

Opportunities, Issues and Best Practices in Online Education and Examination of University Students

TRANSVERSAL SKILLS CORRELATION TO ONLINE EDUCATION

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Abstract. Rapidly changing society, we are living in and the World's transformation observed in the last decade are providing new educational trends, increased needs and demands of the labor market and adaptivity of educational systems, especially during biosecurity emergencies such as COVID-19 pandemic. The new reality requires skills and knowledge that goes beyond a specific profession itself and leads to the emerging need of development of high level of possession of transversal skills in the current educational systems. "Transversal skills are those typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge but as skills that can be used in a wide variety of situations and work settings" (IBE 2013). "These skills are increasingly in high demand for learners to successfully adapt to changes and to lead meaningful and productive lives" (UNESCO UNEVOC). Specific problem, analyzed by the present article focus on the correlation the aspects of transversal skills applied in force major accelerated development of educational systems and the feedback provided by students, which took part in online education activities. This research aims to analyze the interconnections between the development of transversal skills and the online reality of education during the COVID-19 pandemic. Based on the implemented analysis of reachable literature, process overview and implemented survey with 91 respondents has been defined that the importance of transversal skills is critical to the effective and goal-oriented educational process in online environment, including the education in sport.

Keywords: COVID-19; online education; biosecurity emergency; skills development

Introduction

In the New skills Agenda for Europe strategic document, launched by the European Commission in 2016 is highlighted that "formal education and training should equip everyone with a broad range of skills which opens doors to personal fulfilment and development, social inclusion, active citizenship and employment. These include literacy, numeracy, science and foreign languages,

as well as transversal skills and key competences such as digital competences, entrepreneurship, critical thinking, problem solving or learning to learn, and financial literacy... Early acquisition of these skills is the foundation for the development of higher, more complex skills which are needed to drive creativity and innovation. These skills need to be strengthened throughout life and allow people to thrive in fast-evolving workplaces and society, and to cope with complexity and uncertainty. While some of these competences already have an established place in educational systems, this is not typically the case for key competences such as entrepreneurship and citizenship, or transversal skills. Where some Member States have taken steps to incorporate them in curricula, this has not always been done consistently¹⁾. The White paper on the future of Europe²⁾ is clearly stating that “making the most of the new opportunities whilst mitigating any negative impact will require a massive investment in skills and a major rethink of education and lifelong learning systems”. In 2018, a policy paper were released by AEGEE regarding the importance of transversal skills and competences for young people that pointed out “the importance of transversal skills and competences for young people in a modern Europe, to present the challenges they face and to state the position of AEGEE-Europe followed by recommendations to different stakeholders”³⁾. In the document are described the growing importance of the transversal skills, current challenges and practices in their development for young people. Recommendations has been set to both European and national institutions, as well to the employers and labor market and to organizations, working with young people.

In the national legislation and reachable documents of Bulgaria, the country of residence of paper researchers, the transversal skills development is a relatively new policy field that is described in the National Programme for Development of Unified VET education⁴⁾ (2013 – 2020). In the document is referred to the Conclusions of the Council and of the Representatives of the Governments of the Member States, meeting within the Council, on the priorities for enhanced European cooperation in vocational education and training for the period 2011 – 2020 in which Member States are welcomed to “guarantee that initial VET provides learners with both specific vocational competences and broader key competences, including transversal competences, that enable them to follow further education and training (within VET or in higher education) and to support career choices, participation in and transitions within the labor market”.

In the scientific literature, the transversal skills are widely explored in the last years. Although the research process of different skills and knowledge models is a highly explored topic, including the Ulrich Naiser, the founder of cognitive psychology that concluded that “the cognitive activity of a person is better explained and associated with the process of acquiring of skills” (Naiser, 1976). One of the first publications regarding the transversal skills has pointed out that “transversal (horizontal) competencies, in which competence copes with

a series of situations” was published in 1996 by Bernard Ray (Rey, 1996). Ray found out that “his transversal competency a man gives sense to the situation... As a result, transversality can be described as the simultaneousness which exists between multiple situations united by their common sense assigned to them by the subject...” Bernard Ray has also defined the existence of four groups of transversal competencies: “autonomy and responsibility, communication competency, organizational and methodological competency, and cognitive competency for processing of information.” (Merdzanova, 2005). The definition has been further developed by different researchers and for the purposes of the present paper has been adopted the definition of UNESCO, stating that the main transversal skills categories are six: critical and innovative thinking, interpersonal skills, intrapersonal skills, global citizenship, media and information literacy and others (the domain ‘others’ was created as a way for researchers to include competencies, such as physical health or religious values, that may not fall into one of the other).

In the Bulgarian scientific community Yana Merdzanova researched the different aspects of transversal competency both as fiction and as an intention and highlighted that “in reality, the competency-function cannot go beyond the specifics but the competency-intention as a point of view, as an approach, as a manner, as a style – it can and it must be pedagogically formed and to be transferred through different ages and activities. This is the sense that every person assigns to the specific situation in which he acts through his narrow competencies.” (Merdzanova, 2005). According to Boris Minchev “actually, the general intellect is transversal, i.e. the capability to form skill, but not the structure of the skill itself” (Minchev, 1991).

Numerous studies have provided information that education through sport and play allows children and youth to better enjoy and engage with the learning process while enhancing social connectedness between participants. This creates an environment more conducive to open communication and encourages a love of learning (McCune, 1998; Hirsh-Pasek and Golinkoff, 2008; Jeans, 2010; Kay, 2009; Crabbe, 2009; Colucci, 2012). The correlation of transversal skills and their development through sport has been also recently highlighted in a publication that revealed that “when athletes go to international competitions they have to speak various languages, negotiate with competition managers, meet day-to-day challenges, and all these activities contribute to the development of competencies characterizing numerous interpersonal relations and communications” (Galimov, et al., 2019).

Aim of the research

The aim of the study is to analyze the interconnections between the transversal skills and the online reality of education during the biosecurity emergency that the world has experienced in the frame of covid-19 pandemic.

Methodology

In order to reveal the correlation of transversal skills and online education and

in particular what is the level of possession of transversal skills of both online educator and online student, has been set an anonymous online survey. The data was analyzed through set of statistical procedures.

Study and Questionnaire design

An anonymous empirical research was implemented in the period 15 – 29 June 2020. The software used to collect the data was QuestionPro⁵⁾ and the system was opened and closed on the above-mentioned dates. The database includes 3 categories. The first section was devoted to demographic characteristics such as participants' gender, age, and country. The following two sections included a set of 20 skills, corresponding to the UNESCO terminology, mentioned in previous section has been described and the participants in the research has the opportunity to evaluate each one of the skills and the level of its possession from the highlighted points of view – possession by online educator and by online student. The respondents were able to evaluate each of the sub-skills forming the transversal skills specter as follows: For the purposes of the present research a questionnaire has been developed, which can be conditionally divided into 3 categories: for the demographic profile of the surveyed: gender, age, country, the analysis of the skills development level of online educators and the ones of students in online environment. The skills that were presented for evaluation was the same as for the online educator – 20 sub-skills of the six categories of transversal skills:

1. Critical and innovative thinking;
2. Inter-personal skills (e.g. presentation and communication skills, organizational skills, teamwork, etc.);
3. Intra-personal skills (e.g. self-discipline, enthusiasm, perseverance, self-motivation, etc.);
4. Global citizenship (e.g. tolerance, openness, respect for diversity, intercultural understanding, etc.);
5. Media and information literacy such as the ability to locate and access information, as well as to analyze and evaluate media content;
6. Others such as physical health and religious views⁶⁾.

Their degree of expression is assessed with a 5-point Likert scale, where 1 is considered as not important/lack of development and 5 is considered with significant development of the mentioned skill. The level with intermediary significance of the data is evaluated with 2, 3 and 4.

Participants

The research has been implemented in an online environment and the questionnaire was sent to both Bulgarian and foreign students, involved in Bulgarian universities and foreign students, involved in their national or international universities (in English). The respondents are from Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Greece, Hungary, Republic of North Macedonia, Moldova, Norway, Serbia, Slovakia, Spain, and Turkey. Based on the analyti-

cal needs of the paper, the researched subjects are divided in 2 groups – Bulgarian and foreign respondents.

Statistical analysis

Statistical processing of the obtained empirical data includes frequency, variation and comparative analysis (Mann-Whitney and Wilcoxon).

The results of the survey were processed according to an approved statistical procedure using the statistical program IBM SPSS Statistics for Windows, version 25.0.

Results and discussion

The online questionnaire received 91 answers, involving 2/3 of them corresponding to Bulgarian participants (Table 1). The average age of the respondents is $M=25.4$ years (Min=18, Max=58, SD=7.86).

Table 1. Participants

Indicator	Groups	Number (n)	Relative share (%)
Gender n=91	Female	53	58.2%
	Male	38	41.8%
Age n=91	up to 25	61	67.0%
	26-35	20	22.0%
	36+	10	11.0%
Country n=91	Bulgaria	68	74.7%
	Other	23	25.3%

The primary focus of the analysis of the results in the present study is to determine the extent to which students have developed a set of transversal skills during online learning conducted at their universities, as well as to determine the level of these skills in educators, according to student's opinion. The results obtained on the basis of average values will be the starting point for further analysis (Table 2).

Table 2. Results of data variation analysis

Skills	Min	Max	Mean		SD	
			S*	E*	S*	E*
Critical thinking	1	5	3.30	3.51	1.41	1.39
Innovative thinking	1	5	3.54	3.91	1.42	1.29
Presentation skills	1	5	3.38	4.07	1.51	1.35
Communication skills	1	5	3.52	4.07	1.45	1.37
Organizational skills	1	5	3.60	3.90	1.47	1.44
Teamwork abilities	1	5	3.31	3.51	1.48	1.41
Self-discipline	1	5	3.74	3.82	1.40	1.38

Enthusiasm	1	5	3.31	3.92	1.47	1.33
Perseverance	1	5	3.34	3.66	1.42	1.32
Self-motivation	1	5	3.52	3.97	1.42	1.34
Tolerance	1	5	3.34	3.79	1.49	1.36
Openness	1	5	3.58	3.89	1.41	1.27
Respect for diversity	1	5	3.35	3.96	1.52	1.31
Intercultural understanding	1	5	3.37	3.89	1.56	1.36
Media literacy	1	5	3.34	3.84	1.46	1.30
Information literacy	1	5	3.44	3.93	1.47	1.31
Ability to locate and access information	1	5	3.56	4.09	1.38	1.31
Ability to analyze and evaluate media content	1	5	3.55	4.02	1.45	1.19
Physical health	1	5	3.10	3.31	1.63	1.56
Religious values	1	5	2.53	2.57	1.57	1.51

*S – Student; E – Educator

Reliability analysis – Cronbach's alpha has been used to assess the internal coherence. For the first subscale (the presence of transversal skills in educators) Cronbach's Alpha = .971, and for the scale concerning the transversal skills of students $\alpha=.966$. The analysis of the results regarding the internal coherence of the two subscales reveals that they are characterized by strongly expressed correlation dependence, with unambiguous criterion orientation and high internal coherence.

The implemented comparative analysis of the data found statistically significant differences in terms of gender and citizenship, but it is noteworthy that the differences relate to different skills (Mann-Whitney test). Such were also reported between the availability of certain transversal skills of the students and the necessary / expected skills for their educators (Wilcoxon test) (Table 3).

Table 3. Comparative analysis results by Wilcoxon

Skill	Z	p
Innovative thinking	-2.593	.01
Presentation skills	-3.424	.001
Communication skills	-3.142	.002
Enthusiasm	-3.500	.001
Self-motivation	-2.713	.007
Tolerance	-2.550	.011
Respect for diversity	-3.418	.001
Intercultural understanding	-2.970	.003
Media literacy	-3.005	.003

Information literacy	-2.631	.009
Ability to locate and access information	-3.349	.001
Ability to analyze and evaluate media content	-2.660	.008

In terms of *gender*, the differences are recorded for the skills Openness ($U=-2.102$; $\alpha=.036$) and Respect for diversity ($U=-1.999$; $\alpha=.046$). The variation analysis suggest that men are more demanding than women in the presence of these skills in their educators. Students who are not Bulgarian citizens are also more demanding of their professors. In the answers, statistically significant differences were found for 7 of the listed 20 skills (Table 4). The age of the students does not affect the preferences for the availability of certain skills in the educators.

The differences in the level of self-assessment of development of transversal skills during online learning in the surveyed students do not meet the criteria for statistical significance at the factors of gender, citizenship and age.

Table 4. Comparative analysis results (Mann-Whitney Test) on citizenship factor

	Critical thinking		Presentation skills		Communication skills		Enthusiasm		Respect for diversity		Information literacy		Ability to analyze and evaluate media content	
	U	α	U	α	U	α	U	α	U	α	U	α	U	α
Bg-other	-2.660	.008	-2.305	.021	-2.002	.045	-1.989	.047	-2.023	.043	-2.052	.040	-2.082	.037

Another task that was set was to reveal the extent to which the students studied believe that these skills are necessary for the implementation of quality online learning process – both in terms of teaching and in terms of acquiring new knowledge. According to the respondents, the set of transversal skills that their educators need to possess largely correlates with the quality of teaching in a virtual environment ($M=3.88$; $SD=1.33$). The answers of the surveyed students regarding the need to develop these skills by themselves ($M=4.04$; $SD=1.27$) have slightly higher average values, although no statistically significant differences were found.

Claiming of non-exhaustivity, the present paper has outlined the set of necessary “transversal skills” of educators, teaching in an online environment. According to the surveyed students, the skills with greatest importance are the Inter-personal skills (e.g. Presentation and communication skills, organizational skills, teamwork, etc.). By the obtained results, we can conclude that the skills Physical health and Religious values are of least importance in terms of quality online educational process.

Based on the received data, a significant need of focused development of transversal skills was acknowledged, both for educators and students in online education. Derived from the research itself and the information, provided by the researched target group, the following conclusions can be highlighted:

- **Transversal skills possession importance – online educator:** Results provide clear evidence that the transversal skills are essential for delivery of quality online education process;
- **Transversal skills development importance – online students:** Results ensure that the online environment of education has provided further development of transversal skills possession in students;
- **Correlation between transversal skills and online education:** Based on the received data there is significant correlation between transversal skills development and quality online education process.

NOTES

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