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STUDENTS' TRANSVERSAL COMPETENCE IN INTERNATIONAL BUSINESS STUDIES: MAPPING OF LEARNING OUTCOMES AND CURRICULUM DESIGN

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ABSTRACT

The promotion of competence development is one of the priorities of education systems in Latvia and Europe. An important driving force in competence development is higher education study programmes, where students acquire professional and transversal skills. Special attention is given to the significance of transversal competence in promoting competitiveness, social integration, and accountability of graduates in their everyday and professional lives. In the research project *Assessment of Higher Education Students Competencies and the Dynamics of its Development Throughout Studies* (Rubene et al. 2021), qualitative and quantitative evaluation indicators and an assessment instrument for six transversal competences (Digital, Global, Innovation, Research, Civic, Entrepreneurial) were developed. The instrument facilitates an assessment of the students' competence level and development.

International Business and Start-up Entrepreneurship (IBSE) is an international, interdisciplinary bachelor's study programme at Rīga Stradiņš University (RSU). Its goal is to prepare highly qualified and creative specialists in international business, start-up entrepreneurship, and management, who will be ready to participate in the business development and transformation of the national economy. In the intended learning outcomes of the study programme the emphasis is put on the graduates' ability to analytically collect information, evaluate it critically, identify trends and find creative solutions to problems, as well as participate in the development of the international business and start-up entrepreneurship in a global environment.

In the framework of this study, the intended learning outcomes of the IBSE programme were mapped to the assessment indicators of transversal competence. Analysis of the curriculum map led to conclusions to what extent the six transversal competence are present in the curriculum, the succession of their acquisition, and their concordance with the education level of the study programme. Recommendations for improving study programme learning outcomes were identified to improve the acquisition of transversal competence within the study programme.

Keywords: *Higher Education, Mapping, Methodology, Transversal Competence, Skills, Study Results*

Introduction

Promoting individual competence is a solid international priority on the higher education agenda (The European Pillar of Social Rights, 2017). The capability of the student – to be alumni – the future employee is an indicator of the quality of the study programme provided by the higher education institution and, consequently, the organisation's human capital (Grigorovica, 2022). One of the cornerstones in the development of professional mastery is the acquisition of transversal skills, also referred to as Future Skills. Well-developed Future Skills go way beyond only indicated fixed skills, they are closely cross-linked with profession-specific skills and serve as a strong binder of both. Future Skills enlighten the conceptual model consisting of three interacted dimensions: a subjective – individual development-related, an objective – task and subject matter-oriented, and a social dimension – organizational and environment-related (Ehlers, 2020). The close interrelations of the dimensions reflect the importance of transversal competence in applying any knowledge and skills.

To analyse and evidentially promote the acquisition of transversal competence, their assessment initiatives are relevant at both the institutional and national levels. Therefore, the assessment of transversal competence at the study programme level was piloted in this research. There are six mapping transversal competence domains used in mapping: research, innovation, entrepreneurship, digital, global, and civic. These categories result from merging Key Competencies represented in the Recommendation of the European Parliament and the Council of the European Union "The Key Competences for Lifelong Learning" (2018). The definitions and assessment methodology for these transversal competencies have been developed in the research project *Assessment of Higher Education Students Competencies and the Dynamics of its Development Throughout Studies* (Rubene et al. 2021).

Digital competence describes student behaviour when using information and communication technologies and digital media to communicate effectively, manage information, collaborate, create, and disseminate knowledge in their professional and/or study activities.

Innovation competence describes the student's knowledge, skills, and attitudes required for creating and long-term implementation of sound, effective improvements or innovations (new product or solution, invention (process result), method, device, idea) for people or organizations.

Entrepreneurial competence describes the ability to create, see or transform ideas and opportunities by mobilizing and effectively using the necessary resources to achieve goals. It covers all areas of life, from personal growth to active participation in society, participation in the labour market as an employee or self-employed person, and starting a social, commercial business.

Civic competence Describes human participation in civic and social life, which contributes to healthy social and political well-being and sustainability at community, national, European Union, and global levels.

Global competence describes the student's ability to assess local, global and intercultural issues, understand and value different perspectives and worldviews, engage in open and effective interaction with people from different cultures, work for collective well-being, promote sustainable development, make decisions in a global environment, interacting with different cultures, by valuing diverse perspectives and worldviews.

Research competence describes the student's behaviour in carrying out research activities in his/her professional and/or study environment, which results in the solution of an independent research problem (Rubene et al. 2021).

Structural setting of the skills and competence mapping

Curriculum mapping is a process of developing a visual map of all study courses in the curriculum and evaluating course content to determine if any gaps or excessive overlap exist and to ensure all courses meet the intended study programme learning outcomes (Harden, 2001; Plaza et al 2007).

Mapping of RSU study programmes' intended learning outcomes has become a strategic analysis tool that is part of the study programme management, including the quality assurance process, and facilitates the implementation of a student-centered approach. The results of the mapping process of the study programme – the designed maps and the observations – are intended and used for both, the analysis of the curriculum and quality assessment of the study programme, and ultimately for its improvement. Mapping is performed using the advanced *MS Excel* mapping tool developed by the Study Process Quality Analysis Unit at RSU Centre for Educational Growth. The semi-automated tool retrieves data from the study course descriptions of the respective study programme in the RSU study course register.

Previously curriculum maps have been also used to analyse the acquisition of a specific set of learning outcomes, for example, study content related to the use of biomaterials in dentistry education (see Koka et al., 2019). Curriculum mapping has been used to assist the alignment of intended professional learning outcomes (knowledge, skills, and competence) in the development of new study programmes, including IBSE, that was designed in 2020. The experience gained on the extensive and wide mapping of the study programme, its courses, and their results in accordance with the Latvian Qualifications Framework (LQF) and the European Qualifications Framework (EQF) level strongly ensured a high-quality connection of the

study programme results with the study course results. Thus it also tied the inner contents structure of the programme and paved a clear methodological way for further mapping and the systemic approach for programme's uninterrupted adjustment to high-quality and higher-level skills and competence frameworks, including the ones derived from European Commission (European Commission 2021, EARLALL 2018-2021), United Nations Educational, Scientific and Cultural Organization (Trzmiel, 2015) and the United Nations Educational, Scientific and Cultural Organization globally (Care, 2016) narrowed down to the six major transversal competence explored in this article which was adjusted to and adopted by Latvian Education Area.

The current case study builds on this previous experience and explores how curriculum mapping can be applied to designing and aligning the intended transversal competence. Mapping of the intended transversal competence proposes new challenges due to the cross-cutting nature of these competence causes them to be a part of the hidden curriculum that which is "learned but not openly intended" (Martin, 1983; Alsubaie, 2015).

Case study of transversal competence mapping in IBSE

The mapping of transversal competence against study courses of the IBSE programme is a consecutive development phase of the skills' and competence development system in RSU as well as the very development of the programme. It is essential to note that the mapping of transversal competence and the interpretation of its result shows greater efficiency if conducted consecutively after the mapping of the very programme's and its study courses' results, even though both mapping grids are separate. The efficiency manifests in the preparatory work with the basic mapping elements (study courses and their study results) and the cooperation of different parties involved – programme leadership, faculty members, and students, which in turn strengthens the collective awareness and understanding of programme's study courses, their results and particularly their relation to skills demanded by the labour market.

During the development of the study results of the very programme, they were first mapped against the corresponding level 6 descriptions of knowledge, skills, and competence of LQF which corresponds to the EQF. This stage of mapping ensured the initial conformity of IBSE programme results to the mentioned qualification frameworks thus justifiably placing the programme in the Latvian and European higher education area. Similarly, during the development of the study courses, interactive mapping of the results of the study courses against the content of the study courses and the results of the programme was performed in a joint workshop attended

by programme director and faculty members. It helped the lecturers and course leaders to become more aware of the results of their study courses and to see the importance of their study course in the overall structure of the programme. It also ensured the start of cooperation with other lecturers involved in achieving the respective study results of the programme. Overall, such an interactive approach ensured the strengthening of the team-teaching method in the programme, thus reducing the risks of disengagement in the classic approach of lectures changing in front of students' group with various courses often one not knowing what others teach particularly. The mapping of the study programme has allowed identifying more clearly both the courses' and their skills, knowledge, and competence to be acquired within the programme according to the classification of Bloom's taxonomy, as well as to align them more closely with the aims and tasks at the higher, study programme, level. This, in turn, significantly strengthens the position, attitude and a clear understanding of the programme director, course leaders, lecturers, students, as well as graduates about the topicality of the study programme and the compliance of study results with the labour market, industry needs, and scientific trends. Mapping also provides an opportunity to examine the relationship between the content of a given study course and other courses of the study programme in a more structured and determined way, serving as a signalling instrument to e. g. avoid possible duplication of contents or, conversely, to justify its need from different perspectives in different courses. As a result of these two main methods (instrument) – face-to-face interactive discussions and mapping – the interconnection of the information included in the study courses is kept up-to-date and relevant. Such system ensures comprehensive monitoring of the quality of studies with control measures throughout the academic year, especially at the end of the academic year when the updating of the descriptions of study courses for the next academic year takes place.

Transversal Competence Mapping Structure and Results in IBSE

The mapping of transversal competence of RSU IBSE programme took place in three separate parts ensuring so-called 360' view or perspective meaning that the 34 study courses offered in the programme are mapped against 25 sub-competence of the six main transversal competence by all major involved stakeholders – 1) programme director, 2) faculty members, 3) students/graduates. The organizational work of the mapping itself was conducted and coordinated jointly by the programme director in close cooperation with the Study Process Quality Analysis Unit at RSU Centre for Educational Growth. To avoid the misjudgement of lessened research and mapping scope, depth and integrity, it is to be noted importantly that

study courses' mapping against transversal competence is an external mapping which follows the already widely scrutinized study course quality assurance including several stages of the internal mapping. Such a 360' approach ensures the most objective results' interpretation given the chosen research methods – surveys and focus group. Arguably, slightly more objective mapping results might be met with other research methods such as experiment (Popoveniuc, 2021) and observation with possible automation aspects based on actual students' performance with specific tasks and detailed transversal competence indicators, however (see recommendations). While further detailed results of the IBSE study courses' mapping against transversal competence by students (survey and focus groups) and teachers shall be published after further research in subsequent publications, this research is focusing on the finalized results of the mapping by programme director. Preliminary results of the mapping by the 1st- and 2nd-year students (the programme enrolled first students in 2020 thus there are yet no 3rd-year students) are included partly where relevant, however as the students' survey part is currently ongoing the statistical confidence interval of the survey (with confidence level 95% and a general group of 18) is as high as six (margin of error 34%).

The results of the mapping showed fairly even dispersion of the number of various IBSE study courses and the number of their repetitive facets (in sub-competence breakdown) facilitating the acquisition of all the six transversal competence (see Figure 1 below). The variance – from 21 distinct courses for Civic competence to 31 for Global competence – is statistically insignificant and practically justified. Overall, the 34 study courses offered in the programme manifest 275 times within 25 sub-competences, providing an average of 8 study courses for one sub-competence (Min 5, Max 17, Mode 12).

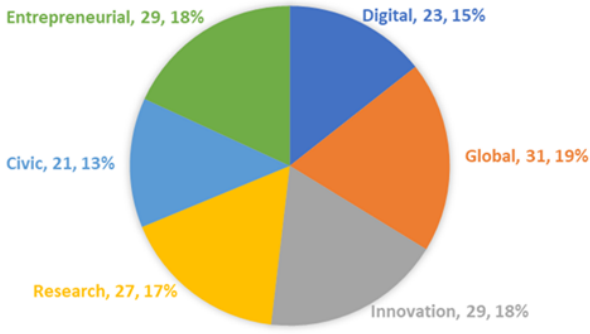

Figure 1. A number of study courses facilitating the acquisition of the respective transversal competence.
Source: Authors' research.

Further analysis of the quantified results of study courses' mapping against transversal competence and sub-competence (see Table 1 below) allows detection of particular points of attention. In IBSE case study example these were 16 distinct study course whose appearance count in the mapping grid was below the groups' statistical median (8) meaning that these courses contributed to the acquisition of transversal competence lesser (as low as 2) than other courses. Additional contents review of such identified courses then allowed to either a) justify the lower median measure by respective courses' contents specifics (on most occasions that was the case e. g., course such as civil defence, language courses, other specific thematic courses) or b) adjust the course for it to contribute better to the acquisition of transversal competence.

Table 1. Descriptive Statistics of Quantified Mapping Results

	Distinct count	Appearance times	Mode	Average	Median	Min	Max	Range	Standard Deviation
Competence total	6	275	#N/A	45.8	45.5	35	57	22	7.4
Sub-competence total	25	275	12	11.6	12	5	17	12	3.6
Distinct courses in sub-competence breakdown	34 in 25	275	3, 5, 11	8.1	8	2	20	18	4.4
Distinct courses in competence breakdown	34 in 6	160	29	26.7	28	21	31	10	3.9
Courses appearance times in competence breakdown	34 in 6	275	#N/A	45.8	45.5	35	57	22	7.4

Source: Authors' research.

The quantification of the mapping results and their statistical analysis allows for variety of various evaluation dimensions to review and assess study courses' placement towards transversal competence. For instance, Table 2 below displays number of study courses the breakdown of transversal competence, showing the number of unique study courses facilitating the acquisition of each of the 6 transversal competence and the number of times the respective transversal competence appears in the whole list of study courses. Such a view allows evaluating the multiplication coefficient. In the IBSE case study it is showing that one given study course is contributing on average to 1-2 sub-competence within the given transversal competence

(see Table 2 below). Such an indicator may assist in identifying how evenly the given transversal competence is gained through several study courses.

Table 2. Number of study courses in the breakdown of transversal competence

Transversal Competence	Distinct study courses	Occurrence times	Mult. C
Digital	23	35	1.5
Global	31	50	1.6
Innovation	29	57	2.0
Research	27	45	1.7
Civic	21	42	2.0
Enterpreneurial	29	46	1.6

Source: Authors' research.

The mapping grid and variations analysis has also strongly positive impact on the programme's curriculum schedule – study courses and their respective activities across study years. The results showed even dispersion of appearance and thus content-wise justified acquisition of transversal competence across programme's curriculum timeline. This helped to avoid imbalances and significant deviations of the achievement of learning outcomes and acquisition of transversal competence curriculum timeline, for instance, it would show if any transversal competence could be obtained in several study courses, but only within one year of studies.

Additionally, the mapping of transversal competence in the IBSE programme case study disclosed other essential content-wise benefits. For instance, as the very IBSE programme is new and contains several uniquely innovative study elements that are to some extent experimental, experts and stakeholders debated already in the IBSE design development phase that some study courses in the curriculum might not achieve the envisaged learning outcomes as planned by programme developers e. g. language courses and Semester project I which already early in the programme focused on comparatively high individual work of a student. The preliminary students' survey results of the mapping show that in relation to the language course the initial doubts can be ruled out, because students clearly identified and justified with examples in the comments field the acquisition of transversal competence in language courses. The examples given by the students also correlate to the detailed transversal competence indicators. The importance of language courses in non-humanitarian fields of science have been noted in scientific debate and practical application contributing to students' cognitive, intra-persona, inter-personal and other skills and transversal competence frequently associated more with social

science dimensions (see e. g. Sinkus, 2020). However, in relation to the Semester project I initial considerations can be confirmed and programme's curriculum shall be adjusted. In this specific case, based on the focus group results, students will be offered to choose between the designed Semester project I course or participation in RSU Business Incubator.

To sum up on the case study of transversal competence mapping in RSU bachelor level study programme IBSE, the mapping approbation presented both, clear justifications as well as space for the improvements of the IBSE curriculum design and its courses' learning outcomes. Furthermore, the mapping provided not only the opportunity to improve several study courses to meet certain transversal competence, e. g. 1st and 2nd sub-competence of Civic competence and 4th sub-competence of the Digital competence which were comparatively insufficiently covered by the programme's study courses, but also provided the opportunity to identify initially hidden facets of IBSE learning outcomes that meet certain transversal competence e. g. in language courses, as well as unfolded other valuable adjustments in IBSE curricula thus strengthening IBSE contents, brand, student-centered aspects, and its conformity to the demand of higher education of both, students and labour market.

Conclusion and recommendations

The mapping is a strategic useful tool for the programme development and continuous adjustment to the labour market needs. It certainly ensures programme's conformity to labour market industries' needs. It is likely to be considerably more efficient if such external mapping as the transversal competence mapping is conducted after several previous stages of the quality assurance of the study programme. Also, not all sub-competence must be to a particularly significant amount covered in all study programmes and all study courses, particularly given the voluminous amount of comparatively narrowly specialized social science study programmes and even more specialized courses' thematises in them.

Despite the many benefits of the mapping instrument, it must not become an aim and a result itself. The further the mapping is developed the 'heavier' it shall become with more data, deeper analysis, ever-increasing levels of typology, classifications, detailing, automation modules, data systems' compatibility issues, organizational administration, bureaucracy, and many other. Keeping the ultimate vision in mind – student-centeredness and uninterrupted monitoring and adjustment to students' needs, research and labour market needs – is crucial.

As for the further research methods, more objective mapping results might be met with other research methods such as experiment and

observation with possible automation aspects based on actual students' performance with specific tasks and detailed transversal competence indicators. This would make the mapping system 'heavier' as mentioned above but would also ensure more direct data and more evidence-based results.

Finally, in relation to the legal dimension of the transversal competence approach further implementation in Latvia, more vivid and clear coherence between the legal, policy-making and practical implementation should be pursued, including joint terminology and classification. That would help increase awareness, joint understanding and thus better implementation of the approach. For instance, in the Education Law of the Republic of Latvia it is stated that "*The result of education is a combination of knowledge, skills and attitudes*" (Education Law, Latvia) in most cases (including this very research) the mentioned "attitudes" would be used as a synonym for "competence", but clearly the question of attitudes in terms of competence is older, more complex, fully integral in this debate, immensely highly crucial in learning opportunities, and largely formally inexplicable. In the scientific development dimension, such discord is likely fruitful for debate and progress, but in practical implications a harmonized usage of terminology in a legal regulatory sphere and in the analysis of educational contents' quality and conformity might be more efficient.

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