Reading Comprehension of Vocational Teachers in Slovakia: A Case Study

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Abstract

This case study explores the relationship between reading comprehension and critical thinking among vocational teachers in Slovakia, highlighting the role of these competencies in professional and pedagogical practice. Reading comprehension is essential not only for processing specialized texts but also for adapting information to diverse learning needs of students in vocational education. At the same time, critical thinking enables teachers to evaluate information, make informed decisions, and foster problem-solving skills in their learners. The study investigates to what extent vocational teachers demonstrate proficiency in both areas and how these skills support their teaching effectiveness. Attention is given to the influence of teaching experience, field of specialization, and continuous professional development. Findings indicate that strengthening reading comprehension and critical thinking is very much needed for improving instructional quality and preparing students for rapidly changing labour market demands. The study underscores the importance of targeted training programs and policy support in this context.

Keywords: Reading Comprehension, Vocational Education, Critical Thinking

1 Introduction

Nowadays, in the times of digital transformation, constant information inflow, and the rapid rise of artificial intelligence, information literacy has become the most important competency

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not only for everyday life but also for individuals' professional development. This ability is particularly important in the field of education, as teachers play a crucial role in shaping future generations. For vocational teachers, who face the demanding challenges of dynamic changes in their fields, information literacy is not only a tool for acquiring relevant information but also a means of critically evaluating and effectively using it in teaching.

Reading literacy, as a component of information literacy, is the ability to understand written text, work with it, and critically evaluate it in order to use it effectively in various life, academic, and professional situations. It includes not only decoding words but also understanding meaning, searching for and interpreting information, forming one's own conclusions, connecting the text with prior knowledge, and reflecting on or assessing its content and purpose. Sorting information has become a complicated issue today, as written text is no longer the exclusive domain of experts. Literary works are now published not only by renowned authors but also by individuals with questionable education or personal credibility. Especially the internet has therefore become a confusing space filled with false or misleading information, disinformation, unverified speculation, and half-truths.

One of the main challenges of today's education system is to ensure that teachers are able not only to receive information but also to understand, analyse, interpret, and apply it in ways that support the quality of instruction. Information literacy and especially reading comprehension in all its forms and dimensions, is inherently connected to critical thinking.

Critical thinking is an essential part of the professional competencies that teachers need to develop in order to assess the quality and reliability of information sources in an environment saturated with misinformation, innovate teaching methods, adapt instruction to the needs of modern students, and shape learners in a way that enables them to become information-literate and critical thinkers themselves.

1.1 Reading Comprehension and Critical Thinking

Reading comprehension (also known as reading literacy) represents an individual's ability to understand written text, interpret it, analyse and critically evaluate its content, and subsequently use this information effectively in various contexts of everyday life, learning, and work.

Key elements of reading comprehension are:

- Decoding – the ability to read words and sentences. Ability to read represents basic literacy. Without it, further education is impossible, but insufficient literacy does not imply low intelligence.
- Comprehension – understanding the meaning of words, sentences, and the text as a whole. A person should be able to understand the context of the read text.
- Interpretation – the ability to draw conclusions, identify main ideas, and recognize relationships between pieces of information.
- Critical evaluation – assessing the credibility, purpose, and relevance of the text.

- Application – the ability to use the acquired information for problem-solving, decision-making, or learning.

Reading literacy is a foundational competency for all educational processes of every individual. It influences not only the understanding of what is read but also the way information is searched for, the selection of relevant and reliable sources, the evaluation and use of information, as well as the presentation of one's own knowledge. Based on what reading literacy requires, we consider the process of text comprehension to be particularly significant (Borovská, 2015).

Better understanding of written text can be strengthened primarily in two ways:

1. By enhancing the comprehension process itself—setting a clear goal of understanding the text and practicing strategies that promote effective comprehension.
2. By working with pedagogical texts designed to support understanding, which, through gradually increasing levels of difficulty, help develop and expand our textual competencies (Gavora, 1992).

There are many strategies that promote effective text comprehension. We are talking about skills and approaches that enable readers to actively process, understand, and apply the information contained in a text (Harvey & Goudvis, 2024):

Before reading the text: activation of prior knowledge and experiences

- Prediction: Based on the title, pictures, or introduction, the reader tries to find out what the text will be about.
- Setting a purpose: Becoming aware of why the text is being read (e.g., to obtain information, understand a situation, solve a problem, etc.).
- Personal experiences and knowledge: Activating prior knowledge based on past experiences related to the topic.

During reading: monitoring the state of comprehension

- Self-correcting: If the reader does not understand, they go back, reread the sentence or paragraph, slow down, or use other sources to clarify the information. Sometimes there is a need to solve focusing problems.
- Visualizing: Creating a mental image of what has been read.
- Questioning: Thinking about what is happening, why it is happening, what will happen next, what the author is trying to say, etc.
- Highlighting and note-taking: Underlining key words, writing notes in the margins. Reader tries to identify main ideas.
- Paraphrasing: Summarizing in one's own words what has just been read.

After reading: processing and using information

- Summarizing: Expressing the main idea or storyline of the text.
- Discussion: Talking about the text – supporting deeper understanding and confronting different perspectives.
- Mapping or diagrams: Creating a mind map or diagram to visualize relationships, main characters or key ideas.

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- Application: Using the information in practice (e.g., assembling something according to instructions, changing behaviour, solving a problem).
- Self-assessment and self-reflection: Evaluating what we have learned and what we found difficult.

Reading comprehension is inevitably connected with critical thinking. It is not easy, however, to define what critical thinking really is (Kosturková, 2016). Most definitions of critical thinking claim that it is a competency that encompasses multiple abilities and skills. Critical thinking comprises the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts (Sternberg, 1996). Critical thinking is a higher order cognitive skill, which includes reasoning, making analyses, inferences, and evaluations (Facione et al., 1995; Liu, Frankel and Roohr, 2014). For example, Paul (1992) proposed a model of 35 components of critical thinking (9 affective strategies, 16 cognitive macro-skills, and 9 cognitive micro-skills).

According to Ruisel (2008), critical thinking is a synonym for the quality or comprehensible thinking, which includes motivation for challenge, knowledge of critical thinking abilities, training of structure to facilitate transfer between contexts, and metacognitive monitoring. Nowadays, when we access many pieces of information primarily through social media and with the help of artificial intelligence, critical evaluating of information has become a must not only in our professional but also in our personal life.

Reading comprehension is not only the foundation stone of other literacies but also the essential base of critical thinking. Without the ability to comprehend written (or spoken) text, it is difficult for an individual to draw sound logical conclusions or orient themselves within today's information chaos.

1.2 Reading Comprehension of Students and Teachers

The purpose of reading is comprehension which means getting meaning from written text. Without comprehension, reading is just a frustrating, pointless exercise. It is no exaggeration to say that how well a person develops the ability to comprehend what they read has a profound effect on their entire lives (Anderson et al, 1985; Teaxas Educational Agency, 2002). Over the past few decades, research has revealed a great deal of information about how readers get meaning from what they read and procedures for developing the skill. Nevertheless, the results of reading literacy assessments remain alarming.

A 2010 study conducted in Slovakia found that the reading comprehension of university students is low, and this concerning situation calls for a revision of teaching approaches already at the elementary and secondary school levels (Gavora & Matúšová, 2010). Similar results have been reached by other studies researching students and teachers as well (Kosturková 2013, 2014).

Data on reading literacy — whether in Slovakia or across Europe — are still fairly concerning. Although the field of reading literacy research is extensive and compelling, its central aim

remains clear: to foster meaningful improvement. Despite the considerable attention devoted to reading comprehension and critical thinking, improvement has not yet followed.

In the current assessment cycle (PISA 2022), the scores of 15-year-old students in Slovakia fall below the OECD average. A similar result can be observed in the other two assessed areas. In both reading literacy and scientific literacy, the performance of Slovak students remained below the OECD average, just as in previous cycles. As in previous cycles, PISA 2022 recorded a significant proportion of Slovak 15-year-old students in the so-called at-risk group (that is, students who do not reach even the basic level of skills and knowledge in the assessed domain), and this occurred in all three assessed areas. The percentage of Slovak students achieving the highest performance level in mathematics literacy is 7.3%. Compared to 2018, when 10.7% of Slovak students reached the highest level, this represents a significantly lower result. In the other two areas—reading and science literacy—changes were also recorded in the share of top-performing students. In reading literacy, the percentage decreased from 4.6% in 2018 to 3.4% in 2022 (a statistically significant difference), while in science literacy it increased from 3.7% in 2018 to 4.3% in 2022 (the difference is not statistically significant, meaning it remains at the same level as in 2018) (OECD, 2023).

Slovakia achieved a score of 447 points in reading literacy, while the OECD average was 476 points. As in all previous cycles, Slovak students' performance in reading literacy in PISA 2022 remained below the average of participating OECD countries. Countries with performance comparable to Slovakia include Chile, Malta, and Serbia. Among OECD countries, significantly lower average results than Slovakia were recorded by students from Greece, Iceland, Mexico, Costa Rica, and Colombia. Compared to 2018, when reading literacy was also the main assessed domain, the average performance of Slovak students in this area decreased by 11 points, which represents a statistically significant difference (OECD, 2023ab; NIVAM, 2023a).

The National Institute for Education and Youth (NIVAM) has been implementing, on behalf of the Ministry of Education, Research, Development and Youth of the Slovak Republic, a national project titled International Assessment of Key Competencies of Adults - Programme for the International Assessment of Adult Competencies (PIAAC) since August 2018. The project is co-funded by the European Union through the support of the European Social Fund and the European Regional Development Fund under the Human Resources Operational Programme. As part of this project, research is being conducted on the competencies of teaching staff and students of teacher-training programs in Slovakia in the areas of reading literacy, mathematical literacy, and problem-solving using ICT (information and communication technologies). NIVAM carries out this research using the international assessment tool Education and Skills Online (PIAAC Online) developed by the OECD (NIVAM, 2023b).

The final report of the International Assessment of Adult Competencies (PIAAC) 2023 for Slovakia states that the average score across all participating countries in reading literacy was 260 points. Adults in Finland achieved the highest average score (296 points), while very

high average scores above 280 were also achieved by adults in Japan, Sweden, and Norway. Adults in other countries, including Slovakia (254 points), scored significantly below the OECD average. The score in Slovakia was significantly lower than in Germany and neighbouring Czechia, comparable to Austria, France, and Croatia, and higher than in Hungary, Spain, Italy, and Poland (NIVAM, 2024).

Abroad, it is common for the development of reading comprehension and critical thinking to be an integral part of education in many scientific disciplines, and with the numerous classes and exercises that students complete during their studies, their critical thinking and reading comprehension improve (Ballová Mikušková, 2019). Critical thinking provides us with independence, protects us against unsubstantiated information, fraudsters, manipulation, and similar threats. However, it must be actively trained (Ballová Mikušková, 2019).

Kosturková (2013, 2014) proposed possible measures already ten years ago, but they have been implemented in practice only partially. She identified the main cause of this unsatisfactory situation primarily in the prioritization of encyclopaedic knowledge over critical thinking in education. The ability to think critically is considered a key competency of the 21st century; therefore, among other recommendations, she also suggested strengthening lifelong education for teachers with this focus.

2 Material and Methods

Based on a decade of research and the latest findings from PISA and PIAAC assessments, this case study evaluated the ability of vocational teachers at Slovak secondary vocational schools to comprehend basic instructions concerning the payment for tutoring students during their practical training.

Participants in the supplementary teacher training program at the Slovak University of Agriculture (SUA) in Nitra complete a practice training (so-called observation and listening practice) in the second year of their studies. The purpose of this practice is to observe vocational subject teachers at work and to pay attention to their interaction with students so that trainees become capable of independently managing the teaching process during their final teaching practice. These teachers serve as mentor teachers for the students and are compensated for their work. In order for the arranged payment to be paid, we must obtain their personal data. Each mentor teacher who agrees to cooperate with SUA in Nitra receives detailed instructions on how to complete this information (Figure 1).

The study was conducted from October 2024 to February 2025 as part of the supplementary teacher training program at SUA in Nitra. A total of 58 mentor teachers from secondary vocational schools in Slovakia participated in the research, including 11 men and 47 women. To preserve anonymity, we do not report their teaching qualifications, the schools in which they work, or any additional data collected. All mentor teachers were asked to send the completed and signed document to the University Counselling and Support Centre at SUA

in Nitra, along with their telephone number and email address. We then contacted them to request additional necessary information for health and social insurance, including pension-related details.

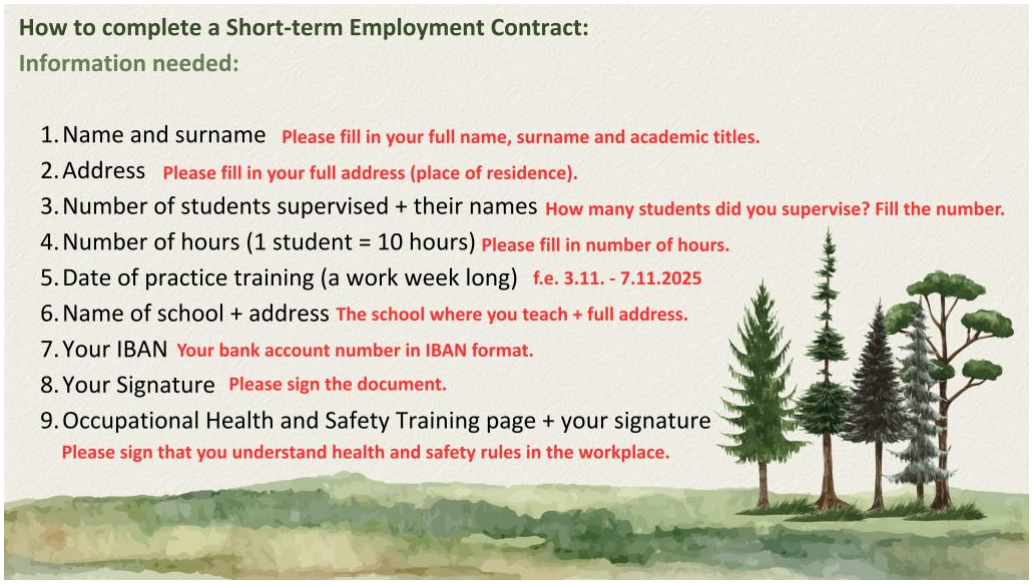

Figure 1: Detailed instructions for mentor vocational teachers.

3 Results and Discussion

Over the course of five months, we collected responses from all 58 mentor teachers. Before that, however, we received 35 phone calls and 7 emails with questions regarding how to complete the required document.

The most frequently asked questions concerned the address to which the document needed to be sent (the address is listed both on the university website and at the bottom of the document that was completed). Other questions we received included:

- the number of hours to indicate when supervising two or more students,
- which date should be entered,
- whether it is necessary to list the full names of all students who completed the practice,
- whether proof of old-age or disability pension must be provided.

We answered all questions posed by the respondents. Nevertheless, the number of fully and correctly completed documents submitted to the workplace was only 27. A total of 31 documents contained one or more incorrectly filled items or completely missing information. A detailed analysis is presented in Figure 2.

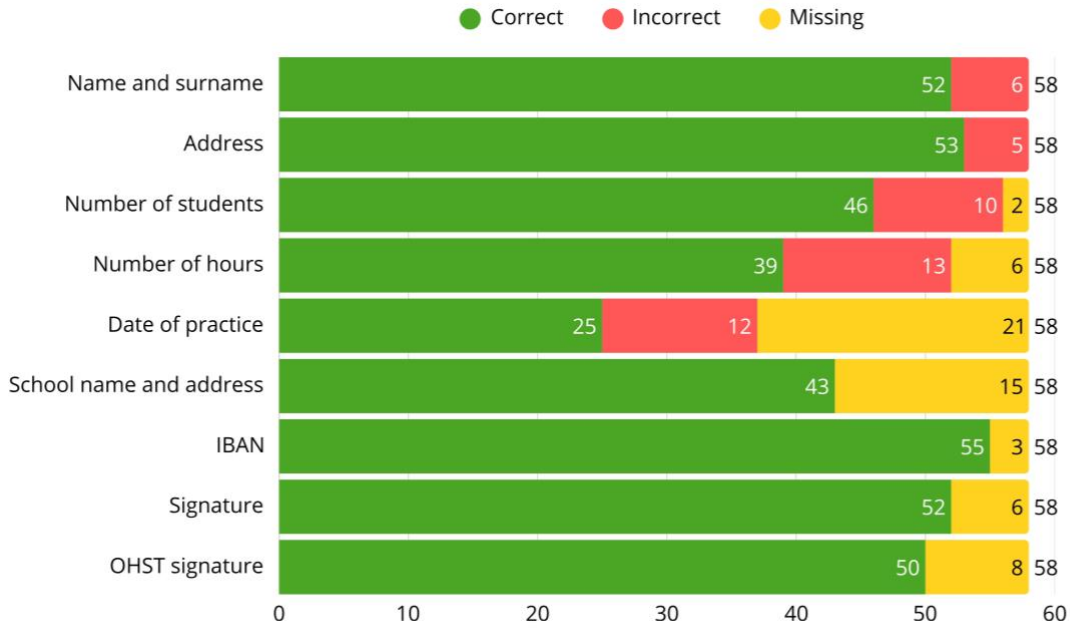

Figure 2: Number of correct, incorrect and missing data in completed documents from teachers.

From the responses obtained, we can infer results similar to those reported by Dole et al., (1991), Gavora et al. (2010), Kosturková (2013, 2014), and others, as well as findings from the International Assessment of Adult Competencies (PIAAC) (2023). Given that fewer than half of the submitted documents were completed correctly and in full and considering the types of questions asked by the mentor teachers, we may assume that the teachers did not read the instructions and the document with sufficient comprehension. The factors influencing this process should be the subject of further research (e.g., the level and ability to maintain concentration while reading and the conditions under which the document was completed, possible specific needs of the teachers such as specific learning difficulties, stress-related factors, and others).

4 Conclusion

Reading comprehension is insufficient not only among pupils and students, but also among teachers, which represents a major problem in the educational process. If a teacher is not able to understand written and spoken word, they may be more vulnerable to false information and more easily succumb to propaganda or develop fear of things that have until now been taken for granted (e.g., scientific knowledge). As a result, they will not be able to adequately prepare students for working with information or for the labour market. Therefore, it is now more important than ever to structure lifelong learning in such a way that activities are oriented toward the current digital information era, information literacy, and critical thinking.

We also agree with Kosturková (2013, 2014), who proposes measures to improve reading literacy and critical thinking. We believe that these measures are equally applicable to lifelong teacher education. To improve reading literacy, it is advisable to shift the type of educational activities so that encyclopaedic knowledge and memorization do not dominate; instead, education should rely more on workshops, discussions, and the use of modern active-learning methods. Project-based and problem-based learning are also essential, as well as problem analysis, development of soft skills such as communication, cultivated expression, and conflict resolution, training in flexible thinking, training in constructive criticism, and linking theory with practice. A considerable amount of further research is needed to examine the impact of social media on human cognitive functions and emotional experience.

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