

# READING HABITS OF UNIVERSITY STUDENTS IN SLOVENIA: CHALLENGES AND THE FUTURE OF READING CULTURE\*

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**Summary.** *The article explores the reading habits of Slovenian university students in teacher education and library science programs, comparing data from two cohorts (2017/18 versus 2024/25). Despite being future educa-*

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tors, around 16% of these students reported not having read a single book in the past year. While a slight increase in reading frequency and English-language reading was observed over the seven-year period, the shift toward less demanding genre fiction raises concerns. Students now predominantly read lighter, popular titles, with significantly fewer individuals engaging in complex literary texts. This shift has cognitive implications: studies indicate that the reading of complex literature enhances abstract thinking and attributional complexity, which are traits of high importance for educators. The rise in English-language reading – though intellectually beneficial – may also reduce exposure to syntactically complex Slovenian texts, potentially weakening native language competence. The findings suggest a troubling disconnection between the reading behaviours expected of educators and their actual practices. As reading complexity strongly correlates with critical thinking, the lack of engagement with demanding texts may hinder the cognitive development of students and their future pedagogical effectiveness. The article concludes by emphasizing the need for higher academic standards and stronger encouragement of deep reading within teacher education programs.

**Keywords:** reading habits, teacher education, literary complexity, attributional complexity, reading literacy, Slovenia.

### **Knygų skaitymo įpročiai tarp Slovėnijos universitetų studentų: iššūkiai ir skaitymo kultūros ateitis**

**Santrauka.** Straipsnyje nagrinėjama Slovėnijos universitetų studentų, studijuojančių pedagogikos ir bibliotekininkystės programas, skaitymo įpročiai, lyginant dviejų laikotarpių duomenis: 2017–2018 ir 2024–2025 m. Nors tiriamieji studentai ruošiasi tapti pedagogais, maždaug 16 proc. jų nurodė per pastaruosius metus neperskaitę nė vienos knygos. Taip pat per septynerių metų laikotarpį pastebėtas nežymus skaitymo dažnumo padidėjimas, taip pat daugiau skaitoma anglų kalba. Vis dėlto ryškus pokytis pastebimas pasirenkant žanrus: studentai vis dažniau renkasi lengvesnę, populiariąją literatūrą ir atsisako sudėtingų literatūrinių tekstų. Būtent šis poslinkis į mažiau reikalaujančią žanrinę fikciją kelia didelį nerimą. Toks studentų pasirinkimas turi svarbių kognityvinių pasekmių. Tyrimai rodo, kad išitraukimas į sudėtingą literatūrą yra labai svarbus, nes gerina abstraktųjį mąstymą ir atributinį sudėtingumą – savybes, kurios yra būtinos sėkmingam pedagogo darbui. Be to, nors dažnesnis skaitymas anglų kalba yra intelektualiai naudingas, kartu

*jis gali sumažinti studentų sąlytį su sintaksiškai sudėtingais slovėnų kalbos tekstais, o tai ilginiui potencialiai silpnina gimtosios kalbos kompetencijų. Straipsnio išvados atskleidžia nerimą keliantį atotrūkį tarp skaitymo elgesio, kurio tikimasi iš būsimų pedagogų, ir jų faktinės praktikos. Kadangi skaitymo sudėtingumas glaudžiai koreliuoja su kritiniu mąstymu, mažas išitraukimas į daugiau reikalaujančius tekstus gali stabdyti studentų kognityvinę raidą ir mažinti jų pedagoginį efektyvumą ateityje. Galiausiai, straipsnis pabrėžia būtinybę nustatyti aukštesnius akademinis standartus ir aktyviau skatinti giluminį skaitymą visose pedagogikos studijų programose.*

**Reikšminiai žodžiai:** *skaitymo įpročiai, pedagogų rengimas, žanrinė įvairovė, raštingumas, Slovėnija.*

## 1. INTRODUCTION

One of the key dilemmas faced by contemporary educational systems and institutions concerns the ways how to establish an appropriate balance in the use of different media and what role, if any, should still be reserved for linear reading of books or other printed content. In several European contexts, recent trends show a shift from an earlier optimism about screen-based media toward a more balanced integration of the print and digital formats. In Sweden, an increasing scepticism toward both audio and electronic textbooks has led to one of the country's largest-ever investments in printed learning materials<sup>1</sup>.

This search for an appropriate balance between print and screen media in schools is grounded in a substantial body of research examining differences in memory and comprehension between paper and screen reading<sup>2</sup>, as well as in

- 1 LUNDBERG, E. Professorn om lyssneläsningen: 'Obegripligt svek'. *Vi Lärare*, 2024, 15 January 2024; The Guardian. "Switching off: Back-to-Basics Schooling Works on Paper." *The Guardian*, 11 September 2023.
- 2 DELGADO, P.; VARGAS, C.; ACKERMAN, R.; SALMERÓN, L. Don't Throw away your Printed Books: A Meta-Analysis on the Effects of Reading Media on Reading Comprehension. *Educational Research Review*, 2018, 25, p. 23–38; CLINTON, Vanessa. Reading from Paper Compared to Screens: A Systematic Review and Meta-Analysis. *Journal of Research in Reading*, 2019, 42(2), p. 288–325; MANGEN, A.; WALGERMO, B. R.; BRÖNNICK, K. Reading Linear Texts on Paper versus Computer Screen: Effects on Reading Comprehension. *International Journal of Educational Research*, 2013, 58, p. 61–68; SINGER, L. M.; ALEXANDER, P. A. Reading on Paper and Digitally: What the Past Decades of Empirical

considerations of the positive cognitive effects of reading literary texts<sup>3</sup>. The conclusion drawn from such studies and reflections is that book reading remains – what might be termed in more colloquial language – a prerequisite for the development of abstract and critical thinking<sup>4</sup>, as it is more effective than other media activities in encouraging readers to engage with complex topics that demand intellectual patience and focus, while also broadening and deepening vocabulary, and fostering the ability to understand multiple perspectives<sup>5</sup>.

Building on these considerations, two key questions emerge: whether teachers who do not read can foster reading habits among their students, and what the reading habits of students enrolled in teacher education programmes actually are. This study addresses the second question by analysing data on the categories and quantities of books read by students in teacher education programmes, as well as the time they devote to such reading. A separate study focusing on the reading habits of in-service teachers and their impact on their students' reading behaviour remains to be conducted.

## 2. METHODOLOGY

2. 1 SAMPLE. The study was conducted across two academic years, 2017–2018 and 2024–2025, by employing a quantitative research design. It included students from three faculties in Slovenia (two at the University of Ljubljana and one at the University of Maribor) that educate future teach-

Research Reveal. *Review of Educational Research*, 2017, 87(6), p. 1007–1041; BARON, Naomi S. *How we Read now*. Oxford: Oxford University Press, 2021.

- 3 WOLF, M. *Reader, Come Home: The Reading Brain in a Digital World*. New York: Harper-Collins, 2020; BARON, Naomi S. *Who Wrote This? How AI and the Lure of Efficiency Threaten Human Writing*. Stanford, CA: Stanford University Press, 2023; SCHÜLLER-ZWIERLEIN, A.; MANGEN, A.; KOVAČ, M.; van der WEEL, A. Why Higher-Level Reading is Important. *First Monday*, 27(9), 2022.
- 4 KIDD, D.; CASTAÑO, E. Reading Literary Fiction Improves Theory of Mind. *Science*, 2013, 342(6156), p. 377–380; KLEINER, A. Thomas Malone on Building Smarter Teams. *Strategy+business*, 2014.
- 5 ACKERMAN, Rakefet; GOLDSMITH, Morris. Metacognitive Regulation of Text Learning: On Screen versus on Paper. *Journal of Experimental Psychology: Applied*, 2011, 17(1), p. 18–32; van der WEEL, A. *Changing our Textual Minds: Towards a Digital Order of Knowledge*. Manchester: Manchester University Press, 2011; BARZILAI, Sharon; KA'ADAN, Iman. Learning to Integrate Divergent Information Sources: The Interplay of Epistemic Cognition and Epistemic Metacognition. *Metacognition and Learning*, 2017, 12(2); OECD. *21<sup>st</sup>-Century Readers: Developing Literacy Skills in a Digital World*. PISA, OECD Publishing, 2021.

ers, school counsellors, and school librarians. The participants completed a structured questionnaire focused on their leisure activities, reading habits, and study practices. The non-random sample consisted of 871 students, of whom, 429 individuals from the 2017–2018 academic year and 442 contributors from the 2024–2025 cohort. Of these, 593 students (68.1%) were enrolled in Bachelor's programmes, while 278 (31.9%) were pursuing a Master's degree. The sample was predominantly female (86.8%), with male participants representing 13.2%, whereas the average age of the respondents was 22 years.

2. 2 DATA COLLECTION. The data for both cohorts were collected by using an identical paper-and-pencil questionnaire consisting of 34 closed-ended items and one assessment scale. The questionnaire was organised into three thematic sections: *leisure activities*, *reading habits*, and *study habits*. The internal consistency of the assessment scale was confirmed by using Cronbach's alpha ( $\alpha = 0.73$ ), and construct validity was supported through factor analysis, with the first extracted factor accounting for more than 20% of the total variance. Data were collected during scheduled lectures and seminars in the presence of university instructors, thereby ensuring high response rates and minimising procedural bias.

2. 3 DATA ANALYSIS. The data analysis employed both descriptive and inferential statistical methods. Frequency and percentage distribution tables ( $f$ ,  $f\%$ ) were used to present the data, while inferential comparisons between the two cohorts were conducted by using chi-square tests and independent-samples t-tests to evaluate statistical differences over time.

### 3. FINDINGS FROM THE 2017–2018 SURVEY

In the 2017–2018 academic year, we conducted the first survey in Slovenia examining the reading habits and reading culture of undergraduate and graduate students in library science and teacher education programs. These students are expected to work as teachers, counsellors, or librarians in primary and secondary schools upon graduation. The findings were compared<sup>6</sup> with data from the national *Book and Readers VI* survey<sup>7</sup>, which investigated the reading culture within a representative sample of the general Slovenian population (hereinafter referred to as the *Book and Readers* general population survey).

6 MAŽGON, J.; KOVAČ, M.; KOVAČ ŠEBART, M.; VIDMAR, T. Books in the Time of Screens: The Reading Habits of Slovenian Students. *Universal Journal of Educational Research*, 2020, 8(9), p. 3875–3884.

7 RUPAR, P.; BLATNIK, A.; KOVAČ, M.; RUGELJ, S. (eds.). *Knjiga in bralci VI: Bralna kultura in nakupovanje knjig v Sloveniji v letu 2019*. UMco, 2019.

3. 1 COMPARISON OF THE TWO DATASETS. A comparison of the two datasets revealed that students in library science and teacher education programs – i.e., the future promoters of reading culture in schools – reported significantly better reading habits than the general population. Specifically, the proportion of self-declared non-readers among these students was 16%, which is substantially lower than the 49% reported in the general population. In both studies, ‘non-readers’ were defined as individuals who stated that they had not read a single book in the past twelve months. However, we still considered the 16% share among future education professionals to be overly high. Moreover, 15% of those students who identified themselves as readers could not recall a single book they had read for leisure in the past twelve months, thereby suggesting that the actual proportion of non-readers might be up to 15 percentage points higher, if these respondents are also considered non-readers. Since the general population survey did not include a question about the last three books read, a direct comparison on this point was not possible.

We were also concerned to find that only 6% of the student respondents read daily for leisure, which represents a figure even lower than the 9% reported in the general population survey. Similarly, only 10% of the students qualified as ‘intensive readers’ – defined as those who read more than ten books per year – compared with 11% in the general population. On a more positive note, 82% of teacher education students reported reading in foreign languages, compared with only 35% in the general population. However, an analysis of the book titles mentioned by students showed that the majority were reading light, popular fiction, with only about 7% naming more demanding essays or literary works of fiction.

#### 4. 2024–2025 SURVEY: RESEARCH PROBLEM AND HYPOTHESES

In June 2024, a new edition of the national reading survey – *Book and Readers VII*<sup>8</sup> – was conducted, involving 1,011 respondents. This survey once again examined reading and book-buying habits over the previous twelve months. As well as in 2014 and 2019, the study was carried out by the same research team and implemented by *Valicon*, a marketing research company (<https://www.valicon.net/about/>), which also conducted an expert review of the

8 GERČAR, J.; KOVAČ, M.; BLATNIK, A.; RUGELJ, S. (eds.). *Knjiga in bralci VII: Bralna kultura in nakupovanje knjig v Sloveniji v letu 2024*. UMco, 2024.

instrument's psychometric properties. The core questionnaire has remained largely unchanged since its first iteration in 1978; however, the methodology has evolved, specifically, from personal interviews and paper questionnaires in 1978 via CATI and CAPI surveys to a fully online survey in 2024. In all studies from 1978 on, the sample consisted of around 1000 respondents, representative for Slovenian general population.

In parallel, from October to November 2024, and again in January 2025, we repeated the student survey from 2017–2018 with a comparable sample of undergraduate and graduate students from the University of Ljubljana and the University of Maribor enrolled in teacher education programmes. As before, we targeted future teachers, school counsellors, and librarians in primary and secondary schools. This follow-up study examined changes in reading habits, the frequency of reading in foreign languages, and the complexity of the literature reported by students. They were also asked to name the titles of the last three books they had read.

The results of the 2024–2025 survey of teacher education students were compared with the data from the 2017–2018 study with the objective to assess changes in the students' reading culture over a seven-year period. Following Maryanne Wolf's research focusing on the ways how reading has historically reshaped human cognitive capacity for thought, emotion, reasoning, and understanding others<sup>9</sup>, we assumed that such effects of reading are also related to both the frequency and complexity of leisure reading (as inferred from the reported book titles) and the amount of time devoted to such reading. As a set of studies shows a powerful link between creativity and innovativeness on the one hand, and multilingualism on the other<sup>10</sup>, we also looked at the frequency of book reading in foreign languages, as testified by the students involved. In order to grasp the relations between reading and thinking, in the discussion section, these findings are interpreted in the light of studies<sup>11</sup> that examine the effects of exposure to literary fiction on attributional complexity, egocentric bias, and accuracy. Since the analysis of the titles reported by the students showed that most of them choose lighter, popular fiction, in Conclusion, our

9 WOLF, M. *Tales of Literacy for the 21<sup>st</sup> Century*. Oxford: Oxford University Press, 2016.

10 MARIAN, V. *The Power of Language*. Penguin Random House, 2023.

11 CASTANO, E.; MARTINGANO, A. J.; PERCONTI, P. The Effect of Exposure to Fiction on Attributional Complexity, Egocentric Bias and Accuracy in Social Perception. *PLOS ONE*, 2020, 15(5); BATINI, F.; BERTOLUCCI, M.; TOTI, G.; CASTANO, E. Shared Reading Aloud Fosters Intelligence: Three Cluster-Randomized Control Trials in Elementary and Middle School. *Intelligence* (in press, 2025).

results are further discussed in relation to the PIAAC adult skills assessment, which revealed declining literacy levels among adults in many OECD countries.

As well as in 2018, the student survey data were also compared with the results of the general population reading survey *Book and Readers VII*. On this basis, we then analysed several factors that influence students' reading habits<sup>12</sup>, and subsequently formulated two additional hypotheses, which are examined in this article:

1. Compared with the data sourced from 2017–2018, students in 2024–2025 read less frequently and are more likely to choose less demanding, genre-based literature.
2. Students in the 2024–2025 cohort read more books in English and devote a larger share of their leisure reading time to books in foreign languages than the 2017–2018 cohort.

## 5. RESULTS

5. 1 CHANGES IN READING HABITS IN THE GENERAL AND STUDENT POPULATION. Data collected from a sample of students enrolled in teacher education and library science programmes reveal (see Table 1) that, in the 2024–2025 academic year, just under 11% of the respondents reported reading more than 20 books in the past year, which is slightly more than in 2017–2018, when the figure was a fraction under 9%. The largest group consisted of those students who reported reading between four and ten books per year (33% in 2017–2018 and 35.3% in 2024–2025). A comparison with the 2017–2018 cohort indicates that students in the 2024–2025 generation tend to read slightly more books per year; however, the differences are not statistically significant. Additionally, the share of those who read between one and three books annually decreased by almost four percentage points (from 21.9% to 18%), whereas the proportion of students who did not read a single book within the past year dropped from 15.6% to 13.4%.

In the *Book and Readers VII* survey<sup>13</sup>, the results indicate that changes in reading habits within the general population are significantly more pronounced: in 2014, as 43% of the respondents reported reading more than three books per

12 KOVAČ ŠEBART, M.; MAŽGON, J.; KOVAČ, M. What Do Future Educators Read and how do Certain Factors Influence their Reading Habits: Evidence from Slovenia. *Education Sciences*, 2025, 15(10), 1333.

13 GERČAR, J.; KOVAČ, M.; BLATNIK, A.; RUGELJ, S. (eds.). *Knjiga in bralci VII: Bralna kultura in nakupovanje knjig v Sloveniji v letu 2024*.



year, while, by 2019, this share had declined to 35%, whereas, in 2024, it further declined to 33%. Additionally, nearly a quarter (24.6%) of the participants stated that they read between one and three books annually. By contrast, in the 2024 study on the reading habits of students enrolled in programmes training future teachers, counsellors, and librarians, over 60% of the respondents reported having read more than three books within the past year.

TABLE 1. Total number of books read by students within the previous year

Number of books		Academic year		Total
		2017/2018	2024/2025	
No books	f	69	71	140
	f%	16.9%	16.5%	16.7%
1 – 3 books	f	111	95	206
	f%	27.2%	22.1%	24.6%
4 – 10 books	f	135	152	287
	f%	33.1%	35.3%	34.2%
11 – 20 books	f	57	65	122
	f%	14.0%	15.2%	14.6%
more than 20 books	f	36	47	83
	f%	8.8%	10.9%	9.9%
Total	f	408	430	838
	f%	100,0%	100.0%	100.0%

5. 2 STUDENTS' LEISURE READING: THE PREVALENCE OF GENRE TITLES. This year's survey on the students' reading habits revealed that the 2024–2025 cohort statistically significantly more frequently ( $p < 0.001$ ) read less demanding literary fiction than the cohort from seven years earlier (see Table 2). Less demanding and popular works of fiction, along with slightly more sophisticated self-help books, accounted for the majority of titles mentioned by 67.5% of the participating students in the 2024–2025 cohort. In contrast, fewer than 40% of the students in the 2017–2018 cohort reported reading such works. For the 2017–2018 generation, reading was primarily associated with more demanding popular fiction and non-fiction books which require intellectual effort, with slightly fewer than a half (49.1%) mentioning these genres.

TABLE 2. Categorization of books read by students

Levels of Difficulty		Academic year		Total
		2017/2018	2024/2025	
Less demanding contemporary fiction	f	12	135	147
	f%	3.9%	40.3%	22.9%
Popular fiction, somewhat more demanding personal growth books	f	108	91	199
	f%	35.2%	27.2%	31.0%
Read as homework	f	35	35	70
	f%	11.4%	10.4%	10.9%
More demanding popular literature	f	126	40	166
	f%	41.0%	11.9%	25.9%
Literature and essays requiring intellectual effort	f	26	34	59
	f%	8.5%	10.1%	9.2%
Total	f	307	335	642
	f%	100.0%	100.0%	100.0%

Note.  $\chi^2 = 149.054$  ( $g = 4$ ,  $p < 0.001$ )

5. 3 READING IN FOREIGN LANGUAGES. In the study conducted on a sample of students in teacher education programmes, no statistically significant changes were observed in leisure reading in English over the past five years (see Table 3): the proportion of students reading in English remained relatively stable, at approximately 82% of the respondents. This figure is six percentage points higher than that found in the age-comparable general population<sup>14</sup>. It should be noted, however, that this higher proportion may partly be attributable to the inclusion of students from English departments in the survey sample.

Students were also asked to list the last three books they had read in the past year (see Table 4). A comparison of the titles reported in 2017–2018 and 2024–2025 reveals statistically significant differences ( $p < 0.001$ ) in the number of English-language titles mentioned. In 2017–2018, nearly 60% of our respondents did not list a single English-language title among the books they had read, whereas, in the 2024–2025 cohort, this figure dropped to just 44%.

<sup>14</sup> GERČAR, J.; KOVAČ, M.; BLATNIK, A.; RUGELJ, S. (eds.). *Knjiga in bralci VII: Bralna kultura in nakupovanje knjig v Sloveniji v letu 2024*.

For instance, in 2024–2025, just over one fifth of the respondents (22%) listed three English-language titles, compared with only 13% in 2017–2018.

TABLE 3. Reading in English

Academic year		I read in English		Total
		Yes	No	
2017/18	f	298	66	364
	f%	81.9%	18.1%	100.0%
2024/25	f	307	64	371
	f%	82.7%	17.3%	100.0%
Total	f	605	130	735
	f%	82.3%	17.7%	100.0%

TABLE 4. Number of books students read in English

Academic year		None	One book in English	Two books in English	Three+ books in English	Total
2017/18	f	183	47	38	39	307
	f%	59.6%	15.3%	12.4%	12.7%	100.0%
2024/25	f	147	67	45	74	333
	f%	44.1%	20.1%	13.5%	22.2%	100.0%
Total	f	330	114	83	113	640
	f%	51.6%	17.8%	13.0%	17.7%	100.0%

Note.  $\chi^2 = 17.840$  ( $g = 3$ ;  $p < 0.001$ )

During this period, the proportion of time spent reading in a foreign language also increased (see Table 5). The respondents were asked to estimate what percentage of their total reading time was devoted to reading in a foreign language. The data indicate that the average for 2017–2018 was 42%, whereas, for 2024–2025, it already rose to 55%. This difference is also statistically significant ( $p < 0.001$ ), suggesting that this trend may reflect a parallel decline in leisure reading in Slovenian. Such a shift may already be, or may in the future become, a factor influencing students' language competence in their mother tongue.

TABLE 5. Proportion of reading time in a foreign language

Academic year	N	Average proportion of reading time in a foreign language	SD	T	Df	Two-sided p
2017/18	300	42.44	29.10	-5.236	598.055	<.001
2024/25	304	55.46	31.99			

Last but not least, these data also point to a broader transformation in the reading culture, which is not, in itself, a new phenomenon. Previous findings have shown that smaller nations almost by definition exhibit relatively high levels of foreign language use for communication with the wider world<sup>15</sup>. However, it can be assumed that, for example, in comparison with the role of Serbo-Croatian in the former Yugoslavia, the influence of English is both stronger and softer, specifically, stronger in its global reach, yet softer in its pervasiveness through media, economic, political, and broader societal factors<sup>16</sup>. It is also important to note that foreign language use in Slovenia exhibits a marked generational divide: those who report English as their first foreign language are generally born after 1990, whereas older respondents more frequently list Serbian or Croatian as their first foreign language<sup>17</sup>.

## 6. DISCUSSION

The *Book and Readers VII* survey<sup>18</sup> on reading habits in the general Slovenian population reveals that the proportion of non-readers over the past five-year period declined from 49% in 2019 to 42% in 2024, thus indicating a return to the long-term average. At the same time, the number of respondents who stated that they had read fewer than three books in the past year increased by 20 percentage points between 2014 and 2024. As a result, only 32% of the respondents in the general population survey reported reading more than three books annually.

15 EF English Proficiency Index. (2024); Foreign Tongues. *Which European Countries are most Proficient at Speaking Multiple Languages?* (n.d.).

16 KOVAČ, M. Global English and Publishing Trends at the Turn of the 20<sup>th</sup> Century. *Knjgo-tyra*, 2014, 62, p. 7–17.

17 GERČAR, J. Desetletna primerjava vprašanj iz raziskav KiB [Ten-Year Comparison of Survey Questions BaR]., 2024, p.21.

18 GERČAR, J.; KOVAČ, M.; BLATNIK, A.; RUGELJ, S. (eds.). *Knjiga in bralci VII: Bralna kultura in nakupovanje knjig v Sloveniji v letu 2024*.

In contrast, in the survey conducted among students enrolled in university-level teacher education programmes in 2024–2025, 60% reported reading more than three books per year, which is a figure that remained relatively stable compared with our previous survey conducted in 2017–2018.

However, the proportion of non-readers among the surveyed students remains high, particularly considering the fact that they are future professionals who will be working in primary and secondary schools. In the 2024–2025 academic year, 16.5% of the respondents reported that they do not read, which is almost the same as in 2017–2018, when the figure was 16.9%. Among them, 9.2% could not recall the title of any book they had read within the previous twelve months, and 10.4% listed only mandatory school reading – either from the primary or secondary school curriculum or required reading for matriculation essays – as their most recently read books (compared with 11.4% in the previous survey). This inability to recall book titles or the very fact of mentioning the compulsory school reading as the most recent books read for leisure suggests that the actual proportion of non-readers among the student population may be close to that in the general population.

Furthermore, the finding that the 2024–2025 cohort reads statistically significantly more frequently ( $p < 0.001$ ) less demanding literary fiction than the cohort from seven years previously is not without implications. A common method used by researchers to distinguish between light and more demanding fiction is the *Author Recognition Test* (ART), which asks the participants to identify and classify authors of literary and genre fiction<sup>19</sup>. Castano et al.<sup>20</sup> refined this approach by conducting a computational analysis of a corpus of 203 contemporary English-language novels of a similar length, 100 of which had received major literary awards, while 103 were classified as a genre or popular fiction, with the classification criterion being their appearance on the *New York Times* bestseller list. They measured lexical and syntactic complexity using several indicators, such as the type–token ratio (the ratio of unique to total words), sentence length, and the distance between syntactic dependencies. The results showed that literary fiction exhibited statistically significantly higher lexical and syntactic complexity. Similar findings were reported by Koolen et

19 ACHESON, Daniel J.; WELLS, James B.; MACDONALD, M. C. New and Updated Tests of Print Exposure and Reading Abilities in College Students. *Behavior Research Methods*, 2008, 40(1), p. 278–289.

20 CASTANO, E.; ZANELLA, J.; SAEDI, F.; ZUNSHINE, L.; DUCCESCHI, L. On the Complexity of Literary and Popular Fiction. *Empirical Studies of the Arts*, 2024, 42(1), p. 281–300.

al.<sup>21</sup>, who categorised texts by using the ART methodology: a representative sample of Dutch citizens was asked to categorise 400 novels as either genre fiction or more serious literary fiction, after which, the linguistic complexity of the texts was analysed computationally. Comparable results also emerged from the study by Jacobs and Kinder<sup>22</sup>, who analysed literary metaphors in contrast to those used in everyday language.

Taken together, the results of these studies suggest that the students included in the 2024 survey tend to encounter syntactically less complex texts in their leisure reading, given the titles they listed. Although still a relatively new field, research to date<sup>23</sup> consistently indicates that reading genre fiction versus more serious literature is associated with different levels of attributional complexity. More frequent exposure to literary fiction correlates with higher attributional complexity, as complex characters and narrative structures foster a deeper and more nuanced understanding of social interactions<sup>24</sup>. Individuals denoted by high attributional complexity therefore tend to consider a broader range of factors, such as personality traits, contextual influences, situational pressures, and interactions among these, when interpreting human behaviour.

In other words, the cognitive, cultural, and societal benefits of reading are linked to the complexity of the texts being read. Individuals manifesting low attributional complexity more often rely on simplistic, stereotypical explanations based on a single cause<sup>25</sup>, which may impair their ability to critically assess societal developments and make them more prone to accept stereotypes

21 KOOLEN, C.; van DALEN-OSKAM, K.; van CRANENBURGH, A.; NAGELHOUT, E. Literary Quality in the Eye of the Dutch Reader: The National Reader Survey. *Poetics*, 2020, 79, 101442.

22 JACOBS, A. M.; KINDER, A. What Makes a Metaphor Literary? Answers from Two Computational Studies. *Metaphor and Symbol*, 2018, 33(2), p. 85–100.

23 CASTANO, E.; MARTINGANO, A. J.; PERCONTI, P. The Effect of Exposure to Fiction on Attributional Complexity, Egocentric Bias and Accuracy in Social Perception. *PLOS ONE*, 2020; CASTANO, E.; ZANELLA, J.; SAEDI, F.; ZUNSHINE, L.; DUCCESCHI, L. On the Complexity of Literary and Popular Fiction. *Empirical Studies of the Arts*, 2024, 42(1), p. 281–300; BATINI, F.; BERTOLUCCI, M.; TOTI, G.; CASTANO, E. Shared Reading aloud Fosters Intelligence: Three Cluster-Randomized Control Trials in Elementary and Middle School. *Intelligence* (in press, 2025).

24 CASTANO, E.; MARTINGANO, A. J.; PERCONTI, P. The Effect of Exposure to Fiction on Attributional Complexity, Egocentric Bias and Accuracy in Social Perception. *PLOS ONE*, 2020.

25 Ibid.

and judgments rather than reasoned arguments. As a result, we hypothesise that, in general, readers of more complex texts among future teachers are better equipped to plan and conduct pedagogical processes and to engage in counselling and school library work. They are more capable of assessing classroom dynamics, evaluating goal attainment in teaching, and identifying the causes of learning difficulties among pupils and students. While the current dominance of genre fiction among students in teacher education is not inherently harmful, it does not involve the formative impact described above.

The picture becomes even more complex when we consider the proportion of students who read in English during their leisure time. This, of course, is not a specifically Slovenian phenomenon. According to the *Special Eurobarometer 540* data<sup>26</sup>, in 2023, only a quarter (25.3%) of working-age adults (defined as those aged 25–64 years) in the EU reported that they did not know any foreign languages. Multilingualism is especially characteristic of younger generations: in 2022, more than four fifths (84.4%) of the EU population aged 25–34 years knew at least one foreign language. Besides the languages of the neighbouring countries, the main second language – unsurprisingly – is English, which is used as a second language on a daily basis by 20% of Europeans in continental EU member states, while 47% of Europeans can conduct a conversation in English. When asked which foreign language is most important for their children to learn with the future in mind, continental Europeans in the EU countries overwhelmingly identified English (85%) as the most important language. Such expectations are reflected in the English proficiency of young Europeans, as seven out of ten individuals in the 15–24 age group report being able to hold a conversation in English.

Our finding that 82% of Slovenian students enrolled in education programmes also do their leisure reading in English is thus consistent with the *Eurobarometer* results. As there are many documented cognitive benefits of multilingualism<sup>27</sup>, this trend is not worrying *per se*. What is concerning, however, is that 22% of students – which is almost double the proportion recorded in 2017–2018 – may be doing their leisure reading exclusively in English, which could have a negative impact on their competence in Slovenian. Considering that these students are training to become teachers who are bound to work in a Slovenian-speaking environment, this may represent a professional disad-

26 European Commission. *Europeans and their Languages: Special Eurobarometer 540, fieldwork September–October 2023* [Report]. Directorate-General for Education, Youth, Sport and Culture / Directorate-General for Communication, 2024.

27 MARIAN, V. *The Power of Language*. Penguin Random House, 2023.

vantage. Further research is needed to better understand the cognitive consequences of such (multi)linguistic and cultural transformations.

## 7. CONCLUSION

The trends presented in this study suggest that, in Slovenia, the reading literacy may continue to deteriorate in the coming years. The 2023 PIAAC adult skills assessment<sup>28</sup>, as reported by Schleicher and Scarpetta<sup>29</sup>, in which Slovenia did not participate, indicated that – except for the Nordic countries – reading skills, as well as mathematical literacy and problem-solving abilities, are declining in many OECD member states. On average, across the OECD countries, 28% of adults scored at or below the lowest level in reading literacy, 25% in mathematical literacy, and 29% in problem-solving ability. The most relevant PIAAC finding for our study is that, across all age groups, 25% of the best-performing individuals with only secondary education outperformed 25% of the lowest-performing university graduates. Even greater disparities were observed between countries: the average literacy and numeracy scores of Finnish secondary school graduates exceeded the average scores of tertiary graduates in 19 out of the 24 participating countries<sup>30</sup>. A question for future research arising from both the PIAAC results and our findings concerns how the leisure reading habits and reading diets of university students and future teachers in the best- and worst-performing PIAAC countries correlate with the PIAAC outcomes. Put differently, the recommendation by Schleicher and Scarpetta<sup>31</sup> – that universities should require students to read more complex texts and tackle more cognitively demanding problems than is currently the case – might be complemented by an additional recommendation: that students should also be made aware that their leisure reading contributes to their cognitive development.

To conclude, we must acknowledge the limitations of our study and of the research referenced throughout this text. Computational analysis of text complexity remains a relatively young discipline. Likewise, research on the relationship between reading complex content, theory of mind, attributional complexity, and democratic orientation is extremely demanding, particularly because

28 OECD. *Do Adults have the Skills they Need to Thrive in a Changing World?: Survey of Adult Skills 2023*. OECD Skills Studies, 2024.

29 SCHLEICHER, A.; SCARPETTA, S. *Survey of Adult Skills 2023: Insights and Interpretations*. OECD, 2024.

30 Ibid., p. 13.

31 Ibid., p. 11.



measuring individuals' exposure to serious literature is inherently subjective. Surveys of reading habits also have their limitations, as their results can be affected by methodological factors, especially sample representativeness and the modes used for collecting self-reported reading data. Therefore, findings derived from such surveys should be understood primarily as tools for identifying the trends in reading culture, rather than as fully objective reflections of the state of reading within a given society.

The trends outlined in this paper are particularly concerning, given that our sample consisted of students preparing for careers as teachers, counsellors, and librarians – who are bound to become those professionals who should be fostering new generations of readers capable of engaging with demanding texts. It is unlikely that those educators who rarely engage with demanding texts can effectively foster a culture of reading among children and adolescents.

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**Miha Kovač** conceptualization, validation, investigation, writing-original draft preparation, writing-review and editing, funding acquisition

**Mojca K. Šebart** conceptualization, validation, investigation, resources, writing-review and editing,

**Jasna Mažgon** conceptualization, methodology, software, formal analysis, resources, data curation, supervision, funding acquisition

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