

Article

Self-Assessment of the Entrepreneurial Competence of Teacher Education Students in the Remote Study Process

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Abstract: Competence-based education has been in the spotlight for several years, and it is a topical issue in the European Union as well as marking the reform of the Latvian education system. The Council of the EU considers entrepreneurial competence to be one of the key competences for lifelong learning, and Latvia's school reforms require teachers to create a study process where students develop entrepreneurial competence. This publication presents research on the self-assessed entrepreneurial competence of teacher education students to find out whether there is any correlation between their assessment of entrepreneurial competence and their readiness/ability to develop this competence in their students, as well as which methods/activities they see as suitable to do so in the classroom and the remote study process. An online survey using the QuestionPro platform was used to collect the data. The questionnaire was fully completed by 157 pedagogy students from various higher education institutions, and it consisted of four question blocks: demographic and socio-cultural questions, entrepreneurial competence, digital competence, and open-ended questions. The data provided by the questionnaire developed for this research showed that students' self-assessed entrepreneurial competence in a remote study process rated their digital competences highest, followed by their entrepreneurial competences. The results indicate that students are sufficiently prepared to be able to further develop their entrepreneurial competence in the remote study process. From the data, it can be concluded that higher education needs to focus on the development of entrepreneurial competence and should also supplement the methodological knowledge of students to improve their readiness to teach entrepreneurial competences to others. It should also be noted that there is a strong correlation between students' entrepreneurial competence and their readiness to teach entrepreneurial competences to others. An online survey using the QuestionPro platform was used to collect the data. The questionnaire was fully completed by 157 pedagogy students from various higher education institutions, and it consisted of four question blocks: demographic and socio-cultural questions, entrepreneurial competence, digital competence, and open-ended questions.

Keywords: teacher education students; remote learning; entrepreneurial competence



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1. Introduction

The European Union (EU) emphasizes the need to move towards competence-based education, as the development of competences ensures individual well-being and the sustainable development of society. The Council of the EU considers communication in the mother tongue, communication in foreign languages, mathematical competence and basic competences in science and technology, digital competence, learning to learn, social and civic competences, sense of initiative and entrepreneurship, and cultural awareness and expression to be key competences for lifelong learning [1].

There are ongoing changes to the Latvian education system both in schools, where the "School 2030" (Skola 2030) project is being implemented, and in higher education development processes, where new goals have been set. The Latvian Education Guidelines for 2021–2027 mention four goals, the first of which is to have highly qualified, competent,

and excellence-oriented teachers and academic staff. School reforms also require teachers to ensure a study process where students develop entrepreneurial competence [2]. Therefore, by 2027, the objective is to have strengthened the teacher education system established in 2020 to make teacher education more flexible. It needs to be able to respond quickly to the demands of the labor market and adapt to technological developments [3].

Although the transformation of educational systems is ongoing and there are requirements to implement a methodology for the development of transversal competences, including entrepreneurial competence, there is still some ambiguity concerning pedagogical entrepreneurship [4], which is a relatively new concept in teacher education in the Latvian educational system.

Pedagogical entrepreneurship concerns how teachers can use their own entrepreneurial competence to manage their professional life outside as well as inside the classroom. Teachers and pedagogy play a key role in developing students' entrepreneurial competence. In order to achieve the goal of entrepreneurial education—that is, to develop the learner's entrepreneurial mindset and competence—learners must be included in the learning process [5,6].

Hietanen's research presents ideas about how to accelerate learners' process of becoming aware of their entrepreneurial mindset and to make them familiar with enterprising and entrepreneurial behavior [7]. Although this particular case focuses on the Finnish education system, its fundamental ideas can be applied internationally [6]. Some of the conclusions from the teachers involved in Hietanen's research disclose that learners' initiatives, ideas, and experimentation, and both individual and collaborative self-guided participation, are essential when developing learning environments in a more entrepreneurial way, as well as teachers emphasizing the connection between the learners' life outside of school and the contents and methods to be learned in school [7].

Pedagogical entrepreneurship should not be about comparing and contrasting economics and entrepreneurship but should be about the path to human development and growth, with an emphasis on authenticity, competence and students' ability to self-regulate. Therefore, students in teacher education should be exposed to a business perspective during their studies and be allowed to interpret, experiment with and reflect on such an approach to teaching and learning [4].

The COVID-19 crisis overshadowed all of this with an unprecedented and unavoidable need for long-term mass remote learning. This need could not be fully met by any other means than using technologies, thereby considerably accelerating the digital transformation of education through the requirement to invest a large number of resources—not only by buying the technologies and technological solutions needed to carry out remote learning but also by organizing learning events for educators, students and their parents and by searching for new approaches to enhance students' remote learning experience [8].

Self-assessment is an act by which students describe and assess their academic abilities and work [9]. They compare their performance to specific criteria or goals and revise their work based on these criteria [10]. The evidence suggests that students find it difficult to develop self-assessment skills. Students need time to make sense of instructions and to incubate and develop self-regulatory skills in order to apply these to new and other learning contexts [11].

Self-assessment helps students not only describe but also evaluate their work [12]. Most studies have examined and proven the contribution of student self-assessment to improvement of performance and learning and should be implemented more systematically because it helps students not only in the context of their studies but also later in their working life, providing them with necessary skills [13].

Although links between the accuracy of self-assessment and performance have been identified, it is also true that it takes time for students to develop such skills, and assessment design needs to be aligned to support such skill [11,14].

Pedagogical Entrepreneurship in the Remote Study Process

For entrepreneurship to become established and flourish, a supportive environment from school leaders and teachers and cooperation with society outside school are valuable and important factors [4].

As the term ‘entrepreneurship’ originally derives from the economic sector, its meaning needs to be clarified in the pedagogical context. The narrow and traditional use of the term ‘entrepreneurship’ almost exclusively refers to the business world, including how people learn to start and run a business. This narrow approach is used to focus on how to create the most effective entrepreneurship programs, mainly in universities but also in secondary schools [15].

A separate and much broader approach to the term is related to human characteristics and skills that allow individuals in organizations and communities to act flexibly and creatively in the face of rapid social and economic change [16]. This broader understanding of the concept does not focus on the acquisition of knowledge about business entrepreneurship but on the development of entrepreneurial mindsets in one’s personal and professional life.

The policy document *EntreComp: The Entrepreneurship Competence Framework* [17] is made up of three competence areas: Ideas and Opportunities, Resources, and Into Action. Each area includes five competences, which, taken together, are the building blocks of entrepreneurship as a competence. This framework developed the 15 sub-competences that were used in the questionnaire for this publication: spotting opportunities, creativity, vision, valuing ideas, ethical and sustainable thinking, self-awareness and self-efficacy, motivation and perseverance, mobilizing resources, financial and economic literacy, mobilizing others, taking initiative, planning and management, coping with uncertainty, ambiguity and risk, working with others, and learning through experience.

This framework defines entrepreneurship as “a transversal competence, which can be applied by citizens to all spheres of life from nurturing personal development, to actively participating in society, to (re)entering the job market as an employee or as a self-employed person, and to starting up ventures (cultural, social or commercial)” [17] (p.6).

Pedagogical entrepreneurship can be understood as a combination of two areas, each with its own traditions and way of thinking: on the one hand, pedagogy, with its ancient scientific traditions of education, socialization, knowledge, motivation, learning and formation; and on the other, entrepreneurship, which has its roots in economic traditions focusing on business development, individual initiative and risk-taking [4].

Pedagogical entrepreneurship is related to the development of an entrepreneurial attitude and competences that make students more confident and better prepared for life [18]. It involves the use of teaching methods that enhance creativity and confidence in one’s skills and that develop the ability to see opportunities and motivation to use one’s abilities to take initiative and improve the environment around oneself [4].

The study titled “*The ambiguity of pedagogical entrepreneurship—The state of the art and its challenges*” refers to research on pedagogical entrepreneurship in teacher education, which points to the need to expose teacher education students to an entrepreneurial perspective so that they can interpret, experiment, and rethink their approach to pedagogical entrepreneurship in teaching and learning [4]. Teachers are agents of the future [19,20], and competences such as action, problem-solving, and self-management, which are universal skills and part of the thinking and action of pedagogical entrepreneurship, must be developed.

In order to ensure success in the process of remote learning, digital competences are needed, which are an essential component in the management of the learning environment [21,22]. Digital competences are the ability to use information and communication technologies to find, understand, evaluate, create and disseminate digital information [23]. They include both cognitive and technical aspects. However, it should be stressed that the use of digital technologies in teaching differs significantly from other professions [24,25]. In the context of education sciences, the digital competences of a student, as a future teacher, also include good pedagogical and didactic evaluation and understanding the

impact of digital technologies on learning strategies and the digital *Bildung* of pupils and students [26].

The European Digital Competence Framework for Citizens proposes dividing digital competences into five groups [27]:

1. Information and data literacy
2. Communication and collaboration
3. Digital content creation
4. Safety
5. Problem solving

Consequently, in the context of this study, there are two aspects to the digital competences required for students in education sciences: the digital skills needed to learn in the digital environment and the digital competences needed to teach others as part of a teacher's work in the future. When looking at digital competence from this perspective, the following components are essential: information and data literacy, interaction, sharing through digital technologies and digital content creation.

2. Materials and Methods

An online survey using the QuestionPro platform was used to collect the data for this publication. The study focused on bachelors, masters, or doctoral level students (ISCED levels 6 to 8) studying education sciences in Latvia. In total, there were 3785 students who met the criteria [28]. The questionnaire was distributed by a boosted Facebook and Instagram post. In addition, links to the survey were sent to the student governments of the University of Liepāja, the Rezekne Academy of Technologies, the University of Latvia, and Daugavpils University with a request for the survey to be distributed in internal systems. The teaching staff of higher education institutions were also contacted and asked to share the link at the end of their lectures, and a link to the questionnaire was published on the Latvian National Centre for Education's website. The questionnaire was fully completed by 157 pedagogy students from various higher education institutions (and partially completed by 384 students). Consequently, $N = 157$ for the questionnaire replies analyzed within this paper. Entrepreneurial competence contained 15 different sub-competences: coping with uncertainty, ambiguity and risk, creativity, ethical and sustainable thinking, financial and economic literacy, learning through experience, mobilizing others, mobilizing resources, motivation and perseverance, planning and management, self-awareness and self-efficacy, spotting opportunities, taking initiative, valuing ideas, vision, and working with others. Digital competences contained 4 different sub-competences: information and data literacy, interaction, sharing through digital technologies, and digital content creation. Each sub-competence was measured by one question.

The questionnaire consisted of four question blocks:

- Entrepreneurial competence—students' self-assessments determined to what extent a specific competence could be attributed to him/herself (15 questions).
- Students' readiness/ability to teach entrepreneurial competence to others—students' self-assessments determined to what extent he/she is qualified or equipped to pass on the competence to others (15 questions).
- Digital competence—as an essential component of the remote learning environment, this was assessed through four questions.
- Open-ended questions—these aimed to clarify students' ideas on the most appropriate teaching methods and how best to develop entrepreneurial capacity in remote learning.

The first three question blocks were assessed using a 7-point Likert scale (1—not characteristic of me at all, 7—completely characteristic of me) and analyzed through descriptive statistics; the Spearman's correlation between entrepreneurial competence and the ability to teach the competence to others was also explored. In order to determine internal consistency, Cronbach's alpha was separately calculated for: students' self-assessment of entrepreneurial competence, students' readiness/ability to teach entrepreneurial compe-

tence to others, and students' self-assessment of digital competence. Open-ended questions were analyzed using the content analysis method. Data were closely examined, and categories for each answer were identified. The relative importance of the categories has been assessed and the individual content of some answers highlighted to provide better understanding [29] of students' perception in a study that promotes entrepreneurial competence. Each answer could contain multiple categories.

The questionnaire was available for completion from 10 October 2020 to 14 February 2021. The data were analyzed using Microsoft Excel and Python 3 software. The study considered all ethical research standards in accordance with the General Data Protection Regulation (GDPR). The questionnaire was anonymous and participation in it completely voluntary.

3. Results

3.1. Students' Self-Assessment of Their Entrepreneurial Competence

The entrepreneurial competence of students was measured by dividing it into 15 sub-competences. The Cronbach's alpha coefficient for this self-assessment of entrepreneurial competences is $\alpha = 0.924$, which is considered to be very high.

In the analysis of the different sub-competences, the average values are relatively similar (see Table 1). They can be divided into four notional groups of decreasing evaluation according to the students' self-assessment values.

The most highly evaluated sub-competences, namely self-awareness and self-efficacy (mean 5.64, SD 1.26) and learning through experience (mean 5.57, SD 1.27), indicate that students believe they are able to learn well from experience, which is essential to begin to improve their knowledge gaps.

There are six sub-competences with average values in the 5–5.5 interval. Planning and management (mean 5.44, SD 1.3) and motivation and perseverance (mean 5.43, SD 1.38) were assessed in a very similar manner, while ethical and sustainable thinking (mean 5.30, SD 1.37), mobilizing others (mean 5.25, SD 1.56), taking initiative (mean 5.10, SD 1.61) and vision (mean 5.06, SD 1.31) were assessed at a slightly lower level, which is nonetheless still high.

It can be noted that this group, with a relatively high level of self-evaluation, contains a wide variety of sub-competences: vision connotes realizing the main directions of an idea, taking initiative provides momentum and leadership to the idea, and the ability to plan and manage indicates the ability to define the vision in more detail by dividing up the individual actions to be taken. A high score for motivation and perseverance, meanwhile, points to the student's ability to carry out the planned actions. These sub-competences cover all phases of the implementation of an idea.

Another six of the sub-competences were evaluated with average values in the 4.5–5 interval, which is considered to be relatively high: coping with uncertainty, ambiguity and risk (mean 4.85, SD 1.42), valuing ideas (mean 4.83, SD 1.39), working with others (mean 4.81, SD 1.57), mobilizing resources (mean 4.80, SD 1.31), spotting opportunities (mean 4.75, SD 1.41) and creativity (mean 4.57, SD 1.38). There are a number of common signs regarding these particular sub-competences. Part of this group's host capacity could be related to creativity—one of the most important components of entrepreneurial competence. Creativity, as one of the sub-competences that makes it possible to adjust ideas, also makes the idea more secure in times of uncertainty, knowing that there is the necessary skill to adjust or adapt the idea according to the circumstances. The creativity component is also needed for spotting ideas. Consequently, these sub-competences form a relatively uniform group. On the other hand, the mobilizing resources sub-competence is assessed at a lower level than communication and mobilizing human resources. This points to the fact that the financial component could give rise to different assessments of these sub-competences.

Table 1. Education science students' self-assessment of entrepreneurial sub-competences and ability to teach others.

Sub-Competence		Students' Competence	Students' Readiness/Ability to Teach Competence to Others
Coping with uncertainty, ambiguity and risk	Mean	4.85	4.31
	SD	1.42	1.51
	Variance	2.02	2.29
Creativity	Mean	4.57	4.41
	SD	1.38	1.32
	Variance	1.90	1.74
Ethical and sustainable thinking	Mean	5.30	4.90
	SD	1.38	1.38
	Variance	1.92	1.89
Financial and economic literacy	Mean	4.05	3.64
	SD	1.62	1.60
	Variance	2.64	2.55
Learning through experience	Mean	5.57	5.05
	SD	1.27	1.29
	Variance	1.61	1.68
Mobilizing others	Mean	5.25	4.95
	SD	1.56	1.54
	Variance	2.43	2.36
Mobilizing resources	Mean	4.80	4.40
	SD	1.31	1.40
	Variance	1.71	1.95
Motivation and perseverance	Mean	5.43	4.94
	SD	1.38	1.38
	Variance	1.91	1.90
Planning and management	Mean	5.44	4.84
	SD	1.30	1.33
	Variance	1.70	1.76
Self-awareness and self-efficacy	Mean	5.64	4.99
	SD	1.26	1.30
	Variance	1.59	1.68
Spotting opportunities	Mean	4.75	4.57
	SD	1.40	1.21
	Variance	1.95	1.47
Taking initiative	Mean	5.10	4.54
	SD	1.61	1.43
	Variance	2.58	2.05
Valuing ideas	Mean	4.83	4.38
	SD	1.39	1.32
	Variance	1.93	1.74
Vision	Mean	5.06	4.68
	SD	1.31	1.37
	Variance	1.73	1.87
Working with others	Mean	4.81	4.40
	SD	1.57	1.45
	Variance	2.48	2.11

Working with others, which is connected to both planning and management and motivation and perseverance, was assessed below the others, indicating that it is the sub-competence regarding cooperation among students that is the least developed. The lowest assessed sub-competence is financial and economic literacy (mean 4.05, SD 1.62). The self-assessment of students in this sub-competence is significantly below all other

sub-competences of the host capacity. This may be due to the fact that financial literacy has historically been linked to school-level teaching of economics and is often not improved in education sciences in higher education. In addition, this particular competence is not associated with education science.

A more detailed look at the number of students (see Figure 1) who believe that their sub-competences have not been developed sufficiently (assessed from 1–3 on the Likert scale) shows that 16% of respondents assessed their sub-competences as insufficient. Four sub-competences were assessed by more than 15% of respondents as insufficient—coping with uncertainty, ambiguity and risk (17.2%), working with others (17.2%), creativity (18.5%) and financial and economic literacy (35.7%)—which highlights the need to improve teaching methods by increasing creative groups in education science or the volume of work or projects in the learning process. In particular, 10.2% of respondents evaluated their financial and economic literacy with the lowest possible rating.

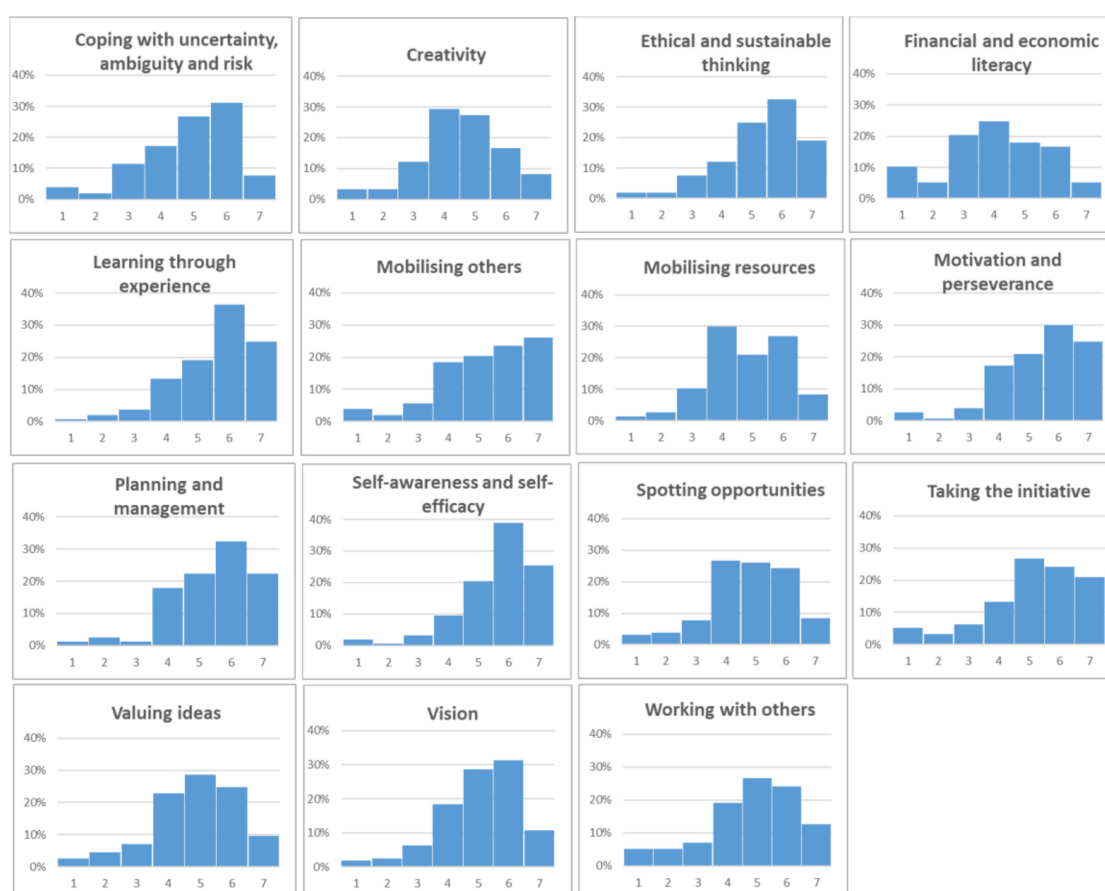


Figure 1. Relative distribution of the self-assessments of students' entrepreneurial competence.

3.2. Students' Self-Assessment of Their Ability to Teach Entrepreneurial Competences to Others

Similarly to the entrepreneurial competences of students, their ability to teach them to others was also measured through 15 sub-competences. The Cronbach's alpha coefficient for students' ability to teach others is $\alpha = 0.938$, which is considered to be very high. By comparing the self-assessment of the students' entrepreneurial competences with their ability to teach them to others, it can be concluded that the former has been judged higher than the latter. Students' self-esteem in teaching entrepreneurial competence to others, grouped by mean values, consists of three groups. Students assessed their ability to teach the following entrepreneurial sub-competences to others highest: *learning from experience* (mean 5.05, SD 1.29), *self-awareness and self-efficacy* (mean 4.99, SD 1.33), *mobilizing others*

(mean 4.95, SD 1.54), *motivation and perseverance* (mean 4.94, SD 1.38), *ethical and sustainable thinking* (mean 4.90, SD 1.38) and *planning and management* (mean 4.84, SD 1.38).

In the second group, where the average values are between 4.31 and 4.68, are eight sub-competences: *vision* (mean 4.68, SD 1.37), *spotting opportunities* (mean 4.57, SD 1.21), *taking initiative* (mean 4.54, SD 1.43), *creativity* (mean 4.41, SD 1.32), *mobilizing resources* (mean 4.40, SD 1.40), *working with others* (mean 4.40, SD 1.45), *valuing ideas* (mean 4.38, SD 1.32), and *coping with uncertainty, ambiguity and risk* (mean 4.31, SD 1.51). Competences in this group are typified by a creative approach to the realization of the idea. This suggests that students should complement their knowledge of the use of different creative methods. This could be linked to the historical situation where the curriculum was centered around the intake of knowledge rather than the pupil, and often the key learning outcome was the acquisition and repeatability of knowledge while neglecting the development of creativity.

The lowest rated sub-competence is *financial and economic literacy* (mean 3.64, SD 1.60). Students' ability to teach financial and economic literacy should thus be considered to be low, and it will be necessary to focus on the development of the necessary competences in the future.

Looking in more detail at the number of students who believe that their ability to teach entrepreneurial competences to others has not been developed sufficiently (evaluated from 1–3 on the Likert scale, see Figure 2), it can be concluded that, on average, almost a fifth (18%) of all respondents have not fully developed the methodology for teaching entrepreneurial competences. In nine out of fifteen sub-competences, over 15% of respondents estimated that their level of competence to teach others was insufficient: *vision* (15.3%), *spotting opportunities* (15.9%), *taking initiative* (17.8%), *creativity* (18.5%), *valuing ideas* (19.7%), *mobilizing resources* (21%), *coping with uncertainty, ambiguity and risk* (23.6%), *working with others* (23.6%) and *financial and economic literacy* (45.2%). In particular, financial and economic literacy should be highlighted, as nearly half of the respondents, if they become teachers, will not be able to teach others this competence to their full potential.



Figure 2. Relative distribution of the self-assessment of students' ability to teach entrepreneurial competences to others.

Consequently, despite the fact that the average self-assessment rate of students' competences is relatively high (mean 5.03), there are many sub-competences of their entrepreneurial capacity that should be significantly improved. Perhaps this is precisely due to the fact that it is only in recent years that entrepreneurial competence has been

recognized as one of the competences to be developed in schools; consequently, in education sciences, entrepreneurial skill as a result of student attainment is only a relatively recent phenomenon. Students' ability to teach entrepreneurial competences to others is assessed as fairly good (mean 4.60), but this is significantly lower than the average value of self-assessed entrepreneurial competence, indicating the need to give increased attention to the methodology for developing competences in entrepreneurial pedagogy.

3.3. Students' Self-Assessment of Their Digital Competence

Turning to analysis of the digital competences that are needed to improve or teach entrepreneurial competences in a remote study process, four sub-competences were measured, giving a Cronbach's alpha coefficient of $\alpha = 0.815$, which is considered to be high. These digital competences needed to manage in the digital learning environment were evaluated as being high (see Table 2). *Interaction* (mean 5.69, SD 1.38) was evaluated highest, indicating that students are prepared to communicate and cooperate in the digital environment. Two competences that were assessed very similarly are *sharing through digital technologies* (mean 5.29, SD 1.65) and *digital content creation* (mean 5.28, SD 1.52). In particular, the development of digital content in the context of Latvia is essential to providing advanced training for students because in Latvia, as a country with a small population, there is a significantly limited range of teaching materials.

Table 2. Self-assessment of the entrepreneurial competences of education science students.

Sub-Competence	Mean	SD	Variation
Information and data literacy	5.03	1.58	2.49
Interaction	5.69	1.38	1.91
Sharing through digital technologies	5.29	1.65	2.73
Digital content creation	5.28	1.52	2.32

The digital competences' mean value is 5.32, which is considered to be high. The digital competence of students to carry out the learning process in Latvia has previously been recognized as high, and the results of this study thus confirm that [30].

When analyzing the students' self-assessment of their entrepreneurial competences and students' readiness/ability to teach entrepreneurial competence to others, Spearman's correlation coefficient was calculated and interpreted as follows [31]:

$r_s \in [0.6; 1]$ —strong correlation;

$r_s \in [0.3; 0.6]$ —moderate correlation;

$r_s \in [0; 0.3]$ —weak correlation.

It can be seen that 12 out of the 15 sub-competences have a strong correlation between the students' self-assessment of them and their ability to teach them to others (see Table 3). The remaining three sub-competences have a moderate correlation. Consequently, it can be concluded that, overall, there is a strong correlation between entrepreneurial competence and the ability to teach it to others. The mean values of students' self-assessment of their entrepreneurial competences are higher than their ability to teach them to others, which may indicate that a strong Spearman's correlation is a necessary prerequisite for teaching to others. Further research is needed to assess factors that could potentially affect this correlation in order to allow such a conclusion to be stated confidently.

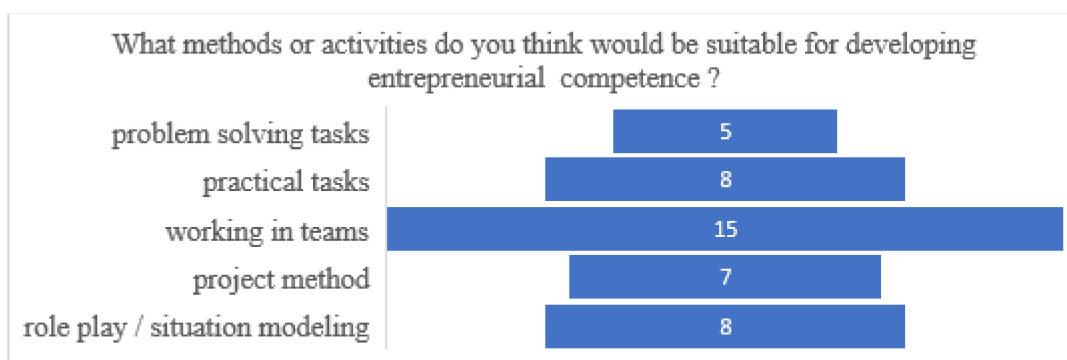
Table 3. Correlation between students' entrepreneurial competences and their ability to teach them to others (Spearman's correlation coefficient).

Sub-Competence	r_s	Sub-Competence	r_s	Sub-Competence	r_s
Coping with uncertainty, ambiguity and risk	0.713	Mobilizing others	0.798	Spotting opportunities	0.578
Creativity	0.681	Mobilizing resources	0.747	Taking initiative	0.721
Ethical and sustainable thinking	0.738	Motivation and perseverance	0.586	Valuing ideas	0.763
Financial and economic literacy	0.797	Planning and management	0.651	Vision	0.696
Learning through experience	0.702	Self-awareness and self-efficacy	0.540	Working with others	0.762

3.4. Students' Perceptions on Study Methods That Promote Entrepreneurial Competence

The first open-ended question sought to understand which methods or activities teacher education students think are suitable for developing entrepreneurial competence. The aim was to collect ideas about methods that teacher education students use, or think would be suitable to use, for the development of entrepreneurial competence and to see if the correlation between their self-assessment of entrepreneurial competence and ability to teach affects ideas about how to do that.

To the question "What methods or activities do you think would be suitable for developing entrepreneurial competence?", 91 out of 157 respondents (more than half) answered that they did not know or did not answer at all (see Figure 3). Referring to the quantitative data of the survey, it can be concluded that, on average, almost one in five (18%) respondents do not have a fully developed entrepreneurial teaching methodology, which would explain why they do not know which methods would be suitable for developing entrepreneurial competence.

**Figure 3.** Students' perceptions about study methods that promote entrepreneurial competence.

The second most common answer was "working in teams", which was written by 15 respondents. Students point out that only by working in groups can they create meaningful cooperation and jointly construct knowledge and improve skills:

- "Teamwork, where everyone is responsible for their own area of strength. One can never be perfect. Communication is the key to all locked doors!"
- "Group work in which a detailed plan must be drawn up."

The third most common answers were practical tasks and role-play/situation modelling with eight responses each, followed closely by the project method with seven responses. Problem-solving skills were mentioned by five respondents.

Great diversity can be observed in the specific methods or activities students think would be suitable for developing entrepreneurial competence, but these were mentioned only 1–3 times each among all the answers. These methods and activities are hackathons, student companies, experience stories, drama, discussions, lectures, courses, work with

positive and negative rewards, analysis of local examples, workshops, participation in conferences, practice, writing, and analyzing strategic plans.

However, by analyzing the content of students' answers in more detail, it can be concluded that some students do not have a full understanding of what entrepreneurial competence is and believe that it relates only to business:

- "I believe that entrepreneurship is successful if the entrepreneur is able to work with colleagues."
- "Good advertising, personal attitude towards the client."

3.5. Students' Perceptions about How to Develop Entrepreneurial Competence in a Remote Study Process

To understand how teacher education students have adapted to the remote study process, they were asked: "How to develop entrepreneurial competence in a remote study process?" Of the 157 respondents, 100 did not answer or said that they did not know, which is foreseeable because more than half of the respondents answered that they did not know which methods or activities would be suitable to develop entrepreneurial competence (see Figure 4). Thus, it seems clear that most of the students will not be able to improve their entrepreneurial competence when they are working remotely.

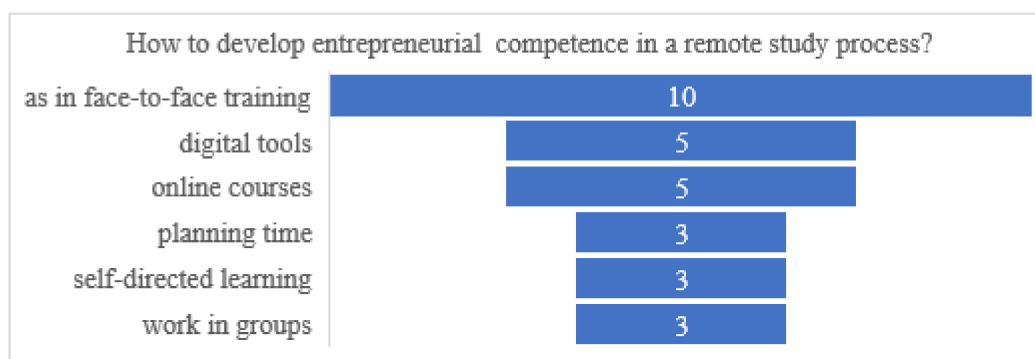


Figure 4. Students' perceptions on how to develop entrepreneurial competence in a remote study process.

The second most common answer was that they would use the same methods as in face-to-face training, which was written by ten respondents. The third most common answers were online courses and the use of technological solutions/digital tools with five responses each.

Although there was only a small percentage of answers that gave suggestions, diverse ideas about how to develop entrepreneurial competence in a remote study process can be observed, such as giving students problem situations or asking them to look for problem situations, developing digital skills, role-playing, self-directed learning, working in groups, doing interdisciplinary projects, receiving feedback, doing real/practical tasks, holding discussions, and conducting financial planning tasks.

By analyzing the students' answers in more detail, it can be concluded that they focus on two different concepts of improvement: the development of entrepreneurial competence in the digital environment and by individually adapting the traditional in-person learning process, emphasizing the individual responsibility of each student in a self-regulated learning process.

Combining students' self-assessments of their entrepreneurial competence and their readiness to teach it to others with their digital competence self-assessment and their answers to the open-ended questions, it can be concluded that although the average self-assessment values are adequate and their digital competence is assessed as high, the answers to the open-ended questions about using teaching methods as well as their adaptation to a remote learning process point to an insufficient understanding of the nature and necessity of entrepreneurial competence, not only in business but also in everyday life

and in any professional activity. Consequently, additional attention should be paid to the development of these competences.

4. Discussion

The research was conducted to understand the current situation among teacher education students, influenced by the topicality of education reforms: globally, according to the European Union (EU)'s requirement to move towards competence-based education [2]; and locally, where school reforms require teachers to create a study process where students develop entrepreneurial competence [1].

This research demonstrates how teacher education students self-assess their entrepreneurial competence, whether there is any correlation between their assessment of entrepreneurial competence and their readiness/ability to develop this competence in their students, and what methods/activities they see as suitable to develop entrepreneurial competence in the classroom as well as in the remote study process.

The entrepreneurial competence of students and their ability to teach competence to others was measured by dividing it into 15 sub-competences, and the data contribute a clearer understanding of which of these 15 sub-competences are highly (*self-awareness and self-efficacy, learning through experience*), average (*planning and management and motivation and perseverance, ethical and sustainable thinking, mobilizing others, taking initiative, and vision, coping with uncertainty, ambiguity and risk, valuing ideas, working with others mobilizing resources, spotting opportunities and creativity*) and the lowest (*financial and economic literacy*) assessed. This may be since financial literacy has historically been linked to school-level teaching of economics and is often not improved in education sciences in higher education.

From the research data, it can be concluded that, on average, almost a fifth (18%) of all respondents have not fully developed the methodology for teaching entrepreneurial competences. The results do fit with the theory that although the transformation of educational systems is ongoing and there are requirements to implement a methodology for the development of transversal competences, including entrepreneurial competence, there is still some ambiguity concerning pedagogical entrepreneurship [4].

These results should be considered when planning how to develop teacher education students' preparatory programs to expose teacher education students to an entrepreneurial perspective so that they can interpret, experiment and rethink their approach to pedagogical entrepreneurship in teaching and learning [4].

The generalizability of the results is limited by the respondents of the research, and further research is needed to assess factors that could potentially affect this correlation to allow us to confidently state the conclusion that a strong Spearman's correlation is a prerequisite for teaching to others.

5. Conclusions

The COVID-19 crisis has caused rapid changes in educational institutions around the world, creating numerous challenges that require urgent solutions. Remote learning is an ongoing solution to the crisis, but the variation brought about by this crisis is often not full-fledged remote learning. Face-to-face formats are transferred online without much consideration of the specific nature of remote learning, and centralized support systems available for teachers and teacher education students are needed.

The data provided by the questionnaire developed for this research showed that students' self-assessed entrepreneurial competence in a remote study process rated their digital competences (with a mean value of 5.32 on a 7-point Likert scale) highest, followed by their entrepreneurial competences (mean 5.03). The results indicate that students are sufficiently prepared to be able to further develop their entrepreneurial competence in the remote study process.

Students' readiness to teach entrepreneurial competences to others was self-assessed significantly lower (mean 4.60), however. In addition, nine out of fifteen entrepreneurial sub-competences were valued as insufficient by more than 15% of respondents.

Among all entrepreneurial competences, students rated their financial and economic literacy (mean 4.05) the lowest. Further, 35% of students rated it as insufficient (assessing it with 1–3 points on the Likert scale). Similarly, their readiness to teach financial and economic literacy to others (mean 3.64) was assessed to be well below other entrepreneurial competences, and 45% of respondents assessed it as insufficient. It is important to emphasize that 14% of respondents assessed it with the lowest possible value, which points to the fact that higher education needs to focus on the development of these competences and should also supplement the methodological knowledge of the students in order to improve their readiness to teach entrepreneurial competences to others.

It should also be noted that there is a strong correlation between students' entrepreneurial competence and their readiness to teach entrepreneurial competences to others.

Students' self-assessment was used to assess students' competence, which students find difficult and therefore does not always coincide with their actual level; however, it should be taken into account that respondents are educational students whose assessment skills are constantly improved in the learning process.

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Informed Consent Statement: All the respondents were informed about the use of research data and the statement “By filling this questionnaire you agree that the information provided will be anonymously used in the research. You can stop filling the form if you feel that you do not wish to answer any of questions”.

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