Math Anxiety, Skills, and Work-related Competencies: A Study on Czech University Students

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Abstract: This article aims to identify the mutual relationship between the awareness of the importance of mathematical competencies for the acquisition of work-related skills and the perceived importance of the latter for performance in future work and successful participation in the labor market. How these issues relate to math anxiety is also explored. The above is examined on a sample of university students in the selected education institution (HEI) N =297 in the Czech Republic in 2022. Subsequently, a series of semi-structured interviews were conducted with the students in 2023. It was found that by improving work-related skills for a future career, math anxiety increases. A crucial finding is up to 47 % of the perceived importance of competencies for future job performance can be explained by understanding the importance of mathematics for their acquisition. The findings of this study have the potential to contribute to the improvement of mathematics education and the development of a more skilled and capable workforce, which can ultimately lead to greater economic growth and social progress. In addition, this article contains practical recommendations on how to use these findings in the practice of mathematics education not only in the selected higher education institution.

Keywords: Mathematics, Transversal skills, Math Anxiety, University Students, Mathematics Education

INTRODUCTION

Mathematical skills are at the core of the ability to solve problems and think logically as well as innovatively. In addition, they directly affect performance on the labor market, as suggested by many authors (Koedel & Tyhurst, 2012; the same findings were reached, e.g., by Cígler, 2018), their importance being highlighted by the International Labor Organization (cf. ILO, 2021) too. In terms of participation in the labor market, mathematical competencies influence the level of cross-cutting transversal skills that go beyond a particular field of expertise and can be exercised in various professions (e.g., Abramihin & Sarai, 2022). If the employees have acquired these skills and knowledge, then the organizational capital of the employer firm possesses sufficient flexibility

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supporting its competitiveness. Constant updating of knowledge and competencies in a continuous educational process become key factors for ensuring the labor market sustainability (Askar, Petryakov, Reiff-Stephan & Ungvari, 2022). Hence, the authors of the present paper consider it critical to tackle the issue of the acquisition of math skills by college students preparing for the future profession. The selection of the target group of students corresponds to the latest findings demonstrating a significant relationship between the acquired mathematical competencies and success in higher education (Delaney & Devereux, 2020), which may then positively affect the working career.

The aim of this article is to identify the mutual relationship between the awareness of the importance of mathematical competencies for the acquisition of work-related skills and the perceived importance of the latter for the performance in future work and successful participation in the labor market. How these issues relate to math anxiety is also explored. Based on the findings, specific recommendations for teachers will be formulated. The above is examined on a sample of freshman/woman undergraduate students in the selected higher education institution (HEI).

Mathematical Skills, Stress, and Anxiety

Mathematical competencies (skills) can be understood as the ability to develop mathematical thinking and use it in solving everyday problems (cf. EU Reference Framework, 2007). Such a concept is incorporated into the mathematical or competence components of most European curricula in considerable overlap with problem-solving and learning competencies. The components of communicative and work competencies are also closely related to math skills, connections with social, personal, and civic competencies being rare and rather partial (Krátká, Zelendová, Cachová & Přibyl, 2018). An adequate level of mathematics skills facilitates access to the labor market and retention of employment in high-quality and permanent positions. However, large numbers of working-age adults as well as youth (20–25 %) in elementary education lack these core skills (see 2012 PIAAC - Programme for the International Assessment of Adult Competencies and 2015 PISA test results, respectively). The enhancement of the aforementioned skills is closely related to the overall (un)popularity of mathematics. In the Czech Republic, pupils and students' attitude towards mathematics gets worse in the course of schooling. There is a significant drop at the onset of the second stage of elementary school, the relation to math remaining basically the same after the transition to high school, but the downward trend keeps going on (Chvál, 2013) A similar tendency is also observable in other countries (Gokkurt-Ozdemir, Yildiz-Durak, Karaoglan-Yilmaz & Yilmaz, 2021). The above trend was confirmed by a survey on a sample of economics students immediately after they started university (see Havlínová & Zelendová, 2019). Some student statements ("*I'm scared of the speed with which people around me can calculate*", "*Due to oral and written exam stress, I got nosebleeds, which led to ridicule and humiliation*") indicated that the dislike of mathematics could in many cases be considered math anxiety. It is not just about the manipulation of numbers, but about any problem that one considers to be mathematical. (Moore, Rudig & Ashcraft, 2015). At colleges of economics, math stress or even math phobia can pose a big problem, mathematics playing an important, although usually not a major, role in the course curriculum.

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For use of the article math anxiety is understood as a psychological condition characterized by intense fear, anxiety, or apprehension when faced with mathematical tasks, resulting in reduced mathematical performance and avoidance behaviour. It can hinder an individual's ability to engage effectively with mathematical concepts and activities. The above definition is consistent with the understanding of math anxiety in recent peer-reviewed articles (Storozuk & Maloney, 2023).

The Importance of Math Skills for Successful Participation in the Labor Market

Math skills and thinking, along with the willingness to use mathematical models, have long been among the key competencies required in the labor market, as is highlighted by many studies (cf. Reynolds & Mackay, 1997) and institutions (WEF, 2015). Since mathematical skills are a prerequisite for acquiring other competencies such as analytical thinking, problem solving, etc., it is not surprising that, according to the International Labor Organization, the acquisition of math skills is crucial for the 21st century labor market (see ILO, 2021). This institutionalized framework of core skills played a key role in compiling the first part of the survey questionnaire for data collection presented below. Across the professional community, there is a consensus that mathematical skills are of considerable importance for success in the labor market. Whether the general public is aware of this, however, remains a question.

AIMS AND RESEARCH HYPOTHESES

The paper aims at identifying the relationship between the awareness of the importance of math skills for developing work-related ones and the perceived importance of these job-related skills for future career and participation in the labor market. The secondary goal is to investigate the connections between the above relations and math anxiety. Based on the findings, specific recommendations for teachers will be formulated. The recommendations will also include options for the organisation of teaching in relation to the real possibilities of classrooms for teaching mathematics at AMBIS University.

Data and Methodology

The respondents of the present survey were recruited among first-year undergraduates of AMBIS University. At the introductory lecture of the mathematics course in the 2022 winter semester, newly admitted students were administered an electronic questionnaire about their opinion on mathematics. The creation of the questionnaire, its distribution and all the evaluation were carried out by the authors of this article. The article provides analysis of original data, not yet processed in any other article. The research was undertaken at the very beginning of their studies so that they could not be influenced by the college experience. Data collection and subsequent analysis is the work of the team of authors of this article. Out of a total of 564 eligible students of the Economics and Business Management program**, 297 respondents (of all genders M/F) completed the survey questionnaire**.

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After data analysis, **additional semi-structured interviews were conducted with randomly selected students**. This activity was carried out to better understand of finding from quantitative research and provide the best possible recommendations for future teaching. The qualitative investigation was more in the form of a research probe. In the case of the interviews conducted, it is not a representative sample in the static sense.

Identification of the respondent	**Gender**	**Age**	**Date of interview**	**Interviewer**
Respondent No. 1.	Female	22	07/09/2023	Farkacova
Respondent No. 2.	Male	20	08/09/2023	Farkacova
Respondent No. 3.	Male	22	11/09/2023	Farkacova

Table 1: Basic information about the respondents in the short interviews

Source: Authors' own computation

With regard to the subject of analysis, mathematical anxiety, which is partly a psychological and social phenomenon, the **combination of qualitative and quantitative investigation** seems to be optimal (Ochrana, 2015, 2022).

The definition of individual variables being based on the 2021 ILO global framework on core skills, the following three variable clusters are examined:

The first group of variables comprises those describing the degree of need that students attribute to mathematical competencies as a precondition for gaining job-related skills (hereinafter referred to as KMTS). These skills are represented by analytical and critical thinking, creative and innovative thinking, strategic thinking, learning to learn, collaboration and teamwork, and literacy in the fields of finance, culture, and science. The need for mathematical competencies to develop these skills was measured on a five-point scale from absolutely necessary (1) to absolutely unnecessary (5).

The variables in the second cluster reflect the degree of importance that students attribute to the competencies necessary for successful participation in the labor market, which also include financial, cultural, and scientific literacy (hereafter referred to as TSFC). Importance in individual monitored areas was measured on the same five-point scale as in the previous case.

Finally, the math anxiety variable (hereinafter referred to as MA) was monitored. A proven methodology was employed (cf. Hopko, Mahadevan, Bare, & Hunt, 2003) using nine standard statements illustrating the causes of math stress (see Figure 1). The degree of agreement was measured on a similar five-point scale from the most stressful attitude (1) to the most relaxed attitude (5).

The following research hypotheses were proposed:

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- **H1:** The perceived need for mathematical competencies for acquiring work-related skills (KMTS) and the perceived importance of work-related skills for the performance of future work (TSFC) are associated.
- **H2:** Math anxiety (MA) and the perceived need for mathematical competencies for acquiring work-related skills (KMTS) are associated.
- **H3:** Math anxiety (MA) and the perceived importance of work-related skills for future work performance (TSFC) are associated.

For a visual overview, see Figure 1 below, methodological notes on the used CANCOR statistical model following underneath.

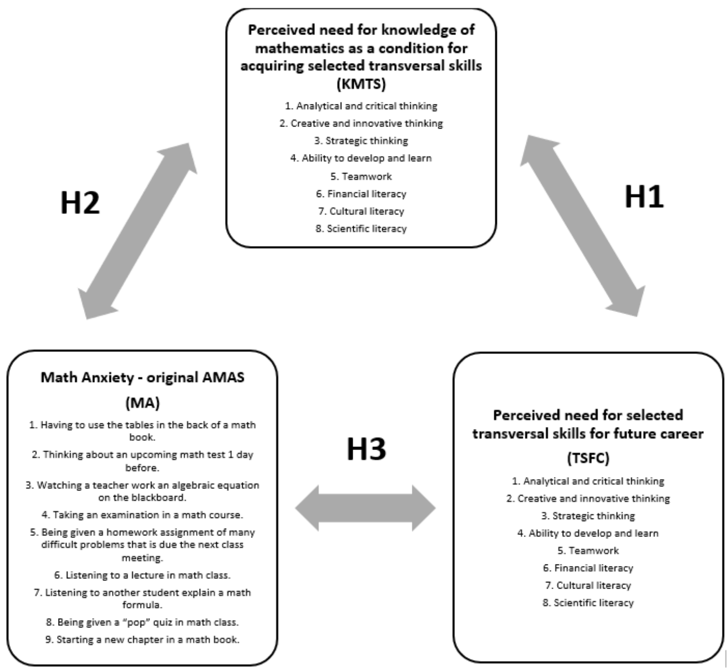

Figure 1 Graphic display of relationships between variables

Source: Authors' own elaboration

Canonical Correlation Analysis (CANCOR) is a multivariate statistics technique that analyzes correlations between two groups of variables without stating any of them as the dependent or independent one. For instance, to evaluate the relationship between the KMTS group of eight variables and the MA cluster of nine variables, the comprehensive list of all relevant "simple" correlation coefficients between two variables would present 9*8=72 correlation coefficients with no overall interpretation. Instead, CANCOR performs a limited number of canonical correlation

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coefficients with complex and straightforward interpretations of the correlation between the two groups of variables. To interpret the concept of canonical correlation coefficients, the concept of canonical variables is to be introduced.

The CANCOR model identifies canonical variables, i.e., linear combinations of variables in one variable cluster. Since the model focuses on correlations between two groups of variables, in fact, pairs of canonical variables are identified – one canonical variable representing the "left group", the other the "right group" of variables. If the number of variables in the left and right groups is different, then as many pairs of canonical variables are identified as there are in the smaller dataset.

The canonical variables are defined by the CANCOR model so that the two linear combinations of original variables (one in each dataset) have the largest possible correlation. Once the canonical variables are defined, the analysis can proceed with the computation of correlations between the canonical variables. Since this correlation is measured between canonical variables, it is called canonical correlation. In the given case with the KMTS cluster of eight variables and the MA group of nine variables, there are eight pairs of canonical variables and eight related canonical correlation coefficients ordered in sequence of gradually decreasing absolute values. The tests of statistical significance of individual canonical correlation coefficients can be performed consequently. (Härdle and Simar, 2015.)

RESULTS

The following section presents the results of hypotheses testing (H1–H3) and the discussion of key findings.

H1: The perceived need for mathematical competencies for acquiring work-related skills (KMTS) and the perceived importance of work-related skills for the performance of future work (TSFC) are associated.

When measuring the association between KMTS and TSFC variables, all canonical correlation coefficients proved to be statistically significant at 5% significance level, thus confirming the strong connection between KMTS and TSFC. Up to 47 % of the perceived importance of competencies for future job performance can be explained by understanding the importance of mathematics for their acquisition.

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Number	Canonical Cor. Coeff	p-value
1	0.87	0.00
2	0.74	0.00
3	0.68	0.00
4	0.61	0.00
5	0.55	0.00
6	0.43	0.00
7	0.38	0.00
8	0.36	0.00

Table 2: Canonical coefficient of correlation between KMTS and TSFC variables

Source: Authors' own computation

A two-dimensional graph in Figure 2 below presents the directions of each of the original variables showing the first two dimensions. Interpreting the proximity of KMTS to TSFC variables makes it possible to understand the relation between the two data sets. Being the most important (as the first pair of canonical variables leads to the highest possible correlation), dimension 1 is plotted on the x-axis, meaning that the variables scoring high or low on this dimension will be on the right and left side of the chart, respectively.

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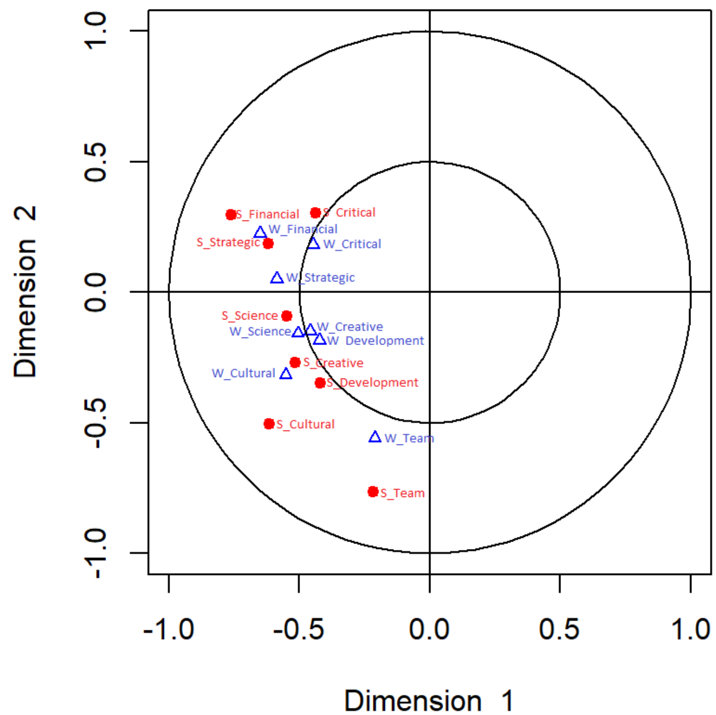

Figure 2 Two-dimensional KMTS (S_Variable) and TSFC (W_Variable) variable directions

Source: Authors' own computation

Based on the analysis of the obtained data, it was proven that the need for mathematical competencies to develop work-related skills and the importance of the latter for a future career are related. Therefore, H1 hypothesis was confirmed.

The perceived necessity of mathematical competencies for acquiring core transversal skills according to the canonical correlation coefficient is related to the perceived importance of transversal skills for future work performance. This positive relationship proves that math skills, as a prerequisite for transversal skills development, are understood by the respondents as pivotal in terms of their future career.

Indeed, as stated by the Respondent No. 2: *„I think that basic math is needed everywhere, but due to the complexity of some calculations etc., one doesn't have a chance to master a given case when technology fails. On the other hand, mathematics aids logical thinking.“* Respondent No. 3 had a similar view on the issue. Respondent No. 3 also added *"Whatever my senior position, knowledge of mathematics will be indispensable."*

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Mathematical competencies are perceived as a kind of springboard for developing the skills needed for future working life and can act as a stimulus to acquire them.

H2: Math anxiety (MA) and the perceived need for mathematical competencies for acquiring work-related skills (KMTS) are associated.

Number	Canonical Cor. Coeff	p.value
1	0.36	0.03
2	0.24	0.48
3	0.23	0.62
4	0.19	0.81
5	0.15	0.90
6	0.11	0.91
7	0.08	0.87
8	0.04	0.76

Table 3: Canonical coefficient of correlation between MA and KMTS variables

Source: Authors' own computation

Only the first canonical coefficient of correlation between MA and KMTS variables is significant at a 5% level of statistical significance. However, only 4.81 % of KMTS can be explained via math anxiety.

A two-dimensional graph in Figure 3 below presents the directions of each of the original variables showing the first two dimensions. Interpreting the proximity of MA to KMTS variables makes it possible to understand the relationships between the two data sets. The direction of the first dimension is of particular importance as only the first canonical correlation coefficient proved to be statistically significant. Team, Creative, Cultural and Development variables are associated with math anxiety.

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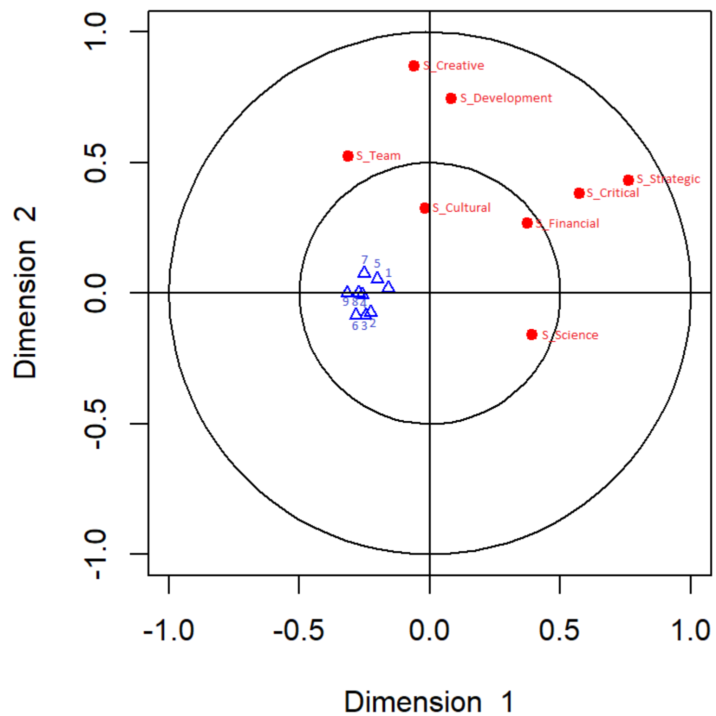

Figure 3 Two-dimensional MA and KMTS variable directions

Source: Authors' own computation

The analysis of the obtained data indicated that variables MA and KMTS are weakly related to each other only through the first canonical correlation coefficient. The hypothesis is therefore verified, but only 4.81 % of KMTS can be explained by math anxiety.

Furthermore, it was found that as the perceived importance of mathematical competencies to gain work-related skills increases, math anxiety also grows (CC1=0.36, p=0.03), which is mainly due to the relation of the four KMTS variables (Team, Creative, Cultural and Development) to MA, as can be seen from Figure 3.

The findings also confirm the viewpoint of Respondent No. 2, who sees mathematical skills as key to acquiring the skills needed for a future career. As he described, he experiences a range of emotions both positive and negative when learning mathematics, specifically stating: joy, frustration, and a sense of victory. He also added that negative emotions prevail the moment he takes longer to calculate a math problem correctly.

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Respondent No. 3 adds to the situation: *"I primarily experience anxiety when solving math problems. I know I need to understand it and learn it, but at the same time it's hard and maybe I don't fully understand it, I'm pressed for time. It's such a necessary evil that I actually want to succeed in the industry. At the same time, I know that if others have mastered it, I have to master it too, so I hold out hope for a successful resolution."*

H3: Math anxiety (MA) and the perceived importance of work-related skills for future work performance (TSFC) are associated.

Only the first canonical coefficient of correlation between MA and TSFC is significant at a 5% level of statistical significance. However, only 4.26 % of TSFC can be explained by math anxiety.

Number	Canonical Cor. Coeff	p.value
1	0.33	0.03
2	0.26	0.28
3	0.22	0.52
4	0.20	0.66
5	0.17	0.77
6	0.11	0.89
7	0.10	0.80
8	0.03	0.91

Table 4: Canonical coefficient of correlation between MA and TSFC variables

Source: Authors' own computation

A two-dimensional chart in Figure 4 displays the directions of each of the original variables showing the first two dimensions. Interpreting the proximity of MA to TSFC variables makes it possible to understand the relationships between the two data sets. The direction of the first dimension is especially important as only the first canonical correlation coefficient proved to be significant at a 5% level of significance. Team and Cultural variables in particular, as well as those of Financial and Development, are associated with math anxiety.

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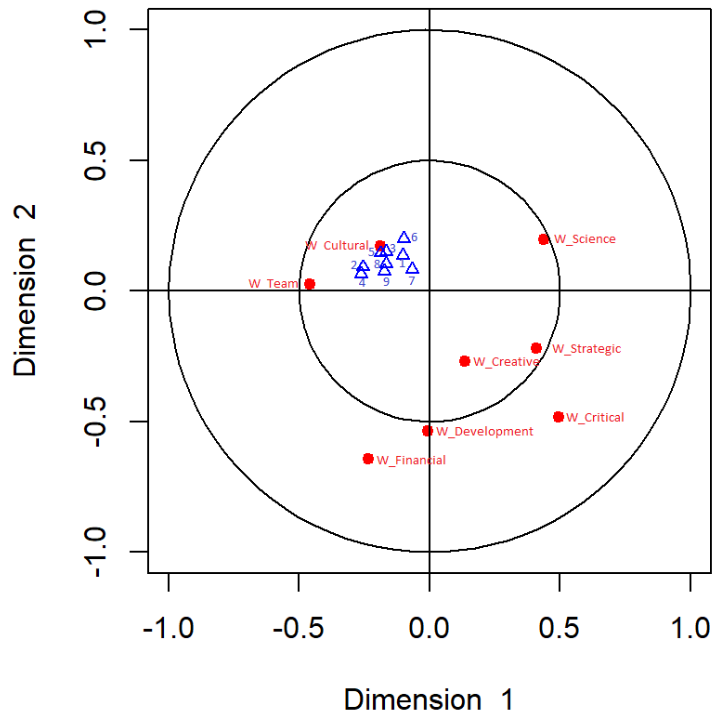

Figure 4 Two-dimensional MA and TSFC variable directions

Source: Authors' own computation

Analysis of the available data revealed a weak correlation between MA and TSFC through the first canonical correlation coefficient only. The H3 hypothesis was also confirmed, but only 4.26% of TSFC can be explained via math anxiety. In addition, it was found that with improving the work-related skills for the future career, math anxiety increases (CC1=0.36 p=0.03).

This means that those respondents who suffer more from fear of mathematics are at the same time more reflective of the importance of the given skills for their future job. This is largely caused by the relation of the four TSFC variables (Team, Cultural, Financial and Development) to MA, as can be seen from Figure 4. (The above finding is consistent with the results of a literature search in the IDEAS database conducted in January 2023.)

This relationship was also confirmed in the case of some of the respondents who took part in the semi-structured interviews. For instance, Respondent No. 2 suffered from a fear of mathematics and considered mathematics important for his future profession, Respondent No. 3 had an identical

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point of view. Respondent no. 1 reflected on the situation in a similar way, but she also added that "*I still hope that I will not encounter mathematics at work*".

Semi-structured interviews failed to identify the cause of this association. However, in general terms the relationship is understandable and was even suggested by Respondent No. 3. If importance of math skills and future needed skills in labour market is subjectively understood as crucial, then fear of failure grows and anxiety or fear may develop.

CONTRIBUTION OF THE FINDING - Recommendations for the Design of Classroom and Teaching Methods

The study has identified a strong association between the perceived need for mathematical competencies in acquiring work-related skills and the perceived importance of work-related skills for future job performance. This suggests that mathematics plays a pivotal role in developing the transversal skills that are important for success in the workplace. The results of this research have significant implications for educators.

Here are selected recommendations for designing the classroom and teaching methods to enhance learning, based on the research findings:

a) **Interdisciplinary connections**: Emphasize the interdisciplinary nature of mathematics by integrating it with other subjects such as economics and management. Showcase how mathematical concepts are applied in various fields, fostering connections and demonstrating the relevance of math beyond the classroom. Specifically, within the target student group, combining mathematics teaching with seminars on key subjects like economics (Ambis, 2023) would be beneficial. For instance, students could apply mathematical skills to determine price elasticity of demand and model predictions for future enterprises. It is worth noting that students already practice topics using practical examples from business economics (Zelendová, 2021), but these examples may be overly simplified, limiting the connection between the topic and real-world applications. This was also confirmed by Respondent No. 3, who stated in a semi-structured interview, *"Mathematics teaching could be less general and more connected to the student's field of study."*

b) **Contextualized learning**: Create authentic learning experiences that simulate work-related contexts where mathematics is applied. Indeed, the findings of recent studies recommend this approach in mathematics education (Wang, Lee, Zhu and Ozdemir, 2022). This can include inviting guest speakers from relevant professions, organizing field trips to workplaces, or designing simulated work scenarios. Such experiences enable students to understand the practical implications of mathematics, reinforcing the importance of mathematical competencies for success in specific careers. Given that the target student group aspires to hold positions such as Managing Director, Marketing Manager, or Chief Financial Officer (Ambis, 2023), it would be appropriate

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to divide students into groups based on their interests in marketing, finance, and management studies. Within these groups, assign mathematical problem-based tasks and demonstrate their practical applications with input from industry practitioners. The suggestion is supported by the viewpoint of Respondent No. 1 who stated, "*Maybe yes, involving people from practice would be good. Practice tends to be different from theory. Practice sometimes makes more sense*." In addition, Respondent No. 3 stated: *"It would change the way mathematics itself is viewed. I could see myself using it more extensively in practice."* The role of the practitioner has proven to be crucial in similar cases with university students (Farkačová, 2022). On the other hand, this solution might not suit all students. As Respondent No. 2 noted: "*I wouldn't want people from practice teaching math. I like to have the subject explained by someone who knows how to deliver and explain it*." A solution could be to pilot test this approach and then explore the benefits from the perspective of the students concerned.

Additionally, considering the physical limitations of the classrooms, it would be advisable to divide students into individual classrooms rather than accommodating multiple groups in one room. In the case of dividing the students within a single classroom, the classroom division could look like see appendix no. II. The existing classrooms have sloping floors and fixed desks (refer to appendix photos), making it impractical to rearrange them. Therefore, incorporating online classes (Tartavulea, Albu, Albu, Dieaconescu, and Petre, 2020) would be appropriate, as it allows for effective practice of newly acquired knowledge while reducing math anxiety and providing a more secure and confident learning environment. Lastly, it is worth noting that the school, as a result of the COVID-19 pandemic, is technically and skill-wise prepared for online and hybrid forms of learning.

c) **Measure the level of math anxiety regularly:** It is advisable to measure the level of math anxiety regularly to assess any improvement. It would be beneficial to test students at the beginning and at the end of the semester. This dual measurement allows for the evaluation of any changes in math anxiety. Additionally, it would be particularly useful to compare the changes in math anxiety with exam performance. An identical questionnaire and data collection instrument used in this research could be employed to measure mathematical anxiety. Considering the broad context and implications of mathematical anxiety, it is still important to compare it with achievements in subjects such as Economics, Public Finance, Banking, etc. For instance, a study conducted by Storozuk & Maloney (2023) in Canada has already demonstrated a negative association between mathematical anxiety and mathematical-financial knowledge. It would be desirable to verify these findings in the context of the Czech Republic as well.

This recommendation appears to be particularly important, as confirmed by the findings from the semi-structured interviews. All respondents were admitted to experiencing some degree of mathematical anxiety during the face-to-face interviews. Which confirms that this is a relevant topic that needs to be addressed.

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LIMITATIONS OF RESEARCH AND APPLICATION OF RESULTS AND RECOMMANDATION

A certain limitation of the present study is due to the nature of the research sample, the results being indicative primarily of the situation at economic HEIs in the Czech Republic. To ensure the representativeness of the sample, other universities would have to be involved in the survey.

The main limitation of the application of the recommendations for teaching lies mainly in the additional: a) direct financial costs for practitioners, b) additional costs for measuring the level of mathematical anxiety, c) additional costs for changes in approaches to teaching (mathematics is taught simultaneously by up to four teachers who divide the teaching between them), d) additional costs for checking the compliance of the changes made and the requirements of the National Accreditation Office for higher education.

It should also be noted that the math anxiety examined here is a complex phenomenon that transcends the field of education. In the ordinary work process, mathematics is not usually applied in its pure abstract form, but rather in conjunction with other knowledge and skills. (A common example is dealing with statistics, statistical anxiety being another potential subject of further research.)

While there is a fairly extensive literature on the link between math anxiety and math avoidance (long-term processes such as career choice, college course selection, homework avoidance, etc.; cf., e.g., Hembree, 1990; Ashcraft, 2002; Skaalvik, 2018), the authors of the present article were limited by the lack of sources exploring the relationship between math anxiety and job-related competencies. Nevertheless, they identified an area of further research on the MA–TSFC relation, namely the application of expectancy-value motivation theory.

CONCLUSIONS

The purpose of the paper was to analyze the relationship between awareness of the importance of mathematical competencies for acquiring work-related skills and the perceived importance of the latter for future employment and work performance. The study also examined how the above-mentioned awareness relates to math anxiety.

The research objectives were met through a survey conducted in 2022 on a sample of economics college students. To gain a complex understanding of the relationships between the variables semi-structured interviews were then conducted in 2023.

Three clusters of variables (MA, KMTS and TSFC) were analyzed, their interrelationships having been hypothesized (see H1, H2 and H3 in the data and methodology section). The hypotheses were statistically tested using the canonical correlation coefficient, the results confirming all three predicted relationships between the variables.

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Developing digital technologies are increasing the demands on the mathematical competencies of labor market participants. Therefore, the article also suggests areas of further research useful not only for modeling access to higher education, but in-house training as well.

The study provides important insights into the role of mathematical competencies in developing work-related skills and their importance for future job performance. The results of this research can be used by educators to improve the effectiveness of mathematics teaching at universities. In addition, the article contains specific recommendations for mathematics education in the areas of Interdisciplinary connections, Contextualized learning.

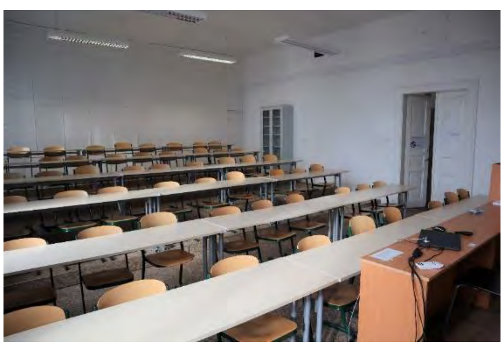
The findings and recommendations may be useful not only in the case of the Czech Republic, but also in other culturally close countries. To determine cultural proximity, the authors recommend using Hosftede's cultural dimensions (Kunwar Jagat Bahadur, 2021).

ACKNOWLEDGMENTS

This paper was supported within the IGA project KEM-2023-01 „Support for scientific publications of the Department of Economics and Management for 2023".

APPENDIX I.

Photos of a typical classroom where seminars are held (location: Prague, Libeň, classroom 208).



The essential specifics of the rooms for teaching mathematics are:
- the tables are fixed to the floor and cannot be manipulated,
- the floor of the rooms is not flat, it is sloping, which makes it difficult for the students and the teacher to move around the room.

Overall, the classrooms are rather adapted for frontal teaching.

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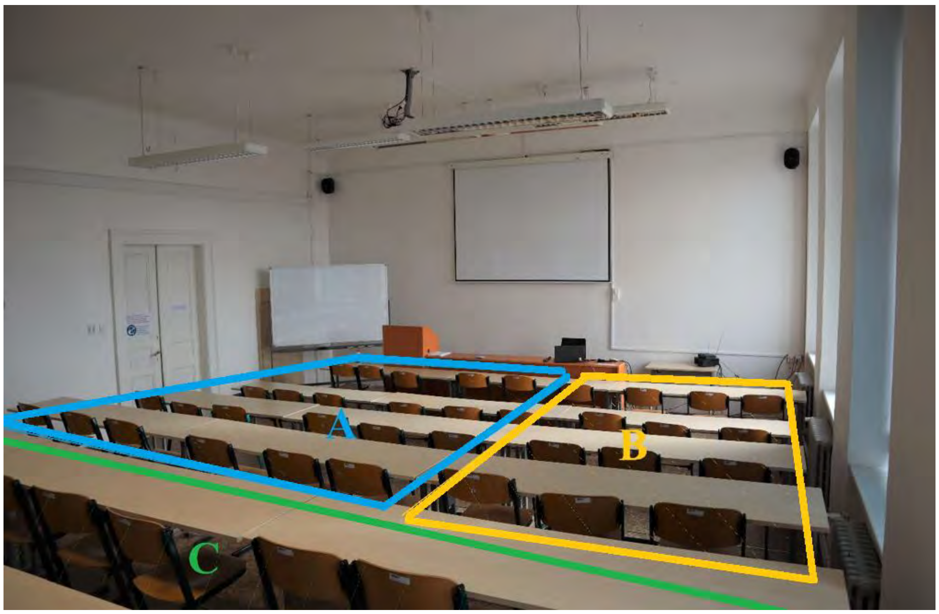
APPENDIX II.

Graphical representation of the possibilities of classroom division (in case of classroom 208). In this case, students would be divided into two groups for mathematics lessons (group A and group B). Part "A" would have one career focus (for instance, Marketing = group A), and part "B" would have a second career focus (for instance, Finance = group B). Each section would be led by one teacher (a practitioner), and student collaboration would take place in groups of about 8-12 people. A mathematics teacher would assist within both sections if needed. At the same time, the teacher could use the part of the classroom marked "C" to deal with individual queries. This back part of the classroom would allow students to experience greater psychological safety and thus alleviate math anxiety.



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