

FACTORS INFLUENCING THE COMPREHENSION OF NON-LITERARY TEXTS BY CZECH PUPILS OF SECONDARY TECHNICAL SCHOOLS

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Abstract

It is essential to develop reading comprehension of non-literary texts in primary and secondary technical school pupils with an interdisciplinary approach focusing on developing their critical thinking, transversal, (e) reading, and digital competencies in everyday situations. International PISA research (2000, 2009, 2019) has repeatedly pointed out the below-average reading literacy level among the fifteen-year-old Czech boys' community. Pupils at secondary technical schools in the Moravian-Silesian and Olomouc regions belong to the endangered groups in terms of their level of reading and digital strategies, especially regarding data processing and evaluation. A quantitatively oriented questionnaire survey investigated (external and internal) factors influencing the reader's understanding of non-literary texts through the lens of 384 pupils at secondary technical schools. A partial goal was to identify the types of non-literary texts the pupils like and the kinds of non-literary texts that are part of the recommended secondary school reading. The research results showed that Czech secondary school pupils do not comprehend the information in non-literary graphic representation. Informal Facebook texts with visualisation are popular among pupils. Administrative-style texts are the most common school-recommended secondary school reading at secondary technical schools in the Moravian-Silesian region.

Keywords: *Reading and digital literacy, text comprehension, non-literary text, secondary technical school pupils, critical thinking.*

1. Introduction

The development of interest in reading and the effort to increase the quality of assignment strategies among Czech primary and secondary school pupils are still critical curricular goals of the long-term concept of the current education system and Framework Education Programs (FEP) across all levels of schools. The results of the PISA (2019) international research on the reading literacy of 15-year-old pupils showed that Czech pupils have improved overall, especially in the level of understanding of written information, compared to the results of the same research on reading literacy carried out in the first decade of the 21st century (PISA, 2009). However, the research results (PISA, 2019) suggest that fifteen-year-old boys remain in the borderline zone of average to below average compared to the international group of pupils. There is a growing interest in researching the factors influencing the level of understanding of written information from the perspective of secondary school youth, especially a sample of boys studying at technical secondary schools. An interest in the reality of the reader's experience with various types of texts, particularly those needed for everyday life, grows in the current information age influenced by the processes of industrial revolution 4.0 with manifestations of digitisation, automation, robotisation, and electronic communication. The cornerstone of the reader's education lies in the development of their cognitive area and capability to think about the problem by forming and harmonising attitudes, ways of behaviour, cultured morals, and interpersonal relationships. According to Podgórecký (1999, p. 171), the expression of learners' thinking can be defined as a category of communication competencies, i.e., "skills to communicate using language". Reading competencies are part of the set of communicative competencies. Today's secondary school pupils should understand the essence of expository, illustrative, descriptive, reasoning, administrative and other texts in paper, electronic, digital and hybrid texting. The aim of the quantitatively oriented research carried out at the Faculty of Education of the University of Ostrava (2023) was to find out what factors influence the reader's comprehension of non-literary texts by analysing the answers of 384 pupils of two secondary technical schools in the Moravian-Silesian and Olomouc regions of the Czech Republic.

2. View of current educational trends in the Czech secondary education system

Since 2012, the Czech education system has been searching for answers to changes in education policy, expected to improve the learning outcomes of Czech pupils in the long term, especially in primary and secondary education. Since 2011, Czech pupils have compulsorily participated in comprehensive testing in the last year of secondary school studies focusing on understanding information in various texts. Mandatory nationwide entrance exams have been implemented for all secondary school fields of study finished by the school-leaving examination in the Czech Republic since 2016. The trend leads to a transition from the internal evaluation of schools towards strengthening the external (independent) evaluation of educational institutions. Strategic decisions are currently being implemented in connection with the introduction of an effective, comprehensive assessment of the educational system, even in a transnational educational context, based on three fundamental approaches:

- excellence and equality,
- compatibility with the labour market in the conditions of globalisation of the world,
- the passage of the pupil through the educational system as part of lifelong learning.

3. Types of texts as a factor in the development of readership

The study (Kalenda, Kočvářová, 2017, p. 71) pointed to the problem of socio-demographic factors towards barriers in the learning process, e.g., situational, dispositional and institutional. Effective educational communication affects understanding in everyday communication acts, situations, interaction with different types of texts and their knowledge from the readers' point of view and their actual level of reading competency. The research by Vicherková, Šenkeříková and Lichá (2020) focused on the problem of secondary school reading of literary texts. The content analysis of the curriculum document "School educational reading list for secondary school-leaving examination" and the analysis of the requirements criteria for the common part of the secondary school-leaving examination, i.e. the catalogue of requirements for the common part of the secondary school-leaving examination (2016 - 2020) revealed that all ten analysed secondary school lists of literary works met all the main criteria contained in the Catalogue of Requirements (2020).

The starting point for the classification of different types of texts and structures can be understood from the point of view of the division of functional styles into six categories of texts: simple communication style (e.g. announcement, report, advertisement, official publications), journalistic style (e.g. review, gloss, commentary, feuilleton, reportage), professional style (e.g. report, explanation, description of work procedure), administrative style (e.g. application, resume, official letter), artistic style (poem, short story, play) and oratorical style (e.g. lecture). Mašková (2010, p. 108) classifies stylistic units according to the way the topic is treated and stylistic procedures, e.g., how the author ranks and selects means in relation to the goal of the speech into five categories: informative, narrative, reasoning, explanatory, descriptive.

Daneš (1995, pp. 174-175) claims that "every text is implicit to a greater or lesser extent, i.e. the reader understands more from it than what is said explicitly, i.e. in individual words. This is because every reader always deduces additional information, imagines, imagines. Moreover, since everyone has a slightly different knowledge of the world, a lot of different experiences, a different degree and mode of imagination and different inferential tendencies and habits, everyone creates their interpretation of a given text, and everyone understands it more or less in their own way."

3.1. Electronic and printed text, semiotically mixed text

Barták et al. (1993, p. 1109) defined a text as "a product of language, usually containing several sentences, bound together through grammar and semantics." A printed text is defined according to the approach of Barták et al. (1993, p. 1116) as "the result of the printing workflow by which colour is transferred from the printing form by pressure onto the paper."

Piorecký's research (2016, p. 14) dealt with the influence of "new media" on traditional forms of Czech literature and the problem of the appearance of new platforms in the web environment. The author is interested in "literary phenomena that appeared on the Czech Internet from the second half of the nineties of the 20th century practically to the present day, as well as the reflection of the new medium in literary texts published by the press."

According to Daneš (1995, 174 – 175), the illustrated text can be regarded as a semiotically mixed (intersemiotic) phenomenon. The author claims that "the image (in a broad sense and visual communication in general) occupies an increasingly important position in contemporary society and talks about "iconographic thickening" in visual culture, citing various circumstances leading to this phenomenon (among other things, television, and different illustrated materials in a large number of copies and with an extensive range of consumers – comp., e.g., Dölvers, 1993).

4. Research methodology

In a quantitatively oriented questionnaire research, we focused on two secondary technical schools in two regions of the Czech Republic, the Moravian-Silesian and Olomouc regions. The study was carried out from December 2022 to January 2023. Data were obtained from 384 respondents (pupils), primarily boys (367, i.e. 95, 57%) from the total number of pupils in the 1st - 4th year of technically oriented secondary school studies. The semi-structured questionnaire contained 32 semi-open items sorted into seven categories (A - G):

- A. "Types of texts in terms of their popularity among technical secondary school pupils" (number of items: 5)
- B. "Types of texts in terms of the frequency of reading texts from the point of view of secondary school pupils" (number of items: 5)
- C. "Effects of reading a non-literary text on a secondary school pupil" (number of items: 3)
- D. "The importance of reading non-literary texts through the lens of a secondary school pupil" (number of items: 2)
- E. "School and Recommended Reading List" (number of items: 5)
- F. "Factors supporting the reading of non-literary texts" (number of items 7)
- G. "School and methods developing critical thinking, communication and reading" (number of items: 2).

Research objectives

The research aimed to determine factors influencing non-literary texts' reading by secondary technical school pupils. The sub-goals of the study were to find out what kinds of non-literary texts are popular with secondary school pupils and what kinds of texts technical secondary schools rank as recommended reading.

The research problem was decomposed into the following research questions:

1. Is there a connection between reading for knowledge and the perception of non-literary text as a learning aid (comprehension of information)? H1
2. Is there a connection between the popularity of reading formal (educational) texts with an image (visualisation) and the popularity of reading informal texts (e.g. on FB and social networks) with an image (visualisation)? H2

4.1. Results

The research objectives and questions led to the formulation of two research hypotheses, which are presented simultaneously with the results of their statistical verification in the next chapter.

Descriptive research data

Descriptive data more narrowly characterises the reading of non-literary texts by the respondents. The research on the popularity of types of texts to read showed that 127 (33.07%) respondents like to read a professional kind of text, and 155 (40.36%) respondents most frequently read professional texts. According to 301 (78.39%) respondents, their knowledge growth is the most significant influence on reading non-literary texts. 182 (47.40%) respondents believe reading non-literary texts is entertainment, and 132 (34.38%) respondents consider reading non-literary texts a learning aid. 170 (44.27%) respondents confirmed an existence of a school-recommended list of non-literary texts. Brainstorming is the most common method for developing critical thinking, reading, and communication in teaching the mother tongue (Czech), according to 221 (57.55%) respondents. Save the last word for me is among the least used methods for developing critical thinking, reading, and communication in teaching the mother tongue (Czech), according to 321 (83.59%) respondents. Critical thinking, reading and communication in teaching technically oriented professional subjects (e.g. engineering) are primarily developed through the brainstorming method, as expressed by 198 (51.56%) respondents. On the other hand, the Diamant method is the least used according to 354 (92.19%) respondents.

Relational research results

Two hypotheses were tested using Pearson's Chi-square for the contingency table. The source data and corresponding statistical results are shown in the following tables.

Pupils answered questions 9 (whether reading non-literary texts affects their knowledge) and 10 (whether they consider reading non-literary texts to help learning and comprehension).

Table 1. Detected and expected frequencies to H1.

| Pearson's chi-square = 2.675417 degree of freedom = 1 significance $p= 0.101909$ | | | |
|--|-------------------------|--|-------------|
| Q 9 | Q 10 - help in learning | Q 10 - entertainment, modern trends, and other | Line totals |
| Yes, it affects my cognition | 107 (100.44) | 183 (189.56) | 290 |
| No, it doesn't affect my cognition | 26 (32.56) | 68 (61.44) | 94 |
| Column totals | 133 | 251 | 384 |

Hypothesis 1, stating that pupils who think that reading non-literary texts affects their knowledge consider reading non-literary texts more frequently as helpful in learning and comprehension, **was not proven** (Tab.1). There is no statistically significant relationship between reading non-literary texts for knowledge and reading non-literary texts as an aid in learning and comprehension.

Pupils answered questions 31 (whether their favourite texts to read include formal (educational) texts with images (visualisation) and 32 (whether their favourite texts to read have informal texts with images (visualisation) on Facebook (FB) and social networks).

Table 2. Detected and expected frequencies to H2.

| Pearson's chi-square = 7.912727 degree of freedom = 1 significance $p= 0.0049088$ | | | |
|---|--|---|-------------|
| Q 31 | Q 32 – informal texts (with image/visualisation) | Q 32 – informal texts (without image/visualisation) | Line totals |
| Formal texts (with image/visualisation) | 323 (318.75) | 37 (41.25) | 360 |
| Formal texts (without image/visualisation) | 17 (21.25) | 7 (2.75) | 24 |
| Column totals | 340 | 44 | 384 |

Hypothesis 2, stating that pupils who like reading formal texts (educational) with images (visualisation) also like reading informal texts with images (visualisation) on Facebook and social networks, **was proven** (Tab. 2). There is a statistically significant relationship between the popularity of reading formal texts with images (visualisation) and reading informal texts (e.g. on Facebook and social networks).

5. Discussion and conclusion

The paper results document the current relationship of pupils of secondary technical schools in the Moravian-Silesian and Olomouc Regions of the Czech Republic to various types of texts, their reading popularity, and reading and comprehending information for multiple purposes of reading. The research supported the need to work with printed, electronic, virtual and hybrid texting for everyday experience and the development of pupils' critical thinking. Furthermore, the research pointed to selected factors influencing the understanding of non-literary texts, e.g., the importance of motivational stimuli by talking about the text with friends, classmates, and parents. Pupils most frequently prioritise reading non-literary texts for everyday life, with professional texts belonging to their favourite. Pupils most frequently read electronic texts for fun and knowledge. Pupils read formal/informal texts on the Internet in their free time. Interestingly, pupils have more literary than non-literary texts in their library. This is related to the finding that schools recommend artistic literature in the recommended reading lists on the school website more frequently. Pupils perceive a non-literary text as reading for fun, an aid in learning, and a support/means of their knowledge growth. The research did not show a statistically significant relationship between reading non-literary texts for cognition and reading non-literary texts to aid learning/comprehension. The study showed a statistically significant relationship between the popularity of reading formal texts with images (visualisation) and reading informal texts (e.g., on FB). Research by Ramsay and Sperling (2015) focused on the problem of concretising the perspective from which readers (pupils aged 12-14) should read an expository text. The research results did not confirm the benefit of perspective concretisation before reading the informational text for pupils to understand the information. The research of Liebfreund and Conradi (2016) focused on the factors influencing the understanding of informational text among primary school pupils, i.e. the pupil's prior knowledge, vocabulary knowledge, ability to decode and the level of intrinsic motivation. Research has shown that vocabulary knowledge is critical to understanding an informational text. The secondary school curriculum, especially the School Education Programs (SEPs) of technically

oriented secondary schools, should emphasise creating opportunities to develop effective pupil communication through reading literary and non-literary – formal/informal – texts. In today's society affected by the (e)information transformation, it is necessary to support the digitisation of reading comfort regarding the development of reading and digital competencies, reading curiosity and the motivation to comprehend the information of everyday life in various types and forms of texts and speeches towards the need for lifelong education.

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