The Development of English Language Competencies in Higher Education in the Context of Media and Informational Literacy

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Abstract: *The paper presents the results of the research conducted with students in the first year of the Early Childhood and Preschool Education graduate study programme at the Faculty of Teacher Education, University of Zagreb. The aim of the research was to examine future preschool teachers' experiences with English in their daily use and in preparing their theses and to gain insight into their plans for future professional development. The results showed that future preschool teachers use traditional sources of knowledge, such as books, textbooks, scientific and professional journals, and other types of texts and tools, such as news articles, Google Search and similar engines, and social networks. In addition, it was determined that almost half of the respondents do not plan to use academic texts in their future careers as primary forms of lifelong learning and professional development. Although the respondents evaluated their media literacy, information literacy, and command of English with high marks, they had difficulty critically evaluating the reliability and credibility of academic, journalistic, and AI-generated texts in English.*

1. Introduction

The term "media literacy" was first defined in 1992 at the National Leadership on Media Literacy conference as the ability to communicate competently in all media forms as well as to understand, interpret, analyze and evaluate the messages we receive from television, radio, magazines, newspapers and advertising" (Aufderheide, 1993). In 2005, Zgrabljić-Rotar warned that such a definition is based on viewing media as positive sources of information and should also include adopting different knowledge and skills (Zgrabljić Rotar, 2005) and from the very beginning, authors have stressed the importance of educating students to acquire the competencies necessary to navigate the world of new media (Ferrington & Anderson-Inman, 1996).

Today, the European Commission recognizes that media literacy refers to the "skills, knowledge, and understanding that allow people to use media effectively and safely (…) to enable them to access information and to use, critically assess and create media content responsibly and safely" (European Commission, 2023a). In the document entitled Media Literacy Guidelines, EC emphasizes that media literacy does not only include learning about technology and tools but that it "should aim to equip people with the critical thinking skills required to exercise judgment, analyze complex realities and recognize the difference between opinion and fact" (European Commission, 2023b).

Media literacy results from media education (Pérez Tornero, 2008, p. 103) and implies organized learning, education, curricula, and outcomes aimed at developing the necessary skills, knowledge, and abilities to navigate different forms of media. Education for media and the new media environment has been called for by experts since the 1970s (see Zgrabljić Rotar, 2005); the concept of media literacy has changed, but the premise that media are regarded through their importance in communication between individuals, which stems from fundamental human rights, remains (ibid.).

Given that a large part of communication in digital media, particularly social networks, is conducted in English today, many authors have researched using digital tools to enhance proficiency in English (El-Henawy, 2019; Kim, 2018), including AI and chatbots (Annamalai et al., 2023). On the other hand, others have also emphasized the need to develop higher English proficiency to understand media messages better (Hickey et al., 2016; Westman, 2019). In other words, it is crucial to develop a second language along with 21st-century literacies, which include media and information literacy. To navigate the digital media environment with its plethora of information, critically evaluate the information discovered, and understand and effectively communicate complex ideas, sufficiently developed language competencies and media literacy are necessary, especially in the context of learning English as a foreign or additional language.

Evidence-Based Teaching

Several authors explored the problem of the emerging gap between scientific research, scientific literature, and education practice (Howard-Jones et al., 2018; Kiemer & Kollar, 2021; Sepúlveda-Vallejos et al., 2023), where the focus of research is most often not aimed directly at improving the education process (Howard-Jones et al., 2018). Today, the importance of evidence-based teaching practices is particularly stressed, where educators are expected to find solutions to their classroom problems in credible, reliable, scientific literature (Csanadi et al., 2021). In recent years, the importance of policy-makers ensuring evidence-informed European education "by developing policies that encourage schools and teachers in their daily practice" (Belgian presidency of the Council of the European Union, 2024) is also emphasized. Evidence-based education is based on educators implementing in their practice and pedagogical problems the solutions based on the most recent scientific findings, which includes the "adequate search and selection of specialized information sources" (Csanadi et al., 2021).

However, several studies show that future educators encounter difficulties with the "adequate search and selection of specialized information sources" (Csanadi et al., 2021) or difficulties transferring knowledge from scientific sources into practice (Stark et al., 2009).

In the research conducted by Kiemer and Kollar (2021), future teachers were presented with a fictional classroom problem situation and offered sources of information where they needed to seek solutions. These sources included an educational theory, a result of an empirical study, a subjective theory, and anecdotal evidence. The study showed that the participants primarily relied on anecdotal evidence and that the educational theory was selected significantly less often than any other source (ibid.).

Studies with preschool education workers showed that for their pedagogical problems, preschool teachers primarily found solutions based on their common sense and experiences from practice. They mainly used non-written sources, such as their colleagues and even families, rather than scientific sources (Sepúlveda-Vallejos et al., 2023).

In the study by Csanadi, Fischer, and Kollar (2021), it was noticed that there were "knowledge-related barriers" and "unfavourable beliefs about the utility of educational theories and evidence," leading to the conclusion that the pre-service teachers' views of good practice were based on personal experience and a "gut feeling" rather than scientific evidence.

For the successful implementation of evidence-based practice, teachers should be proficient in numerous skills and competencies that enable lifelong learning, which also include the knowledge of how to find and critically read information, critically evaluate sources of information, and understand (and produce) the discourse of academic English, i.e., the language of research articles and professional papers worldwide. Ultimately, they should have highly-developed capabilities of evidence-based reasoning needed to implement scientific findings in their educational practice. Future preschool and school teachers are systematically exposed to such literature during their studies – from reading books and textbooks to

scientific papers. However, few courses deal with the linguistic aspect of this literature – the aspect necessary for understanding the language of science.

In their study (2014), Ion and Iucu indicate that "by building bridges between researchers and practitioners, new opportunities for improving schools' practices can be developed". What we consider the most important in this process is precisely the education practitioner – and motivating future teachers to use scientifically based sources in their daily work.

In today's world of fast communication, a multitude of new scientific findings, as well as experiences from practice, are shared through digital media. Results of scientific studies are published in books, textbooks, and printed journals, but the prevalent mode of communication involves online journals and similar online sources of information. In their professional development, preschool teachers use electronic media for their research more than conventional sources (Prtljaga & Savić, 2017).

Today, the majority of scientific research is published in English. Even non-native English researchers publish their papers in English because they believe this can result in greater readership and a greater number of citations (Di Bitetti & Ferreras, 2017). In Croatia, there are scientific databases in the Croatian language, but teachers are more likely to use familiar online search tools and find articles in English.

Evidence-based teaching, based on teachers informing themselves about the achievements of science in areas relevant to them in a timely and quality manner, can be especially challenging in this regard if they are not sufficiently proficient in the English language. In such an environment, a high level of media and information literacy will be crucial and necessary for critically evaluating online sources and their content.

Future Preschool Teachers and Academic Texts

Lifelong learning and professional development are the rights and obligations of all preschool teachers. The role of the preschool teacher in the upbringing and education of a child is highly complex, as preschool teachers are both leaders and organizers of education, which implies a broad spectrum of different skills and competencies (Bognar & Matijević, 2002).

In the Common European Principles for Teacher Competencies and Qualifications document, the European Commission defined a general competency framework for all education system stakeholders. Among others, competencies for working with information, technology, and knowledge are mentioned (European Commission, 2009, p. 3). Acquiring new competencies, i.e., professional development is integral to every profession; preschool teachers have the right and the responsibility to enrich and improve their knowledge, skills, and competencies to be able to educate better, which includes adapting to changes and demands of the modern life (Tischler, 2007). In this regard, the teacher's autonomy in choosing their lifelong learning process is essential (ibid.), as the totality of the individual's professional needs can only be realized in this way.

Today, English is the global language of science, and it is crucial to be highly proficient in it in the context of lifelong learning. At the Faculty of Teacher Education, University of Zagreb, future preschool teachers attend various courses in English. The number of English courses depends on the study programme.

Undergraduate students of Early and Preschool Education attend English for Preschool Teachers (ESP) for two semesters, a mandatory course. They can opt for the German language version of the course if they choose.

Graduate students of Early and Preschool Education attend a higher number of courses in English, particularly if they choose to enroll in the specialized graduate study programme in Early Childhood and Preschool Education: English Language Teaching. Their courses then include *Development of Language*

Skills, *Academic Discourse in English*, *Phonetics and Phonology of English for Preschool Teachers*, *Methodology of ELT in Early and Preschool Age*, *English in Communication*, *Culture Studies in ELT in Early and Preschool Age*, *Adopting and Teaching English in Early and Preschool Age*, *English Literature and the Picture Book in Early Childhood*, *ELT Methodology Exercises*, *English Nursery Rhymes*, *Literary Projects in English*, *Drama Activities in ELT*, and others.

In the *Academic Discourse in English* course, for example, taken in the first year of the Early Childhood and Preschool Education graduate study, special attention is given to acquiring competencies in source evaluation and source criticism, as well as analyzing the nuances of discourse in EAP. Students need to learn to use reputable databases of academic papers independently (including the National and University Library), apply specific strategies to select reliable and credible sources of information and analyze the language within, focusing, among other elements, on the various types of stance and engagement discourse markers, as presented by Hyland (2009).

The premise is that future preschool teachers will continue to develop themselves professionally, both during and after their formal education, where available research articles and other types of academic papers will be of particular importance. As future preschool teachers, these students prepare their undergraduate and graduate theses using a large base of scholarly papers. Only a small part of these belong to the national science – books and articles in Croatian. In searching for literature in various academic databases, students will encounter academic texts in English, where they will need to employ strategies of source evaluation and critical reading to select relevant texts. In this context, the use of media and information literacy skills is recognized, as well as the need for sufficiently developed proficiency in English.

2. Materials and Methods

The questionnaire clearly stated the aim of the research, and the respondents participated voluntarily and anonymously. The questionnaire did not include any sensitive or ethically questionable questions, and all 38 questions were exclusively directed at evaluating their attitudes and experiences.

The research was conducted with first-year graduate Early Childhood and Preschool Education students at the Faculty of Teacher Education, University of Zagreb (i.e., their fourth year of university study). The research involved 45 respondents who had taken the *Academic Discourse in English* course, where the topics of source evaluation and critical reading were covered.

Data were collected using the *Google Forms* online tool. The respondents were guaranteed complete anonymity and were informed about the purpose of using their responses. Their participation in the research was completely voluntary. The research was conducted in April 2024.

The questionnaire was comprised of 38 questions and was divided into five thematic parts. Twelve questions required a single choice of answers, seven accepted multiple answers, 16 were formed as a five-point Likert scale, and three were open-ended questions. The questions where multiple choices were accepted always included the option of writing an independent answer as textual input in addition to selecting one of the choices.

The thematic sections of the questionnaire were as follows:

1) General data (six questions). This segment collected data on the respondents' gender, age, and study programme, and the data related to their experiences of learning English, i.e., how long they have been studying English, the formal education levels in which they have studied English (preschool, primary school, secondary school, university, and their informal education in English (the number of students attending extracurricular English lessons in foreign language schools or private tutoring).

2) Self-evaluation of the respondents' command of English and the purpose of using English in their daily lives (13 questions). This segment included Likert scales by which the respondents self-evaluated their English skills and CEFRL levels of language competencies, along with the possible option of stating any obtained English language certificates. Their attitudes toward English, i.e., its use for entertainment, information, or learning purposes, were also examined. In addition, the questionnaire explored which English language skills students used the most (speaking, listening, reading, and writing). Special attention was paid to the circumstances in which students use these skills in English.

3) Experiences and habits of using English for research purposes (eight questions). These questions were asked to examine how students approach problems related to their profession, initiate their research, look for sources, and evaluate them. Furthermore, the students were asked to self-evaluate their media and information literacy (critical reading) and express their opinions on the importance of English language competencies for media and information literacy. Respondents were also asked how satisfied they were with their English language competencies, i.e., to what extent they believe they are qualified to perform research in English.

4) English language competencies and professional development (six questions). Students were asked which forms of professional development they would use throughout their careers, how likely it is for them to use scientific literature in their work, and to what extent they believe this would include scientific literature in English. They were also asked to state which online academic databases they were familiar with, and they self-evaluated their knowledge and understanding of academic texts in English so that their motivation to use such literature could be predicted.

5) Critical evaluation. The final segment contained five texts from different sources (popular-scientific, populist/journalistic, original research paper, and AI-generated texts) to obtain insight into their evaluation of the reliability and credibility of the sources of these texts and the discourse within.

Through this research, we wished to examine the experiences of future preschool teachers with English in their daily use and in writing term papers and theses, as well as their plans for future professional development. The aim of the research was to explore how students of Early Childhood and Preschool Education at the University of Zagreb evaluate their level of language competencies in English and the level of their media and information literacy in the context of using English in their professional development as well as using scientific and professional literature in English in their careers, both during their studies and their lifelong learning.

In accordance with the research aim, the following research questions were posited:

- To what extent do students use English to study and research literature, and how do they evaluate their English language competencies?

- Which sources do students use to explore the relevant literature for evidence-based practice, and how do they evaluate their media and information literacy necessary for critically evaluating texts?

- To what extent will students use academic texts in English during their studies and their subsequent careers (i.e., in their professional development and lifelong learning), and how do they evaluate their English language competencies as a prerequisite for using such literature?

- Can students who attend specific courses dealing with this question (i.e., *Academic Discourse in English*) discern the reliability and credibility of texts and sources? In other words, can they differentiate an academic text in English from a popular science, journalistic, or even AI-generated text?

3. Results

General data: Forty-five respondents participated in the research, and all of them were female (100%). Most respondents have studied English for approximately 15 years (14.27 on average).Most of them started learning English in their early years of primary school and continued learning it throughout their education, including university. Only seven respondents stated that they started learning English in preschool. Over half of the respondents (64.3%) confirmed that, during their education, they also learned English non-formally in foreign language schools for three to five years on average.

Self-evaluation of the respondents' command of English and the purpose of using English in their daily lives: Half of the respondents (50%) evaluated their command of English as "very good", while the next average mark was "good" (38.1%), which corresponds to the following answer, related to their self-evaluation on the CEFRL framework, where most of the respondents selected the B2 level of English. Few respondents self-evaluated their knowledge as "excellent" (9.5%) or even "insufficient" (2.4%). Only eight respondents had obtained an additional English language certificate from other institutions.

The respondents use English in almost equal amounts for entertainment (76.2%), information (73.8%), learning and studying (73.8%), and research (71.4%).

More than half of the respondents read in English daily (52.4%) – primarily the content on social networks (76.2%) and blogs and online news portals (61.9%). Some (38.1%) said they read scientific and professional articles in English. A minority of the respondents said they read works of literature in English (23.8%), non-fiction books and textbooks (21.4%), and magazines (16.7%).

Writing in English was less common among the responders. 26.2% said they never write in English. An equal percentage of the respondents said they wrote in English daily, several times a month, or once a month (16.7%). Out of these, most of their writing in English refers to correspondence through social networks (57.1%) and a lesser percentage (16.1%) to writing term papers. As much as 14.3% of the respondents admitted never writing in English. Some respondents wrote poetry and prose (one respondent), professional and scientific papers (one respondent) or a "daily to-do list" (one respondent).

The respondents were also divided when asked about how often they spoke English. 23.8% of the respondents stated that they spoke English once a year, while 16.7% claimed to speak it daily. The remainder of the respondents stated that they spoke English several times a week (14.3%), once a week (4.8%), several times a month (19%), once a month (9.5%), and rarely or never (11.9%). In so doing, most respondents (42.7%) said they use English for tourism purposes (when travelling abroad), while 21.4% said they use English to communicate with friends and family. Only 19% of the respondents said they spoke English while attending lectures at the Faculty, while the rest stated that they spoke English in situations such as "working during tourist season", "working with children who do not speak Croatian", "the English group where I teach a programme", and "creating creative content".

Interestingly, most respondents (66.7%) listened to English daily or several times a week (16.7%), which corresponds with the responses to the following question related to the sources from which they listened to English. The respondents claimed to listen to English when watching films and series (42.9%), and the same percentage responded to listening to English while perusing social networks or listening to music in English. Few respondents stated that they listen to English while communicating with friends or attending training seminars. Interestingly, only one respondent remembered that she listens to English while attending English courses at the Faculty.

The respondents confirmed their previous responses by mostly opting for listening to English as their primary way of using English in daily life (83.7%). Fewer respondents (11.6%) opted for reading, and only 4.7% for writing in English.

Experiences and habits of using English for research purposes: The majority of the respondents (81.4%) said that when exploring a topic related to their profession, they start by performing a Google search (or using a similar search engine), followed by scientific journals (65.1%). Books and textbooks, or the traditional sources of knowledge, are used by 48.8% of the respondents, followed by blogs and online portals (34.9%) and social networks (32.6%). Artificial intelligence tools, or large language models, are used by 27.9% of the respondents, while online forums and other sources, such as TED Talks, Wikipedia, or Pinterest, are used by 20.9% of the respondents.

In the following question, the respondents confirmed regular or very frequent use of Google and similar search engines (90.3%). At the same time, Wikipedia was mostly deemed untrustworthy, as 67.4% of the respondents use it very rarely or do not use it at all. A similar response was noted when asked about using AI tools, where 55.8% of the respondents claimed not to use AI tools when searching for information related to their profession, while the other respondents were divided between "almost never" and "very rarely".

The majority of the respondents self-evaluated their media literacy as "very good" (62.8%) and "good" (32.6%). Only two respondents answered "excellent", and none of the respondents chose a mark less than "good". In self-evaluating their information literacy, they were somewhat more self-critical – 46.5% evaluated their level of information literacy as "good" (46.5%), followed by "very good" (41.9%), "excellent" (7%), and "sufficient" (4.6).

Most respondents agreed that English language competencies are important for developing media and information literacy today (69.8%). 27.9% were undecided and only 2.3% disagreed with the claim. Interestingly, when answering how satisfied they were with their knowledge of English for studying, reading, and acquiring information related to their profession, 31.9% said they were quite satisfied, and 34% were neither satisfied nor dissatisfied. In contrast, other respondents said they were completely satisfied (14.9%), not quite (10.6%), or not at all satisfied (8.5%).
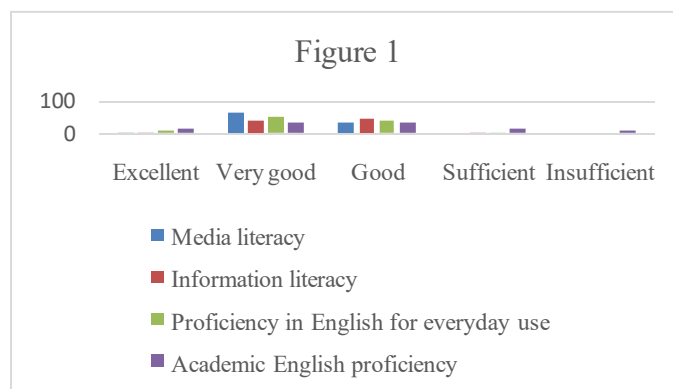

Figure1. Comparison of the respondents'self-evaluation of media literacy, information literacy, English proficiency for everyday use, and proficiency in academic English

English language competencies and professional development: When asked how they plan to conduct their professional development in their future careers, 88.4% of the respondents stated they would attend professional training seminars, followed by reading books and textbooks (69.8%) and online training seminars (60.5%). The respondents also claim that they will develop themselves professionally by reading professional publications (58.1%) and scientific journals (46.5%), as well as participating in scientific and professional conferences (41.9%). However, in the following question, where the respondents evaluated the extent to which they would use scientific journals, i.e., academic papers, most respondents said they would use them (51.2%), but 48.8% said that they would not, or probably would not.

55.8% of the respondents said they would not use academic papers in English or that they did not know whether they would, while 44.2% answered affirmatively – "certainly" or "more than likely".

At the same time, most respondents said that, in their soon-to-come research for the purpose of writing their graduate theses, they would use scientific literature – professional papers (86%), scientific papers (83.7%), books (88.4%), followed by the Google search engine (60.5%), textbooks (39.5%), online scientific databases (39.5%), popular science magazines (34.9%), and AI tools (18.6%).

It is interesting to notice that all the respondents were familiar with Hrčak – the national online database of academic and professional papers (100%), and many of them were also familiar with Google Scholar and JSTOR (46.5%), followed by ResearchGate (36.5%), Scopus (25.6%), and ERIC (2.3%).

At the same time, 41.9% of the respondents self-evaluated their knowledge and understanding of academic texts in English as "good", 37.2% as "very good", and 7% as "sufficient".

Evaluating reliability and credibility: The final segment featured parts of five texts from different sources. Each text was about the same topic, related to the preschool teaching profession and the implementation of research in practice, namely, the use of mobile phones in preschools. The first text was a populistic-journalistic text from an online news portal, the second text was an academic paper, and three other segments were generated by online AI tools. The latter three differed as well – the first was generated by *ChatGPT*, the second by *Perplexity.ai*, which also offers links to its sources, and the third one by *Elicit.com*, which includes hyperlinks to its citations in the generated summary.

The text generated by *ChatGPT* was mostly assessed as "good" (44.2%), followed by "insufficient" (25.6%). 20.9% of respondents gave it a "sufficient" mark, and none of them awarded it the "excellent" mark. The text generated by *Perplexity.ai*, which included sources, was mostly marked as "sufficient" (32.6%), followed by "good" (30.2), "very good" (23.3), "insufficient" (9.3), and "excellent" (4.7%). The text generated by *Elicit.com*, which included links to sources, was marked as "excellent" by 53.5% of the respondents, followed by "good" (25.6%), "very good" (18.6%), and "insufficient (2.3%).

The text from a journalistic article received rather good marks, on average – "good" (44.2%), "very good" (30.2%), "excellent" (16.3%), "sufficient" (18.6%), and "insufficient" (9.3%).

Finally, the academic paper published in a prestigious scientific journal was marked by the respondents as "good" (44.2%), "very good" (27.99%), "sufficient" (18.6%), and "insufficient" (9.3%).

Source of the text	Average mark
AI (*Elicit.com*)	4.2
Journalistic article	3.5
AI (*Perplexity.ai*)	2.8
Original research article	2.9
AI(*ChatGPT*)	2.37

Table 1: Average marks of the reliability and credibility of the analyzed text

4. Discussion

The respondents in the research have gone through about 15 years of experience in learning English within the total vertical structure of education (on average, from Year 1 of primary school to university). Many respondents (64.3%) have taken additional English classes in private foreign language schools or private tutoring for three to five years, on average. If we consider the number of courses in English the respondents have taken by their first year of graduate study, we can see that this is a rather long language learning process, both in formal, non-formal, and informal education.

Most respondents evaluated their knowledge of English with the mark of "very good" (50%) or "good" (38.1%), but only a few respondents considered their knowledge of English "excellent" or "insufficient".

Such positions, however, changed when they evaluated their English language competencies when used for learning and research, as most students confirmed that they were "quite satisfied" (31.9%), while 34% were neither satisfied nor dissatisfied. In contrast, only 14.9% were completely satisfied, not quite satisfied (10.6%), or not at all satisfied (8.5%).

In principle, these results become clearer if we consider that "learning and research" for working in preschool education often rely on texts that are, in reality, not always academic. The respondents express a somewhat more optimistic attitude regarding their independent research of a subject, where they most frequently start from a Google search (81.4%) and where as much as 34.9% of students confirm using journalistic texts and social networks (32.9%). Of course, the texts found on social networks are mainly written in a more accessible language that students evidently use, so the satisfaction in working with such sources is greater.

Some students have difficulties determining what an academic text or source is, especially if it is written in English (Xu, 2020), and their proficiency in English will impact their comprehension of such texts. The results suggest that the students were encouraged to use traditional sources of knowledge, such as books, textbooks, and professional and scientific papers, as they state that they use such sources the most in their studies (48.8% of the respondents use books and journals). A large number of participants claim that they will use books, textbooks, and professional and scientific papers to write their graduate theses, just as they have done during their studies.

However, when asked if they would use scientific and professional journals, i.e., academic papers which are the basis of evidence-based practice, in their future careers (in the context of professional development and lifelong learning), the results were divided – 51.2% of the respondents said that they would, whereas 48.8% said that they would not. They seemed to have the same position regarding such texts in English – 44.2% said they would probably use them, but as much as 55.8% of the respondents were unsure or said they would not. At the same time, the students are familiar with the online databases of academic papers. They were familiarized with them in their studies as part of the syllabi. Although they confirm that they would use them in writing their graduate theses – as their active participation in producing science – they rely less on these databases (39.5%), which is similar to their use of popular science magazines (34.9%), and more on the traditional sources of knowledge, such as books, textbooks, and printed scientific journals.

These results, in fact, predict that this topic should be explored further and that the positions of future preschool teachers toward academic sources should be investigated. In addition, further research into why such a large percentage of respondents expressed a lack of interest in academic databases containing fresh and relevant sources of information, i.e., determined a priori that such texts would not be the starting point in their professional development, would be beneficial.

The respondents confirmed that they consider lifelong learning but that they primarily see it through the prism of traditional ways of education – their prediction that they will professionally develop in organized training seminars, which is the common practice of today, was confirmed (88.4%), bearing in mind that the new generations of students include online training seminars (60.5%). These results are clear, given that these are the generations that experienced university classes online during the COVID-19 pandemic and are part of the modernization of education, which largely relies on the use of digital tools in the classroom.

The respondents mainly use English daily or weekly. They use it for entertainment, but also for studying and researching. However, in the sub-questions related to their habits and experiences of using English, it should be noted that the respondents mainly listen to English (66.7%) for entertainment (films, series, music, social networks). Productive language skills, i.e., writing and speaking, are not as well represented; in other words, they are also mainly related to entertainment – most respondents (23.8%)

speak English once a year, as tourists abroad (or working with tourists from abroad) (42.7%). They primarily relate writing to social media correspondence (57.1%) and reading to the content of social networks (76.2%).

This is a rather interesting piece of information since, at university, they attend several courses in which they speak, read, write, listen, act, play, and sing in English, so it should be examined why such forms of education are (mostly) not considered when self-evaluating their language skills in English. Furthermore, the question of maintaining and improving their competencies in English is raised – it is of utmost importance to continue reading, writing, listening, speaking, acting, playing, and singing in English throughout their careers, i.e., lives. Namely, if, during their professional career, they continue their current habits of using English primarily in the context of entertainment, it is likely that, in time, they will encounter difficulties in reading academic texts in English needed for their professional development. In the context of lifelong learning, reading in English is particularly important because this is how our students will probably receive new information and knowledge related to their profession. In addition, fresh information is coursing through online academic databases, and it would be highly beneficial if preschool teachers continue using them for efficient learning and receiving new information.

In such an environment, there is the question of the levels of their media and information literacy, indicating their level of the competencies needed to navigate the multitude of online information and critically evaluate information sources and the adequacy of the texts they need to read.

The respondents evaluated their media literacy as relatively high (the highest mark was "very good") and their media literacy as somewhat lower ("good"). Most respondents recognized the importance of English language competencies in media and information literacy today (69.8%). Results of several studies are in favour of simultaneously developing media literacy, information literacy, and English language competencies (Chen, 2014; Živić & Zadravec, 2016).

From Figure 1, it is evident that students generally evaluate their media literacy and English skills for general use as higher than their information literacy and proficiency in academic English (EAP).

Students who evaluated their EAP proficiency as "excellent" were more reserved when evaluating their levels of media and information literacies. On the other hand, students who evaluated their EAP proficiency as "insufficient" rated their media literacy and general English proficiency higher, which is in concordance with their use of English mainly for entertainment or social media communication. However, perhaps these very discrepancies hold the answer to why so many students do not plan to use academic texts in English for their professional development in their future careers.

The critical attitude toward sources of information was expressed by the distrust toward Wikipedia (67.4% never use it or use it very rarely), indicating a change in student trends. Namely, in 2016, a large study conducted by Selwyn and Gorard (2016) showed that a large number of students used Wikipedia to write academic papers (87.5%). Almost a decade has passed since then, so this might indicate a falling trend of students' reliance on this source. As a new source for students' research, AI tools or large language models are emerging – the research by Von Garrel and Mayer (2023) shows that as much as two-thirds of students use these tools to write academic papers, while the McGraw Hill study (2023) shows a somewhat lower result (35% of students used them to help with schoolwork). The latter study showed that although students distrusted information they found on social media, they still used it in research – four out of five students used both AI tools and social media for study or research. More importantly, the study found that as much as 78% of students said they would study more if learning materials today were as convenient as social media.

In our research, the respondents were somewhat more reserved, as only 25.6% said they use AI tools regularly or at times, while 18.6% said they would use them to help them write their graduate theses. In

time, this aspect of the research should be repeated, and it should encompass the students' habits of using new tools and check whether this conservative appraisal is accurate, i.e., whether the trend has changed.

Still, 90.3% of respondents use *Google Search* in all aspects of their studies.

Georgas (2014) noted that students believe themselves to be "sophisticated searchers of information and frequently use Google to do all of their research", but her research showed that their search is not always as effective, as the students tend to visit commercial sites and do not spend time to refine their questions and searching process.

The 11-year study by Glass and Kang (2022) showed an increase in students using the Google Search engine and lower academic performance – students who relied on internet searches to obtain answers performed well in exercises but received lower marks in exams.

Considering the rapid technological changes, the cited studies may already be outdated, but they indicate certain types of behaviour in using internet search engines that are prevalent even now. In addition, if we consider the described aims of using, for example, *Google Search* – before the emergence of AI tools – we can assume that Croatian students will also reach for the new tools (as upgrades of the "classic" search engines) very soon.

The final segment of the research focused on evaluating the reliability of texts. It was, in essence, constructed to confirm what the students claimed - that they had a high level of media literacy and a satisfactory level of information literacy, English language competencies, and competencies in reading texts in academic English.

The respondents awarded the highest average mark of reliability and credibility to a text generated by the *Elicit.com* AI tool (4.2). This tool summarizes multiple studies it accesses through searching the internet. It also cited its sources in parentheses, so in this aspect, its results are similar to authentic academic texts.

The text generated by *Perplexity.ai*, a tool that operates in a similar manner, was graded with a much lower average mark (2.8), even though the text included hyperlinks to the articles the text referred to. However, the surnames of the authors were not given, only footnotes. This was a sufficient indicator for the students that the text was not credible, which leads us to conclude that they consider one of the main indicators of credibility "the academic look of the text", i.e., the style of referencing that uses parentheses, such as APA.

Therefore, the text generated by *ChatGPT*, which included no references, received the lowest average mark (2.3). Bearing this in mind, an actual research article from a reputable journal received an average of 2.9. The article also contained citations and entire sentences summarizing the author's opinion. However, the number of citations in the original research article was lower than in the text generated by Elicit.com, so this might have impacted the evaluation of reliability and credibility. Ultimately, an unusual piece of data is that the students scored a journalistic article from an online news portal with the second highest average mark, 3.5. The article included vague, general phrases such as "studies have shown", and the researcher was named, but there were no references or other indicators of an accurate transfer of information. However, the language style of the article appears to have "sounded" credible enough to be given such a high average mark.

These results are a motivation to consider the ways students will evaluate AI-generated texts in the future; as they are using *Google Search* today, and as they used to use *Wikipedia*, will they use AI-generated texts in their professional development and will that still encourage them to read academic texts, even those in English? These are the questions that, at this moment, only future research might answer.

5. Conclusion

As the primary institution for the training of preschool teachers, the Faculty of Teacher Education is tasked with providing a sufficient scope of education that will prepare them to work in preschool institutions but also prepare them for quality lifelong learning and professional development, which includes the strategies of independent knowledge, skills, and competencies acquisition. According to Zgrabljić Rotar, "Developed societies do not leave it to the individuals to worry about, and unsystematically navigate the acquisition of the needed knowledge, competencies, and skills" but rather "encourage various social strategies of promoting and fostering media literacy by following positive international examples and recommendations" (Zgrabljić Rotar, 2005). As this paper describes, English language competencies are, in this regard, equally valuable for the successful development of media literacy.

In the context of media literacy, English proficiency helps students:

- Expand the basis of the literature they use. Being proficient in English opens a multitude of scientific achievements outside national science. Books and textbooks are the primary sources of knowledge during their studies, but it is assumed that readily available international sources would be particularly significant for lifelong learning.

- Understand the texts they read, evaluate their reliability and credibility, and assess the quality of processing the topic they are interested in.

- Critically evaluate their sources – recognise quality sources and know the differences between academic texts and popular science texts. In this regard, academic discourse analysis, which is part of the syllabus, is helpful. Furthermore, they learn how to find scientific and professional papers in reputable online scholarly databases.

- Make informed opinions and contextualise – based on evaluating their sources and the quality of the texts, they put the obtained information in context and apply the findings in their practice.

- Open themselves to differences – reading articles written by scientists, researchers and other experts worldwide opens the students toward new knowledge, perspectives, and cultural differences.

The research results indicate that our students – future preschool teachers – are familiar with online academic databases and traditional sources of knowledge. However, they also use other methods and tools, namely *Google Search* and texts in English found on social networks. Although they self-evaluate their media and information literacy with high marks, as well as their English language competencies, they appeared to have difficulty critically analyzing different (but similar) types of texts and evaluating whether those were reliable and credible sources of information. What is, perhaps, more important is that almost half of the respondents expressed a lack of interest in using academic papers in both Croatian and English in their future professional development. In the context of quality, evidence-based practice, this information should be a motivating factor for future research on the causes of such attitudes and, ultimately, an impulse from practice that will impact the creation of adequate and motivating syllabi for university courses.

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Conflicts of Interest: The author declares no conflict of interest.

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