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Teachers' Views on the Integration of Information and Communication Technology in the Teaching of Slovene (First Language) in Primary School

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Abstract: Information and Communication Technology (ICT) brings modern learning approaches, forms and methods to education, and with them new opportunities for learning and teaching. The use of ICT in the classroom motivates students, enables them to participate, provides individualisation and differentiation, interactivity, and encourages creativity and critical thinking. Teachers play a very important role in this, as they are the ones who can provide students with a stimulating learning environment, including through the use of ICT. As Slovene (first language) is the subject with the most teaching hours in public primary schools in the Republic of Slovenia, we conducted an empirical study on the views of general and subject teachers of Slovene (N = 190) on the integration of information and communication technology in teaching. Teachers' opinions were investigated through quantitative research. We found that teachers frequently use ICT in Slovene lessons, namely for repeating and consolidating learning material and for presenting new learning material, and that ICT is used most often in frontal forms of learning. Teachers mostly use LCD projectors, computers, interactive whiteboards, e-workbooks, audio recordings and videos. We also found that teachers are moderately satisfied with the available ICT equipment and e-materials, and that they feel moderately competent when it comes to using ICT in Slovene lessons. Teachers also used ICT during the COVID-19 epidemic. We also found that there are no statistically significant differences in the use of ICT between teachers teaching Slovene according to their teaching level, age and years of service.

Keywords: *Elementary school teachers, ICT in education, primary school, Slovene, Slovenian language teachers.*

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Introduction

Information and Communication Technology (ICT) forms a large part of our daily lives and its impact on education is becoming increasingly important. It brings modern learning approaches, forms and methods to education, and with them new opportunities for learning and teaching. The use of ICT in education motivates students to learn, enables them to participate, provides individualisation and differentiation, interactivity, and encourages creativity and critical thinking, thus developing students' digital literacy and the skills they need to live in the 21st century. Teachers also play an important role as they are the ones who can provide students with a stimulating learning environment through the use of ICT. Although curricula aim to use and integrate ICT in the classroom, teachers also need to be professionally qualified to work with ICT in a quality manner. Digital literacy, which is also part of the Slovene (first language) curriculum, is linked to the development of communicative skills. When teaching Slovene (first language) through ICT, teachers also develop digital competence in students. The aim of the study is to investigate teachers' views on the integration of information and communication technology in the teaching of Slovene (first language) in elementary schools. In this article, we want to explore the opinions of teachers of Slovene in primary schools on the integration of ICT in the teaching of Slovene. We also want to find out how frequently they integrate ICT in their teaching, which types of ICT they use in their work, in which part of the lesson the use of ICT is most widespread, in which teaching styles they use ICT most often, how satisfied they are with the existing availability of ICT devices, tools and e-materials at school, how competent they feel in working with ICT and how they integrated ICT in their teaching during the COVID-19 epidemic. We are also interested in examining the possible differences in the use of ICT among teachers teaching Slovene, according to their teaching level, age and years of service. With this article, we want to encourage teachers of Slovene (first language) to integrate ICT in the classroom and, consequently, to receive additional training in this field.

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Literature Review

Information and Communication Technology and Teaching

Information and communication technology encompasses a range of different computing, communication and information devices (hardware), applications (software), services and networks. These are devices and systems through which the user can find, retrieve, process, store, transmit and receive various type of information (Hofman, 2022). As technology changes, society changes with it, and rapidly. Social processes and services are becoming more complex, unpredictable and digitised. Such a society also requires individuals to be able to adapt quickly to new circumstances and changes, and to work effectively under such conditions which includes mastering ICT and its services (Alt, 2018).

One of the fundamental skills for individuals in modern society is digital literacy. This is the ability to use ICT critically and confidently in different areas of life. Knowledge and use of different devices and tools such as computers, mobile phones, tablets and online tools are crucial. They are used by individuals to find, share and store information. A digitally literate person can therefore communicate digitally, acquire new knowledge in different contexts and be creative in the use of ICT (Alemu, 2015).

In the field of education, due to rapid social changes at all levels of life, the focus is increasingly on the establishment of a modern school that prepares students for life in such a society and follows technological innovations and progress (Samida Cerk, 2021). Flogie and Aberšek (2019) emphasise that in a modern school, it is important to achieve 21st century competencies, digital competencies and higher taxonomic levels of student knowledge with which students use the acquired knowledge in different life situations and creatively. Critical thinking, creativity, cooperation and problem-solving skills are crucial, and the use of technology is also an important link (Samida Cerk, 2021). ICT brings new opportunities for learning and teaching in a creative and rich learning environment to the school space, and this has led to the need for a transformation in education that enables active forms and methods of learning, integrated learning, self-reflection and self-evaluation (Brečko, 2016; Samida Cerk, 2021).

The integration of ICT in education means not only its use in teaching, but also in all key components of the educational process, namely pedagogical, content-related and organisational-technical. In order to achieve the aims of a modern school, traditional approaches to learning and teaching are no longer appropriate, so the use of new methods and forms of work is crucial (Flogie & Aberšek, 2019; Samida Cerk, 2021). ICT is a tool that enables innovative ways of working, such as: collaborative learning, problem and research teaching, combined and reverse learning as well as project work (Bregač, 2023; Lipovec et al., 2019).

The integration of ICT in education directly changes the learning process because it provides many opportunities for learning and enables the acquisition of deeper and broader knowledge, which is also the aim of a modern school (Kingsley & Patience, 2019; Tondeur et al., 2018). Learning with technology includes learning situations where teachers teach with the aid of various ICT devices and tools (Flogie & Aberšek, 2019). Technology must be integrated into the educational process step by step. In the first step, schools are equipped with technology, technical support and infrastructure being established. In the second step, teachers are trained in the use of ICT and digital tools. In the last step, ICT and the development of digital literacy are meaningfully and critically integrated into the curriculum (Breznik, 2019).

Through the appropriate integration of ICT in learning and teaching processes, we can improve the quality of education (Atsari, 2019; Das, 2019; Fu, 2013; Kimmons, 2018). In this regard, teachers play an important role and can enhance students' learning capabilities through the appropriate use of ICT (Salam et al., 2018). Ghavifekr and Rosdy (2015) add that by integrating ICT into the learning process, teachers enable students to process information faster and more efficiently, and provide them with the ability to develop lifelong learning.

All the changes that ICT brings to the education system require the creation of a quality learning environment where students have the space and time to think critically, solve problems, be creative and develop their ability to communicate effectively (Štemberger et al., 2022). Teaching is effective when the teacher uses teaching methods and forms that encourage students to learn independently and include the appropriate use of ICT. Taking into account the individual and developmental characteristics of each student and the use of appropriate working methods, the teacher links learning content and objectives, as well as procedures for planning, implementing and evaluating the educational process (Samida Cerk, 2021).

The teacher is not required to invent new ways of learning by integrating ICT, but to be flexible and creative in its use. It is important for the teacher to be receptive to students' ideas as this is the only way the teacher can introduce them to different ways of learning and increase their motivation to learn (Mbarek & El Gharby, 2013). The teacher can only encourage students to participate by talking and asking questions at higher taxonomic levels (Hoesni et al., 2020). In order to successfully integrate ICT, teachers need to have the appropriate technological and pedagogical knowledge. Without their own competence, it is difficult for them to develop students' digital competence (Alemerich et al., 2016).

It is also important to mention the period of the COVID-19 epidemic, which was an unpredictable period for educational institutions, as education moved to distance learning in a very short space of time, i.e. to an online environment. Teachers had to adapt the implementation of planned activities, testing and assessment of knowledge as well as in the ways they

could provide feedback (Petek, 2021). The need for digital development in education and therefore the creation of a modern learning environment that promotes the development of digital and other 21st century skills has been demonstrated (Rupnik Vec, 2020).

Information and Communication Technology and Teaching of Slovene (First Language)[†]

The rapid development of ICT is changing the nature of learning and teaching of Slovene (first language), as its use in the educational process has become indispensable. The penetration of ICT in schools has influenced the accelerated acquisition of digital skills and the necessary knowledge of teachers and students, as well as the development of new learning methods and forms. Teachers are mainly concerned with how and to what extent to include ICT in the learning process, taking into account the fact that students spend most of their time using technology (Baloh, 2018). It is important that they are guided towards a safe and critical use of technology which they can do through its meaningful use in Slovene lessons.

The teaching and learning of Slovene in primary schools can therefore be made much more effective through the use of ICT. It is crucial that the teacher plans the use of ICT well and adapts the ways and forms of working accordingly (Lavrenova et al., 2020; Mićović Struger, 2021). Technology enables the teacher to prepare and adapt non-art and art texts, various tasks and other materials, and students are motivated by learning with ICT (Krajnc Ivič et al., 2021). Today, teachers have access to a number of ICT tools, interactive materials (e-textbooks, e-workbooks and assignments), programs and applications that are suitable for teaching Slovene.

Teaching Slovene (First Language) during the COVID-19 Epidemic

The period of the COVID-19 epidemic was full of challenges, successes and failures, opportunities and, above all, comprehensive learning for students, teachers and other professionals (Pertovt, 2022). Teachers of Slovene faced a number of challenges: how to keep students in contact with the language, how to encourage them to solve tasks independently at home, how to maintain their level of knowledge and how to plan Slovene (first language) lessons (Petek, 2021). Before the closure of primary schools, teachers mostly included various ICT tools and e-materials to spice up their lessons, during distance learning, however, the use of ICT became a necessity (Mićović Struger, 2021). This required teachers to plan and organise lessons differently (Gorozidis & Papaioannou, 2014; Ping et al., 2018; Rupnik Vec, 2020), and they also had to ensure the students' motivation to learn which they could only maintain if they had enough willpower to teach (Mićović Struger, 2021). The majority of teachers of Slovene who participated in the Petek survey (2021) were satisfied with teaching Slovene (54%) and with distance communication (65%).

Since the use of ICT in the school environment brings new opportunities for learning and teaching, which is why traditional approaches are no longer sufficient (Flogie & Aberšek, 2019), we conducted an empirical study of teachers' views on the integration of information and communication technology in the teaching of Slovene (first language) in primary schools, the results of which are presented in the empirical part of the article.

Methodology

Purpose and Objectives of the Research

As part of the empirical research, we wanted to find out from teachers of Slovene (first language) in primary[‡] schools: (a) how frequently they use ICT in Slovene lessons; (b) which forms of ICT (devices and e-materials) they use most often in their lessons; (c) in which part of the lesson they use ICT most often; (d) in which teaching styles they use ICT most frequently; (e) how satisfied they are with the ICT devices and e-materials available in their school; (f) how competent they feel in using ICT in Slovene lessons; (g) how frequently they used ICT in distance learning during the COVID-19 epidemic. In addition to the findings based on basic descriptive statistics, the aim was to present the results on: (a) whether there are statistically significant differences in the frequency of use of ICT in Slovene lessons between general and subject teachers; (b) whether there are statistically significant differences in the frequency of use of ICT in Slovene lessons between general and subject teachers of Slovene according to their age; (c) whether there are statistically significant differences in the ability to use ICT in Slovene lessons between general and subject teachers of Slovene according to their years of service.

Research Method and Research Sample

We used a descriptive and causal, non-experimental method for our pedagogical research. For this purpose, we used an online questionnaire that was in line with the defined purpose and objectives of the research (*validity*). We checked that

[†]Digital competence is included in the general and operational objectives of Slovene language classes. The use of ICT in the teaching of Slovene is also included in the didactic recommendations of the curriculum of the course, as the appropriate and effective use of ICT has a positive impact on learning. For the roles and position of Slovene in the educational process, see Petek (2013). For Slovene as a subject, see Ministry of Education, Science and Sport (2018).

[‡] The subject of Slovene can be taught in a public primary school in the Republic of Slovenia by general teachers (1st and 2nd educational cycles) and general teachers (2nd and 3rd educational cycles).

it was *comprehensible* and confirmed this with twenty randomly selected teachers. The *reliability* of the questionnaire was tested by calculating the Cronbach's alpha coefficient (α = .91). The survey was anonymous and the questionnaire was prepared in advance and published online to ensure *objectivity*. In addition, all respondents were given as much time as they needed to complete the questionnaire. The sensitivity of the survey was ensured by using closed and semi-open questions with the option of being able to respond 'other', as well as the use of a 5-point rating scale. The researchers were not influenced by the respondents as the survey was available online. It consisted of an introductory and enquiry part. The introductory part contained the title and purpose of the research, the presentation of the author and the content of the questionnaire. The enquiry part included various types of questions, such as closed questions, semi-open questions with the option of being able to respond "other" and questions with a 5-point rating scale. The questionnaire contained 16 questions. The content of the questionnaire included questions on the frequency of including ICT in Slovene lessons (first language), types of ICT used by respondents in their work, part of the lesson when ICT is used, learning forms in which they use ICT, satisfaction with the availability of ICT devices, tools and e-materials, the integration of ICT during the epidemic, and their own competence in being able to integrate ICT in Slovene lessons. At the end of the enquiry, questions about the respondents' personal data were also included, such as: biological sex, age, length of service and teaching level.

The sample of the research was represented by 237 general and subject teachers of Slovene (first language) in the school year 2022/23. A total of 190 teachers completed the questionnaire. 47 questionnaires were only partially completed, so we excluded them from the processed data. The sampling method was causal. We cannot generalise the data to the population, but we can determine what was found in the sample studied and conclude that the general situation is similar.

Research Questions, Processing and Displaying the Data

For the purpose of the research, we designed ten research questions: (a) how frequently teachers use ICT in Slovene lessons; (b) which forms of ICT (devices and e-materials) teachers use most often in Slovene lessons; (c) in which part of the lesson teachers use ICT most often in Slovene lessons; (d) in which teaching styles teachers use ICT most often in Slovene lessons; (e) how satisfied teachers are with the available ICT devices, tools and e-materials; (f) how competent teachers feel about using ICT in Slovene lessons; (g) how frequently teachers used ICT in distance learning of Slovene during the COVID-19 epidemic; (h) whether there are statistically significant differences in the frequency of ICT integration in Slovene lessons between general and subject teachers; (i) whether there are statistically significant differences between general and subject teachers of Slovene in terms of the frequency of ICT integration in Slovene lessons according to their age; (j) whether there are statistically significant differences in competence in the use of ICT between teachers teaching Slovene according to their years of service.

The data obtained from the questionnaire were analysed quantitatively using Microsoft Excel and IBM SPSS Statistics 29. Descriptive statistics were used to process the data which allowed us to display the arithmetic mean, standard deviation, frequency and structural distributions, as well as the minimum and maximum values. The chi-square test of the independence hypothesis was used to test whether the differences in the sample were statistically significant and could be generalised to the population as a whole. We had two attribute variables, one of which divided the sample into two or more subgroups. The chi-square test was used in the research questions that tested whether there were statistically significant differences in the use of ICT in Slovene lessons between general and subject teachers (RQ 8), whether the frequency of the use of ICT in Slovene lessons differed according to the age of the teachers (RQ 9), and whether there were statistically significant differences in the ability to use ICT in Slovene lessons according to the years of service of the teachers (RQ 10). If at least one of the conditions for theoretical frequencies was not met (theoretical frequencies less than 5 may not represent more than 20% of the total number of frequencies, and no theoretical frequency may be less than 1), the Kullback 2 test was used. The results are presented below in tabular form with textual interpretation.

Findings/Results

Frequency of ICT Integration in Slovene Lessons

Table 1. Frequency and Structure Table of the Frequency of ICT Integration

Frequency of ICT integration	f	f (%)
Always	28	14.7
Frequently (about twice a week)	114	60
Occasionally (about twice a month)	33	17.4
Rarely (less than twice a month)	14	7.4
Never	1	0.5
Total	190	100

Note: f – Number of valid answers; f (%) – Valid percentage

The results in Table 1 show that 60% of general and subject teachers of Slovene use ICT in their Slovene lessons frequently (about twice a week). Only 1 teacher (.5%) never uses ICT in the classroom.

Use of ICT in Slovene Lessons

Table 2. Frequency and Structure Table of the Frequency of Integration of ICT Devices

ICT Devices	f	f (%)
Computer	144	75.8
Laptop	59	31.1
LCD Projector	156	82.1
Mobile phone	36	18.9
Tablet	40	21.1
Interactive whiteboard	72	37.9
Television	10	5.3
Other	0	0

Note: f – Number of valid answers; f (%) – Valid percentage

We were interested in what forms of ICT are used most often by teachers in Slovene lessons. Table 2 shows that most teachers use an LCD projector (82.1%) and a computer (75.8%) when teaching Slovene. We were interested to see which e-learning materials teachers used most often in Slovene lessons.

Table 3. Frequency and Structure Table of the Frequency of Integration of E-Materials

E-materials	Always		Frequently		Occasionally		Rarely		Never		Total	
	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)
E-textbook	22	11.6	53	27.9	40	21.1	35	18.4	40	21.1	190	100
E-workbook	45	23.7	69	36.3	38	20	14	7.4	24	12.6	190	100
E-reading textbook	15	7.9	35	18.4	46	24.2	31	16.3	63	33.2	190	100
Audio recordings	16	8.4	79	41.6	74	38.9	18	9.5	2	1.1	190	100
Videos	15	7.9	73	38.4	77	40.5	22	11.6	3	1.6	190	100
Interactive worksheets	2	1.1	21	11.1	53	27.9	60	31.6	54	28.4	190	100
Quizzes	0	0	32	16.8	75	39.5	60	31.6	23	12.1	190	100
Other	0	0	8	4.2	5	2.6	1	.5	15	7.9	29	100

Note: f – Number of valid answers; f (%) – Valid percentage

The greatest number of teachers (27.9%) use *e-textbooks* frequently in Slovene lessons, while the smallest number of teachers (11.6%) always use them. The percentage of teachers who use e-textbooks occasionally, rarely or never is 60.6%. Teachers who frequently or always use *e-workbooks* in their Slovene lessons was 60%. 20% of teachers use them occasionally, while the remaining 20% of teachers rarely or decide never to use them. The majority of teachers do not use *e-reading textbooks* in Slovene lessons (33.2%), while 24.2% of teachers choose to use them occasionally. *Audio recordings* are frequently or occasionally used in Slovene lessons by 80.5% of the teachers. 2 teachers (1.1%) never use them. Most teachers frequently or occasionally use *videos* in their Slovene lessons (78.9%). 3 teachers (1.6%) never use them. *Interactive worksheets* are 'rarely' used in Slovene lessons by about a third of the teachers (31.6%). Almost a third of the teachers (28.4%) never use them, while 2 teachers (1.1%) state that they always use them. 71.1% of the teachers use *quizzes* in Slovene lessons occasionally or rarely, 16.8% use them frequently, while 12.1% never use them. No teachers were found to always use them.

The Use of ICT in the Teaching of Slovene in Different Parts of the Lesson

Table 4. Frequency and Structure Table of the Frequency of ICT Integration in Different Parts of the Lesson

Part of the lesson	Always		Frequently		Occasionally		Rarely		Never		Total	
	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)
I use ICT as an introductory motivation.	2	1.1	59	31.1	78	41.1	42	22.1	9	4.7	190	100
I use ICT to present new learning material.	7	3.7	98	49.6	61	32.1	20	10.5	4	2.1	190	100
I use ICT to repeat and consolidate the learning material.	7	3.7	111	58.4	52	27.4	13	6.8	7	3.7	190	100
I use ICT to assess the learning material.	1	.5	6	3.2	13	6.8	53	27.2	117	61.6	190	100
I use ICT in the final part of the lesson.	1	.5	29	15.3	87	45.8	61	32.1	12	6.3	190	100
I integrate ICT into all parts of the lesson.	14	7.4	51	26.8	66	34.7	41	21.6	18	9.5	190	100

Note: f – Number of valid answers; f (%) – Valid percentage

Most teachers use ICT for *introductory motivation* in Slovene lessons occasionally (41.1%) or frequently (31.1%). The proportion of the teachers who rarely or never use ICT for introductory motivation is 26.8%, while 2 teachers always use ICT in the introductory part of the lesson (1.1%). Half of the teachers (51.6%) frequently use ICT when teaching Slovene

to present new learning material. 42.6% of the teachers use ICT occasionally or rarely in this part of the lesson. 7 teachers (3.7%) always use ICT to present new learning material, while 4 (2.1%) never use it. Almost two thirds of the teachers (58.4%) frequently use ICT in Slovene lessons to *repeat and consolidate learning material*. ICT is used occasionally or rarely for this purpose by more than a third of the teachers (34.2%). A smaller number of teachers always (3.7%) or never (3.7%) use ICT in this part of the lesson. Two thirds of the teachers (61.6%) never use ICT to *assess learning material*, and 27.2% rarely use ICT at that time. Only 10% of the teachers occasionally or frequently use ICT for assessments, while 1 teacher (.5%) states that ICT is always used for an assessment. Most teachers occasionally use ICT (45.8%) in the *final part of the lesson*, while 32.1% rarely use ICT in this part of the lesson. 15.3% of the teachers frequently use ICT in the final part of the lesson, 6.3% never use it, and only 1 teacher (.5%) always uses ICT in the final part of the lesson. Two thirds of the teachers (61.5%) frequently or occasionally use ICT in *all parts of the lesson when teaching* Slovene. 21.6% of the teachers rarely use it in all parts of the lesson, while 9.5% of the teachers never do. Only 7.4% of the teachers always use it in all parts of the lesson.

Use of ICT in Slovene Lessons for Individual Teaching Styles

Table 5. Frequency and Structure Table on the Frequency of ICT Integration in Different Teaching Styles

Teaching style	f	f (%)
I use ICT most often in frontal work.	147	77.4
I use ICT most often in individual work.	17	8.9
I use ICT most often when working in pairs.	5	2.6
I use ICT most often in group work.	21	11.1

Note: f – Number of valid answers; f (%) – Valid percentage

Table 5 shows that teachers use ICT most often in frontal work when teaching Slovene (77.4%). ICT is used most often in group work by 11.1% of teachers and in individual work by 8.9%. The smallest proportion of teachers (2.6%) use ICT most frequently when working in pairs.

Satisfaction of Teachers with Available ICT Devices, Tools and E-Materials

Table 6. Teachers' Satisfaction with Available ICT

N	M	Me	SD	Minimum	Maximum
190	3.44	3.00	.79	1	5

Note: N – Number; M – Mean; Me – Median; SD – Standard Deviation

Table 7. Frequency and Structure Table of Teachers' Satisfaction with Available ICT Devices, Tools and E-Materials

Satisfaction	f	f (%)
1 (dissatisfied)	3	1.6
2	7	3.7
3	103	54.2
4	58	30.5
5 (very satisfied)	19	10
Total	190	100

Note: f – Number of valid answers; f (%) – Valid percentage

The respondents rated their satisfaction with the availability of ICT devices, tools and e-materials with an average score of 3.44 ± .79 (table 6). Table 7 shows that more than half of the teachers (54.2%) rated their satisfaction with the availability of ICT devices, tools and e-materials as 3. As many as 30.5% of teachers rated their satisfaction as 4 and 10% as 5, which means that they are very satisfied. Only 3.7% of teachers gave a grade of 2, while 3 teachers (1.6%) were not satisfied with the availability and gave a grade of 1.

Teachers' Ability to Integrate ICT in Slovene Lessons

Table 8. Teachers' Competence in ICT Integration

N	M	Me	SD	Minimum	Maximum
190	3.35	3.00	.74	1	5

Note: N – Number; M – Mean; Me – Median; SD – Standard Deviation

Table 9. Frequency and Structure Table of Teachers' Competence in ICT Integration

Competence	f	f (%)
1 (not competent)	3	1.6
2	5	2.6
3	121	63.7
4	45	23.7
5 (very competent)	16	8.4
Total	190	100

Note: f – Number of valid answers; f (%) – Valid percentage

The respondents rated their ability to integrate ICT in Slovene lessons with an average grade of 3.35 ± .74 (table 8). Table 9 shows that more than two thirds of teachers (63.7%) rated their own competence in using ICT in Slovene lessons as 3. About a third of teachers (32.1%) rated their own competence as 4 or 5. The proportion of teachers who rated their competence as 2 or 1 is 4.2%.

Integration of ICT in Distance Learning of Slovene During the COVID-19 Epidemic

Table 10. Frequency and Structure Table of the Frequency of ICT Integration during the COVID-19 Epidemic

Frequency of ICT integration during the COVID-19 epidemic	f	f (%)
Always	127	66.8
Frequently (about twice a week)	50	26.3
Occasionally (about twice a month)	3	1.6
Rarely (less than twice a month)	5	2.6
Never	5	2.6
Total	190	100

Note: f – Number of valid answers; f (%) – Valid percentage

The results in Table 10 show that the majority of general and subject teachers always used ICT in their Slovene lessons (66.8%) during the COVID-19 epidemic. 26.3% of the teachers used ICT frequently (about twice a week) and 5.2% rarely (less than twice a month) or never. Only 3 teachers (1.6%) stated that ICT was used occasionally (about twice a month) during the COVID-19 epidemic. The results are to be expected, as education during the COVID-19 epidemic took place in an online environment and the use of ICT was a prerequisite for the successful implementation of the pedagogical process (Logaj, 2020; Rupnik Vec, 2020).

Integration of ICT in Slovene Lessons by General and Subject Teachers

Frequency of ICT Integration

We were interested to see if there were statistically significant differences between the general and subject teachers in terms of the frequency of ICT integration in Slovene lessons. The chi-square test of the independence hypothesis (χ^2) was used to process the data on the frequency of integration of ICT in Slovene lessons according to the teaching level. Since the conditions for the chi-square test were not met (theoretical frequencies less than 5 may not exceed 20%; no theoretical frequency may be less than 1), the Kullback 2 test was used. Null hypothesis: There are no statistically significant differences between general and subject teachers of Slovene in terms of the frequency of ICT integration in Slovene lessons.

Table 21. Chi-Square Test Calculation for the Frequency of ICT Integration by Teaching Level

		Frequency of integration											
		Always		Frequently		Occasionally		Rarely		Never		Total	
		f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)
Teaching level	General	15	14.7	56	54.9	21	20.6	10	9.8	0	0	102	100
	Subject	13	14.8	58	65.9	12	13.6	4	4.5	1	1.1	88	100
Total		28	14.7	114	60	33	17.4	14	7.4	1	.5	190	100

	Value	Degree of freedom	Risk level (α)
Pearson chi-square test	5.201[a]	4	.267
Kullback 2Î test	5.674	4	225
Number of respondents	190		

a. 2 cells (20%) have an expected computation of less than 5. The lowest expected computation is .46.

The value of the Kullback 2Î -test is not statistically significant ($2\hat{I}$ = 5.066; df = 4; α = .225). We retain the null hypothesis. There are no statistically significant differences between general and subject teachers of Slovene in terms of the frequency of ICT integration in Slovene lessons.

Frequency of ICT Integration in Slovene Lessons According to the Teacher's Age

We were interested to see if there were statistically significant differences in the frequency of ICT integration in Slovene lessons between general and subject teachers of Slovene depending on their age. The chi-square test of the independence hypothesis (χ^2) was used to process the data on the frequency of ICT integration in Slovene lessons according to the age of teachers. Since the conditions for the chi-square test were not met (theoretical frequencies of less than 5 must not be more than 20%; no theoretical frequency must be less than 1), we used the Kullback 2Î-test. Null hypothesis: There are no statistically significant differences in the frequency of ICT integration in Slovene lessons between general and subject teachers of Slovene according to their age.

Table 12. Chi-Square Test Calculation for the Frequency of ICT Integration by Teacher Age

		Frequency of integration											
		Always		Frequently		Occasionally		Rarely		Never		Total	
		f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)
Teacher age	30 years or less	9	20.5	22	50	7	15.9	5	11.4	1	2.3	44	100
	31–49 years	12	12	65	65	18	18	5	5	0	0	100	100
	50 years or more	7	15.2	27	58.7	8	17.4	4	8.7	0	0	46	100
Total		28	14.7	114	60	33	17.4	14	7.4	1	.5	190	100

	Value	Degree of freedom	Risk level (α)
Pearson chi-square test	7.874[a]	8	.446
Kullback 2Î test	7.400	8	.494
Number of respondents	190		

a. 5 cells (33.3%) have an expected computation of less than 5. The lowest expected computation is .23.

The value of the Kullback's 2Î test is not statistically significant ($2\hat{I}$ = 7,400; df = 8; α = .494). We retain the null hypothesis. There are statistically no significant differences in the frequency of ICT integration in Slovene lessons among general and subject teachers of Slovene according to their age.

Ability to Integrate ICT in Slovene Lessons According to Teachers' Years of Service

We wanted to know whether there are statistically significant differences in the ability to integrate ICT into Slovene language teaching between general and specialised Slovene teachers. The chi-square test of the independence hypothesis (χ^2) was used to process ICT integration competence data according to the teachers' years of service. Since the conditions for the chi-square test were not met (theoretical frequencies of less than 5 must not be more than 20%; no theoretical frequency must be less than 1), we used the Kullback 2Î-test.

Null hypothesis: There are no statistically significant differences in the ability to integrate ICT in Slovene lessons between general and subject teachers of Slovene according to their years of service.

Table 13. Chi-Square Test Calculation for ICT Integration Competence by Teachers' Years of Service

		Teacher competence											
		1		2		3		4		5		Total	
		f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)	f	f (%)
Years of service	1–3 years	1	2.7	1	2.7	19	51.4	10	27	6	16.2	37	100
	4–6 years	1	4.3	0	0	12	52.2	7	30.4	3	13	23	100
	7–18 years	0	0	1	2.1	29	61.7	13	27.7	4	8.5	47	100
	19–30 years	1	1.8	1	1.8	46	83.6	5	9.1	2	3.6	55	100
	31–40 years	0	0	2	7.1	15	53.6	10	35.7	1	3.6	28	100
Total		3	1.6	5	2.6	121	63.7	45	23.7	16	8.4	190	100

Table 13. Continued

	Value	Degree of freedom	Risk level (α)
Pearson chi-square test	23.969[a]	16	.090
Kullback 2Î Test	25.678	16	.059
Number of respondents	190		

a. 15 cells (60%) have an expected computation of less than 5. The lowest expected computation is .36.

The value of the Kullback's 2Î-test is not statistically significant (*2Î* = 25.678; *df* = 16; *α* = .059). We retain the null hypothesis. There are no statistically significant differences in the ability to integrate ICT in Slovene lessons between general and subject teachers of Slovene according to their years of service.

Discussion

Based on the results, it can be generalised that general and subject teachers of Slovene frequently (60%) use ICT in Slovene lessons. The proportion of teachers who always or occasionally (14.7% and 17.4% respectively) use ICT in Slovene lessons is also higher than the percentage of teachers who rarely (7.4%) or never (.5%) decide to use it. Similar findings regarding the frequent use of ICT in Slovene lessons were also confirmed by Gerlič (2011) and Pajk (2012). Skumavc (2021) also notes the frequent integration of ICT in Slovene lessons, from two to three times a week.

General and subject teachers of Slovene most often use an LCD projector (82.1%), a computer (75.8%) and an interactive whiteboard (37.9%) when teaching Slovene. They are less likely to use a laptop (31.1%), a tablet (21.1%) or a mobile phone (18.9%), and rarely use a television (5.3%) in their Slovene lessons. Similar results were also found by Skumavc in her research (2021). The use of an interactive whiteboard is also common (37.9%). When teaching languages, Urbančič et al. (2021) recommend the use of these ICT devices. About a third of teachers (31.1%) use a laptop, 21.1% a tablet, 18.9% a mobile phone, while the smallest proportion of teachers (5.3%) use a television in teaching Slovene There were no responses under 'other'. The results of the research conducted by Nolimal (2017) also showed that students mostly use a computer at school, followed by: mobile phone, tablet, digital camera and finally a camera. The most frequent use of the computer was also found by Hubalovska et al. (2015). A study by Lah Majkić (2017) showed that students use a computer only a few times a month in Slovene lessons.

Regarding the integration of e-materials in Slovene lessons, the results show that teachers most often use e-workbooks, audio recordings and videos. E-textbooks, quizzes and e-reading textbooks are used less frequently, and they rarely use interactive worksheets etc. or their own e-materials. Rutar Leban (2015) found in her research that the use of e-textbooks has a positive effect on students' motivation, attention and activity, but has no effect on their independent work. The research on the use of classical and e-textbooks showed a positive attitude of students towards the use of e-textbooks. 34.3% of the students surveyed believe that they would understand the content discussed in school better if they had the opportunity to use an e-textbook. An interesting fact is that as many as 39.1% of students prefer to learn from a classic textbook at home (Kreuh & Sambolić Beganović, 2015). In her research, Skumavc (2021) found that teachers teaching Slovene in higher grades are more likely to use e-workbooks. Skumavc (2021) found that they are used more frequently by teachers teaching Slovene in higher grades. The results of the research conducted by Knez (2015) showed that students who discussed the poem through an e-reading textbook understood it much better and found it easier to form a short text later on, compared to students who got to know the poem through printed text. Urbančič et al. (2021) recommend the use of audio recordings mainly in the search for different information, i.e. as a starting point for conversation and to motivate students for further work. Teachers can also create an audio recording themselves and publish it, e.g. in an online classroom, to which all students have access, and use it later as teaching material (Oblak, 2013). Bregač (2023) emphasises that the appropriate use of audio recordings can significantly contribute to better achievement of goals in teaching Slovene. Čuk et al. (2021) recommend the use of videos in Slovene lessons, especially with the aim of promoting creativity. Bregač (2023) stresses that students learn to evaluate and use information critically through videos. Retelj (2015) encourages the use of various e-materials, including interactive worksheets, which enable students to acquire knowledge and develop skills through research, observation and listening. The author emphasises that such worksheets are suitable for all students as they allow for individualisation and differentiation. Skumavc (2021) found that teachers often create and use quizzes themselves because they allow students to check their knowledge in real time and receive immediate feedback on correct or incorrect answers. Lipovec et al. (2019) add that quizzes are a fun way to consolidate knowledge and encourage students to participate and achieve better results. Žveglič (2012) draws attention to the limitations of quizzes in developing communicative skills, as they do not allow for monitoring and quantifying all elements of students' skills in all their levels of knowledge.

General and subject teachers of Slovene use ICT most often in the teaching of Slovene for the repetition and consolidation of learning material and for the presentation of new learning material. ICT is used less often as an introductory motivator and there are few teachers who use ICT in all parts of the lesson. Teachers rarely use ICT in the final part of a lesson, and rarely to assess the learning material. Lah Majkić (2017) states that an appropriate and interesting introductory activity in the teaching of Slovene is especially important in literature classes. The author recommends the use of various e-

materials and videos, which the teacher can import to the interactive whiteboard. In his research, Pajk (2012) found that teachers very frequently (58%) use ICT when presenting teaching material. Lah Majkić (2017) also found that the use of an interactive whiteboard for visual reinforcement of new learning material works well in Slovene lessons. The results of some research (Gerlič, 2011; Škabar, 2010) show that the most common use of ICT is in the repetition and consolidation of learning material, and Skumavc (2021) perceives less involvement of ICT in this part of the lesson. For repetition and consolidation, it is recommended to use various e-materials, especially quizzes, which allow for active participation of all the students (Lah Majkić, 2017). Kreuh and Sambolić Beganović (2015) and Preskar (2015) found that more than half of the teachers use various e-materials and e-textbooks for repetition and consolidation. Kreuh and Sambolić Beganović (2015) and Nolimal (2017) also perceived the infrequent use of ICT in knowledge assessment.

The results show that teachers teaching Slovene at general or subject level use ICT most often in frontal work (77.4%). Teachers use ICT less frequently in group work (11.1%) and individual work (8.9%), while it is least frequently used in pair work (2.6%). Similarly, Skumavc (2021) found that the most frequent use of ICT was in frontal work. The results of the research conducted by Gerlič (2011) showed that the most frequent use of ICT was in individual forms of learning (48.3%), and the least frequent in group forms of learning (25.4%). Teachers who participated in the Škabar survey (2010) also used ICT most often in individual work (73.5%), as it allows students to complete activities at their own pace. Based on the results, we can conclude that teachers use ICT mainly as a means of support in their work, as it is mostly used in frontal teaching styles.

Based on the results, we can conclude that general and subject teachers of Slovene are moderately satisfied with the available ICT devices, tools and e-materials, as more than half of them (54.2%) rated their satisfaction on a 5-point rating scale with a score of 3. We can also generalise that teachers are more satisfied than dissatisfied with the available ICT devices, tools and e-materials, since as many as a third (30.5%) rated their satisfaction with a score of 4, and 10% are very satisfied and rated their satisfaction with a score of 5. On the other hand, only 2.7% of teachers rated their satisfaction as 2 and 3 teachers (1.6%) expressed dissatisfaction (rating 1). Gerlič (2011) found in his research that almost every classroom was equipped with a computer and an LCD projector, but he also highlighted the need for better computer equipment in classrooms as, at that time, only 15% of primary schools in Slovenia had appropriate equipment and an interactive whiteboard. Between 2007 and 2012, an increase in the use of ICT in Slovene lessons was observed, which the author Žveglič (2012) attributed to the better equipment, both software and hardware, in primary schools. Research also shows that teachers are satisfied with e-textbooks and the possibilities they offer (e.g. multiple viewing of animations, hints for solutions and the possibility of underlining etc.) (Filipčič & Deutsch, 2014; Preskar, 2015). A survey conducted by the European Commission between 2017 and 2018 showed that Slovenian primary schools were digitally better equipped than the EU average (59% in Slovenia and 35% in the EU). This means that primary schools had a good ratio between the number of computers and the number of students in the classroom. In recent years, and especially in 2022, Slovenia has invested in the digital infrastructure of schools, which shows that schools are still well equipped and connected (European Commission, 2022).

The results also show that general and subject teachers of Slovene feel moderately competent to integrate ICT in Slovene lessons. The majority of teachers (63.7%) rated their own competence on a 5-point scale as 3. It can also be generalised that teachers are more qualified than unqualified to integrate ICT in Slovene lessons, as about a third (32.1%) rated their own competence as 4 or 5, and the proportion of teachers who rated their own competence as 2 or 1 is only 4.2%. The Gerlič survey (2011) showed that teachers have shown interest in ICT integration education in the past, with 78.2% of teachers attending various courses on the use of ICT in 2009.

General and subject teachers of Slovene always (66.8%) used ICT in distance learning during the COVID-19 epidemic. Furthermore, a higher proportion of teachers (27.9%) used ICT frequently or occasionally compared to the proportion of teachers who rarely or never used ICT (5.2%). In his research, Petek (2021) also found that, during this period, general and subject teachers of Slovene mostly used ICT in every lesson (59%). 25% of teachers used ICT frequently, 11% occasionally and 5% rarely.

There are no statistically significant differences between general and subject teachers of Slovene in terms of the frequency of ICT integration in Slovene lessons. There are also no statistically significant differences in the frequency of ICT integration in Slovene lessons between general and subject teachers of Slovene according to their age. There are also no statistically significant differences in the ability to integrate ICT in Slovene lessons between general and subject teachers of Slovene according to their years of service.

Conclusion

The development of digital literacy is one of the general objectives defined in the Slovene (first language) curriculum. This objective emphasises the importance of developing the ability to use ICT and represents one of the key skills for lifelong learning. In the teaching of Slovene, ICT is used to achieve learning objectives, promote student motivation, search, evaluate and process different information, design and adapt materials, and promote collaborative learning (Ministry of Education, Science and Sport, 2018). ICT enables the integration of different forms and methods of work, and its appropriate use can significantly contribute to the creation of a better learning environment. The results contributed

to the further development of the didactics of Slovene (first language) and the prevalence of the use of ICT in the teaching of Slovene (first language) in primary schools.

Recommendations

A recommendation for further research could be that our author's questionnaire should also be completed by first language teachers in other European and non-European countries, which would give us an insight into the comparison between countries; a similar questionnaire could be completed by teachers of other subjects where we could then compare the results and find the similarities and differences between individual subject areas regarding the integration of ICT in teaching. The research could also be supported by observing Slovene lessons and asking students about their opinions on the use of ICT in Slovene lessons and their feelings when learning with ICT. The following recommendations are proposed for general and subject teachers of Slovene: (a) ICT should be used to implement a better learning process and to facilitate the achievement of learning goals; (b) ICT enables the inclusion of active learning methods and forms of work that include activities at higher taxonomic levels of knowledge; (c) ICT is used to encourage the activities of all students, regardless of their level of knowledge, abilities, learning styles, motivation and needs; (d) ICT is also used to promote modern ways of working: collaborative learning, research teaching, problem-based teaching, reverse learning, etc.). (e) Students should be taught to use ICT safely and responsibly, especially when using the internet and social media.

Limitations

When analysing the results, we found that the survey could be improved with additional questions about the way ICT is used. Different statements could be made about the integration of ICT in Slovene lessons and respondents would indicate the frequency with which they agreed with each statement. In addition to the frequency of integration of individual ICT devices and e-materials that we have explored in our research, we would gain a deeper insight into how teachers actually use ICT in Slovene lessons. The sample could be even more representative if more general and subject teachers of Slovene were included. As our sample was not random, we had no control over the country-wide distribution.

Ethics Statements

The studies involving human participants were reviewed and approved by the University of Ljubljana. The participants provided their written informed consent to participate in this study.

Authorship Contribution Statement

Petek: Concept and design, drafting manuscript, critical revision of manuscript, revision of manuscript, editing/reviewing, supervision, final approval. Prelovec: writing, data acquisition, data analysis, interpretation.

References

Alemerich, G., Orellana, N., Suárez-Rodríguez, J., & Díaz-García, I. & (2016). Teachers' information on communication technology competences: A structural approach. *Computers & Education*, *100*, 110–125. https://doi.org/10.1016/j.compedu.2016.05.002

Alemu, B. M. (2015). Integrating ICT into teaching-learning practices: Promise, challenges and future directions of higher educational institutes. *Universal Journal of Educational Research*, *3*(3), 170–189. https://doi.org/10.13189/ujer.2015.030303

Alt, D. (2018). Science teachers' conceptions of teaching and learning, ICT efficacy, ICT professional development and ICT practices enacted in their classrooms. *Teaching and Teacher Education*, *73*, 141–150. https://doi.org/10.1016/j.tate.2018.03.020

Atsari, F. (2019). Learning styles and the role of technology in second language learning. In Fitriah (Ed.), *Proceedings of the International Conference on English Language Teaching (ICONELT 2019)* (pp. 23–27). Atlantis Press. https://doi.org/10.2991/assehr.k.200427.006

Baloh, B. (2018). Raba IKT pri spodbujanju sporazumevalne zmožnosti v predšolskem in zgodnjem šolskem obdobju [Use of ICT in promoting communicative capacity in pre-school and early school years]. In S. Čotar Konrad & T. Štemberger (Eds.), *Strokovne podlage za didaktično uporabo informacijsko-komunikacijske tehnologije in priporočila za opremljenost šol* (pp. 77–91). Založba Univerze na Primorskem. https://t.ly/EOwAF

Brečko, B. N. (2016). Spremenjene pedagoške prakse z uporabo IKT [The changes in the pedagogical practice through the introduction of ICT]. *Andragoška Spoznanja, 22*(4), 43–56. https://doi.org/10.4312/as.22.4.43-56

Bregač, Š. (2023). Uporaba digitalne tehnologije pri pouku slovenščine [Use of digital technology in the teaching of slovene]. In I. Breznik (Ed.), *Digitalna tehnologija pouk razvija: zbornik prispevkov* (pp. 129–147). Zavod RS za Šolstvo. https://t.ly/Bkru7

Breznik, I. (2019). *Priporočilo za razvoj primerov obetavne rabe v projektu Inovativna učna okolja podprta z IKT* [Recommendation for the development of promising use cases in the project innovative learning environments supported by ICT]. Zavod RS za Šolstvo. https://t.ly/QzRyg

Čuk, A., Bregač, Š., & Hedžet Krkač, M. (2021). *Smernice za uporabo digitalne tehnologije pri predmetu Slovenščina* [Guidelines for the use of digital technology in Slovene lessons]. Zavod RS za Šolstvo. https://t.ly/E39YB

Das, K. (2019). The role and impact of ICT in improving the quality of education: an overview. *International Journal of Innovative Studies in Sociology and Humanities, 4*(6), 97–103. https://t.ly/ySFMW

European Commission. (2022). *Education and training monitor 2022 – Slovenia*. Publications Office of the European Union. https://doi.org/10.2766/502253

Filipčič, V., & Deutsch, T. (2014). *Učna gradiva za doseganje izobraževalnih ciljev v osnovni šoli* [Innovative learning environments – the role of ICT]. *Vzgoja in Izobraževanje, 45*(3), 61–66.

Flogie, A., & Aberšek, B. (2019). *Inovativna učna okolja – vloga IKT* [Innovative learning environments – the role of ICT]. Zavod Antona Martina Slomška. https://t.ly/WYtVi

Fu, J. S. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education and Development Using Information and Communication Technology, 9*(1), 112–125. https://t.ly/uQdrt

Gerlič, I. (2011). *Stanje in trendi uporabe informacijsko komunikacijske tehnologije (IKT) v Slovenskih osnovnih šolah. Poročilo o raziskovalni nalogi za leto 2011*. [The state and trends of the use of information and communication technology (ICT) in Slovenian primary schools. Research assignment report 2011]. Univerza v Mariboru. https://t.ly/q2vjN

Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science, 1*(2), 171–191. https://doi.org/10.21890/ijres.23596

Gorozidis, G., & Papaioannou, A. G. (2014). Teachers' motivation to participate in training and to implement innovations. *Teaching and Teacher Education, 39*, 1–11. https://doi.org/10.1016/j.tate.2013.12.001

Hoesni, W., Abu Hassan, F. N., Ajmain, T., & Rosli, N. (2020). The effects of ICT towards students' attitude. *Khazanah Pendidikan Islam, 2*(2), 90–99. https://doi.org/10.15575/kp.v2i2.9270

Hofman, A. (2022). Razvijanje produktivnih zmožnosti pri angleščini s pomočjo IKT [Developing productive capabilities in english with the help of ICT]. In T. Štemberger, S. Čotar Konrad, S. Rutar, & A. Žakelj (Eds.), *Oblikovanje inovativnih učnih okolij* (pp. 367–380). Založba Univerze na Primorskem. https://doi.org/10.26493/978-961-293-139-1.367-380

Hubalovska, M., Manenova, M., & Burgerova, J. (2015). Selected problems of relation of the teachers to modern technology at the primary education. *Procedia – Social and Behavioral Sciences, 191*, 2062–2067. https://doi.org/10.1016/j.sbspro.2015.04.621

Kimmons, R. (2018). *K-12 technology frameworks*. EdTech Books. https://t.ly/cGigv

Kingsley, N. U., & Patience, U. (2019). The concept and application of ICT to teaching/learning process. *International Research Journal of Mathematics, Engineering and IT, 6*(2), 10–22.

Knez, Š. (2015). S tablico v vzporedna vesolja poučevanja [With the tablet to the parallel universes of teaching]. In A. Sambolić Beganović & A. Čuk (Ed.), *Kaj nam prinaša e-Šolska torba: zbornik zaključne konference projekta e-Šolska torba* (pp. 230–235). Zavod RS za Šolstvo. https://t.ly/FWNpa

Krajnc Ivič, M., Voršič, I., & Brčić Petek, T. (2021). Oblikovanje nalog in vaj za področje besedil [Creation of tasks and exercises in the field of texts]. In N. Ulčnik (Ed.), *Slovenščina na dlani* (pp. 65–83). Univerzitetna Založba. https://doi.org/10.18690/978-961-286-521-4

Kreuh, N., & Sambolić Beganović, A. (2015). Na poti k e-kompetentni šoli preko e-šolstva, e-učbenikov in e-šolske torbe [On the way to an e-competent school through e-learning, e-textbooks and e-school bag]. In A. Sambolić Beganović & A. Čuk (Eds.), *Kaj nam prinaša e-Šolska torba: zbornik zaključne konference projekta e-Šolska torba* (pp. 69–81). Zavod RS za Šolstvo. https://t.ly/cAzwN

Lah Majkić, K. (2017). Uporaba e-gradiv pri pouku Slovenščine [Use of e-materials in Slovene lessons]. In S. Zwitter & N. Bucik (Ed.), *E-gradiva kot bližnjica do uspeha?: e-zbornik Bralnega društva Slovenije ob 12. strokovnem posvetovanju 8. septembra 2017* (pp. 94–99). Bralno Društvo Slovenije.

Lavrenova, M., Lalak, N. V., & Molnar, T. I. (2020). Preparation of future teachers for use of ICT in primary school. *Revista Romaneasca Pentru Educatie Multidimensionala, 12*(1), 185–195. https://doi.org/10.18662/rrem/12.1sup1/230

Lipovec, A., Krašna, M., & Pesek, I. (2019). Inovativni in sodobni pristopi k učenju in poučevanju [Innovative and modern approaches to learning and teaching]. In A. Lipovec, M. Krašna, & I. Pesek. (Ed.), *Izzivi in dileme osmišljene uporabe IKT pri pouku* (pp. 5–12). Univerzitetna Založba Univerze v Mariboru. https://t.ly/kVMeZ

Logaj, V. (Ed.). (2020). *Vzgoja in izobraževanje v Republiki Sloveniji v razmerah, povezanih s covid-19: modeli in priporočila* [Education in the republic of Slovenia in the situation related to COVID-19: Models and recommendations]. Ministrstvo za Izobraževanje, Znanost in Šport, Zavod RS za Šolstvo. https://t.ly/2wcFN

Mbarek, R., & El Gharby, J. E. (2013). A meta-analysis of e-learning effectiveness antecedent. *International Journal of Innovation and Applied Studies, 3*(1), 48–58. https://t.ly/XoOZK

Mićović Struger, L. (2021). Pouk e-slovenščine [Teaching e-slovene]. In N. Ulčnik (Ed.), *Slovenščina na dlani 4* (pp. 201–218). Univerzitetna Založba. https://doi.org/10.18690/978-961-286-521-4

Ministry of Education, Science and Sport. (2018). *Primary school programme. Slovene. Curriculum*. https://t.ly/7Kb0b

Nolimal, F. (2017). Osmišljena raba IKT, razvoj digitalnih kompetenc, temeljnih in višjih ravni bralne pismenosti; vpogled skozi projekte zavoda RS za šolstvo [Designed use of ICT, development of digital competences, basic and higher levels of reading literacy; insight through projects of the Institute of the Republic of Slovenia for Education]. In S. Zwitter & N. Bucik (Eds.), *E-gradiva kot bližnjica do uspeha?: e-zbornik Bralnega društva Slovenije ob 12. strokovnem posvetovanju 8. Septembra 2017* (pp. 49–62). Bralno Društvo Slovenije.

Oblak, M. (2013). Uporaba svetovnega spleta pri šolski interpretaciji v osnovni šoli [Using the world wide web in primary school school interpretation]. *Slovenščina v Šoli, 16*(1), 18–32.

Pajk, T. (2012). Ugotavljanje e-kompetenc pri učiteljih razrednega pouka [Determining e-competence in primary school teachers]. *Razredni Pouk, 14*(3), 51–56.

Pertovt, S. (2022). Poučevanje četrtega razreda med pandemijo [Fourth grade teaching during the pandemic]. In M. Željeznov Seničar (Ed.), *Izkušnje in izzivi vzgoje in izobraževanja v času epidemije: zbornik, III. Online mednarodna konferenca* (pp. 136–141). MiB. https://t.ly/qSDKC

Petek, T. (2013). Vloga in položaj Slovenščine v vzgojno-izobraževalnem procesu [The role and position of Slovene in the educational process]. *Pedagoška Obzorja, 28*(1), 32–44. https://t.ly/zCnye

Petek, T. (2021). The opinion of Slovene (first language) teachers on distance learning in primary schools. *CEPS Journal, 11,* 383–406. https://doi.org/10.26529/cepsj.1139

Ping, C., Schellings, G., & Beijaard, D. (2018). Teacher educators' professional learning: A literature review. *Teaching and Teacher Education, 75*(19), 93–104. https://doi.org/10.1016/j.tate.2018.06.003

Preskar, S. (2015). Spremljave pouka potrjujejo novo vlogo učiteljev [Class accompaniments confirm the new role of teachers]. In A. Sambolić Beganović & A. Čuk (Ed.), *Kaj nam prinaša e-Šolska torba: zbornik zaključne konference projekta e-Šolska torba* (pp. 89–91). Zavod RS za šolstvo. https://t.ly/TWklB

Retelj, A. (2015). Pouk tujih jezikov v luči e-gradiv in e-storitev: od poučevanja do učenja tujega jezika z IKT [Teaching foreign languages in the light of e-materials and e-services: From teaching to learning a foreign language with ICT]. *Vzgoja in Izobraževanje, 46*(2–3), 73–78. https://t.ly/jWodr

Rupnik Vec, T. (Ed.). (2020). *Analiza izobraževanja na daljavo v času prvega vala epidemije covida-19 v Sloveniji* [Analysis of distance learning during the first wave of the COVID-19 epidemic in Slovenia]. Zavod RS za Šolstvo. https://t.ly/WKBHq

Rutar Leban, T. (2015). Uvajanje in uporaba e-vsebin in e-storitev v osnovnih šolah in gimnazijah: vmesni rezultati spremljave pilotnih projektov [Introduction and use of e-content and e-services in primary schools and secondary schools: Interim results of monitoring pilot projects]. In A. Sambolić Beganović & A. Čuk (Eds.), *Kaj nam prinaša e-Šolska torba: zbornik zaključne konference projekta e-Šolska torba* (pp. 56–68). Zavod RS za Šolstvo. https://t.ly/VW9Zc

Salam, S., Zeng, J., Pathan, Z. H., Latif, Z., & Shaheen, A. (2018). Impediments to the integration of ICT in public schools of contemporary societies: a review of literature. *Journal of Information Processing Systems, 14*(1), 252–269. https://doi.org/10.3745/JIPS.04.0062

Samida Cerk, S. (2021). Sodobni izzivi izobraževanja na daljavo v okviru medpredmetnega povezovanja in inovativnih učnih okolij [Contemporary challenges of distance learning in the context of cross-curricular integration and innovative learning environments]. *Uporabna Informatika, 29*(2), 76–82. https://doi.org/10.31449/upinf.122

Škabar, B. (2010). Uporaba informacijske tehnologije v prvem triletju osnovne šole [Use of information technology in the first three years of primary school]. In *Zbornik 7. festivala raziskovanja ekonomije in managementa* (pp. 789–797). Fakulteta za Management. https://t.ly/i8WfF

Skumavc, A. (2021). *Uporaba informacijsko-komunikacijske tehnologije pri pouku slovenščine v prvem in drugem triletju osnovne šole* [Use of information and communication technology in the teaching of slovene in the first and second triad of primary school] [Master's thesis, University of Ljubljana]. Repozitorij Univerze v Ljubljani. https://t.ly/eL1aj

Štemberger, T., Čotar Konrad, S., Rutar, S., & Žakelj, A. (Ed.). (2022). Oblikovanje inovativnih učnih okolij [Designing innovative learning environments]. In T. Štemberger, S. Čotar Konrad, S. Rutar, & A. Žakelj (Eds.), *Oblikovanje inovativnioh učnih okolij* (pp. 9–11). Založba Univerze na Primorskem. https://doi.org/10.26493/978-961-293-139-1.9-11

Tondeur, J., Aesaert, K., Prestridge, S., & Consuegra, E. (2018). A multilevel analysis of what matters in the training of pre-service teacher's ICT competencies. *Computers & Education, 122*, 32–42. https://doi.org/10.1016/j.compedu.2018.03.002

Urbančič, M., Bevčič, M., Dagarin-Fojkar, M., Drožđek, S., Jedrinović, S., Luštek, A., Retelj, A., & Radovan, M. (2021). *Strokovne podlage za didaktično uporabo IKT v izobraževalnem procesu za področje jezikov*. Založba Univerze. https://t.ly/c3nxa

Žveglič, M. (2012). Umeščanje informacijsko-komunikacijskih tehnologij kot integralnega dela pouka slovenščine [Placement of information and communication technologies as an integral part of slovene lessons]. *Slovenščina v Šoli, 15*(2), 13–23. https://t.ly/TMlvE