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DEVELOPING STUDENTS' TRANSVERSAL COMPETENCES THROUGH CULTIVATION OF HEALTH LITERACY COMPETENCE

ROZWÓJ PRZEKROJOWYCH KOMPETENCJI STUDENTÓW POPRZEZ PROMOWANIE WIEDZY I UMIEJĘTNOŚCI MEDYCZNEJ

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ABSTRACT

The recognition that transversal competences are increasingly needed to face the challenges of the ever-changing world has given rise to work examining students' development of transversal competences (TVCs) during their university time. This approach argues in favor of embedding transversal competences as well as health literacy competence and subject-based competences in curricula. The mini-study presented herein first posits a logical model for the integration of transversal competences in university curricula, supplemented with a qualimetric model comprising 6 factors associated with transversal competences. The resulting tools for transversal competence evaluation and self-assessment were next applied in a pilot questionnaire study of a small group of management students at a local university. Overall, the findings support the claim that students' TVC development requires a new educational paradigm based on a holistic approach to competence-based learning that involves the harmonious development of a person's TVCs and subject-based competences. Moreover, the results may serve as

a reference for future studies on transversal competences and health literacy in particular, as well as for teachers and researchers in related fields.

Key words: transversal competences, health literacy competence, subject-based competences, holistic approach, competence-based education, qualimetric model

ABSTRAKT

Założenie, że kompetencje przekrojowe są coraz bardziej potrzebne, aby stawić czoła wyzwaniom stale zmieniającego się świata, dało początek pracom badającym rozwój kompetencji przekrojowych (TVC) studentów podczas ich studiów. Podejście to przemawia za osadzaniem w programach nauczania kompetencji przekrojowych, a także kompetencji zdrowotnych i kompetencji przedmiotowych. Przedstawione tu minibadanie jako pierwsze zakłada logiczny model integracji kompetencji przekrojowych w programach nauczania uczelni, uzupełniony o model jakościowy obejmujący 6 czynników związanych z kompetencjami przekrojowymi. Wykorzystane narzędzia do przekrojowej oceny kompetencji i samooceny zostały zastosowane w pilotażowym badaniu ankietowym małej grupy studentów wydziału zarządzania na lokalnym uniwersytecie. Ogólnie rzecz biorąc, odkrycia potwierdzają twierdzenie, że rozwój TVC studentów wymaga nowego paradygmatu edukacyjnego opartego na holistycznym podejściu do opartego na kompetencjach uczenia się, które obejmuje harmonijny rozwój TVC danej osoby i kompetencji przedmiotowych. Ponadto wyniki mogą służyć jako punkt odniesienia dla przyszłych badań nad kompetencjami przekrojowymi a w szczególności świadomością zdrowotną, a także nauczycielom i badaczom pokrewnych dziedzin.

Słowa kluczowe: kompetencje przekrojowe, wiedza medyczna, kompetencje podmiotowe, podejście holistyczne, uczenie się oparte na kompetencjach, metoda jakościowa

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Introduction

Much research in recent years has focused on developing health literacy competence (HLC), enabling people to exercise control over their health and health-related decisions. The importance of cultivating HLC in university students, through modifications in the design, scope, and content of curricula, has been demonstrated. Most institutions of higher education now integrate health literacy competence into their curricula through subjects included under co-scholastic areas such as "life skills" and "health and physical education" as well as into extracurricular activities, such as sports events. Nevertheless, HLC can also be integrated into curricula across subjects, through the development of students' transversal competences (TVCs).

TVCs have been extensively studied by educators as competences vital for individuals as citizens to cope with global social, economic and technological changes and development. Therefore, their provision should be enhanced across all curricula, using innovative and student-centred pedagogical approaches. As a mini-study by Kristine Sorensen and other scholars (Sorensen et al., 2012) has shown, the definitions of the concept "health literacy" encompasses domains that nearly mirror the domains of transversal competences (TVCs): 1) critical and innovative thinking; 2) interpersonal skills; 3) intrapersonal skills; 4) global citizenship; 5) media and information literacy; and 6) physical health and religious values (UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific, 2015).

New educational policy documents emphasise that TVCs are needed to cope with the increasing challenges to the individual's physical, social and emotional health; thus, TVCs as well as HLC need to be further integrated into subject-based curricula. However, the relationship and balance between TVCs, HLC and subject-based competences in university curricula as well as the assessment of students' learning outcomes remain unclear.

The purpose of the article, therefore, is to propose a logic model for integrating transversal competences into university curricula, by relating curriculum activities to anticipated learning outcomes. The approach we employ in this study aims to cultivate students' HLC using the integration of TVC and Bloom', Dave's or Simpson's revised taxonomies into university curricula planning.

Literature review

The concept of "competence" is misused or used in a loose manner by scholars in many countries due to labour market demands. A competence is associated with a construct, a dynamic, complex combination of cognitive and metacognitive skills, knowledge and understanding, interpersonal, intellectual and practical skills, ethical values, attitudes, as well as the desire, motivation and experience to apply them in a particular situation of every day or professional life. A competence is gained through competence-based education, initial training and refined through practice. A competence

demonstrates the individual's physical and intellectual quality to effectively perform the professional or everyday life activities or to meet the expectations of society (Tuning Academy Reference Points, 2009).

Traditionally, in higher education competences are classified in conceptual terms as being generic (common to any degree course) and subject-area related (specific to a field of study). In the last two decades, the conceptualization of generic competences has been widened and redefined. In the previous decade, educators used the terms "personal transferable skills", "graduate capability development", "generic capabilities", "graduate attributes movement", "generic graduate attributes", and so on to emphases the future graduates' ability to better address the demands of the ever-changing labour market. Presently, the concept of "generic competences" has been redefined due to the realization of the UNESCO Roadmap for Implementing Global Action Programme on Education for Sustainable Development (2015). The challenges of the 21st century (global warming, shifts in demographic makeup, the rapidly changing global economy, the digital transformation, etc.) future generations will face require a new educational paradigm shift and a holistic approach. It should be focused on the development of the transversal (cross-cultural and transferable) competences needed by society to implement sustainability in all its domains, such as employment, education, well-being, environmental protection, economies and health. Thus, students' TVCs development aims to equip future graduates with competences required to interact effectively with society and the planet in the following dimensions: economic, social, cultural and ecological. Accordingly, TVCs are often also labelled as 21st century skills, soft skills, non-cognitive skills or skills to survive (Table 1).

Table 1. Different Views on Transversal Competences' Definitions and Skill Taxonomy

Author	Year	Definition	Skills
Quebec school training program (Gouvernement 2003)	2003	Transversal competences refer to additional set of skills that support the development of professional, subject-based skills	Intellectual skills: problem solving, critical thinking, creative thinking.Methodological skills: communication and information technologies.Personal and social skills: ability to cooperate and self-development Communication skills: ability to communicate
Pârvu and Ipate (2010)	2010	Transversal competences refer the values and attitudes that go above of a given specific field or study program and that have a transdisciplinary character. Transversal competences deal with personal attributes of a cognitive, social, attitudinal or evaluative nature that enrich professional behavior. Although it is not obligatory for an employee to obtain such a set of skills they can be an additional element that raises the employee's value.	autonomy, responsibility, social interaction and personal and professional development.
Hernandez-Linares et al. (2014)	2014	Transversal competences, also referred to as global competences, are a set of competences that can be transferred to any professional context irrespective of the situation where they were attained. They are crucial for all types of work and are fundamental for more specific "hard" competences.	Can be divided according to Tuning Project diversification: • Instrumental • Interpersonal • Systemic or integrative competence
Balcar, Janickova, Filipova (2014)	2014	Transversal competences contain skills, values and attitudes that help future employees to obtain a high level of holistic development and therefore allows them to adapt to any changes	Leadership skills, the ability to communicate, problem-solving, the ability to work as a team and creativity-related competences
UNESCO Office Bangkok (2015)	2015	Transversal competences are skills and competences that are attained in non-work-related situation or through academic disciplines that are not related to a specific profession. Thus, transversal competences can be acquired in one context to solve a task and transferred to another context.	Skills represented in 6 domains: 1 Critical and innovative thinking 2 Interpersonal skills 3 Intrapersonal skills 4 Global citizenship 5 Media and information literacy 6 Other

Cont. table 1

Author	Year	Definition	Skills
Comprehensive Synthesis Report (2015)	2015	Transversal competences are considered as such skills that are not specifically related to a particular work-related situation, field or area of knowledge and academic discipline but can be used for completing different tasks in any work settings.	Different lists of TVCs from each country-partner: **Austria** (Communication in the mother tongue and foreign languages / second language; Mathematical competence and competences in science and technology; Digital competence; Learning to learn; Social and civic competences; Sense of initiative and entrepreneurship; Cultural awareness); **Belgium** (relational, organizational competences; linguistic skills; social behaviour; communication, coaching and leadership abilities); **Greece** (Literacy skills; Strong numeral and mathematical skills; Fundamental financial / accounting skills; Fluency in English and other foreign language skills; Computer / ICT skills; Emotional Intelligence related skills; Team-player; Strong communicating skills; Management skills); **Italy** (Learning to learn; Organizing and planning; Communication; Collaborating; Consciousness; Problem Solving; Identifying links among facts and events; Ability to collect and analyse information); **Spain** (Language communication; Mathematical competence and basic skills in science and technology; Digital competence; Learning to learn; Civic and social competences; Sense of initiative and entrepreneurship; Cultural awareness and expression); **Poland** (transversal competences referred to as a subgroup of key competences).
AEFA (2016)	2016	Transversal competences are competences that can be mobilized in different professional situations.	Skills represented in 5 dimensions: 1 organizational 2 autonomy and adaptability 3 social sphere 4 communication 5 ability to participate and initiate

Cont. table 1

Author	Year	Definition	Skills
Viska project (2017)	2017	Transversal competences are considered as such skills that are not specifically related to a particular work-related situation, field or area of knowledge and academic discipline but can be used for completing different tasks in any work settings.	The classification is the same as UNESCO but adapted with several skills examples from Key Competences: 1 Critical and innovative thinking, Ability to learn 2 Interpersonal skills — presentation and communication skills; both in mother tongue and in foreign language 4 Global citizenship — social and civic competence 5 Media and information literacy — digital competence
Wittermore (2018)	2018	Transversal competences that can be also viewed as soft skills, 21st century skills, key competencies, and global competencies. They are essential for personal self-development and improvement of work-related characteristics; fundamental for applying any knowledge or skill in a work context.	seven core transversal skills: Collaborative problem-solving; Learning to learn, continuing to learn; Digital competencies and mindset; Initiative and independent thinking; Resilience; Adaptability; Cultural awareness and expression.
Canclini et al. (2019)	2019	Transversal competences are skills that refer to an employee's values of cognitive and relational nature. They are connected with specific situation rather than precise professional activity. TVC can also transfer acquired skills to different work contexts.	1. Ability to work in a group 2. Knowing how to work independently 3. Problem solving 4. Creativity 5. Initiative skills 6. Ability to listen 7. Public speaking ability 8. Ability to overcome difficulties 9. Having the ability to synthesize 10. Flexibility and adaptability
ESCOpedia. (2020)	2020	Transversal competences are the building blocks for the development of the "hard" skills and competences required to succeed on the labour market. They are often referred to as core skills, basic skills or soft skills.	application of knowledge attitudes and values language social interaction thinking

Source: original compilation by the authors.

The above definitions take different approaches to describing their characteristics, because the analysis of transversal competencies depends on the areas of activity and the specific training that is required to obtain them. Earlier studies depict transversal competences as an additional set of skills that help a person to develop their specific "hard" skills (Gouvernement du Québec, 2003).

Development of transdisciplinary and transferable competences in future employees is one of the long-term aims of modern educational integration aspects. Thus, the main feature that is similar in many researchers' definitions is that TVCs can be transferred to any work-related situation, irrespective of where and when they were acquired (Balcar, Janickova and Filipova, 2014; Sá and Serpa, 2018, Visca, 2017; Canclini et al. 2019; Simon Wittermore, 2018).

Although some aspects of transversal competences are already harnessed in the educational process, their nature is not homogeneous and requires further study. The issue of transversal competence terminology is unclear, as the very concept continues to evolve. Their value is intensified by the growing need for social and labour realities in which specialized knowledge quickly becomes obsolete, contrary to the ability of applying general knowledge to different situations that is considered a necessary productive strategy in relation to the modern labour market.

The ERI-Net's framework on TVCs, which is the most commonly used by researchers, has six domains: 1) critical and innovative thinking (creativity, entrepreneurship, resourcefulness, application skills, reflective thinking, reasoned decision-making); 2) interpersonal skills (communication skills, organizational skills, teamwork, collaboration, sociability, collegiality, empathy, compassion); 3) intrapersonal skills (self-discipline, ability to learn independently, flexibility and adaptability, self-awareness, perseverance, self-motivation, compassion, integrity, self-respect); 4) global citizenship (awareness, tolerance, openness, responsibility, respect for diversity, ethical understanding, intercultural understanding, ability to resolve conflicts, democratic participation, conflict resolution, respect for the environment, national identity, sense of belonging); 5) media and information literacy (ability to obtain and analyse information through ICT, ability to critically evaluate information and media content, ethical use of ICT); and 6) physical health, religious values (appreciation of healthy lifestyle, respect for religious values) (UNESCO et al., 2015).

Transversal competences describe knowledge, skills and values that will help future employees to realize themselves as individuals and professionals, as well as to find work, their place in life and society. Therefore, higher education is designed to create conditions for the training of specialists of the innovative type, who have transversal skills that will allow individuals to optimize their work.

Today, health is considered as a personal and public asset, so health care, disease prevention and health promotion are a priority task for each individual and society as a whole. The sixth domain of TVCs comprises "physical health" and "appreciation of healthy lifestyle", which Nutbeam (2000:261) defines as "health and social outcomes" of health literacy. As our literature review has shown, numerous researchers have paid attention to health literacy as "an individual construct", "a personal's ability or capacity", "specific skills required to perform health care related tasks, e.g., making health decisions", "the cognitive and social skills", "motivation to receive health information", "the skills to evaluate and participate in civic action related to health care issues", "communication skills", "the ability to engage in two-way communication", "skills in media literacy and computer literacy", "lay and professional knowledge of health topics, culture", and so on (Berkman, Davis, & McCormack, 2010). Consequently, we can conclude that definitions of health literacy are in line with the definition of the concept "competence", thus, in our mini-study we refer to health literacy as health literacy competence. The current conceptualization of HLC concerns the domains of TVCs; HLC is one of TVCs and can be cultivated through students' TVCs development; definitions of HLC manifest the deep interrelations between its structure and functions, as well as interrelations of internal and external factors, natural and social ones.

Bowden and Marton (2014) suggest that integration of TVCs as generic competences in the context of higher education should be characterized by the following: a) recognition of TVCs by the given "university community"; b) students' TVCs development during their time at university; c) transcendence of disciplinary knowledge; and d) training graduates as agents whose future activity will benefit the society.

Educators react to the integration of TVCs into university curricula differently. Enthusiasts take into account that TVCs facilitate integrated

learning across disciplinary boundaries; are intended to improve graduates' employability, training; enhance reflective practice. Sceptics state that the distinction between subject-based and transversal competences (TVCs) is not very clear; TVCs are subject-independent; there is an overlapping link between TVCs; some TVCs are viewed as "traditional" competences. Thus, educators face challenges that require modification of curricula and pedagogy as well as assessment.

Methodology

The holistic approach of the new educational paradigm is underpinned by the systems approach, which assumes a structural and functional analyses of complex systems in their dynamics and interrelations with other systems. The systems approach reveals a deep picture of the functioning of complex systems from a holistic point of view. TVCs may be viewed as multidisciplinary objects that are learned through inter-, trans- and pluri-disciplinary approaches. While structural analysis is aimed at studying isolated static complex systems and functional analysis is oriented toward analysing the functioning of systems outside their development, the systems approach is based on the study of the mechanism of development and functioning of complex systems, the latter being taken in all the richness of interrelationships with other systems.

The participants in this study comprised a group of bachelor's degree students studying management at a local university in Ukraine. Altogether there were 24 students between ages of 18–20.

To confirm the reliability of the obtained results, the following formal methods and techniques were applied: qualimetrics method, statistical method of index assessment and the method of arithmetic average.

Results and Discussions

Traditionally, the classification of competences is based on a philosophical approach, as subject-object-subject interrelations: 1. Competences relating to the individual as a personality, as an actor of

everyday life activity (personality development) 2. Competences relating to the interaction of the individual with other people, 3. Competences relating to the individual's labour activity, manifested in all its types and forms (cited in Vozniuk, 2011). In this research we refer the combination of TVCs (HLC as well) and subject-based competences as universal competences that: are acquired through education; can be embedded and well-balanced in the university curricula; underpin all subjects; can be assessed.

Under the systems approach, the human being is the agent and object of culture who is in the process of creative activity, i.e. an individual actor who creates material and spiritual culture in the socio-cultural context. Communication is the link that connects all the components of culture and sociocultural processes together. Thus, communication is the basis of human interaction, professional interactions as well. As communication competence is the basis to develop students' HLC, we can apply a functionalist perspective on culture to exploring and identifying the methods and strategies to develop TVC in young adults.

As any human activity, cultivating HLC is a specific kind of individual's active attitude to the world, the aim of which is to change and transform the world through assimilation and development of existing forms of culture. The gradual process of internalization of culture forms causes the gradual development of the individual and externalization of his or her actions based upon knowledge. This process represents the process of socialization or enculturation of the individual to culture and predicts his or her ability to be an accepted member of the society. Therefore, cultivating students' HLC should be based on Galperin's theory of internalization and externalization of cognitive activities, that is, the individual's socio-cultural knowledge assimilation (internalization) gradually takes over his or her behaviour patterns (externalization) and makes sense of them.

From the philosophical standpoint, culture is a system of values. We assume that students should be oriented to such individual values as Health, Truth, Goodness while acquiring HLC.

Culture as a system of symbols determines the choice of texts that contain information about health care, disease prevention and health promotion, e.g. prescription bottles, appointment slips, other essential health-related materials, etc.

The interrelation between communication and culture, e.g. professional and personal interactions; doctor's consultations, etc., requires a dialogic model displayed through initiating, stimulating and terminating interaction. So, students need to be taught consensus-making communication strategies. The interrelation between human activity and culture focuses on interactions with the ecosystems that support our lives (e.g. disputes about environmental pollution, man-made disasters, etc.).

To describe the results achieved by students in terms of HLC, Bloom's, Dave's or Simpson's taxonomies can be applied. Bloom's taxonomy is focused on cognitive and affective domains; Dave's and Simpson's taxonomies can be used by students to observe their progress in the psychomotor domain as they become more competent in health literacy. An example is given in Table 2.

Table 2. An application of Bloom's cognitive domain categories to a student's HLC

Level	Definition
Knowledge	The student is able to remember information about diabetes
Comprehension	The student is able to demonstrate that he or she understands this information
Application	The student is able to use this information in a concrete situations (eat less sugar and sweets)
Analysis	The student gains an understanding of why this information is important to his or her well-being (the risk of weight gain, high blood pressure)
Synthesis	The student is able to use this information to make positive changes in lifestyle (to appreciate a healthy lifestyle, to keep to a diet)
Evaluation	The student is able to make healthy choices based on this information (not to buy high sugar content processed foods, to engage in exercise)

Source: Adapted from Castle (2003).

Let us now turn to the table describing the Qualimetric Model of Transversal Skills Cultivating (Table 3). First, we will view the process of working with the qualimetric model of Transversal Skills Cultivating. According to the qualimetric model, its components are specified as the factors of this model, indicated as F_i, $i = 1, ..., 6$, while the values of these factors were indicated as f_i, $i = 1, ..., 6$, where F_1 is an individual as an actor of life activity (personality development competence), $f_1 = 0.2$;

F_2 — global citizenship competence, $f_1 = 0.1$;
F_3 — interpersonal skills; $f_1 = 0.2$;
F_4 — communication competence, $f_1 = 0.2$;
F_5 — the individual as an actor of professional activity (subject-based competence), $f_1 = 0.2$;
F_6 — media and information literacy competence, $f_1 = 0.1$.

Table 3. The Qualimetric Model of Evaluating Transversal Skills Cultivation

Factor — *F*	value — m	Criteria content	value — v	conformance index-K	conformance index value	Partial criteria assessment	Partial factors assessment
1. the individual as an actor of life activity (personality development competence)	0.20	1. health literacy competence	0.30	K1	0.75	0.225	0.15
		2. critical and innovative thinking	0.30	K2	0.75	0.225	
		3. intrapersonal skills	0.40	K3	0.8	0.320	
2. global citizenship competence	0.10	4. multicultural values	0.30	K4	0.9	0.270	0.080
		5. social values	0.30	K5	0.8	0.240	
		6. personal values	0.40	K6	0.6	0.240	
3. interpersonal skills	0.20	7. teamwork skills	0.40	K7	0.75	0.300	0.150
		8. leadership skills	0.30	K8	0.9	0.270	
		9. presentation skills	0.30	K9	0.65	0.195	
4. communication competence	0.2	10. reflect quickly, and appropriately for the circumstances, on the external situation of communication	0.20	K10	0.75	0.150	0.161
		11. plan the content of communication	0.30	K11	0.90	0.270	
		12. find the adequate method of communication	0.30	K12	0.75	0.225	
		13. give feedback	0.20	K13	0.80	0.160	
5. the individual as an actor of professional activity (subject-based competence)	0.2	14. general/compulsory subjects	0.30	K14	0.80	0.240	0.162
		15. professional-based subjects	0.50	K15	0.90	0.450	
		16. elective courses	0.20	K16	0.60	0.120	

Cont. table 3

Factor — *F*	value — m	Criteria content	value — v	conformance index-K	conformance index value	Partial criteria assessment	Partial factors assessment
6. media and information literacy competence	0.10	17. IT skills 18. Media and IT Ethics	0.70 0.30	K17 K18	0.80 0.45	0.560 0.135	0.07
Total assessment in unit parts	1.00						0.77

Source: results of author's research

The above mentioned factors and their values are given in the first two columns (Table 4). As an example, let us take factor F_1 . Five criteria of this factor are presented in the second line and the third column (table 4).

Table 4. The Qualimetric Model of Evaluating Transversal Skills Cultivation

Factor F_i	Factor' value f_1	Criteria content	conformance index m_i	conformance index value k_i	criteria assessment	factors assessment
F_1 — the individual as an actor of life activity (personality development competence)	$F1$ =0.2	1. health literacy competence	m_1 =0.3	0.75	0.225	F_1 =0.15
		2. critical and innovative thinking	m_2 =0.3	0.75	0.225	
		3. intrapersonal skills	m_3 =0.4	0.80	0.320	

The criteria values are defined by the experts and determined as m_i, m_i = 0.3, i = 1, 2, 3.

Source: results of original research

The second factor — F_2 — comprises three criteria, the third one F_3 includes three, the fourth one F_4 comprises four, the fifth factor F_5 includes

three criteria and the sixth one F_6 comprises two criteria, making for a total of 18 criteria. The criterion with index i from the third column corresponds to value m_i ε with the same from the fourth column.

A student who evaluates their own activity with the help of this qualimetric model has to assess their activity according to each 18 criteria. The conformance index value is k_i for criterion i. Experts suggest giving k_i the following value: 0.00 — the student does not correspond to a certain level; 0.25 — the student corresponds to a certain level for around 0% to 40% of requirements; 0.50 — the student conforms to this level for around 40%–60% of the requirements; 0.75 — the student corresponds to this level for around 61%–75% of requirements; 1.00 — the student conforms to this level for around 76%–100% of requirements.

After a student has completed the table by putting his mark in the fifth column, conformance index value k_i, $i = 1, ..., 18$. Then the factor analysis is calculated — it corresponds to the numbers that characterize the conformity of a student to the defined factors; these numbers are given the same letters F_i, $i = 1, ..., 6$, as the factors are calculated using the formulas:

$$F_1 = f_1 \sum_{i=1}^{3} k_i m_i,\ F_2 = f_2 \sum_{i=4}^{6} k_i m_i,\ F_3 = f_3 \sum_{i=7}^{9} k_i m_i,\ F_4 = f_4 \sum_{i=10}^{13} k_i m_i,$$

$$F_5 = f_5 \sum_{i=14}^{16} k_i m_i,\ F_6 = f_6 \sum_{i=17}^{18} k_i m_i.$$

The factor value letters F_i, $i = 1, ..., 6$ is the sum of this factor value f_i, $i = 1, ..., 6$ on the paired sum of the total value sum of its criteria as well as on their conformance index value. If the sum of every criteria conformance index value is 1, the factor index is less or equal to the factor value.

$$F_1 \le f_1,\ F_2 \le f_2,\ F_3 \le f_3,\ F_4 \le f_4,\ F_5 \le f_5,\ F_6 \le f_6.$$

The sum of factor indexes F_i, $i = 1, ..., 6$ is considered to be equal to the level of student's transversal skills cultivation and is denoted as: $r = \sum_{i=1}^{6} F_i$.

If we sum up every component of the last inequality, it will

be: $r = \sum_{i=1}^{6} F_i \le \sum_{i=1}^{6} f_i = 1,\ r \le 1$, so the level of student's transversal skills cultivation is always less or equal to 1, and is 1 exactly only in case when all conformance indices values are $k_i = 1$, $i = 1, ..., 18$.

The analysis of questionnaire responses, therefore, made it possible to reveal the level of student's transversal skills cultivation and to pay attention to the specific techniques that show how the skills can be more effectively streamlined. It was found out that most students do not master the communication techniques, interpersonal skills, and have a low level of global citizenship competence as well as health literacy competence. Nevertheless, under the circumstances of the COVID-19 pandemic and future challenges of the modern world, most students reported that they felt that TVCs and HLC, in particular, are vital for their future professional activity. Overall, the majority of the respondents have positive results in such TVCs as: the individual as an actor of professional activity (subject-based competence), as well as media and information literacy competence.

Conclusions

This article has focused on the six most significant factors for transversal competence evaluation: 1. the individual as an actor of life activity (personality development competence); 2. global citizenship competence; 3. interpersonal skills; 4. communication competence; 5. the individual as an actor of professional activity (subject-based competence); 6. media and information literacy competence. The study was limited to 18 criteria of the abovementioned corresponding factors, and also limited to a relatively small group of management students from a local university. The findings were drawn from qualimetric analysis, and as such, any attempt at generalization of this mini-study should bear these limitations in mind.

The key findings of the study indicate that most students do not consider themselves to have mastered communication techniques or interpersonal skills, and they report that they have a low level of global citizenship competence and health literacy competence. Nevertheless, the respondents report positive results in such transversal competences as: the individual as an actor of professional activity (subject-based competence) as well as media and information literacy competence.

Overall, the study reveals that despite educators' recognition of TVCs, most students' TVCs development appears to be insufficiently connected to the curricula and to focus mainly on professional competence cultivation. This suggests that current curricula fail to meet the students' needs and expectations to be well equipped to the future challenges, e.g. the current COVID-19 pandemic. The findings from our mini-study thus support the claim that students' TVC development requires a new educational paradigm based on a holistic approach to competence-based learning that involves the harmonious development of a person's TVCs and subject-based competences. For instance, HLC can be cultivated through TVCs on the basis of communication competence.

While this study is limited with respect to its scope, to management students' cultivation of HLC, it is hoped that this work will stimulate further research in the field of other TVCs and HLC development. The experimental results illustrate promising prospects for further research involving researching tools that can develop students' transversal competence.

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