disconnection from school teachers' community and school community. On the other hand, school teachers (or) mentor teachers assumed that giving a private room for student teachers was aimed to provide them more privacy and freedom for student teachers.

"*During our practical teaching, the school gave a separate room for us. So, I felt like I am separated from all teachers at schools. We didn't have any closeness, communication and friendship among us. I don't like this. I couldn't see, and learn what the teachers are doing and talking and collaborating. Mostly, I have to discuss and reflect with my friends in my teaching during practicum. We didn't have a chance to discuss with teachers. This is sad*" (ST1)

"*Student teachers, they are at another room. Principal asked us to give them a private room. So, I don't really know what they are doing or what is happening there. I told them to come to me if they have any questions about the lesson or teaching. I am welcome. But we are a bit separated from each other. But I think this is also good for them. They can freely talk and do what they want in their private room. If they are with us, they may be a bit nervous or stressed, I think. This is good for them*" (MT3)

According to interviewees' response, this obstacle was coped with annual school's ceremony or school activities. Student teachers and school teachers built closer relationship when they were participating in school's activities and ceremonies.

6. Discussion

As school-university partnership initial teacher training becomes one of the major areas in teacher education, sources of issues and solution for problems are also explored. Based on the literature, the unequal power relationships and difference values and opinion between schools and universities are common obstacles for both organizations (Martin et al., 2011; Taylor et al., 2014). Workload and too much teaching tasks rise as major pressure for mentor teachers while lack of clear guidelines and structure for practice teaching are unpleasant factors for student teachers (Botha & Beets, n.d.). On the other hand, trust is not only the sources of developing tension but also the solution for building a strong relationship between partners (Johnston, 1997). The results of this study show that some of the above obstacles are the major obstacles for establishing effective learning community between student teachers and mentor teachers.

6.1. Trust and different beliefs between partners

According to the interviews conducted, student teachers and mentor teachers showed lack of trust. Student teachers preferred teaching according to their methods and didn't want to follow the notes and lesson plan given by mentor teachers. On the other side, mentor teachers were not

sure that student teachers can handle the classroom alone. Checking student teachers' teaching by mentor teachers made student teachers frustrated.

Openness and trust between partners became the major obstacle to build mutual learning environment. At first, the partners did not try to collaborate. Though mentor teachers guided student teachers indirectly by giving her lesson notes and lesson plans, they didn't openly discuss what they want to get and what they expect from student teachers. Nevertheless, mentor teachers were afraid of letting student teachers to give the whole classroom control.

On the other side, student teachers denied using these lesson notes and plans from the mentor teachers. They liked to teach and use their own teaching methods.

This lack of trust can be connected to teacher identity. Student teachers have a strong beliefs and ideas in their teaching styles and methods while mentor teachers want them to use their notes and lesson plans. Mentor teachers' lack of trust in student teachers' teaching led to checking student teachers while they were teaching. Student teachers felt that they are being controlled while they are trying to build their identity.

Having different opinion and attitudes in teaching and learning is another obstacles and interesting factor in school-university partnership for initial teacher training. At university of education in Myanmar, practice teaching for student teachers is only two weeks. Student teachers have to do their practice teaching in their third year and fourth year and each lasts only two weeks. Many student teachers complained about not having enough time for their practice teaching. On the contrary, mentor teachers gave them a load of work to finish teaching at least two chapters of a subject during these two weeks. For mentor teachers, finishing lessons according to schedule is important because of huge workload and teaching tasks to complete in time. For student teachers, delivering lesson to motivate students and to get essential concepts are more important than finishing lessons according to schedule.

Another thing to consider is the matter of generational and social perceptions between mentor teachers and student teachers. Student teachers' belief in communicating with children in a friendly and open way is the opposite of mentor teachers' assumption. This needs to be considered as one of the main important factors between student teacher and mentor teachers that made them separated.

6.2. Disconnection

One interesting point is the privacy consideration between mentor teachers and student teachers. Student teachers felt that they are neglected by school community when they are given a private room. A group of student teachers felt that they are separated from all teachers in the schools and they didn't like that kind of separation.

For mentor teachers, they also mentioned that they didn't know what student teachers were doing because the partners were in two separate rooms. On the other hand, mentor teachers thought that this is good for student teachers to talk freely among their friends in the group.

This made a thought that student teachers like having a privacy related to their teaching and classroom management while they didn't like to have no connection with teachers as colleagues. This also concern with identity as student teachers wanted to communicate with other teachers as their colleagues. This finding showed that student teachers wanted their

privacy in classroom teachers; however, they also wanted to be a part of the school teachers' community.

7. Conclusion

The findings of this study suggest that there is tension between partners in school-university partnerships in teacher training in Myanmar. Based on the interview results, tensions are mainly caused because of trust, different opinion and beliefs. Tension could be reduced and solved if schools and universities developed more intensive partnerships.

Besides this, the limited time for practice teaching is also one of the major barriers for collaboration. According to student teachers and school teachers, the practice teaching should be longer than two weeks since two weeks duration is too short for building trust and effective learning between partners. To be effective in student teachers' practice teaching as well as for school teachers' learning, the practice teaching duration should be extended to some amount of time.

In conclusion, through the collaboration between schools and universities, the teacher education system in Myanmar could be significantly improved and advanced. Starting from collaboration for initial teacher training, it can also expand for further improvements from professional development to research development areas of teacher education. In such a way, school-university partnerships in Myanmar could be one of the main sources for fostering teacher education.

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There's a Flip Side: the Mystery of the Human Being and Puzzle of Homo Economicus

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Abstract

Steven Pinker wrote in the introduction to one of his books that every idea in the book may turn out to be wrong, but that would be progress, because our old ideas were too vapid to be wrong. In this essay we are also trying to understand which the right question is. We are looking for a question for which we do not have to look for a single correct answer. We are looking for a question that makes those who prone thinking to be actually start thinking. Here is the question: what does a child learn? We remember that all of us, our children and our grandchildren played with things that were made available to them. Some of us played with dolls, balls, Barbie dolls, Lego blocks, or 5G smart gadgets. The child kicked the ball, comforted the doll the same way as nowadays he or she plays with 5G smart gadgets without any prior training. The tools have simply become more sophisticated. However, something did not change. Ancient Greek tales were read to all. Is it possible the other way round, namely to read or watch contemporary tales on ancient Greek gadgets? We tend to claim that this is impossible, as gadgets are becoming ever more modern day by day, and ancient Greek tales and their ethical norms do not change. In this essay we argue that the 'Septem Artes Liberales' are permanent, but the 'Septem Artes Vulgares' change. As we stated earlier, the emphasis is on asking the right question. Noam Chomsky suggests the terms 'problem' and 'mystery'. Here and now, we are using the terms 'puzzle' and 'mystery' to depict unknown phenomena. This is how we view it: the unknown phenomena of the world are mistakenly classified as puzzles, to which someone either already knows the solution or else the solution will become known sometime in the future. Let us instead accept a world where the 'Septem Artes Liberales' have mysteries, while the 'Septem Artes Vulgares' have puzzles. This explains why the solutions for puzzles have become more sophisticated over time. The mysteries have endured, and it is good that they have done so.

***Keywords*:** analytical thinking, common arts, cognitive skills, liberal arts, metaphorical thinking

1. Artes Liberales vs. Artes Vulgares

During classical antiquity, the 'Septem Artes Liberales' (Latin for seven liberal arts) were defined to signify what a free person should know in order to be a useful member of the society. It consisted of the more essential 'trivium' of grammar, logic, and rhetoric and the somewhat less important 'quadrivium' of arithmetic, geometry, music, and astronomy. In the 12th century these were included in the 'Hortus deliciarum' (Latin for Garden of Delights) by Herrad von Landsberg, which was intended as a compendium of all human knowledge. At the dawn of Renaissance, they served as basis for creating the first European Universities, where magistri (Latin for masters) taught the scholaria (Latin for scholars or students). The education at these first universities was conducted in Latin.

Juxtaposed to the 'Artes Liberales' in antiquity we can find the 'Artes Vulgares' (Latin for common arts) or 'Artes Serviles' (Latin for servile arts); the first of these two labels emphasising that these are inferior to the 'Artes Liberales', while the second signifying knowledge needed to perform work, usually with the purpose of making money, in the service of free men, as a contrast 'Artes Liberales', which signified knowledge that has no end other than itself. Due to the negative connotations of vulgar and servile, these were later renamed into 'Artes Mechanicae' (Latin for mechanical arts and in later translations practical arts). In the 9th century, John Scotus Eriugena divided 'Artes Mechanicae' into *agricultura* (agriculture), *architectura* (architecture), *coquinaria* (cooking), *mercatura* (trade), *metallaria* (blacksmithing), *militia and venatoria* (warfare and hunting) and *vestiaria* (tailoring/weaving). In the 12th century Hugh of St Victor replaced agricultura, architectura, coquinaria and mercatura with navigation, medicine and theatrical arts.

The trivium of 'Artes Liberales' was renamed as Studia Humanitatis, or human (and social) studies, the quadrivium was identified as scientific arts, while the 'Artes Vulgares' became the practical arts, in the sense of engineering and medicine. Of course, in today's world we have a much larger number of disciplines, but we can see that historically, human and social studies were not inferior to science and engineering – to the contrary, they were considered to be the noblest disciplines. As Jerome Bruner said: "We forget at our peril that the great advances in Eastern Europe were led not so much by mathematicians and scientists (although they were there too) but by playwrights, poets, philosophers, and even music teachers" (Bruner, 1996, p. 117). This thought once again draws readers' attention to the fact that the human sciences do have a serious impact on social and economic development.

In the next section, we will examine how different disciplines can help us understand human behaviour.

2. Mystery vs. Puzzles

In order to do good economics – according to the top behavioural economists – we have to keep in mind that people are human. We have been teaching courses in economics and MBA at domestic and foreign universities for decades. This experience confirms that the presentation, interpretation and applicability of the results achieved by a behavioural economics researcher have only a very marginal place in the education of future economists.

We mention some of influential behavioural economists without supposing to be exhaustive: Dan Ariely (2010), Tim Harford (2008), Daniel Kahneman (2011) and Richard H. Thaler (2008; 2015). "For four decades, since my time as a graduate student, I have been preoccupied by these

kinds of stories about the myriad ways in which people depart from the fictional creatures that populate economic models. It has never been my point to say that there is something wrong with people; we are all just human beings – homo sapiens. Rather, the problem is with the model being used by economists, a model that replaces homo sapiens with a fictional creature called homo economicus, which I like to call an Econ for short. Compared to this fictional world of Econs, Humans do a lot of misbehaving, and that means that economic models make a lot of bad predictions, predictions that can have much more serious consequences than upsetting a group of students" (Thaler, 2015, p. 4). And so now we can see the conflict of the homo economicus of mainstream economics and the homo sapiens of behavioural economics. At this point we will again cite Richard Thaler, who is the 2017 recipient of the Nobel Memorial Prize in Economic Sciences for his contributions to behavioural economics. "Although I have at times been critical of economists in this book, I am entirely optimistic about the future of economics. One sign that I find particularly encouraging is that economists who do not identify themselves as "behavioural" wrote some of the best behavioural economics papers published in recent years. These economists simply do solid empirical work and "let the chips fall where they may" (Thaler, 2015, p. 357).

The human being always remains a mystery, even if the homo economicus is presented in the form of a puzzle. "Our ignorance can be divided into problems and mysteries. When we face a problem, we may not know its solution, but we have insight, increasing knowledge, and an inkling of what we are looking for. When we face a mystery, however, we can only stare in wonder and bewilderment, not knowing what an explanation would even look like" (Chomsky, 2015, p. 124). Solving puzzles is different. Let us take the mystery of fear as an example. We are aware that fear is taught at some schools as if it was a puzzle for which there is a correct solution, however, we are also aware that this is wrong. Let us see some examples:

> We are afraid of becoming fat but also of becoming slim.
>
> We are afraid of going to a good school but also of going to a bad one.
>
> We are afraid of our partner leaving us but also of them staying.
>
> We are afraid of getting to know others but also of not getting to know anybody.

We could go on listing the mysteries of fear, but it is superfluous. Less deeply, positivists say that solving puzzles needs intelligence and solving mysteries needs creativity. This thought is an error. The trouble is that we do not know anything about creativity. According to Avram Noam Chomsky, who is an American linguist, philosopher and one of the founders of cognitive science we can say this less bluntly: "we barely know more about creativity than what Juan Huarte knew, a Spanish philosopher in the XVI century" (Chomsky, 2015, p. 99). Problems arise when someone does not believe this and wants to learn something that cannot be learned. Bela Hamvas, the one of the greatest Hungarian thinkers and writers of the 20th century, said that a man, as soon as it is about things over the fence, becomes suspicious, looks in disbelief, and thinks that someone wants to push him against the wall.

Disciplines have specialised over time. In 1300 they were classified into seven disciplines. In 1950, they were classified into 54 disciplines, in 1975 into almost 2000 disciplines. Nowadays references mention more than 8000 disciplines. It is impossible to figure a new way out within the frames of a single discipline, however, it does not follow as a result that disciplines can be chosen at random. "If there is something in nature you don't understand, odds are it makes sense

in a deeper way that is beyond your understanding. So there is a logic to natural things that is much superior to our own. Just as there is a dichotomy in law: 'innocent until proven guilty' as opposed to 'guilty until proven innocent', let me express my rule as follows: what Mother Nature does is rigorous until proven otherwise; what humans and science do is flawed until proven otherwise" (Taleb, 2012, p. 388). Reality does not do the favour of remaining within the frames of a single discipline. Perhaps if those embracing the transdisciplinary view are given some space, we could be closer to getting to know reality. The transdisciplinary mindset does not wish to control or dominate other disciplines. Here and now, we are wishing not to rise above disciplines but to get beyond them, and from that place to get a perspective on how organisations can be led. To achieve this, we need to leave the cage of learned disciplines, and experiment with terminology that is over disciplines – metaphors. "Philosophical theories are our conscious, systematic attempts to develop coherent, rational views about our world and our place in it. They help us understand our experience, and they also make it possible for us to reflect critically on our views and to see where and how they ought to be changed" (Lakoff & Johnson, 1999, p. 480).

The big question is whether one must stay caught up in the cage of their learned discipline. Some time ago philosophy was the 'king' of all disciplines. Today's world looks as if positivist thinkers want to direct everyone towards the cage of physics, where it is recommended to describe reality using causal relationships. Referring to science these people even look down on others thinking within soft disciplines and seeing the world in different ways than physicists do. If we want to take a step further from disciplines and accept the excitement of studying new phenomena in a discipline-free way, then we will not be longing for our cage or that of our neighbours.

In this section we remind the reader that human being will never be like homo economicus. So, in the next section, we examine how we – as a human being – understand each other!

3. Metaphors vs. Algorithms

When we sit in a cafe and overhear a conversation about new tools at another table, we do not know anything about the people who are talking. However, we know everything: they are industrial workers, and they are not talking about tools, but they are legitimising themselves: 'we are up-to-date workers'. When we overhear a conversation on the tram about today's lunch, we do not know anything about the people who are talking. However, we know everything: they are housewives, who are not talking about soup, but they are legitimising themselves: 'we are taking care of our families'. When observing a narrative, a frame arises which creates the order for the sensemaking of the narratives. We do not have to accurately foresee what will happen. This is impossible and superfluous. Human beings are not trains that can only move on tracks. What we have to understand is the sensemaking of the narratives.

It is the illusion of positivists that human beings will function according to the laws of physics. Maintaining the illusion of rationality and single correct sensemaking costs much and it is dangerous. We are wasting immense amount of mental capacity on measuring the unmeasurable, quantifying the unquantifiable, and imposing these on complex societal systems. We are doing all this instead of paying attention to the sensemaking of the narratives. Not only do we waste time and capacity, but the disappointment in the end is harmful as well.

Observing the sensemaking of the narratives about the direction of movement within complex societal systems may get us closer to understanding complexity than the models imposed on us which are based on the laws of physics. Based on the sensemaking of narratives we can understand that the individual thinking, narratives, decisions and actions that operate complex societal systems make individual phenomena cognisable. We cannot talk about significant changes until we understand individual phenomena, which can only be derived from the whole. Sensemaking is a prerequisite and a consequence of whether we can connect it with our experiences.

When we look at metaphors, they are in fact fancy heuristics, in the sense that they are based on the starting image, as opposed to deductive, inductive or abductive reasoning. This is acceptable as we can only work with what we see, and that is the starting image, when we do not know anything. "Metaphor is for most people a device of the poetic imagination and the rhetorical flourish, a matter of extraordinary rather than ordinary language. Moreover, metaphor is typically viewed as characteristic of language alone, a matter of words rather than thought or action. For this reason, most people think they can get along perfectly well without metaphor. We have found, on the contrary, that metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature" (Lakoff & Johnson, 2003, p. 4).

The increase in the number of observations increases the distance among narratives. The sensemaking of phenomena which occurred in the past includes the memories of our experiences. This means that it is foolish to expect that two minds will create the same image when exposed to the same narrative. As a consequence, two people who have experienced the same phenomena there and then, will attribute two different sensemaking in the here and now regarding the same phenomena. It is an error to assert that there and then they both experienced the same phenomenon. The emphasis should not be on precision. There is no text which has a universal sensemaking, there is only individual sensemaking. Using words to express things is a game which does not aim to create a single sensemaking that is recognisable and imitable for everyone. The beauty of the text is conferred by its mysteriousness and the multiple possibilities of sensemaking according to the mood of the reader. If the same text meant the same for everyone, every time and everywhere, then an algorithm could be easily defined. Only those who really pay attention can talk. Primitive people are not capable of playing with sensemaking. For them, one word or phrase can have only one sensemaking. These people try to create a world that is tolerable for themselves, or in other words: they make the phenomena of the world unambiguous. Complex societal systems have an abundance of phenomena which cannot be typified. These organisations survive until symbols are recognised and can be given sensemaking that is not typified. The educated mind can respond to symbols by making use of symbols and can make sense of the functioning of the system through rituals and myths. This person does not try to determine which phenomena he or she will observe but observes phenomena which occur.

The educated mind describes new phenomena using metaphors. Some notions have a certain kind of sensemaking only then and there. The then-and-there sensemaking of the notion cannot be found in dictionaries. These are symbols the sensemaking of which can be different from the original meaning. Phenomena are named by saying 'this is this' and that's it. "We do not know very much about the experiential bases of metaphors. Because of our ignorance in this matter, we have described the metaphors separately, only later adding speculative notes on their

possible experiential bases. We are adopting this practice out of ignorance, not out of principle. In actuality we feel that no metaphor can ever be comprehended or even adequately represented independently of its experiential basis" (Lakoff & Johnson, 2003, p. 20). In contrast, metaphors are poetically intensified and are abstract. After using them for a long time, they appear solid and obligatory, their frequent use makes us forget about their origin. We often say that the leader in the organisation is like a conductor. He is not playing the instruments instead of the members of the orchestra, but he ensures they are playing harmoniously. The phenomena can be described more understandably with this expression. Only primitive men think about him wearing a tailcoat and waving with a stick. By using more metaphors, we can make understanding easier. For example, the leader of the organisation conducts the winning team. Be careful with beautifying metaphors! – says Henry Mintzberg (2019) the doyen of the influential thinkers on business and management. "The top is nothing more than a metaphor – a quite silly one, actually. The leader is on top of the organigram, on the top of the salary scale, and most often on the top of the office building" (Mintzberg, 2019, p. 50). In these situations, it is a must to use metaphors but use them carefully. It is possible that there and then in a particular culture they can be used for something; they seem insignificant only when observing them from the standpoint of a different culture.

Metaphors mirror the cognitive process and the thinking process. They are expressions we use to describe a phenomenon and they may seem distant when we hear them for the first time. Metaphors are not only interpretations but worldviews. Metaphors are tools which make the expression of new phenomena and their content possible. Educated men can express what cannot be said by using metaphors. Metaphors create a conceptual frame which is in harmony with reality and the image of which is mirrored in language. By using a metaphor, we tune in with the phenomenon. Things we believed yesterday to be true we confute today. Things we hold true today we may confute tomorrow. There are no sensemaking set in stone. The same text may make different sense tomorrow. Relying on the knowledge we have today we see a certain image behind a text (metaphor) and tomorrow we may see a different one. Hypotheses can be created about order which assume a simple or a complex causal relationship. This does not exist in complex societal systems.

What is the origin of good things being located above and bad things below? It is better to rise than to sink. In sports we also have upper and lower tiers. At school we have lower and upper classes. It is clear that these are not spatial positions, even though these expressions refer to such. These metaphors 'mistakenly support' the right way of thinking. "We have offered evidence that metaphors and metonymies are not random but instead form coherent systems in terms of which we conceptualize our experience. But it is easy to find apparent incoherencies in everyday metaphorical expressions. We have not made a complete study of these, but those that we have looked at in detail have turned out not to be incoherent at all, though they appeared that way at first" (Lakoff & Johnson, 2003, p. 42).

Those who think beyond disciplines see a simple but obscure picture, which they can only describe by using metaphors. Above the disciplines it is not the birth of a new discipline that can be expected. The twist is if the audience accepts the picture described with metaphors. No society has ever been discovered – not even in the farthest part of the world – where there was not something to be considered art. It does not matter if these objects are drawings or scripts, people found ways to illustrate the world without taking it to pieces beforehand. Analytical

thinking, which has been striving to achieve a monopoly in the past two decades, has extinguished philosophising.

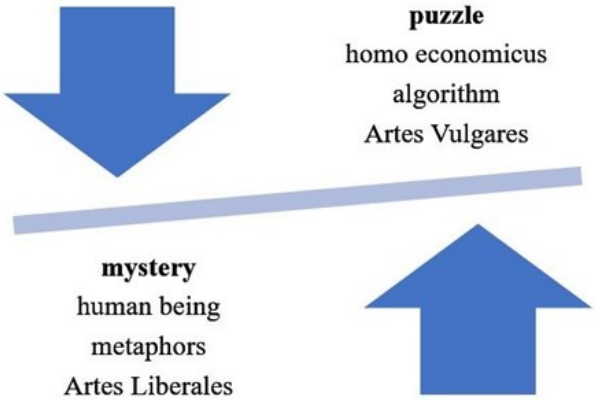
The scientific discourse approaches people as puzzles. “Since you have never heard either sentence before, you must have interpreted them by applying a set of algorithms (incorporating the rules of syntax) to the strings of words. The end product in each case is a novel thought you assembled on the fly. Equipped with the concepts of babies, slugs, and eating, and with an ability to arrange symbols for them on a mental bulletin board according to a scheme that can be registered by the demons that read it, you can think the thought for the first time in your life” (Pinker, 1998, p. 132). Our research method is based on Karl Popper's theory (Popper, 1992). It means that we can define the problem through tentative solutions and error elimination only during the sequence of our research.

4. Discussion

There are ancient Greek tales about digital technology, but there are no new tales about ancient Greek technology. In mysteries the analytical thinking will always be inferior to metaphorical. The scientist’s mind is not able and willing to embrace reasoning without reason, which is the notion of human behaviour. What should scientists search for if they want to prove that free will exists? Some kind of random neurological event which is then amplified by other parts of the mind into a behavioural trigger? Thanks to Marc Prensky the words Digital Native and Digital Immigrant are now in the Oxford English Dictionary. He stated that “Digital Immigrant teachers assume that learners are the same as they have always been, and that the same methods that worked for the teachers when they were students will work for their students now. But that assumption is no longer valid” (Prensky, 2001, p. 3). What remains is the charisma of the lecturer and the artistic performance (Tick, 2018, 2019). Add to the previous statement: ancient Greek tales may be taught as before, through performance.

Human beings can trigger behavioural hurricanes, but this does not fit into the stimulus-response model. As a result, we either dismiss human behaviour as something unscientific, or we consider it completely unresolved. “Are there any concepts at all that are understood directly, without metaphor? If not, how can we understand anything at all?” (Lakoff & Johnson, 2003, p. 57). Figure 1 depicts our model which we offer for discussion.

FIGURE 1. MODEL OF MYSTERY AND PUZZLE SEPARATION



Source: own editing

Some will accept this model, others will not, and some will allow discussion. Our goal should be to engage in discussion focused only on the model of mystery and puzzle separation. "Classical philosophical conceptions of the person have stirred our imaginations and taught us a great deal. But once we understand the importance of the cognitive unconscious, the embodiment of mind, and metaphorical thought, we can never go back to a priori philosophizing about mind and language or to philosophical ideas of what a person is that are inconsistent with what we are learning about the mind. Given our new understanding of the mind, the question of what a human being is arises for us anew in the most urgent way" (Lakoff & Johnson, 1999, p. 17).

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