Embedding employability skills into vocational education and training: What works best for students' self-evaluation and aspirations?

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Abstract

This paper investigates how the explicit integration of employability skills into vocational education and training (VET) affects students' perceived skills. While perceived or self-evaluated skills often represent inaccurate perceptions of real skills, they nonetheless play a profound role in graduates' career decisions. Confidence resulting from positive self-evaluation supports efforts and aspirations during the school-to-work transition. It may therefore be considered an important educational outcome supporting employability. The purpose of the present study is to enrich the understanding of the relationship between students' self-evaluation of their employability skills and different teaching practices.

Our analysis examines the self-evaluations and entrepreneurial intentions of Russian VET students collected by the Monitoring of Education Markets and Organizations in 2020 (n = 9,178). It focuses on the social, self-learning and entrepreneurial skills that are part of the VET national curriculum. Our findings show that the explicit embedding and integration of employability skills into the curriculum is significantly related to the positive self-evaluation of social and self-learning skills. Moreover, students who are explicitly taught entrepreneurial skills are more likely to want to start their own business after graduation. Despite its effectiveness, the explicit integration approach turns out not to be dominant. Further research on the reasons behind this is needed for the development of properly informed policy.

Introduction

Transferable skills emerged on the educational agenda in the second half of the twentieth century, and interest in them has been rapidly increasing ever since. In particular, research on transferable skills has doubled in the field of vocational education and training (VET) over the period 2010-2019 (Calero López & Rodríguez-López, 2020). This attention is usually justified by two interconnected reasons (e.g., Fajaryati, Budiyono, Akhyar, & Wiranto, 2020; McGunagle & Zizka, 2020). The first relates to the preparation of students for the modern world of work that requires more than traditional qualifications. It underscores the necessity to provide young people with skills that facilitate a smooth school-to-work transition and speed up adaptation after employment. The other argument addresses the challenges of the unprecedented speed of socio-economic and technological transformations. It substantiates the need to develop employability skills for the sake

of long-term competitiveness on the labour market, arguing that graduates with such skills will be capable of building more flexible and diverse career paths. Even if structural changes occur in the labour demand, workers will be able to switch to alternative employment opportunities more easily.

In general, it is widely assumed that transferable skills increase the effectiveness of workers across various economic sectors (Harris & Clayton, 2018; International Labour Office, 2007). This is the reason why different countries have introduced frameworks for developing transferable skills at educational institutions. Some of the frameworks are exclusively focused on job-related skills – for example, the Core Skills for Work Developmental Framework in Australia (Australian Government, 2013). Others also encompass skills required for well-being and social inclusion– for example, key competences for lifelong learning in the EU and general competences in Russia (EU Council, 2018; Ministry of Education and Science of the Russian Federation, 2018). Even greater diversity is found among the terms used to label the new intended educational outcomes: 21st-century skills, soft skills, key competences, transferable skills, employability skills, etc. (Bakar, 2011). In this paper, this phenomenon is interchangeably called 'transferable skills' and 'employability skills.'

While the employability skills concept is recognized to be important by most experts, it often implies only the actual acquisition of skills. However, the self-evaluation of employability skills also plays a significant role in students' career decisions despite its lack of accuracy (Dunning, Heath, & Suls, 2004; Ng & Earl, 2008). In fact, students' decisions are mostly informed not by their actual skill levels but by their self-beliefs. This is the reason why self-evaluations or self-beliefs are sometimes considered to be employability skills in their own right (Baartman & Ruijs, 2011; Sewell & George, 2009; Wood & Olivier, 2004).

We still lack sufficient empirical evidence to gain an understanding of how transferable skills are developed in VET and what initiatives impact their enhancement (Calero López & Rodríguez-López, 2020). Even less evidence exists about how to promote the positive self-evaluation by VET students of their capacity to apply employability skills to vocational and personal problem-solving. In the present study, I address the latter issue by citing some new evidence on the relationship between the type of employability skill integration into the VET curriculum and students' self-evaluations of their social and self-learning skills. Furthermore, perceived entrepreneurial skills are investigated by modelling predictors of student aspirations to start their own business 2-3 years after graduation.

The study focuses on the Russian case. It employs the data of a VET students survey (n = 9,178) conducted by the Monitoring of Education Markets and Organizations (MEMO) in 2020. MEMO was initiated by the Ministry of Education and Science of the Russian Federation in 2002. It is annually updated and implemented by the National Research University Higher School of Economics. Its purpose is to collect and analyse data on recent trends in education. It typically addresses such issues as the choice of educational programmes, attitudes to new policies, involvement in innovations, funding, etc. Its main objective is to provide decision-makers at different levels of education with additional information for designing evidence-based policies. The investigated employability skills are a part of the current Russian national curriculum, and so all the VET schools in the sample are obliged to teach them. It should also be kept in mind that, due to MEMO's unusual data collection method in 2020 (non-probability sampling), the results are limited in terms of generalizability.

Literature review

Employability skills

The notion of transferable skills appeared in the 1970s (Kechagias, 2011). In 1972, UNESCO published a report entitled 'Learning to Be: The World of Education Today and Tomorrow', which laid the foundations for a neoteric paradigm of educational reform. The report aimed to address new challenges in the socio-economic development of Western countries relating to globalization and technological innovation. One of UNESCO's key messages for the new policies was that education '… prepares people for a type of society which does not yet exist' (Faure et al., 1972, p.

13). Thus, it is necessary to educate students to be not only professionals but also life-long learners who possess universal skills that allow them to succeed at totally different jobs.

The abovementioned recommendation led to the development of various programmes. National examples include SCANS in the USA (Kane et al., 1990), the Mayer Committee in Australia (Australian Education Council Mayer Committee, 1992), the multifaceted concept of 'Handlungskompetenz' developed in Germany in 1996 (Weigel, Mulder, & Collins, 2007), etc. At the international level, the issue was addressed by the OECD project 'DeSeCo' (Rychen & Salganik, 2003), the World Bank project 'Skills Toward Employability and Productivity' (Sanchez Puerta & Rizvi, 2018), the EU Council 'Recommendation on Key Competences for Lifelong Learning' (EU Council, 2018), etc. The developed frameworks differ in terms of their focus. Some of them aim exclusively to improve graduates' outcomes on the labour market. Others also encompass general well-being and social inclusion. Thus, they can be analytically divided into two types – employability skills and key skills/competences – which in fact often overlap (e.g., communication skills are crucial for success in both the professional and the private environment). For the sake of simplicity, both types are called 'transferable' or 'employability' skills in this paper. Based on the consensual employability concept (Römgens, Scoupe, & Beausaert, 2020), they are defined as skills that support the ability of an individual to obtain and maintain employment, including the option of being self-employed, throughout his/her work-life.

Concerning the integration of employability skills into the curriculum, the literature distinguishes between three main approaches (Chadha & Nicholls, 2006; Cranmer, 2006; Fraser, Duignan, Stewart, & Rodrigues, 2019):

- 'Total embedding' – implicitly teaching skills by 'dissolving' them in the main course context; no explicit methods of assessment are applied
- 'Explicit embedding and integration'- explicitly teaching skills along with the main course content; the skills are assessed overtly
- 'Parallel development'- teaching skills in separate courses; the skills are assessed apart from other educational outcomes

Explicit integration is said to have the highest impact on curriculum effectiveness. The other approaches are opposed to each other and found more problematic. Parallel development is criticized for the lack of connections to other academic tasks, while total embedding may result in students being unaware about the development of their employability skills (Cranmer, 2006). The latter criticism is supported by recent evidence from Spain, which is notorious for its high youth unemployment. Spanish students complain about the lack of explicit teaching of transferable skills and feel that they are not being taught them sufficiently (Altuna et al., 2021). The significance of explicit instruction is underscored not only by student opinions but also in research and policy recommendations (Durlak et al., 2011; UNICEF, 2019).

Explicit instruction refers to teaching that is characterized by 'a series of supports or scaffolds, whereby students are guided through the learning process with clear statements about the purpose and rationale for learning the new skill, clear explanations and demonstrations of the instructional target, and supported practice with feedback until independent mastery has been achieved' (Archer & Hughes, 2011, p. 1). In other words, it teaches transferable skills in a way that is visible to students.

We argue that explicit teaching is a critical element of the successful integration of transferability skills into the curriculum. It is not so important whether employability skills are taught as a separate course or embedded into an existing one. In fact, this choice partly depends on the specific national skills framework. For instance, entrepreneurship skills (which are often found on the national employability skills agenda) may require 'parallel development,' because they incorporate highly domain-specific components (basic accounting, law, taxes, etc.). This knowledge can compete with the traditional content of some vocational courses and make it is unrealistic for a teacher to provide all the expected outcomes within the limited time framework.

Self-evaluation

Self-evaluation is a crucial element of cognition. In the literature it is investigated from the perspectives of global and domain-specific self-evaluation (Orth, Dapp, Erol, Krauss, & Luciano, 2021), self-efficacy (Bandura, 1997; Klassen, 2002), expectancies using the expectancy–value theory of motivation (Wigfield & Eccles, 2000; Doménech-Betoret, Abellán-Roselló, & Gómez-Artiga, 2017), self-rated abilities (Brown, Lent, & Gore, 2000), and so on. All of these multiple constructs overlap to some extent, as they focus on people's self-beliefs about their own capacities (Valentine, DuBois, & Cooper, 2004). It has long been known that such beliefs predict actions (Sewell & George, 2009). In fact, they might be even more important than actual skills insofar as a person can avoid some activities altogether due to his or her low self-evaluation of the required skills. For instance, he or she may not apply for a particular job. Such behaviour would decrease the chances of positive labour market outcomes expressed in both employability and wages.

It is also well-known that people are not very accurate in the self-evaluation of their capacities (Dunning, Heath, & Suls, 2004; Narciss, Koerndle, & Dresel, 2011) and usually tend to overestimate their own skills and competences (Taylor & Brown, 1988; Chen, 2003). This phenomenon is called 'positive self-evaluation bias' and seems to contribute to individual psychological comfort and well-being (Bouffard & Narciss, 2011). Nevertheless, self-evaluation positively correlates with the actual level of skills and performance. There is mixed evidence on the strength of this correlation: some researchers argue that it varies from medium to small (Jackson, 2013; Narciss, Koerndle, & Dresel, 2011), while others speak of a strong dependence (Hewitt, 2015). From the socio-cognitivist point of view, this correlation implies a complex relationship in which the actual acquisition of skills leads to positive self-beliefs, which in turn support efforts in the related activities. Thus, people with more positive self-beliefs are more likely to develop the respective capacity further (Bandura, 1997). This makes positive self-beliefs valuable for learning.

We use students' self-evaluations of their employability skills as a proxy for the corresponding educational outcomes at VET schools. This has some limitations, however. Even though these predictors are mainly based on the literature about the development of transferability skills, our analysis should not be interpreted as evidence for/against predictors of the acquisition of objective skills. Our aim is to contribute to the study of how employability skills should be taught to improve students' perceived skills and expected self-confidence after graduation.

Entrepreneurial aspirations

Aspirations are a key component of the entrepreneurial process despite the fact that they do not always result in an actual enterprise (Bogatyreva & Shirokova, 2017). Entrepreneurial aspiration refers to the intention to start one's own business at some point in the future. It is considered to be the best predictor of future behaviour and is thus extensively investigated by researchers (Piperopoulos & Dimov, 2015). The factors known to influence entrepreneurial intentions include age, gender, personality traits, educational attainment, etc. (Liu, Lin, Zhao, & Zhao, 2019).

At the same time, the evidence is mixed about the possibility of raising entrepreneurial aspirations through entrepreneurial education. Many studies report that entrepreneurial courses positively affect students' intentions to establish an enterprise (Hoang, Le, Tran, & Du, 2021; Pittaway & Cope, 2007; Liu, Lin, Zhao, & Zhao, 2019). However, other researchers say that the effects are unclear (Walter, Parboteeach, & Walter, 2011) or even negative (Oosterbeek, van Praag, & Ijsselstein, 2010). Therefore, it would be valuable to introduce additional data into the academic discussion.

Research background

The Russian system of vocational education and training is predominantly school-based: less than 3% of students study at work-based 'dual VET programmes' (Russian University of Technology, 2020). Students can choose between two options: (1) training programmes for skilled workers and (2) mid-level training programmes. Both programmes are open to secondary graduates (typical age: 15-16 years) and upper-secondary graduates (typical age: 17-18). VET programmes for secondary graduates last a year longer, as they also cover the general upper secondary curriculum. All VET graduates can apply to universities, so the educational system is characterized by high permeability. The key difference between the two types of VET programmes is that their graduates receive different qualification levels. Training programmes for skilled workers pertain to levels 3-4 of the International Standard Classification of Education 2011 (ISCED). Mid-level training programmes are longer and more difficult, corresponding to ISCED 5. Further information in English about the Russian vocational education and training system may be found in the report 'Russian Vocational Education and Training (VET) System' (Kopnov et al., 2018).

In Russia, transferable skills are usually called 'general competences'. They became part of the national VET curriculum in 2010, when the competence-based approach (CBA) was introduced. Thus, transferable skills may be considered to be a part of the national CBA framework. The latter is not unique: career and citizenship competences, which conceptually overlay general ones, are also included in the CBA framework in China and the Netherlands (Chen et al., 2021).

The list of general competences was completely revised in 2015 and then further updated in 2018. The reasons and arguments behind these changes were not publicly articulated. Today, general competences are considered to be a key part of the VET agenda and perceived as a powerful tool for assuring the long-term competitiveness of graduates on the labour market. The most recently updated list contains 11 competences that are described in detail. They are unified for all VET programmes (ISCED 3-4, ISCED 5) and occupations. Every student of the Russian VET system is expected to master the same list of general competences and be able to

- Elaborate ways of solving professional tasks in different contexts
- Find, analyse and interpret necessary information for professional performance
- Plan and realise his or her professional and personal development
- Work in teams and interact effectively with colleagues, supervisors and clients
- Communicate orally and in writing in the official language, taking the social and cultural context into account
- Adopt a civic and patriotic attitude, exercise informed behaviour on the basis of traditional human values, and apply anti-corruption standards
- Promote environmental protection and resource saving and act effectively in emergencies
- Use physical training to preserve and improve his or her health during professional activity and maintain the necessary level of physical fitness
- Use information technologies in professional activity
- Use professional documentation in national and foreign languages
- Plan entrepreneurial activity in the professional sphere

(Ministry of Education and Science of the Russian Federation, 2018)

The contemporary national curriculum does not prescribe any teaching methods or didactic principles for developing general competences at VET schools. When these competences were first introduced, teachers were simply summoned to promote active learning in their classrooms (Ministry of Education and Science of the Russian Federation, 2013). It was assumed that such practices as group discussions, role playing, and case studies would foster the acquisition of both vocational and employability skills. The same methods along with project-based learning are advocated by Russian academics and educational practitioners specialising in competence-based vocational education (Romanova, 2021). The principal innovative ideas are to provide students with

opportunities to solve complex problems, put them at the centre of the education process, and make them actively engaged in the construction of their own competences. Such constructivist ideas were intensively developed in the USSR during the 1920s before being abandoned in favour of more rigid and traditional schooling (Froumin & Remorenko, 2020). Today, pedagogies based on constructivism are once again becoming a guiding principle for educational practice at all levels of Russian education.

It should be said that general competences have not been supported with prescriptions for changing the content of VET programmes. VET schools and even individual teachers must add new elements to the curriculum on their own in order to attain the expected educational outcomes. While this approach might seem inadequate, it is not nationally specific. Rather, it is a part of current international curriculum development, which is moving from content-oriented to outcome-based design (Priestley and Biesta, 2013). The outcomes of education in contemporary curricula '…tend to be less prescriptive (or vaguer depending on one's outlook) …' (Priestley and Biesta, 2013, p. 4). Specific assessment procedures are not prescribed, and general competences are not separately graded in VET credentials. One expects transferable skills to be embedded into all general and vocational courses without the enforcement of accountability mechanisms. Thus, VET schools can choose between explicit and total integration. They can also employ parallel development when the state-regulated time limitations on the programme and the schools' financial and teaching staff resources allow. All of this leads to very heterogeneous practices of developing general competences. However, there is still insufficient evidence today to decide which of these practices are superior.

In this study, I provide some data on how widespread the explicit integration of employability skills is in existing Russian VET curricula. Integration is considered explicit if students are aware that they are being taught employability skills or that these skills will be assessed. The main objective of the present study is to test the following hypothesis: the explicit integration of employability skills into the VET curriculum predicts more positive student self-beliefs about social, self-learning and entrepreneurial skills.

Data collection and methodology

We took our data from the project 'Monitoring of Education Markets and Organizations (MEMO) 2020' implemented by the Higher School of Economics. The project conducted an online sociological survey in early 2021. The survey employed all-Russian quota sampling that took the following stratifying characteristics into account: the region where the VET school is located, the type of ownership (public or private), and the type of VET programme (ISCED 3-4 or ISCED 5). The descriptive statistics of the chosen variables are presented in Table 1. The number of observations is provided for each variable to describe the sampling variation due to missing values.

The present study focuses on the self-evaluation of social and self-learning skills. They were chosen insofar as they are an integral part of the Russian national compulsory VET curriculum. These skills have been found in all versions of the list of general competences, so that schools and teachers have had enough time to develop practices for their enhancement. Simultaneously, these skills are among the most important aspects of employability, as identified by the megatrends in skills needs (Australian Industry and Skills Committee (AISC), 2016). The respondents were asked to evaluate the sufficiency of their possession of these skills for problem-solving in private and vocational contexts from poor to excellent (5-point Likert scale, see Appendix A). They self-reported on

- Their ability to interact/collaborate with other people (self-evaluation of social skills)
- Their ability to identify and acquire the right skills to achieve goals (self-evaluation of self-learning skills)

Less than 2% of respondents chose the answer 'Very Poor' (table 1). As a result, the data was recoded into 4-point dependent variables with 'Very Poor' and 'Poor' combined into one variable. To

answer the research questions, these dependent variables were tested with ordered logistic regressions.

Table 1: Descriptive Statistics (n= 9178)

	%	Number of participants
Weighted number of observations (participants)	-	9 178
Dependent variables		
Self-evaluation of social skills		*9 178*
1 – very poor	1.44	
2	3.31	
3	15.88	
4	39.60	
5 – excellent	39.76	
Self-evaluation of self-learning skills		*9 178*
1 – very poor	1.39	
2	1.99	
3	17.25	
4	45.49	
5 – excellent	33.88	
Students who want to start their own business 2-3 years after graduation	51.87	8 821
Independent variables		
Explicit integration		
Students that were told how to develop social skills by their teachers	55.2	9 178
Students that were told how to develop self-learning skills by their teachers	52.4	9 178
Students that were told how to develop entrepreneurial skills by their teachers	42.5	9 178
Students whose social skills were assessed by teachers	58.62	9 178
Students whose self-learning skills were assessed by teachers	53.2	9 178
Gender, age, and academic achievements		
Male	50.8	9 178
Average age, years	18.7	9 082
Students' grades		*9 178*
Students who usually receive the grade 'Low/Fail'	1.1	
Students who usually receive the grade 'Satisfactory'	7.7	
Students who usually receive the grade 'Good' yet sometimes the grade 'Satisfactory'	40.3	
Students who always receive the grades 'Good' or 'Excellent'	43.2	
Students who always receive the grade 'Excellent'	7.8	
Infrastructural and organisational setting at VET schools		
Diversity of learning activities[1], mean [standard deviation]	0.0007 [0.93]	9 178

[1]The result of factor[1] analysis with subsequent oblique rotation on a group of 7 questions about what percentage of seminars and practical training sessions of the respondents included group work, individual practical work, public presentations, writing lectures, participating in discussions, and solving cases. The respondents could choose one of three options: under 30%, from 30% to 70%, over 70%. The Kaiser Meyer Olkin (KMO) value of 0.8992 indicates the high quality of the model. Our analysis identified 1 factor that explains the diversity of students' learning experiences.

Modernity of acquired technologies		*7 917*
Students who evaluate technologies that they learn at their VET school as 'cutting-edge'	10.5	
Students who evaluate technologies that they learn as 'modern and used at leading enterprises'	15.9	
Students who evaluate technologies that they learn as 'relatively modern yet not the most up-to-date'	40	
Students who evaluate the technologies that they learn as 'obsolete'	10.4	
Students who are unable to evaluate the modernity of the technologies that they learn	9.2	
Evaluation of the state of classrooms		*9 178*
Poor	6.3	
Satisfactory	51.8	
Good	42	
Evaluation of the state of learning equipment, including equipment used for authentic vocational training		*9 178*
Poor	7.3	
Satisfactory	49.5	
Good	43.3	

To obtain data on explicit instruction, the survey asked students if their teachers had told them how to develop a particular skill and if the teachers had assessed this skill. According to the survey results, over half of the students were not taught entrepreneurial skills explicitly. The situation with social and self-learning skills was just slightly better. Only 55.2% of VET students reported that they were told how to develop social skills and 58.6% confirmed that their teachers had assessed their social skills. Explicit instruction of self-learning skills was less widespread: 52.4 % of students were told how to develop self-learning skills and 53.2% were aware of being assessed in this domain.

Entrepreneurial intentions were addressed by modelling the relationship between the aspirations of students to start their own business 2-3 years after graduation (binary variable) and learning experiences. A logistic regression was used for this part of the study.

The data set has missing values in the infrastructural setting variables that lead to a considerable attrition of the sample. The problem is tackled with a stepwise presentation of the regression models.

Results

The students' grades have a statistically significant positive relationship with their self-evaluation of their social and self-learning skills (Table 2). An exception is the group that usually receives the grade 'Low/Fail'. Such a result might be explained by the fact that this group consists of academically high-risk students, who tend to have unrealistically high beliefs about their capabilities (Klassen, 2002, Narciss, Koerndle, & Dresel, 2011; Lynn, Holzer, & O'Neill, 2006).

Student's beliefs about their self-learning capacities are more strongly related to better grades than their beliefs about their social skills. For instance, students who always receive the grade 'Excellent' are 3.5 more likely to evaluate their self-learning skills as being high in comparison with students who usually receive the grade 'Good' yet sometimes the grade 'Satisfactory'. The corresponding ratio for social skills is only 2.

Age is not related to students' self-evaluation of analysed employability skills. Gender also does not seem to be statistically significant for the self-evaluation of social skills. However, males have higher odds of having positive beliefs about their self-learning abilities than females.

Table 2: Ordered Logistic Regression Modelling of the Self-evaluation of Employability Skills (Social and Self-learning Skills), Odds Ratio

Model specification	Social skills (1 Model)	Social skills (2 Model)	Self-learning (1 Model)	Self-learning (2 Model)
Gender (0 - Female, 1 - Male)	0.997 (0.0532)	1.015 (0.0594)	1.120** (0.0605)	1.136** (0.0678)
Age (years)	1.009 (0.0119)	1.001 (0.0133)	1.003 (0.0123)	1.005 (0.0150)
Academic achievements (Reference group: students who usually receive the grade 'Good' yet sometimes the grade 'Satisfactory')				
Usually receive the grade 'Low/Fail'	0.567 (0.244)	0.708 (0.281)	0.372* (0.188)	0.490 (0.247)
Usually receive the grade 'Satisfactory'	0.665*** (0.0765)	0.675*** (0.0862)	0.766** (0.0884)	0.779* (0.100)
Always receive the grade 'Good' or 'Excellent'	1.460*** (0.0830)	1.451*** (0.0908)	1.784*** (0.104)	1.794*** (0.115)
Always receive the grade 'Excellent'	2.054*** (0.241)	1.889*** (0.234)	3.542*** (0.415)	3.599*** (0.448)
Students were told how to develop the corresponding skill by their teachers (0 - no, 1 - yes)	1.331*** (0.0800)	1.191*** (0.0790)	1.334*** (0.0800)	1.240*** (0.0815)
Students' skills were assessed by their teachers (0 - no, 1 - yes)	1.685*** (0.105)	1.576*** (0.108)	1.608*** (0.0978)	1.528*** (0.103)
Diversity of learning activities	1.634*** (0.0509)	1.491*** (0.0532)	1.872*** (0.0613)	1.680*** (0.0634)
Evaluation of the modernity of technologies taught to students (Reference group: modern technologies used at leading enterprises)				
Cutting-edge technologies		1.198 (0.136)		1.371** (0.169)
Relatively modern technologies		0.950 (0.0749)		0.845** (0.0681)
Obsolete technologies		0.819 (0.0994)		0.773** (0.0960)
Unable to evaluate the modernity of taught technologies		0.826* (0.0924)		0.712*** (0.0786)
State of classrooms (reference group: Satisfactory)				
Poor		0.854 (0.141)		0.592*** (0.109)
Good		1.600*** (0.118)		1.452*** (0.104)
State of learning equipment (reference group: Satisfactory)				
Poor		1.055 (0.168)		1.185 (0.209)
Good		1.332*** (0.0973)		1.452*** (0.104)
Observations	9 082	7 833	9 082	7 833

Note(s):

1) *** — significance level of 1%, ** — significance level of 5%, * — significance level of 10%.

2) Analysis gives odds ratio instead of coefficients.

3) Standard errors were calculated using the robust method.

As to the indicators of the explicit instruction of employability skills, they show a positive relationship with the corresponding self-evaluation that is statistically significant at a 99% confidence level. The diversity of learning experiences was also significantly related (significance level of 1%) to self-beliefs about social and self-learning skills. A more diverse student learning experience is associated with more positive self-evaluation.

VET students that report the use of more modern vocational technologies in instruction have higher odds of positive self-beliefs about self-learning skills. At the same time, the perceived modernity of technologies is not significant for the self-evaluation of social skills, except for the case when students are unable to make such a judgment. This inability is negatively related to both self-evaluations. Presumably, it is explained by the unawareness, uncertainty, and low self-confidence of students who are incapable of drawing conclusions about whether their vocational training is relevant to contemporary labour market demand or not. Their actual employability skills are low, which they evaluate with relative accuracy given the overall positive self-evaluation bias of the whole sample.

Entrepreneurial aspirations are related to gender (Table 3). Males are 1.16 times more likely to want to start a business than females. Academic achievements are also significant for entrepreneurial aspirations: the better the grades received by students, the higher their odds of wanting to become entrepreneurs.

Table 3: Logistic Regression Modelling the Aspiration to Start One's Own Business 2-3 Years After Graduation (0 – lack of aspiration, 1 – aspiration), Odds Ratio

Model	(1)	(2)
Gender (0 - Female, 1 - Male)	1.159*** (0.0657)	1.157** (0.0657)
Age (years)	1.003 (0.0103)	1.004 (0.0103)
Academic achievements (Reference group: students who usually receive the grade 'Good' yet sometimes receive the grade 'Satisfactory')		
Usually receive the grade 'Low/Fail'	0.921 (0.319)	0.934 (0.322)
Usually receive the grade 'Satisfactory'	0.784** (0.0900)	0.793** (0.0914)
Always receive the grades 'Good' or 'Excellent'	1.149** (0.0704)	1.136** (0.0698)
Always receive the grade 'Excellent'	1.439*** (0.162)	1.402*** (0.158)
Told by teachers how to develop entrepreneurial skills (skills to start and maintain a business) (0 - no, 1 - yes)		1.291*** (0.0733)
Observations	8 743	8 743

Notes:
1) *** — significance level of 1%, ** — significance level of 5%, * — significance level of 10%
2) Analysis shows odds ratio instead of coefficients
3) Standard errors were calculated using the robust method

The explicit instruction of entrepreneurial skills has a positive relationship with entrepreneurial aspirations that is statistically significant at a 99% confidence level. Students who reported explicit entrepreneurial instruction were 1.4 times more likely to have entrepreneurial aspirations than students who did not have such a learning experience.

Discussion

The variable 'diversity of learning activities' reflects the modernization of instruction in Russian VET. Teachers who offer more diverse student experiences embed active learning into their classroom practices. They regularly combine traditional lectures and individual practical work with discussions, presentations, groupwork, etc. While such innovations were prescribed by the first competence-based national VET curriculum in 2010, some educators are apparently still struggling to introduce them. The obtained results highlight the importance of active learning for student self-evaluation of social and self-learning skills. These results are in line with previous studies that measured the impact of active learning on the acquisition of transferable skills (Arsenis, Flores, & Petropoulou, 2021; Durlak et al., 2011; Shah, 2013).

Student self-beliefs about social and self-learning skills are positively related to explicit instruction. This correlation remains statistically significant even after controlling for the diversity of student learning experiences. It implies that explicit instruction by itself is capable of improving student self-evaluation. In practice, this means that it is insufficient to introduce, e.g., discussions in the classroom. Such discussions or any other learning activities must be followed with comments on employability skills. Students should be informed about the features that characterize the higher levels of these skills and about the ways of attaining them. Furthermore, they should be provided with individual feedback on their current skill levels. Apparently, such an approach raises student self-beliefs and self-confidence by helping them not only to master employability skills but also to reflect on the process of their enhancement.

According to our results, the explicit instruction of entrepreneurial skills positively correlates with entrepreneurial aspirations. This corroborates past research showing the beneficial effects of entrepreneurial education on student intentions to start a business (Hoang, Le, Tran, & Du, 2021; Pittaway & Cope, 2007; Liu, Lin, Zhao, & Zhao, 2019). Furthermore, our analysis reveals gender differences in entrepreneurial intentions. Female students are less likely to have the intention to start a business in comparison to male students. These results support previous studies on gender inequality in the field of entrepreneurship (Haus, Steinmetz, Isidor, & Kabst, 2013; Liu, Lin, Zhao, & Zhao, 2019; Steinmetz, Isidor, & Bauer, 2021).

The final point that merits discussion is student evaluations of the learning environment. Just as learning experiences, they serve as a predictor of more positive self-evaluations. It should be said that students are generally loyal to their VET schools and rarely assess their classrooms and learning equipment as poor. They tend to evaluate the learning arrangements as satisfactory or good. Thus, the analysis focuses predominantly on a comparison of 'satisfactory' and 'good' evaluations.

The resulting pattern is the following: students who believe that their learning equipment and classrooms are good are likely to have more flattering self-beliefs about employability skills. These results could be interpreted differently. One may argue that they are due to the less critical attitude to reality of some students who evaluate both themselves and their environment with a significantly positive bias. However, another plausible explanation is that Russian VET schools are very heterogeneous in terms of the quality of infrastructure and teaching staff. Some VET schools have more resources that allow them to make the learning environment more attractive, hire better teachers, and provide more incentives and training for current employees. Students in such 'prosperous' schools have more opportunities to acquire higher levels of both real and perceived employability skills, which would subsequently underpin their career decisions. On the contrary, students from less prosperous and usually smaller VET schools are disadvantaged with regard to the learning environment and teacher qualifications. Thus, the undertraining of employability skills might be considered as a new and growing facet of education inequality.

Conclusion

The present study provides evidence for the importance of explicitly embedding and integrating employability skills into the VET curriculum. We showed that explicit instruction has a positive relation to the self-evaluation of social and self-learning skills among VET students. Moreover, it positively correlates with student entrepreneurial aspirations. Therefore, explicit embedding is recommended for the inculcation of transferability skills by vocational education and training providers.

Employability skills are an obligatory part of the Russian national VET curriculum. Therefore, our analysis was based on the assumption that all the analysed vocational schools are involved in innovation to some extent. Depending on the skill, 42–48 % of VET students reported that they had not been explicitly taught transferable skills by teachers. These results might imply that many VET teachers prefer the total embedding of employability skills into their courses. They do not draw students' attention to social, self-learning or entrepreneurial skills because of the belief that these skills are developed indirectly through learning activities focused on domain-specific competences. However, our data may also imply that teachers simply neglect the task of embedding employability skills into their courses due to certain beliefs or objective constraints. This matter requires further study.

In addition, our analysis shows that diverse learning experiences are beneficial for student self-evaluations of the employability skills considered here. The rise of the diversity of student experiences in the Russian setting is related to the integration of active learning methods into teaching practices. Even though these methods were prescribed by the national curriculum in 2010, they are still far from being omnipresent. This shows the importance of political interventions aimed at promoting active learning methods at Russian VET schools. Such policies must consider the heterogeneity of VET financing in different regions.

References

Altuna, U. J., Cruz, I. E., Aierbe, B. A., Madinabeitia, E. A., & Marko, J. I. (2021). Estudio de los espacios profesionales actuales de la Pedagogía: La voz del alumnado y de los profesionales. *Teoría de la Educación. Revista Interuniversitaria*, *33*(2), 1–21. https://doi.org/10.14201/teri.23714

Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching*. Guilford Press.

Arsenis, P., Flores, M., & Petropoulou, D. (2021). Enhancing graduate employability skills and student engagement through group video assessment. *Assessment & Evaluation in Higher Education, 47*(2) 245-258 https://doi.org/10.1080/02602938.2021.1897086

Australian Education Council Mayer Committee 1992, *Key competencies: report of the Committee to advise the Australian Education Council and Ministers of Vocational Education, Employment and Training on employment-related key competencies for postcompulsory education and training [Mayer report]*, Australian Education Council and Ministers of Vocational Education, Employment and Training, Canberra. http://hdl.voced.edu.au/10707/72980

Australian Government. (2013). Core skills for work: Developmental framework. Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education and Department of Education, Employment and Workplace Relations. https://cica.org.au/wp-content/uploads/Core-Skills-for-Work-Developmental-Framework-2013.pdf

Australian Industry and Skills Committee (AISC). (2016). Future skills and training: A practical resource to help identify future skills and training. Retrieved from https://ontargetworkskills.files.wordpress.com/2018/01/2016-aisc-future-skills-and-training.pdf

Baartman, L., & Ruijs, L. (2011). Comparing students' perceived and actual competence in higher vocational education. *Assessment & Evaluation in Higher Education, 36*(4), 385–398. https://doi.org/10.1080/02602938.2011.553274

Bakar, A. R. (2011). *Preparing Malaysian youths for the world of work: Roles of technical and vocational education and training (TVET)*. Universiti Putra Malaysia Press. Retrieved from http://pnc.upm.edu.my/upload/dokumen/20170731160618Preparing_Malaysian_Youths_for_The_World_of_Work_Roles_of_Technical_and_Vocational_Education_and_Training(TVET).pdf

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman/Times Books/Henry Holt & Co.

Bogatyreva, K., & Shirokova, G. (2017). From entrepreneurial aspirations to founding a business: The case of Russian students. *Foresight and STI Governance*, *11*(3), 25–36. https://doi.org/10.17323/2500-2597.2017.3.25.36

Bouffard, T., & Narciss, S. (2011). Benefits and risks of positive biases in self-evaluation of academic competence: Introduction. *International Journal of Educational Research, 50*(4), 205–208. https://doi.org/10.1016/j.ijer.2011.08.001

Brown, S., Lent, R., & Gore, P. (2000). Self-rated abilities and self-efficacy beliefs: Are they empirically distinct? *Journal of Career Assessment, 8*(3), 223–235. https://doi.org/10.1177/106907270000800302

Calero López, I., & Rodríguez-López, B. (2020). The relevance of transversal competences in vocational education and training: A bibliometric analysis. *Empirical Research in Vocational Education and Training*, *12*, article no. 12. https://doi.org/10.1186/s40461-020-00100-0

Chadha, D., & Nicholls, G. (2006). Teaching transferable skills to undergraduate engineering students: Recognizing the value of embedded and bolt-on approaches. *International Journal of Engineering Education*, *22*(1), 116–122.

Chen, P. (2003). Exploring the accuracy and predictability of the self-efficacy beliefs of seventh-grade mathematics students. *Learning and Individual Differences, 14*(1), 77—90. https://doi.org/10.1016/j.lindif.2003.08.003

Chen, P., Goncharova, A., Pilz, M., Frommberger, D., Li, J., Romanova, O., & Lin, Y. (2021). International curriculum comparison in vocational education and training: A collaborative development of an analysis instrument. *International Journal for Research in Vocational Education and Training, 8*(4), 16–43. https://doi.org/10.13152/IJRVET.8.4.2

Cranmer, S. (2006). Enhancing graduate employability: Best intentions and mixed outcomes. *Studies in Higher Education, 31*(2), 169–184. https://doi.org/10.1080/03075070600572041

Doménech-Betoret, F., Abellán-Roselló, L., & Gómez-Artiga, A. (2017). Self-efficacy, satisfaction, and academic achievement: The mediator role of students' expectancy-value beliefs. *Frontiers in Psychology, 8*, 1193. https://doi.org/10.3389/fpsyg.2017.01193

Dunning, D., Heath, C., & Suls, J. M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest, 5*(3), 69–106. https://doi.org/10.1111/j.1529-1006.2004.00018.x

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

EU Council. (2018). EU Council Recommendation of 22 May 2018 on key competences for lifelong learning (2018/C 189/01). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&from=EN

Fajaryati, N., Budiyono, B., & Wiranto, A. M. (2020). The employability skills needed to face the demands of work in the future: Systematic literature reviews. *Open Engineering, 10*(1), 595–603. https://doi.org/10.1515/eng-2020-0072

Faure, E. (1972). *Learning to be: The world of education today and tomorrow*. UNESCO.

Fraser, C., Duignan, G., Stewart, D., & Rodrigues, A., (2019). Overt and covert: Strategies for building employability skills of vocational education graduates. *Journal of Teaching and Learning for Graduate Employability, 10*(1), 157–172. https://doi.org/10.21153/jtlge2019vol10no1art782

Froumin, I., & Remorenko, I. (2020). From the 'best-in-the world' Soviet school to a modern globally competitive school system. In F. Reimers (Ed.). *Audacious education purposes* (pp. 233-250). Springer, Cham. https://doi.org/10.1007/978-3-030-41882-3_9

Harris, R., & Clayton, B. (2018). The importance of skills – but which skills? [editorial]. *International Journal of Training Research, 16*(3), 195-199. https://doi.org/10.1080/14480220.2018.1576330

Haus, I., Steinmetz, H., Isidor, R., & Kabst, R. (2013). Gender effects on entrepreneurial intention: A meta-analytical structural equation model. *International Journal of Gender and Entrepreneurship, 5*(2), 130–156. https://doi.org/10.1108/17566261311328828

Hewitt, M. P. (2015). Self-efficacy, self-evaluation, and music performance of secondary-level band students. *Journal of Research in Music Education, 63*(3), 298–313. https://doi.org/10.1177/0022429415595611

Hoang, G., Le, T. T. T., Tran, A. K. T., & Du, T. (2021). Entrepreneurship education and entrepreneurial intentions of university students in Vietnam: The mediating roles of self-efficacy and learning orientation. *Education + Training, 63*(1), 115–133. https://doi.org/10.1108/ET-05-2020-0142

International Labour Office (ILO). (2007). *Portability of skills*. Committee on Employment and Social Policy, International Labour Office. Retrieved from

https://www.ilo.org/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_gb_298_esp_3_en.pdf

Jackson, D. (2014). Self-assessment of employability skill outcomes among undergraduates and alignment with academic ratings. *Assessment & Evaluation in Higher Education, 39*(1), 53-72. https://doi.org/10.1080/02602938.2013.792107

Kane, M., Berryman, S. Goslin, D., & Meltzer, A. (1990) *Identifying and describing the skills required by work*. Report prepared for The Secretary's Commission on Achieving Necessary Skills, Employment and Training Administration, United States Department of Labor, Washington DC. Retrieved from https://wdr.doleta.gov/SCANS/idsrw/idsrw.pdf

Kechagias, K. (ed.) (2011). *Teaching and assessing soft skills*. 1st Second Chance School of Thessaloniki, Neapolis, Thssaloniki, Greece. Retrieved from: http://research.education.nmsu.edu/files/2014/01/396_MASS-wp4-final-report-part-1.pdf

Klassen, R. M. (2002). A question of calibration: A review of the self-efficacy beliefs of students with learning disabilities. *Learning Disability Quarterly, 25*(2), 88–102. https://doi.org/10.2307/1511276

Kopnov, V. A., Dremina, M., Shmurygina, O., Golubeva, T., Sartakova, E., Kurolap, M., Papaloizou, L., & Morevs, P. (2018). Russian vocational education and training (VET) system ECVET implementation environment. In *Piloting ECVET to the national VET system of Russia and Uzbekistan*, Vol. 45. https://doi.org/10.13140/RG.2.2.28125.10728

Liu, X., Lin, C., Zhao, G., & Zhao, D. (2019). Research on the effects of entrepreneurial education and entrepreneurial self-efficacy on college students' entrepreneurial intention. *Frontiers in Psychology*, *10*, 869. https://doi.org/10.3389/fpsyg.2019.00869

Lynn, D. J., Holzer, C., & O'Neill, P. (2006). Relationships between self-assessment skills, test performance, and demographic variables in psychiatry residents. *Advances in Health Sciences Education: Theory and Practice*, *11*(1), 51–60. https://doi.org/10.1007/s10459-005-5473-4

McGunagle, D., & Zizka, L. (2020). Employability skills for 21st-century STEM students: The employers' perspective*. Higher Education, Skills and Work-Based Learning, 10*(3), 591–606. https://doi.org/10.1108/HESWBL-10-2019-0148

Ministry of Education and Science of the Russian Federation. (2013). Order N 701 of the Ministry of Education and Science of the Russian Federation of 2 August 2013 'On the approval of the federal state educational standard for secondary vocational education for the profession 190631.01 car mechanic.' Retrieved from http://base.garant.ru/70444462/

Ministry of Education and Science of the Russian Federation. (2018). Federal state educational standard for secondary vocational education for the specialization 38.02.01 economics and accounting. Author's translation. Retrieved from https://base.garant.ru/71887436/53f89421bbdaf741eb2d1ecc4ddb4c33/

Narciss, S., Koerndle, H., & Dresel, M. (2011). Self-evaluation accuracy and satisfaction with performance: Are there affective costs or benefits of positive self-evaluation bias? *International Journal of Educational Research, 50*(4), 230–240. https://doi.org/10.1016/j.ijer.2011.08.004

Ng, J. R., & Earl, J. K. (2008). Accuracy in self-assessment: The role of ability, feedback, self-efficacy, and goal orientation. *Australian Journal of Career Development, 17*(3), 39–50. https://doi.org/10.1177/103841620801700307

Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review, 54*(3), 442–454. https://doi.org/10.1016/j.euroecorev.2009.08.002

Orth, U., Dapp, L. C., Erol, R. Y., Krauss, S., & Luciano, E. C. (2021). Development of domain-specific self-evaluations: A meta-analysis of longitudinal studies. *Journal of Personality and Social Psychology, 120*(1), 145–172. http://dx.doi.org/10.1037/pspp0000378

Piperopoulos, P., & Dimov, D. (2015). Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. *Journal of Small Business Management, 53*(4), 970–985. https://doi.org/10.1111/jsbm.12116

Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. *International Small Business Journal, 25*(5), 477–506. https://doi.org/10.1177/0266242607080656

Priestley, M., & Biesta, G. (2013). Introduction: The new curriculum. In M. Priestley & G. Biesta (Eds.). *Reinventing the curriculum: New trends in curriculum policy and practice* (pp. 1–12). Bloomsbury Academic.

Romanova, O. (2021). Competence-based approach in vocational education and training: Systematic review of the Russian literature. *Education and Self Development, 16*(2), 105–123. https://doi.org/10.26907/esd.16.2.06

Römgens, I., Scoupe, R., & Beausaert, S. (2020). Unraveling the concept of employability, bringing together research on employability in higher education and the workplace. *Studies in Higher Education, 45*(12), 2588–2603.

Russian University of Technology. (2020). On the results of monitoring the quality of training in 2020. Retrieved from https://monitoring.miccedu.ru/iam/2020/_spo/bulletin_SPO_RF_2020.pdf

Rychen, D. S., & Salganik, L. H. (Eds.). (2003). *Key competencies for a successful life and a well-functioning society*. Hogrefe & Huber.

Sanchez Puerta, M. L., & Rizvi, A. (2018). Measuring skills demanded by employers: Skills toward employment and productivity (STEP). Job notes, no. 5. World Bank. https://openknowledge.worldbank.org/handle/10986/29816

Sewell, A., & George, A. (2009). Developing efficacy beliefs in the classroom. *The Journal of Educational Enquiry, 1*(2), 58–71. Retrieved from https://ojs.unisa.edu.au/index.php/EDEQ/article/view/576

Shah, S. Z. A. (2013). The use of group activities in developing personal transferable skills. *Innovations in Education and Teaching International, 50*(3), 297–307. https://doi.org/10.1080/14703297.2012.760778

Steinmetz, H., Isidor, R., & Bauer, C. (2021). Gender differences in the intention to start a business: An updated and extended meta-analysis. *Zeitschrift für Psychologie, 229*(1), 70–84. https://doi.org/10.1027/2151-2604/a000435

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin, 103*(2), 193–210. https://doi.org/10.1037/0033-2909.103.2.193

UNICEF. (2019). Global framework on transferable skills. UNICEF Education Section Programme Division. Retrieved from https://www.unicef.org/media/64751/file/Global-framework-on-transferable-skills-2019.pdf

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: A meta-analytic review. *Educational Psychologist, 39*(2), 111–133. https://doi.org/10.1207/s15326985ep3902_3

Walter, S. G., Parboteeach, K. P., & Walter, A. (2012). University departments and self-employment intentions of business students: A cross-level analysis. *Entrepreneurship Theory and Practice, 37*(2), 1–26. https://doi.org/10.1111/j.1540-6520.2011.00460.x

Weigel, T., Mulder, M., & Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states. *Journal of Vocational Education and Training, 59*(1), 67–88. https://doi.org/10.1080/13636820601145630

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 6*(1), 68–81. https://doi.org/10.1007/BF02209024

Wood, A. L., & Olivier, M. A. J. (2004). A self-efficacy approach to holistic student development. *South African Journal of Education, 24*(4), 289–294. https://hdl.handle.net/10520/EJC32009

Appendix A

Questions from the questionnaire used in the study. The whole questionnaire is available in Russian at: https://www.hse.ru/data/2021/01/20/1349406212/Anketa_student_SPO.pdf

FUT5. Please rate your ability to use the following skills to carry out professional and private tasks from 1 (no skill at all) to 5 (excellent mastery)					
Skill	1	2	3	4	5
Search for, analyse and interpret information (*this variable was not used in our analysis*)	1	2	3	4	5
Ability to interact/cooperate with others	1	2	3	4	5
Identify and acquire the right skills to achieve goals	1	2	3	4	5
TRUD21. Would you like to start a new business (with or without employees) to sell goods or provide services on your own or together with others within 2-3 years after graduating from your vocational school (or within 2-3 years after graduating from the university if you are planning to enrol in it)?					
More likely not	1				
More likely yes	2				

Are you already running a business or are self-employed? (category excluded from our analysis due to very small numbers)	3		
FUT3. Did your teachers assess the following skills during your studies at this VET school? (select all the answers that apply)			
Ability to interact/cooperate with others	1		
Ability to search for, interpret, and analyse information	2		
Ability to start your own business / entrepreneurial skills	3		
Ability to identify and acquire the right skills to achieve goals	4		
Did not assess any of the above	5		
FUT4. Did your teachers tell you during your studies about how to develop the following skills? (select all the answers that apply)			
Ability to interact/cooperate with others	1		
Ability to search for, interpret, and analyse information	2		
Ability to start your own business / entrepreneurial skills	3		
Ability to identify and acquire the right skills to achieve goals	4		
Did not talk about how to develop the above skills better	5		
FAM2. Your age: _____ (full years)			
STUD1. What grades did you mostly get at your VET school during the past school year (2019/2020)? (select one answer)			
Mostly unsatisfactory grades ('2's')	1		
Mostly satisfactory grades ('3's')	2		
Mostly good grades ('4's') yet also some '3's'.	3		
Only good and excellent ('4's' and '5's')	4		
Only excellent grades ('5's')	5		
Tech19. How up-to-date are the technologies you are learning at your institution? (select one answer)			
Cutting-edge technologies that are not yet available in real production	1		
State-of-the-art technologies used at leading firms	2		
Relatively modern technologies that could be more up-to-date	3		
Yesterday's technologies that are no longer on the market	4		
Don't know or can't tell	5		
STUD5. How would you rate the following conditions at your VET school? (select one answer in each line)			
Condition of study spaces	Low/Poor	Average/satisfactory	High/good
Condition of training equipment, including equipment for authentic vocational training	Low/Poor	Average/satisfactory	High/good
Questions used in factor analysis			

FUT11. What percentage of your seminars and workshops at your VET school, including online courses, were conducted in the following forms during the past year (2019/2020)? (select one answer in each line)			
Students working in groups on an assignment or project	Under 30%	From 30% to 70%	Over 70%
Individual practical work by students (solving training exercises, laboratory work, project work)	Under 30%	From 30% to 70%	Over 70%
Student oral reports or presentations	Under 30%	From 30% to 70%	Over 70%
Independent student search for information on the issue being studied	Under 30%	From 30% to 70%	Over 70%
Writing down course material from dictation or copying it from the board/slides	Under 30%	From 30% to 70%	Over 70%
Involvement in class discussions	Under 30%	From 30% to 70%	Over 70%
Applying theoretical knowledge to solve case studies or practical tasks	Under 30%	From 30% to 70%	Over 70%