

The Relationship Between Teachers' Professional Competences and Their Perspectives on the Implementation of ICT in Art Instruction

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Abstract

Rapid changes and the digitalisation of society present new challenges for the education system, making the continuous development of teachers' professional competences a necessity if quality education is to be sustained. In the context of teaching art, the use of ICT contributes to the construction of a modern educational environment and serves as a means of enriching student experiences. The aim of this research was to examine class teachers' (N=121) perspectives on the application of information and communication technology (ICT) in art instruction and their correlation to teachers' age, education degree, professional status and self-assessment of professional competences. The results indicate that teachers' perceptions of using ICT in art classes are highly positive, especially regarding student motivation, the media's visual appeal, and the availability of art content. Statistically significant differences were observed with regard to the type of teacher education and the correlations between their perspectives on ICT and self-assessment of professional competences, especially those regarding digital tools and modern teaching strategies. These results align with relevant source theories that emphasise the importance of teachers' competencies for the successful integration of ICT into up-to-date art instruction and highlight the need for continuous professional development.

Key words: art; digital literacy; information and communication technology; professional competences; teachers' perspectives

Introduction

Since teachers directly influence student achievement through their actions, they assume a central role in the realisation of educational goals in general, as well as in the field of visual art – i.e., art instruction specifically. Jurić (2007) considered teachers' competences and the quality of education as principal factors that affect the level of students' educational outcomes. Darling-Hammond et al. (2005) found a positive correlation between teacher quality and student achievement in primary school. According to the European Commission (European Commission, 2018), learning quality is reflected in the professional work of teachers, which is reflected in the fact that European countries have been investing for a time now in teachers' professional development with the aim of realising one of the goals of the Lisbon strategy – the increase in the quality of education and professional training at all levels (Council of the European Union, 2000; Vizek-Vidović & Domović, 2013; Symeonidis, 2018). Excellence in the teaching profession is primarily achieved through the development of a professional competence framework (Vizek-Vidović, 2009; European Commission, 2020), which provides guidelines for overall professional development by clearly identifying teachers' professional responsibilities and expectations (Sanchez-Tarazaga & Matarranz, 2023). No defined framework of teacher competences exists in the Republic of Croatia, but the development of competences is regulated by the Croatian Qualification Frame (CQF), which establishes standards based on learning outcomes and aligns them with the needs of the market and society (MZO, 2017). The term competence has been defined by many authors, but there is no unified definition. Keuffer (2010) outlined competences in terms of professional knowledge, personal beliefs, and motivational directions. Spajić-Vrkaš et al. (2001) differentiated between subject-specific, pedagogic-methodological, and psychological teacher competences. Tuning (2006) determined general or generic competences, shared by all and not determined by profession, and profession-specific competences. Jurčić (2012) examined teachers' pedagogical competences through the prism of subject domains, the methodology of designing subject curricula, the organisation and implementation of the education process, shaping classroom settings, determining student achievement, and forming models of educational partnerships with parents. Competencies are developed throughout our lives through formal, non-formal, and informal learning, wherein they are subject to evaluation and susceptible to permanent development and adjustment in accordance with personal and professional needs (European Commission, 2018).

Teachers' professional competences in art instruction

Alongside general competences pertaining to planning, implementation and evaluation of instruction, to conduct art classes, teachers should also develop specific competences regarding visual literacy, aesthetic sensibility and student creative expression, since

precisely those skills facilitate students' deeper understanding and interpretation of artworks and development of their own artistic expression (Županić Benić, 2011). As an ability to understand, interpret, and create visual messages, visual literacy is becoming a key competence of the 21st century, particularly in the educational context, where visuals and digital media are assuming an increasingly important role (Supšáková, 2020). In art classes, teachers' professional competences (Županić Benić, 2017) affect quality instruction (Palekčić, 2008) and the design of an incentive and comprehensive teaching process. In modern schools, a competent teacher is therefore expected to conduct student-focused classes, meaning the subject curriculum must be adjusted to students' needs and interests (Županić Benić, 2017, p. 28). Art classes entail learning the visual art language, i.e., students getting to know and use various techniques of artistic expression, which, in turn, motivates the development of creativity, visual literacy, and aesthetic sensibility (Özsoy & Sarıbaşı, 2021; Birša et al., 2022). The ICT dimension of teacher competence has recently gained importance, especially in visual art, where digital tools are becoming a means of creating, expressing, and presenting artworks (European Commission – DigCompEdu, 2017). This technology provides students with opportunities to use animation, digital illustration and multimedia as forms of creative expression. The present study focused on teachers' professional competence in implementing ICT in visual art classes. In that, media and multimedia serve as instructional means, but their true value comes to the fore only when they are used for teaching and learning, as well as for student art expression (Herceg et al., 2010). The theoretical framework DigCompEdu (European Commission, 2017) clearly defines the levels of teachers' ICT competences and their application in practice, including the ability to select, implement, and evaluate digital tools in line with the established pedagogical goals. Tot and Klapan (2008) considered that key domains of teacher competences, which require development through professional education, include the application of information and communication knowledge and technologies in learning and instruction, and the ability to choose and use high-quality sources of information. Art teachers' digital literacy, therefore, becomes an indispensable part of their professional competences, although in practice it is often limited by insufficient infrastructure, a lack of professional education, and poor integration of technology into art curricula (Ge Tai & Mohd Nasir, 2024).

The Implementation of Information and communication technology in art classes

The use of information and communication technology (ICT) in art teaching has the potential to enrich students' educational experience and shape modern, student-directed education environments. Clark-Wilson (2014) noted that digital technologies can improve relationships among teachers, students, and subject matter, thereby fostering cooperative, interactive classes. ICT is not seen only as a technological means but also as a pedagogical tool that provides students with opportunities for active participation

in a digital society, along with the development of creativity, technical skills and critical thinking. According to the European Commission (DigCompEdu, 2017), teachers' competences for the use of ICT in class involve not only the technical use of digital tools but also the ability of pedagogically comprehensive integration of ICT with the goal of stimulating active student participation and quality teaching. Hilčenko et al. (2018) pointed out that the use of ICT promotes individualisation in the classroom and increases student engagement. Despite the recognised advantages, numerous challenges impede the broader implementation of ICT in art classes. One of the main challenges entails the standpoints and levels of digital literacy of teachers themselves. UNESCO (2008) emphasised that teachers' professional development is key to the effective use of technology, as the mere presence of technical equipment in schools does not guarantee quality instruction if teachers lack the related pedagogical competences. In modern art education, digital literacy is becoming a component of visual literacy since students increasingly communicate via images, videos and interactive media. According to Duncum (2010), art education should entail digital media so students can critically interpret and create content in a multimedia environment. Duncan described the inclusion of ICT in art education (2010) as a way for young people to shape, communicate, and interpret the world that surrounds them.

Teachers' perspectives on the use of ICT in art classes

Teachers' perspectives on the use of ICT in art instruction are a key factor in its successful integration in art classes. Although technical infrastructure and institutional support also play a significant role in this process, research has shown that teachers' personal perspectives and perceptions are often conclusive to whether and how the ICT is used (Ertmer, 1999). Ilić et al. (2017) reiterated that teachers' views and understanding of the value of digital tools are crucial for their successful integration in art education. These attitudes are not fixed but are shaped by experience, expertise, prior education, and generational differences. For example, teachers' age is often cited as a factor influencing their openness to new technologies, with younger teachers showing greater readiness to use them (Tondeur et al., 2008; Tondeur et al., 2017). Furthermore, a higher professional status (e.g., mentor, counsellor) can be a precursor to greater work autonomy and the inclusion of innovative teaching approaches, including digital ones. At the same time, the length and level of formal education can contribute to differences in teacher perceptions of their technological readiness and ability to use ICT. The relevant research has proven that some teachers express concerns about the use of ICT diminishing the immediacy of art expression and limiting the development of practical skills (Coleman & Cramer, 2015). Rahmat & Au (2019) stated that teachers at times perceive ICT as a threat to the authenticity of art creation, which can lead to them resisting its implementation. Snyder and Bulfin (2007) stressed that digital literacy in art is not merely a technical skill but a part of a wider communication and creative

framework involved in the development of student competencies in a digital society. Phelps and Maddison (2008) also noted that teachers have different approaches to integrating ICT: while some perceived its innovative potential, others considered that technology is not in accordance with the nature of art and would never support the development of student creativity through art expression. In its recommendations for lifelong learning, the European Commission (2018) lists digital competence as one of eight key competences of the 21st century, additionally emphasising its importance at all levels of education. In the context of the Croatian education system, a curriculum for the cross-curricular topic using ICT in primary and secondary education (Official Gazette, 2019) clearly recommends the use of ICT across all subjects, including art. However, for these curricular frameworks to come to life in practice, it is necessary to provide continuous professional support for teachers and raise their awareness of the values and potential of digital tools.

Methodology

The research goal and problems

The use of ICT in art classes is a means of enriching student experiences and creating a modern educational setting that contributes to the quality of instruction. The goal of this research was to examine class teachers' perspectives on the use of ICT in art instruction with regard to age, education degree and professional status, as well as the relationship between these perceptions and their self-assessment of professional competences. Considering the set goal, the following research problems and hypotheses were formulated:

To establish whether a statistically significant difference exists between teachers' perspectives on the use of ICT in art classes with regard to their education degree.

First hypothesis - 1H – Teachers who completed a five-year undergraduate study have more positive perspectives on the use of ICT in art classes than teachers who acquired lower education degrees.

To establish whether a statistically significant correlation exists between teachers' perspectives on the use of ICT in art classes with regard to age and professional status.

Second hypothesis - 2H – Older teachers' perspectives on the use of ICT in art classes are less positive than those of younger teachers.

Third hypothesis - 3H – Teachers with higher professional status have more positive perspectives on the use of ICT in art classes than teachers of lower status.

To establish whether a statistically significant correlation exists between teachers' self-assessment of competences in art instruction and their perspectives on the use of ICT in art classes.

Fourth hypothesis - 4H – There is a statistically significant positive correlation between class teachers' self-assessment of professional competences and their perspectives on the use of ICT in art classes.

The research sample and procedure

The study involved a total of 121 participants – 118 (97,5 %) female and 3 (2,5 %) male teachers, aged 23 to 64 years. Regarding the education degree, 52,5 % completed a five-year class teacher study with a module, 28,1 % completed a four-year class teacher study with a subject specialisation, 11,7 % graduated from a four-year study without a subject specialisation, and 7,5 % completed a two-year class teacher study. Depending on the teachers' professional status, the sample comprised the highest number of class teachers (44,6 %) and interns (40,5 %), and it included approximately the same number of mentors (6,6 %) and counsellors (5,8 %), with the lowest number of excellent counsellors (2,5 %).

The research was conducted in 2025 via an online questionnaire specifically designed for the purpose. The data were partially collected online via social networks for class teachers and partly in immediate contact with the participants. The questionnaire included clear explanations of the research purpose and instructions for completing it, and participation was voluntary and anonymous. The questionnaire comprised questions on demographic characteristics (age, gender, professional status, type of completed study), while 16 claims addressed teachers' standpoints on the use of ICT in art classes, and 14 separate claims addressed the self-assessment of professional competences in teaching art. Based on previous work experience, the participants expressed their agreement with the claims on a 5-point Likert-type scale (1=completely disagree, 2=disagree, 3= neither disagree nor agree, 4=agree, 5= completely agree). The relatively small convenience sample, collected through social networks and direct contact with teachers, limits the broader applicability and generalizability of the results. This can be considered a methodological limitation of the study, and future research should be conducted with a larger, more representative sample of teachers in the Republic of Croatia.

Results and discussion

Teachers' perspectives on the implementation of ICT in art classes

Before statistical data processing regarding the formulated research problems, the descriptive analysis of the results on the implementation of information and communication technology (ICT) in art classes is presented in Table 1.

The results presented in Table 1 show that teachers mostly or completely agree with all the claims from the Scale of Teachers' Perspectives on the Use of ICT in Art Classes. However, by reviewing all singular claims, it is visible that teachers completely agree (4,5 or more) with the claims: *ICT provides easy access to artworks* (M = 4,7, C = 5, D = 5), *Students find information and communication technology (ICT) is visually appealing* (M = 4,6, C = 5, D = 5), *Students find art classes with integrated ICT interesting* (M = 4,5, C = 5, D = 5), *The integration of ICT in art classes motivates students and attracts their attention* (M = 4,5, C = 5, D = 5) and *The use of ICT in art classes provides access to virtual walks through galleries and museums* (M = 4,5, C = 5, D = 5).

Table 1
 Descriptive Values for the Scale of Teachers' Perspectives on the Use of ICT in Art Classes

	<i>M</i>	<i>C</i>	<i>D</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>KS</i>
Students find information and communication technology (ICT) visually appealing.	4,6	5	5	0,63	1	5	0,41**
ICT provides easy access to artworks.	4,7	5	5	0,55	2	5	0,43**
The use of ICT in art classes motivates student activity.	4,4	5	5	0,75	2	5	0,32**
Art instruction with the use of ICT is interesting to students.	4,5	5	5	0,67	2	5	0,36**
The integration of ICT in art classes motivates students and attracts their attention.	4,5	5	5	0,68	2	5	0,36**
Student motivation for creative art expression is higher when ICT is used.	4,2	4	5	0,92	1	5	0,27**
Students can relate to ICT, and they use it skilfully.	4,2	4	5	0,80	2	5	0,25**
Creating visual content via ICT is easy.	4,3	4	5	0,86	1	5	0,29**
Simple implementation of ICT empowers student independence in creating visual content in art classes.	4,0	4	4	0,92	1	5	0,26**
With the use of ICT, teachers can devise attractive and motivating content as an incentive for creation.	4,4	5	5	0,78	2	5	0,31**
The use of ICT in art classes affects the greater use of a multidisciplinary approach and increases cross-curricular links.	4,4	5	5	0,74	2	5	0,34**
ICT motivates students in art classes to experiment, research, and engage in creative expression.	4,1	4	5	0,91	2	5	0,25**
The use of ICT in art classes increases student achievement.	4,0	4	4	0,90	1	5	0,25**
The use of ICT in art classes motivates cooperative learning.	3,9	4	4	0,95	1	5	0,22**
The use of ICT in art classes enhances understanding of art language and concepts.	4,2	4	5	0,81	2	5	0,25**
The use of ICT in art classes provides access to virtual walks through galleries and museums.	4,5	5	5	0,80	1	5	0,38**

Legend: *M* – arithmetic mean, *C* – central value, *D* – dominant value, *SD* – standard deviation, *min* – minimum score, *max* – maximum score, *KS* – Kolmogorov-Smirnov test for testing the distribution's normality, ** - significant with 1 % risk, * - significant with 5 % risk

Furthermore, participants mostly agree (3,5-4,4) with other claims. The results show no disagreement or complete disagreement with any of the claims. The results indicate extremely positive perspectives on the use of ICT in art classes, especially regarding motivation, visual attractiveness, and the availability of art content. These results are in line with studies by Clark-Wilson (2014) and Duncuma (2010), which emphasise the potential of digital technologies to enhance the teaching process and stimulate more active learning. A high level of agreement with all the claims also indicates general acceptance of ICT among teachers, confirming Tondeur et al.'s (2008) conclusion that teachers' perspectives are often crucial to the successful integration of technology into educational processes.

The results of the Kolmogorov-Smirnov test indicate that all teachers' perspectives on the implementation of ICT in art classes are statistically significantly different from a normal distribution, so further data processing used nonparametric statistical methods.

Differences in teachers' perspectives on the influence of ICT on the quality of art instruction with regard to education degree

Kruskal-Wallis nonparametric tests were conducted to examine whether there is a statistically significant difference in teachers' perspectives on the influence of ICT on the quality of art classes by education degree (Table 2).

Table 2

Kruskal-Wallis nonparametric tests for testing the differences in teachers' perspectives on the influence of ICT on art instruction with regard to the education degree

	Z	Two-year			Four-year without			Four-year with			Five-year		
		M	C	SD	M	C	SD	M	C	SD	M	C	SD
Students find information and communication technologies (ICT) visually appealing.	8,01*	4,4	4	0,53	4,4	4	0,63	4,8	5	0,50	4,6	5	0,70
Students can relate to ICT, and they use it skilfully.	14,77**	3,2	3	0,67	4,1	4	0,62	4,3	4	0,83	4,3	4	0,76
Creating visual content via ICT is easy.	13,05**	3,8	4	0,67	3,9	4	0,77	4,3	4,5	0,81	4,4	5	0,87
Simple implementation of ICT empowers students' digital independence when creating visual content in art classes.	10,89**	3,6	4	0,53	3,6	4	1,28	3,9	4	0,92	4,3	4	0,81
ICT provides teachers with the opportunity to create appealing and motivating content as an incentive for creative expression.	9,50*	4,2	4	0,44	3,9	4	0,95	4,5	5	0,75	4,5	5	0,76

Legend: Z – value of Kruskal Wallis test, M – arithmetic mean, C – central value, SD – standard deviation, Two-year – two-year class teacher study, Four-year without – four-year class teacher study without subject specialisation, Four-year with – four-year class teacher study with subject specialisation, Five-year – five-year class teacher study with a module, ** - significant with 1 % risk, * - significant with 5 % risk

The obtained results point to five statistically significant differences with regard to the education degree for the following perspectives: *Students find information and communication technologies (ICT) visually appealing* ($Z = 8,01$, $p < 0,05$), *Students can relate to ICT and use it skilfully* ($Z = 14,77$, $p < 0,01$), *Creating visual contents via ICT is easy* ($Z = 13,05$, $p < 0,01$), *Simple implementation of ICT empowers students' digital independence when creating visual contents in art classes* ($Z = 10,89$, $p < 0,01$) and *ICT provides teachers with the opportunity to create appealing and motivating content as incentives for creative expression* ($Z = 9,50$, $p < 0,05$).

To precisely establish which pairs are statistically different, Mann-Whitney U tests between all pairs were conducted for five claims (Table 3).

Table 3

Mann-Whitney U nonparametric tests for testing the differences in the self-assessment of professional competence in art classes regarding the education degree

	Four-year without	Four-year with	Five-year
Two-year	Students can relate to ICT and they use it skilfully ($Z = -2,66$, $p < 0,05$).	Students can relate to ICT and they use it skilfully ($Z = -3,13$, $p < 0,01$).	Students can relate to ICT and they use it skilfully ($Z = -3,59$, $p < 0,01$). Creating visual content via ICT is easy ($Z = -2,68$, $p < 0,01$). Simple implementation of ICT empowers students' digital independence when creating visual content in art classes ($Z = -2,89$, $p < 0,01$).
Four-year without		Students find information and communication technologies (ICT) visually appealing ($Z = -2,42$, $p < 0,05$). Creating visual content via ICT is easy ($Z = -2,02$, $p < 0,01$). ICT provides teachers with the opportunity to create appealing and motivating content as an incentive for creative expression ($Z = -2,51$, $p < 0,01$).	Students find information and communication technologies (ICT) visually appealing ($Z = -1,95$, $p < 0,05$). Creating visual content via ICT is easy ($Z = -2,82$, $p < 0,01$). ICT provides teachers with the opportunity to create appealing and motivating content as an incentive for creative expression ($Z = -2,54$, $p < 0,01$).
Four-year with			-

Legend: Two-year – two-year class teacher study, Four-year without – four-year class teacher study without a subject specialisation, Four-year with – four-year class teacher study with a subject specialisation, Five-year – five-year class teacher study with a module

Regarding the claim *Information and communication technology (ICT) is visually appealing for students*, a statistically significant difference was found between teachers who completed a four-year class teacher study without a subject specialization, who gave lower assessments ($M = 4,4$, $C = 4$), and teachers who graduated from a four-year class teacher study with a subject specialization or a five-year study, who gave higher assessments ($M = 4,6$, $C = 5$).

Furthermore, teachers who completed a two-year study gave significantly lower assessments of the claim *Students can relate to ICT and they use it skilfully* ($M = 3,2$, $C = 3$), in comparison to teachers who completed a four-year study without ($M = 4,1$, $C = 4$) and with a subject specialization ($M = 4,3$, $C = 4$) and those who completed a five-year study ($M = 4,3$, $C = 4$).

Regarding the claim *Creating visual content via ICT is easy*, teachers who completed a two-year study gave a significantly lower assessment ($M = 3,8$, $C = 4$) than teachers who graduated from a five-year study ($M = 4,4$, $C = 5$), and the teachers who completed a four-year study without a subject specialization expressed a significantly lower degree of agreement ($M = 3,9$, $C = 4$) than teachers who completed a five-year or a four-year study with a subject specialization ($M = 4,3$, $C = 4,5$).

Teachers who completed a two-year study gave a significantly lower assessment of the claim *Simple implementation of ICT empowers students' digital independence when creating visual content in art classes* ($M = 3,6$, $C = 4$) than teachers who completed a five-year study ($M = 4,3$, $C = 4$).

Finally, regarding the claim *ICT provides teachers with the opportunity to create appealing and motivating content as incentive for creative expression*, teachers who completed a four-year study without a subject specialisation provided lower assessments ($M = 3,9$, $C = 4$) than teachers who graduated from a four-year study with a subject specialisation ($M = 4,5$, $C = 5$) and those who completed a five-year study ($M = 4,5$, $C = 5$).

The results partially confirm the first hypothesis - 1H because, depending on the level of education, teachers differ only in some, but not all, standpoints regarding the influence of ICT on art classes. These results suggest a possible influence of educational degree on teachers' perceptions of ICT's usefulness in instruction, confirming the findings of Phelps and Maddison (2008), who showed that teachers' acceptance of ICT varied according to their professional education and experience. In a study conducted in the Republic of Croatia, Tomljenović and Novaković (2019) found that teachers with higher education degrees and specialisation in art have greater self-confidence and a more positive attitude toward using ICT in art classes. Tondeur et al. (2008) also stressed the significance of educational contexts and programmes of professional teacher education, as they can shape pedagogical approaches to technology, particularly in the art domain, where integrating digital tools is often challenging.

The relationship between teachers' perspectives on the influence of ICT on art classes and their age and professional status

To establish whether a statistically significant difference exists between teachers' perspectives on the influence of ICT on art classes and their age and professional status, Spearman's nonparametric correlation coefficients were calculated (Table 4).

Table 4

Spearman's coefficients of correlation between teachers' age and professional status, and their perspectives on the influence of ICT on art classes

	Age	status
ICT provides easy access to artworks.	0,14	0,19*
Students relate to ICT and they use it skilfully.	-0,22*	-0,14
Creating visual content via ICT is easy.	-0,21*	-0,10
Simple implementation of ICT empowers students' digital independence when creating visual content in art classes.	-0,26**	-0,14
ICT in art classes motivates students to experiment, research, and engage in creative expression.	-0,19*	-0,13
The use of ICT in art classes increases student achievement.	-0,22*	-0,25**
The use of ICT in art classes motivates cooperative learning.	-0,18*	-0,21*
The use of ICT in art classes enhances understanding of the visual art language and concepts.	-0,20*	-0,21*

Legend: ** significant with 1 % risk, * - significant with 5 % risk

The results show several statistically significant correlations between teachers' perspectives on the influence of ICT on art classes and their age and professional status, some positive and some negative.

The increase in age effects the decrease of agreement with the following claims: *Students relate to ICT and they use it skilfully* ($r = -0,22$, $p < 0,05$), *Creating visual contents via ICT is easy* ($r = -0,21$, $p < 0,05$), *Simple implementation of ICT empowers students' digital independence when creating visual contents in art classes* ($r = -0,26$, $p < 0,01$), *ICT in art classes motivates students to experimentation, research and creative expression* ($r = -0,19$, $p < 0,05$) and *The use of ICT in art classes increases student achievement* ($r = -0,22$, $p < 0,05$), *The use of ICT in art teaching motivates cooperative learning* ($r = -0,18$, $p < 0,05$) and *The use of ICT in art classes empowers better understanding of the visual art language and concepts* ($r = -0,20$, $p < 0,05$).

Regarding the teachers' professional status, it was found that a higher status effected higher assessment of the claim *ICT provides easy access to art works* ($r = 0,19$, $p < 0,05$), and a decrease in assessment of the claims *The use of ICT in art classes increases student achievement* ($r = -0,25$, $p < 0,01$), *The use of ICT in art classes motivates cooperative learning* ($r = -0,21$, $p < 0,05$) and *The use of ICT in art classes empowers better understanding of the visual art language and concepts* ($r = -0,21$, $p < 0,05$). Based on the presented

results, it can be concluded that hypotheses 2 and 3 are partially confirmed. Namely, although many of the correlations are statistically significant, they do not hold across all perspectives. Furthermore, some correlations are negative and others are positive, suggesting a complex relationship between teachers' perspectives and individual characteristics. Negative correlations between teachers' professional status and their perspectives on ICT indicate that teachers with higher professional status do not perceive ICT as key to achieving quality educational goals in art instruction, especially in segments related to students' socialisation, understanding visual art language, and the acquisition of related concepts. They probably rely on a more comprehensive pedagogic methodology, where ICT is only one of the accessible tools. Furthermore, although motivationally and visually stimulative, ICT alone does not guarantee quality instruction. Phelps and Maddison (2008) warned that higher professional status without continuous professional education does not necessarily entail higher digital competence nor motivation to use ICT, which can explain moderate and negative correlations to professional status. Therefore, the results point to a complex relationship among teachers' status, perspectives, and the integration of ICT, and they emphasise the importance of lifelong professional education as a prerequisite for the efficient integration of ICT.

Teachers' self-assessment of professional competence in art instruction

Before presenting the data regarding the self-assessment of professional competence in art teaching, descriptive statistics for the results obtained on the Scale of Teachers' Self-Assessment of Professional Competences in Art Classes are displayed in Table 5.

Table 5

Descriptive statistics for teachers' self-assessment of professional competences in art classes

	<i>M</i>	<i>C</i>	<i>D</i>	<i>SD</i>	<i>min</i>	<i>Maks</i>	<i>KS</i>
The ability to apply modern teaching strategies and methods in art instruction.	4,0	4	4	0,88	1	5	0,26
The ability to implement information and communication technology (ICT) in art classes.	4,1	4	4	0,91	1	5	0,25
The knowledge of visual arts needed to determine the topic, motifs, art problems, and content in teaching art.	4,2	4	4	0,65	2	5	0,31
The ability to choose an artwork (reproduction) for analysis and identification of art concepts.	4,1	4	4	0,83	2	5	0,23
The ability to realise learning outcomes within the number of art lessons prescribed by the curriculum.	4,1	4	4	0,90	1	5	0,29

	<i>M</i>	<i>C</i>	<i>D</i>	<i>SD</i>	<i>min</i>	<i>Maks</i>	<i>KS</i>
The ability to critically evaluate the art curriculum.	3,9	4	4	0,89	1	5	0,25
The ability to plan art instruction with precise goals and expected learning outcomes.	4,1	4	4	0,77	2	5	0,25
The ability to evaluate various teaching and learning strategies in art instruction.	4,0	4	4	0,79	1	5	0,26
The ability of reflection and self-reflection regarding own work and values in art classes.	4,0	4	4	0,82	1	5	0,27
The ability to develop and motivate creativity and expressive student potential in art classes.	4,4	4	5	0,68	2	5	0,30
The ability to develop and motivate students' critical thinking and freedom of expression in art classes.	4,3	4	4	0,69	2	5	0,27
Enriching art instruction with visits to museums and galleries.	3,6	4	4	1,20	1	5	0,23
The ability to motivate students to use new media, digital tools and applications in art classes.	3,9	4	4	0,89	1	5	0,24
The ability to accept and respect student opinions that differ from one's own perspective.	4,5	5	5	0,62	3	5	0,35

Legend: *M* – arithmetic mean, *C* – central value, *D* – dominant value, *SD* – standard deviation, *min* – minimum score, *max* – maximum score, *KS* – Kolmogorov-Smirnov test for testing the distribution's normality, ** - significant with 1 % risk, * - significant with 5 % risk

The data presented in Table 5 show that teachers mainly assess their competence as highly developed. However, when all individual competences are reviewed, it is obvious that the ability to accept and respect student opinions that differ from the teacher's is assessed as advanced (4,5 or more) ($M = 4,5$, $C = 5$, $D = 5$), whereas teachers state they possess all other abilities to a high extent (3,5-4,4). There were no competences that teachers recognised as average, poorly or very poorly developed.

The results of the Kolmogorov-Smirnov test indicate that the distributions for all assessments differ from the normal distribution at the 0.05 significance level, so further data analysis was conducted using nonparametric statistical methods.

The correlation between teachers' self-assessment of competence in art instruction and the influence of ICT on its quality

To establish whether a statistically significant correlation exists between teachers' self-assessment of competences in teaching art and their perspectives on the influence of ICT on art classes, Spearman's correlation coefficients were calculated (Appendix 1 – Table 6a and Appendix 2 – Table 6b).

The obtained correlations partially confirm the fourth hypothesis - 4H because most, although not all, are statistically significant and in the expected direction – positive with low to medium intensity. The results indicate that teachers who assess themselves as more competent in the professional aspects of art instruction also express more positive perspectives on the implementation of ICT in art classes. Similar results were reported by Tondeur et al. (2017), who found a statistically significant correlation between teachers' self-assessment of professional competence and their readiness to integrate digital tools into their classes. Ertmer and Ottenbreit-Leftwich (2010) also emphasised that teachers' personal beliefs and perspectives on the inclusion of technology in pedagogical practices are a powerful predictor of the actual use of ICT in the classroom. OECD's TALIS research (2021) showed that teachers who feel professionally competent are more likely to participate in innovations and to adopt instructional practices using digital tools. The correlations observed in this research between the assessment of professional competence and a positive perspective on the integration of ICT in art classes are not solely a singular phenomenon that pertains to the area of the Republic of Croatia, where the study was conducted, but its results concur with both European and global trends in education. In this context, the research results support the theoretical framework, which places professional competence at the heart of successful and purposeful integration of ICT in teaching (European Commission, 2018).

Conclusion

This research examined class teachers' perspectives on the implementation of information and communication technology (ICT) in art instruction and their correlations with age, professional status, educational degree, and self-assessment of professional competence. The results have shown that teachers mostly expressed positive attitudes toward ICT, particularly in the context of student motivation, the availability of content, and the creation of a stimulating environment for art expression. Most set hypotheses have been partially confirmed. Statistically significant differences in perspectives on the integration of ICT in art classes were observed by education degree, with teachers who graduated from a five-year or four-year program with a subject specialisation expressing more positive perceptions. Teachers' age and professional status have shown more complex patterns: namely, older teachers and those who gained higher professional qualifications did not necessarily express more positive attitudes. This fact suggests that teachers do not perceive ICT as a crucial tool for achieving education goals in art classes, especially in segments that address students' socialisation, understanding visual art language, and the acquisition of related concepts. Nevertheless, they consider ICT as one of many available didactic resources. Although ICT is motivationally and visually stimulating, it is not sufficient for the realisation of quality instruction. Moreover, a moderate but statistically significant positive difference was found between teachers' self-assessment of professional

competences and their perspectives on ICT, confirming that teachers who perceive themselves as more competent in teaching art are more ready to integrate digital tools. The obtained results are in line with previous research in the field (Tondeur et al., 2008; Ertmer & Ottenbreit-Leftwich, 2010; Phelps & Maddison, 2008), which stressed the importance of education and a sense of personal assuredness in digital competences as key predictors of accepting ICT. Besides, the results of this research align with modern European guidelines (European Commission, 2018) that stress the necessity of continuous support for teachers in integrating ICT into instruction. The present study contributes to understanding teachers' roles in the implementation of ICT in art instruction, but it also opens up a space for further research that might involve qualitative methods, a longitudinal approach, and comparisons across different educational contexts.

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Appendix 1 – Table 6a

Spearman's coefficients of correlation between the self-assessment of professional competences in art classes and the standpoints on the influence of ICT on art instruction

	Students find information and communication technologies (ICT) visually appealing.	ICT provides easy access to artworks.	The use of ICT in art classes motivates student activity.	Art instruction with the use of ICT is interesting to students.	The integration of ICT in art classes motivates students and attracts their attention.
The ability to apply modern teaching strategies and methods in art instruction.	0,29**	0,20*	0,14	0,24**	0,15
The ability to implement information and communication technology (ICT) in art classes.	0,41**	0,27**	0,31**	0,30**	0,24**
The knowledge of visual arts needed to determine the topic, motifs, art problems, and content in teaching art.	0,08	0,12	0,05	0,22*	0,14
The ability to choose an artwork (reproduction) for analysis and identification of art concepts.	0,12	0,19*	0,19*	0,28**	0,19*
The ability to realise learning outcomes within the number of art lessons prescribed by the curriculum.	0,18*	0,15	0,16	0,27**	0,15
The ability to critically evaluate the art curriculum.	0,22*	0,24*	0,19*	0,28**	0,28**
The ability to plan art instruction with precise goals and expected learning outcomes.	0,26**	0,17	0,08	0,16	0,16
The ability to evaluate various teaching and learning strategies in art instruction.	0,21*	0,21*	0,15	0,25**	0,24**
The ability of reflection and self-reflection regarding own work and values in art classes.	0,22*	0,20*	0,14	0,17	0,15
The ability to develop and motivate creativity and expressive student potential in art classes.	0,32**	0,30**	0,26**	0,21*	0,25**
The ability to develop and motivate students' critical thinking and freedom of expression in art classes.	0,32**	0,29**	0,12	0,25**	0,19*
Enriching art instruction with visits to museums and galleries.	0,24**	0,20*	0,17	0,21*	0,20*
The ability to motivate students to use new media, digital tools and applications in art classes.	0,36**	0,27**	0,21*	0,28**	0,25**
The ability to accept and respect student opinions that differ from one's own perspective.	0,22*	0,40**	0,03	0,23*	0,19*

	Student motivation for creative art expression is higher when ICT is used.	Students can relate to ICT, and they use it skilfully.	The simplicity of using ICT facilitates its effortless use in creating visual content.	Simple implementation of ICT empowers student independence in creating visual content in art classes.
The ability to apply modern teaching strategies and methods in art instruction.	0,09	0,19*	0,18*	0,18*
The ability to implement information and communication technology (ICT) in art classes.	0,16	0,37**	0,41**	0,39**
The knowledge of visual arts needed to determine the topic, motifs, art problems, and content in teaching art.	0,06	0,06	-0,07	0,11
The ability to choose an artwork (reproduction) for analysis and identification of art concepts.	0,09	0,16	0,14	0,15
The ability to realise learning outcomes within the number of art lessons prescribed by the curriculum.	0,12	0,20*	0,21*	0,13
The ability to critically evaluate the art curriculum.	0,14	0,19*	0,10	0,11
The ability to plan art instruction with precise goals and expected learning outcomes.	0,05	0,18*	0,13	0,09
The ability to evaluate various teaching and learning strategies in art instruction.	0,12	0,19*	0,07	0,15
The ability of reflection and self-reflection regarding own work and values in art classes.	0,09	-0,03	-0,02	0,04
The ability to develop and motivate creativity and expressive student potential in art classes.	0,14	0,16	0,15	0,20*
The ability to develop and motivate students' critical thinking and freedom of expression in art classes.	0,12	0,11	0,13	0,19*
Enriching art instruction with visits to museums and galleries.	0,15	0,34**	0,33**	0,23*
The ability to motivate students to use new media, digital tools and applications in art classes.	0,10	0,32**	0,33**	0,31**
The ability to accept and respect student opinions that differ from one's own perspective.	0,20*	0,08	0,20*	0,12

Legend: ** - significant with 1 % risk, * - significant with 5 % risk

Appendix 2 – Table 6b

Spearman's coefficients of correlation between self-assessment of professional competences in art classes and the perspectives on the influence of ICT on art instruction

	ICT motivates students in art classes to experiment, research, and engage in creative expression.	The use of ICT in art classes increases student achievement.	The use of ICT in art classes motivates cooperative learning.	The use of ICT in art classes enhances understanding of art language and concepts.
The ability to apply modern teaching strategies and methods in art instruction.	0,13	0,13	0,11	0,07
The ability to implement information and communication technology (ICT) in art classes.	0,31**	0,31**	0,23*	0,23*
The knowledge of visual arts needed to determine the topic, motifs, art problems, and content in teaching art.	0,05	0,09	0,04	0,06
The ability to choose an artwork (reproduction) for analysis and identification of art concepts.	0,16	0,23**	0,07	0,20*
The ability to realise learning outcomes within the number of art lessons prescribed by the curriculum.	0,12	0,16	0,12	0,13
The ability to critically evaluate the art curriculum.	0,24**	0,23*	0,21*	0,22*
The ability to plan art instruction with precise goals and expected learning outcomes.	0,17	0,11	0,14	0,15
The ability to evaluate various teaching and learning strategies in art instruction.	0,20*	0,16	0,18*	0,13
The ability of reflection and self-reflection regarding own work and values in art classes.	0,02	0,12	0,17	0,11
The ability to develop and motivate creativity and expressive student potential in art classes.	0,20*	0,23*	0,21*	0,15
The ability to develop and motivate critical thinking and freedom of expression in students in art classes.	0,20*	0,08	0,16	0,12
Enriching art instruction with visits to museums and galleries.	0,21*	0,15	0,14	0,07
The ability to motivate students to use new media, digital tools and applications in art classes.	0,29**	0,30**	0,31**	0,22*
The ability to accept and respect student opinions that differ from one's own perspective.	0,10	0,12	0,13	0,29**

	The use of ICT in art classes provides access to virtual walks through galleries and museums.	The use of ICT in art classes promotes a greater use of the multidisciplinary approach and increases the number of cross-curricular links.	With the use of ICT, teachers can devise attractive and motivating content as an incentive for creation.
The ability to apply modern teaching strategies and methods in art instruction.	0,22*	0,26**	0,28**
The ability to implement information and communication technology (ICT) in art classes.	0,30**	0,30**	0,44**
The knowledge of visual arts needed to determine the topic, motifs, art problems, and content in teaching art.	0,18	0,12	0,15
The ability to choose an artwork (reproduction) for analysis and identification of art concepts.	0,24**	0,20*	0,25**
The ability to realise learning outcomes within the number of art lessons prescribed by the curriculum.	0,26**	0,28**	0,23*
The ability to critically evaluate the art curriculum.	0,32**	0,30**	0,18
The ability to plan art instruction with precise goals and expected learning outcomes.	0,27**	0,24**	0,16
The ability to evaluate various teaching and learning strategies in art instruction.	0,30**	0,32**	0,17
The ability of reflection and self-reflection regarding own work and values in art classes.	0,21*	0,14	0,14
The ability to develop and motivate creativity and expressive student potential in art classes.	0,33**	0,29**	0,19*
The ability to develop and motivate critical thinking and freedom of expression in students in art classes.	0,38**	0,25**	0,19*
Enriching art instruction with visits to museums and galleries.	0,24**	0,25**	0,22*
The ability to motivate students to use new media, digital tools and applications in art classes.	0,43**	0,29**	0,31**
The ability to accept and respect student opinions that differ from one's own perspective.	0,45**	0,25**	0,29**

Legend: ** - significant with 1 % risk, * - significant with 5 %

Povezanost profesionalnih kompetencija učitelja i stavova o primjeni informacijsko-komunikacijske tehnologije u nastavi likovne kulture

Sažetak

Ubrzane promjene i digitalizacija društva donose nove izazove u odgojno-obrazovni sustav, a kvaliteta odgoja i obrazovanja moguća je jedino uz kontinuirano razvijanje profesionalnih kompetencija učitelja. U kontekstu nastave likovne kulture upotreba IKT-a doprinosi stvaranju suvremenoga obrazovnog okružja i predstavlja sredstvo obogaćivanja iskustva učenika. Cilj ovoga istraživanja bio je ispitati stavove učitelja (N = 121) razredne nastave o primjeni informacijsko-komunikacijske tehnologije (IKT) u nastavi likovne kulture te njihovu povezanost s dobi, završenim studijem, profesionalnim statusom i samoprocjenom profesionalnih kompetencija. Rezultati istraživanja pokazuju izrazito pozitivne stavove učitelja prema IKT-u u nastavi likovne kulture, osobito pri motivaciji učenika, vizualnoj privlačnosti medija i dostupnosti umjetničkih sadržaja. Utvrđene su statistički značajne razlike u stavovima s obzirom na vrstu završenoga studija te određene korelacije s dobi i statusom učitelja. Također je potvrđena pozitivna povezanost između samoprocjene profesionalnih kompetencija i stavova prema IKT-u, posebice u kompetencijama vezanim uz digitalne alate i suvremene nastavne strategije. Rezultati podupiru teorijska polazišta o važnosti kompetencija učitelja za uspješnu integraciju IKT-a u nastavu likovne kulture kako bi ona pratila suvremene trendove u odgoju i obrazovanju te upućuju na potrebu za kontinuiranim stručnim usavršavanjem.

Ključne riječi: *digitalna pismenost; informacijsko-komunikacijska tehnologija; likovna kultura; profesionalne kompetencije; stavovi učitelja*

Uvod

Učitelji imaju središnju ulogu u ostvarivanju odgojno-obrazovnih ciljeva, kako u nastavi općenito tako i u umjetničkom području poput nastave likovne kulture jer svojim djelovanjem izravno utječu i na uspjeh učenika. Jurić (2007) smatra kompetencije učitelja i kvalitetu obrazovanja učitelja jednim od glavnih činitelja koji djeluju na razinu učeničkih obrazovnih postignuća. Darling-Hammond i suradnici (2005) utvrdili su da postoji pozitivna korelacija između kvalitete učitelja i uspjeha učenika u osnovnoj školi. Kvaliteta učitelja, prema navodima Europske komisije (European Commission,

2018), očituje se u njihovom profesionalnom djelovanju. U skladu s tim, u europskim zemljama već neko vrijeme postoji fokus na ulaganje u profesionalni razvoj učitelja kako bi se ostvario jedan od ciljeva Lisabonske strategije, a to je povećanje kvalitete obrazovanja i osposobljavanja na svim razinama (Council of the European Union, 2000; Vizek-Vidović i Domović, 2013; Symeonidis, 2018). U povećanju kvalitete učiteljske profesije ključan je razvoj profesionalnih kompetencijskih okvira (Vizek-Vidović, 2009; European Commission, 2020) koji određuju smjernice za cjelokupni profesionalni razvoj učitelja jasnim definiranjem njihovih odgovornosti i onoga što se od njih očekuje u njihovom profesionalnom djelovanju (Sanchez-Tarazaga i Matarranz, 2023). U Republici Hrvatskoj ne postoji definiran okvir učiteljskih kompetencija, već se razvoj kompetencija regulira Hrvatskim kvalifikacijskim okvirom (HKO) koji standarde kvalifikacija temelji na ishodima učenja i usklađuje ih s potrebama tržišta rada i društva (MZO, 2017). U definiranju pojma kompetencija ne postoji jedinstvena definicija pa tako Keuffer (2010) kompetencije određuje profesionalnim znanjem, osobnim uvjerenjima, ljestvicama vrijednosti i motivacijskim usmjerenjima. Spajić-Vrkaš, Kukoč, Bašić (2001) učiteljske kompetencije dijele na predmetne, pedagoško-didaktičko-metodičke i psihološke. Tuning (2006) razlikuje opće ili generičke kompetencije koje su zajedničke svima i nisu određene profesijom i kompetencije specifične za pojedinu profesiju. Jurčić (2012) pedagoške kompetencije učitelja promatra u okviru područja, metodologije izgradnje predmetnoga kurikula, organizacije i vođenja obrazovnoga procesa, oblikovanja razrednoga ozračja, utvrđivanja učenikova postignuća i oblikovanja modela odgojnoga partnerstva s roditeljima. Kompetencije se razvijaju tijekom cijeloga života putem formalnoga, neformalnoga i informalnoga učenja, pri čemu su istovremeno mjerljive i podložne trajnom razvoju i prilagodbi u skladu s osobnim i profesionalnim potrebama (European Commission, 2018).

Profesionalne kompetencije učitelja u nastavi likovne kulture

Uz opće kompetencije koje se odnose na planiranje, izvođenje i vrednovanje nastave, učitelji za vođenje nastave likovne kulture trebaju razvijati i specifične kompetencije vezane uz vizualnu pismenost, estetsku osjetljivost i kreativno izražavanje učenika jer upravo te vještine omogućuju učenicima dublje razumijevanje i interpretaciju umjetničkoga djela te razvoj vlastitoga likovnog izraza (Županić Benić, 2011). Vizualna pismenost, kao sposobnost razumijevanja, interpretacije i stvaranja vizualnih poruka, postaje ključna kompetencija u 21. stoljeću, osobito u obrazovnom kontekstu u kojem slike i digitalni mediji imaju sve značajniju ulogu (Supšáková, 2020). U nastavi likovne kulture učiteljeve profesionalne kompetencije (Županić Benić, 2017) omogućuju mu kvalitetu poučavanja (Palekčić, 2008) i oblikovanje poticajnoga i smislenoga nastavnog procesa. Stoga se od kompetentnoga učitelja u suvremenoj školi očekuje vođenje nastave usmjerene na učenika, što znači da se predmetni kurikulum u određenoj mjeri mora prilagoditi potrebama i interesima učenika (Županić Benić, 2017:28).

Sama nastava likovne kulture podrazumijeva učenje likovnog jezika, upoznavanje i korištenje različitih likovnih tehnika u likovnom izražavanju učenika potičući pritom razvoj kreativnosti, vizualne pismenosti i estetske osjetljivosti (Özsoy i Sarıbaş, 2021; Birša, Kljun i Kopačin, 2022). U novije vrijeme sve veću važnost dobiva IKT dimenzija kompetencija učitelja, osobito u likovnoj kulturi pri čemu digitalni alati postaju sredstva stvaranja, izražavanja i prezentacije umjetničkoga rada (European Commission - DigCompEdu, 2017). Takva tehnologija omogućuje učenicima korištenje animacije, digitalne ilustracije i multimedije kao oblika kreativnoga izraza. U fokusu istraživanja ovoga rada su profesionalne kompetencije učitelja za primjenu IKT-a u nastavi likovne kulture. Pritom mediji i multimediji predstavljaju sredstva i pomagala u nastavi, no njihova prava vrijednost dolazi do izražaja tek kada se koriste u svrhu učenja i poučavanja, kao i za učeničko likovno izražavanje (Herceg, Rončević i Karlavaris, 2010). Teorijski okvir DigCompEdu (European Commission, 2017) jasno definira razine IKT kompetencija učitelja i njihovu primjenu u praksi, uključujući i sposobnost odabira, primjene i vrednovanja digitalnih alata u skladu s pedagoškim ciljevima. Tot i Klapan (2008) smatraju da ključna područja učiteljskih kompetencija, koja je potrebno kontinuirano razvijati stručnim usavršavanjem, obuhvaćaju primjenu informacijsko-komunikacijskih znanja i tehnologija u nastavi i učenju te sposobnost odabira i korištenja kvalitetnih izvora informacija. Digitalna pismenost učitelja likovne kulture tako postaje neizostavan dio njegovih profesionalnih kompetencija, ali je u praksi često ograničena infrastrukturom, nedostatkom edukacije i nedovoljnom integracijom tehnologije u kurikulum nastave likovne kulture (Ge Tai i Mohd Nasir, 2024).

Primjena informacijsko-komunikacijske tehnologije u nastavi likovne kulture

Primjena informacijsko-komunikacijske tehnologije (IKT) u nastavi likovne kulture ima potencijal obogaćivanja obrazovnog iskustva učenika i stvaranje suvremenoga nastavnog okružja usmjerenoga na učenika. Clark-Wilson (2014) ističe da digitalne tehnologije mogu poboljšati odnose između učitelja, učenika i nastavnoga sadržaja, čineći nastavni proces suradničkim i interaktivnim. IKT se ne promatra samo kao tehničko sredstvo, već kao pedagoški alat koji učenicima omogućuje aktivno sudjelovanje u digitalnom društvu, uz razvoj kreativnosti, tehničkih vještina i kritičkoga mišljenja. Prema Europskoj komisiji (DigCompEdu, 2017), kompetencije učitelja za primjenu IKT-a u nastavi uključuju ne samo tehničku upotrebu digitalnih alata, već i sposobnost pedagoški promišljene integracije tehnologije u nastavu, s ciljem poticanja aktivnoga sudjelovanja učenika i kvalitete poučavanja. Hilčenko, Filipović i Ilić (2018) ističu da primjena IKT-a potiče individualizaciju nastave i povećava angažman učenika. Unatoč prepoznatim prednostima, brojni su izazovi koji usporavaju širu implementaciju IKT-a u nastavi likovne kulture. Jedan od glavnih izazova odnosi se na stavove i razinu digitalne kompetencije samih učitelja. UNESCO (2008) ističe da je profesionalni razvoj učitelja ključan za učinkovito korištenje tehnologije jer tehnička

opremljenost škole sama po sebi nije dovoljna ako učitelji ne razviju odgovarajuće pedagoške kompetencije. U suvremenom umjetničkom obrazovanju digitalna pismenost postaje sastavni dio vizualne pismenosti jer učenici sve više komuniciraju putem slika, videozapisa i interaktivnih medija. Prema Duncumu (2010), obrazovanje iz likovne kulture mora uključivati digitalne medije kako bi učenici mogli kritički interpretirati i stvarati sadržaje u multimedijском okružju. Uključivanje likovne kulture i IKT-a u umjetničko obrazovanje Duncum (2010) opisuje kao način na koji mladi ljudi oblikuju, interpretiraju i komuniciraju sa svijetom u sebi i oko sebe.

Stavovi učitelja o primjeni IKT-a u nastavi likovne kulture

Stavovi učitelja o primjeni IKT-a ključan su čimbenik u njezinoj uspješnoj integraciji u nastavu likovne kulture. Iako tehnička infrastruktura i institucionalna podrška imaju značajnu ulogu u navedenom procesu, istraživanja pokazuju da su osobni stavovi i percepcije učitelja često presudni u odluci hoće li i kako primijeniti IKT u nastavi (Ertmer, 1999). Pri tome Ilić, Šikl-Erski i Stojanović-Đorđević (2017) potvrđuju kako su stavovi učitelja i njihovo razumijevanje vrijednosti digitalnih alata ključni za učinkovitu integraciju IKT-a u umjetničko obrazovanje. Ti stavovi nisu statični, već se oblikuju iskustvom, stručnošću, prethodnim obrazovanjem te generacijskim razlikama. Primjerice, dob učitelja često se navodi kao čimbenik koji utječe na otvorenost prema novim tehnologijama, pri čemu mlađi učitelji pokazuju veću spremnost za njihovu upotrebu (Tondeur i sur., 2008; Tondeur i sur., 2017). Također, viši profesionalni status učitelja (npr. mentor, savjetnik) može biti povezan s većom samostalnošću u radu i većom uključenosti u inovativne nastavne pristupe, uključujući i digitalne. Ujedno duljina i razina formalnoga obrazovanja mogu doprinijeti razlici u percepciji učitelja o tehnološkoj spremnosti i osposobljenosti za rad s IKT-om. Istraživanja pokazuju da neki učitelji izražavaju zabrinutost da bi upotreba digitalnih alata mogla umanjiti neposrednost likovnoga izražavanja i ograničiti razvoj praktičnih vještina (Coleman i Cramer, 2015). Rahmat i Au (2019) navode da učitelji ponekad percipiraju IKT kao prijetnju autentičnosti likovnoga stvaralaštva, što može dovesti do otpora prema njihovoj implementaciji. Snyder i Bulfin (2007) ističu da digitalna pismenost u umjetnosti nije samo tehnička vještina, već dio širega komunikacijskog i kreativnoag okvira koji je ključan za razvoj kompetencija učenika u digitalnom društvu. Phelps i Maddison (2008) također primjećuju da učitelji imaju različite pristupe integraciji IKT-a: dok jedni vide inovativni potencijal, drugi smatraju da tehnologija nije u skladu s prirodom umjetnosti te da neće doprinijeti razvoju kreativnosti učenika putem likovnoga izražavanja. Europska komisija (2018) u svojim preporukama za cjeloživotno učenje navodi digitalnu kompetenciju kao jednu od osam ključnih kompetencija za 21. stoljeće, čime dodatno naglašava njezinu važnost u obrazovanju na svim razinama. U kontekstu hrvatskoga obrazovnog sustava, Kurikulum za međupredmetnu temu uporaba informacijske i komunikacijske tehnologije (NN, 2019) jasno preporučuje korištenje IKT-a u svim nastavnim predmetima, uključujući i likovnu kulturu. Međutim, da bi ti kurikulni okviri zaživjeli u praksi, nužno je osigurati kontinuiranu

stručnu podršku učiteljima te razvijati njihovu svijest o vrijednosti i mogućnostima digitalnih alata.

Metodologija

Cilji i problemi istraživanja

IKT u nastavi likovne kulture predstavlja sredstvo obogaćivanja iskustva učenika i stvaranja suvremenoga obrazovnog okružja koje bi trebalo doprinosti kvaliteti nastave. Cilj je ovoga istraživanja ispitati stavove učitelja o primjeni IKT-a u nastavi likovne kulture s obzirom na dob, završeni studij i status učitelja, kao i povezanost tih stavova sa samoprocjenom profesionalnih kompetencija. U odnosu na navedeno postavljene su sljedeći istraživački problemi i pripadajuće hipoteze:

Provjeriti postoji li statistički značajna razlika u stavovima učitelja o primjeni IKT-a u nastavi likovne kulture s obzirom na završeni studij.

Prva hipoteza - 1H Postoji statistički viša procjena stavova među učiteljima s petogodišnjim studijem u odnosu na druge ispitanike.

Provjeriti postoji li statistički značajna povezanost u stavovima o primjeni IKT-a u nastavi likovne kulture s obzirom na dob i status učitelja.

Druga hipoteza - 2H S porastom dobi učitelja, njihova procjena stavova o primjeni IKT-a u nastavi likovne kulture opada.

Treća hipoteza - 3H S porastom statusa učitelja, raste i procjena stavova o primjeni IKT-a u nastavi likovne kulture

Provjeriti postoji li statistički značajna povezanost između samoprocjene profesionalnih kompetencija učitelja u nastavi likovne kulture i stavova o primjeni IKT-a u nastavi likovne kulture.

Četvrta hipoteza - 4H Postoji statistički značajna pozitivna povezanost između samoprocjene profesionalnih

kompetencija u nastavi likovne kulture i stavova o primjeni IKT-a u nastavi likovne kulture.

Uzorak ispitanika i postupak istraživanja

U istraživanju je sudjelovao ukupno 121 ispitanik, od kojih 118 (97,5 %) učiteljica i 3 (2,5 %) učitelja u dobi od 23 do 64 godine. S obzirom na stupanj obrazovanja 52,5 % učitelja završilo je petogodišnji studij razredne nastave s modulom, 28,1 % četverogodišnji studij razredne nastave s pojačanim predmetom, 11,7 % četverogodišnji studij razredne nastave bez pojačanoga predmeta te 7,5 % dvogodišnji studij razredne nastave. Ovisno o statusu učitelja najviše je ispitanih učitelja (44,6 %), zatim pripravnika (40,5 %) dok mentora (6,6 %) i savjetnika (5,8 %) ima podjednako, a najmanje je izvrsnih savjetnika (2,5 %).

Istraživanje je provedeno 2025. godine *online* anketnim upitnikom kreiranim za potrebe ovoga istraživanja. Podatci su djelomično prikupljeni *online* preko društvenih mreža

koje okupljaju učitelje razredne nastave, a dio u neposrednom kontaktu s ispitanicima. Upitnik je kreiran s jasnim objašnjenjem o svrsi ispitivanja i uputama. Sudjelovanje je bilo dobrovoljno i anonimno. Za potrebe istraživanja upitnik se sastojao od pitanja koja su obuhvaćala demografske karakteristike (dob, spol, status učitelja, vrstu završenoga studija), dok se 16 tvrdnji odnosilo na ispitivanje stavova o primjeni IKT-a u nastavi likovne kulture, a zasebnih 14 tvrdnji odnosilo se na samoprocjenu profesionalnih kompetencija u nastavi likovne kulture. Tvrdnje su ispitanici procjenjivali temeljem dosadašnjega radnog iskustva na petostupanjskoj skali Likertova tipa intenziteta: (1 = vrlo malo, 2 = malo, 3 = osrednje, 4 = u većoj mjeri i 5 = izrazito). Relativno malen i prigodan uzorak, prikupljen putem društvenih mreža i u neposrednom kontaktu s učiteljima, ograničava mogućnost šire primjene i generalizacije nalaza. Navedeno se može smatrati metodološkim ograničenjem istraživanja, a buduća bi se istraživanja trebala provoditi na većoj i reprezentativnijoj populaciji učitelja u Republici Hrvatskoj.

Rezultati i diskusija

Stavovi ispitanika o primjeni IKT-a u nastavi likovne kulture

Prije statističke obrade vezane uz postavljene istraživačke probleme, prikazana je deskriptivna analiza rezultata skale stavova o primjeni informacijsko-komunikacijske tehnologije (IKT) u nastavi likovne kulture (Tablica 1).

Tablica 1

Iz rezultata (Tablica 1) vidljivo je da se učitelji uglavnom ili u potpunosti slažu sa svim tvrdnjama iz skale stavova o primjeni IKT-a u nastavi likovne kulture. Međutim, pregledom svih pojedinačnih tvrdnji, vidimo da se učitelji izrazito slažu (4,5 ili više) s tvrdnjama: IKT omogućuje laku dostupnost umjetničkih djela ($M = 4,7$, $C = 5$, $D = 5$), Informatičko-komunikacijske tehnologije (IKT) vizualno su privlačne učenicima ($M = 4,6$, $C = 5$, $D = 5$), Nastava LK uz IKT je zanimljivija učenicima ($M = 4,5$, $C = 5$, $D = 5$), Nastava LK uz primjenu IKT-a motivira učenike i privlači njihovu pažnju ($M = 4,5$, $C = 5$, $D = 5$) i Primjena IKT-a u nastavi LK omogućuje pristup virtualnim šetnjama kroz galerije i muzeje ($M = 4,5$, $C = 5$, $D = 5$). Nadalje, u većoj mjeri (3,5 - 4,4) slažu se sa svim ostalim tvrdnjama. U rezultatima uočavamo da nema stavova s kojima je slaganje učitelja malo ili vrlo malo slažu.

Ovakvi rezultati upućuju na izrazito pozitivan stav učitelja prema korištenju IKT-a u nastavi likovne kulture, osobito u kontekstu motivacije, vizualne privlačnosti i dostupnosti umjetničkih sadržaja. Oni su u skladu s istraživanjima Clark-Wilsona (2014) i Duncuma (2010), koji ističu potencijal digitalnih tehnologija za obogaćivanje nastavnoga procesa i poticanje aktivnijega učenja. Visoka suglasnost sa svim tvrdnjama ukazuje i na općeprihvaćenost IKT-a među učiteljima, što potvrđuje zaključke Tondeura i suradnika (2008) da su stavovi učitelja često ključan faktor uspješne integracije tehnologije u nastavni proces.

Rezultati Kolmogorov Smirnov testa pokazuju da se svi stavovi o primjeni IKT-a u nastavi likovne kulture statistički značajno razlikuju od normalne raspodjele te je

stoga u daljnjoj obradi korištena neparametrijska statistička obrada podataka.

Razlike u stavovima o utjecaju IKT-a na kvalitetu nastave likovne kulture obzirom na završeni studij

Kako bismo odgovorili na pitanje postoji li statistički značajna razlika u stavovima o utjecaju IKT-a na kvalitetu nastave likovne kulture s obzirom na završeni studij provedeni su Kruskal Wallisovi neparametrijski testovi (Tablica 2).

Tablica 2

Dobiveni rezultati pokazuju da postoji pet statistički značajnih razlika ovisno o studiju i to za stavove: Informatičko-komunikacijske tehnologije (IKT) vizualno su privlačne učenicima ($Z = 8,01$, $p < 0,05$), IKT su bliske učenicima i njima se vješto koriste ($Z = 14,77$, $p < 0,01$), Jednostavnost primjene i korištenja IKT alata čini ih lakima za upotrebu pri kreiranju vizualnih sadržaja ($Z = 13,05$, $p < 0,01$), Jednostavna primjena IKT-a pruža učeniku digitalnu samostalnost pri kreiranju vizualnih sadržaja u nastavi LK ($Z = 10,89$, $p < 0,01$) i IKT omogućuje učiteljima stvaranje privlačnoga i motivirajućega sadržaja kao poticaja za stvaralaštvo ($Z = 9,50$, $p < 0,05$).

Da bismo vidjeli između točno kojih parova postoje statistički značajne razlike, na ovih pet tvrdnji provedeni su međusobni Mann Whitney U testovi između svih parova (Tablica 3).

Tablica 3

Iz navedenoga možemo zaključiti da postoji statistički značajna razlika u stavu Informatičko-komunikacijske tehnologije (IKT) vizualno su privlačne učenicima između četverogodišnjega studija bez pojačanoga predmeta koji ima nižu procjenu ($M = 4,4$, $C = 4$) i četverogodišnjega studija s pojačanim predmetom ($M = 4,8$, $C = 5$) i petogodišnjeg studija ($M = 4,6$, $C = 5$) koji imaju višu procjenu.

Zatim učitelji s dvogodišnjim studijem imaju značajno nižu procjenu o stavu: IKT su bliske učenicima i njima se vješto koriste ($M = 3,2$, $C = 3$) u odnosu na one s četverogodišnjim studijem bez ($M = 4,1$, $C = 4$) i četverogodišnjim studijem s pojačanim predmetom ($M = 4,3$, $C = 4$) i one s petogodišnjim studijem ($M = 4,3$, $C = 4$).

O stavu: Jednostavnost primjene i korištenja IKT alata čini ih lakima za upotrebu pri kreiranju vizualnih sadržaja učitelji s dvogodišnjim studijem ($M = 3,8$, $C = 4$) daju statistički značajno nižu ocjenu od onih s petogodišnjim ($M = 4,4$, $C = 5$), a učitelji s četverogodišnjim studijem bez pojačanoga predmeta ($M = 3,9$, $C = 4$), od onih s petogodišnjim, ali i onih s četverogodišnjim studijem s pojačanim predmetom ($M = 4,3$, $C = 4,5$).

O stavu: Jednostavna primjena IKT-a pruža učeniku digitalnu samostalnost pri kreiranju vizualnih sadržaja u nastavi LK učitelji s dvogodišnjim studijem daju manju procjenu ($M = 3,6$, $C = 4$) od onih s petogodišnjim studijem ($M = 4,3$, $C = 4$).

I na kraju o stavu: IKT omogućuje učiteljima stvaranje privlačnoga i motivirajućega sadržaja kao poticaja za stvaralaštvo učitelji s četverogodišnjim studijem bez pojačanoga

predmeta daju nižu procjenu ($M = 3,9$, $C = 4$) od onih s četverogodišnjim studijem s pojačanim predmetom ($M = 4,5$, $C = 5$) i onih s petogodišnjim studijem ($M = 4,5$, $C = 5$).

Ovime možemo reći da je hipoteza 1 djelomično potvrđena jer se učitelji, ovisno o vrsti završenoga studija, razlikuju samo u nekim, a ne u svim stavovima o utjecaju IKT-a na nastavu likovne kulture s obzirom na završeni studij. Ovakvi rezultati upućuju na to da stupanj obrazovanja učitelja može utjecati na percepciju korisnosti digitalne tehnologije u nastavi, što je u skladu s nalazima Phelps i Maddisona (2008) koji su istaknuli da se razina prihvaćanja IKT-a razlikuje među učiteljima ovisno o njihovoj profesionalnoj pripremljenosti i iskustvu. Tomljenović i Novaković (2019) u svojem su istraživanju u Republici Hrvatskoj utvrdile da učitelji s višom obrazovnom razinom i specijalizacijom za likovno područje iskazuju višu razinu samopouzdanja i pozitivniji stav prema upotrebi IKT-a u nastavi likovne kulture. Tondeur i sur. (2008) također ističu važnost obrazovnoga konteksta i programa u kojem je učitelj osposobljen jer on može oblikovati njegove pedagoške pristupe tehnologiji, osobito u umjetničkom području pri čemu je integracija digitalnih alata često izazovna.

Povezanost stavova o utjecaju IKT-a na kvalitetu nastave likovne kulture s dobi i statusom učitelja

Kako bismo odgovorili na pitanje postoji li statistički značajna povezanost u stavovima o utjecaju IKT-a na nastavu likovne kulture s dobi i statusom učitelja izračunati su Spearmanovi neparametrijski koeficijenti korelacije (Tablica 4).

Tablica 4

Dobiveni rezultati pokazuju da postoji nekoliko statistički značajnih korelacija stavova o utjecaju IKT-a na nastavu likovne kulture i dobi te statusa učitelja te da su neke pozitivne, a neke negativne.

Pokazalo se da s porastom dobi padaju procjene o stavovima: IKT su bliske učenicima i njima se vješto koriste ($r = -0,22$, $p < 0,05$), Jednostavnost primjene i korištenja IKT alata čini ih lakima za upotrebu pri kreiranju vizualnih sadržaja ($r = -0,21$, $p < 0,05$), Jednostavna primjena IKT-a pruža učeniku digitalnu samostalnost pri kreiranju vizualnih sadržaja u nastavi LK ($r = -0,26$, $p < 0,01$), IKT potiče učenike u nastavi LK na eksperimentiranje, istraživanje i kreativno izražavanje ($r = -0,19$, $p < 0,05$) i Primjena IKT-a u nastavi LK pospješuje učenička postignuća ($r = -0,22$, $p < 0,05$), Primjena IKT-a u nastavi LK povećava suradničko učenje ($r = -0,18$, $p < 0,05$) i Primjena IKT-a u nastavi likovne kulture omogućuje bolje razumijevanje likovnoga jezika i likovnih pojmova ($r = -0,20$, $p < 0,05$).

Što se tiče statusa učitelja, s njegovim porastom raste procjena stava: IKT omogućuje laku dostupnost umjetničkih djela ($r = 0,19$, $p < 0,05$), a padaju procjene stavova: Primjena IKT-a u nastavi LK pospješuje učenička postignuća ($r = -0,25$, $p < 0,01$), Primjena IKT-a u nastavi LK povećava suradničko učenje ($r = -0,21$, $p < 0,05$) i Primjena IKT-a u nastavi likovne kulture omogućuje bolje razumijevanje likovnoga

jezika i likovnih pojmova ($r = -0,21$, $p < 0,05$). Na temelju prikazanih rezultata može se zaključiti da su hipoteze 2 i 3 djelomično potvrđene. Naime, iako velik broj korelacija pokazuje statističku značajnost, one se ne pojavljuju konzistentno u svim dimenzijama stavova. Također, neke su korelacije negativne, a neke pozitivne, što ukazuje na složenost odnosa između stavova i individualnih karakteristika učitelja. Negativne korelacije između profesionalnoga statusa učitelja i stavova prema IKTu ukazuju na to da učitelji s višim statusom ne percipiraju IKT kao ključan za postizanje obrazovnih ciljeva u nastavi likovne kulture, osobito u segmentima koji se odnose na socijalizaciju učenika, razumijevanje likovnoga jezika i usvajanje likovnih pojmova. Vjerojatno se oslanjaju na bogatiju pedagošku metodologiju pri čemu IKT predstavlja samo jedan od mogućih alata. Naime, iako motivacijski i vizualno poticajan, IKT nije dovoljan sam po sebi za kvalitetu nastave. Phelps i Maddison (2008) upozoravaju da viši profesionalni status bez kontinuiranoga stručnog usavršavanja ne jamči veću digitalnu kompetenciju ni motivaciju za primjenu IKTa, što može objasniti umjerene ili negativne veze sa statusom. Stoga rezultati potvrđuju složen odnos između statusa, stavova i primjene tehnologije i ističu važnost kontinuiranoga profesionalnog razvoja kao preduvjeta za efikasnu integraciju IKTa.

Samoprocjene profesionalnih kompetencija u nastavi likovne kulture

Prije obrade podataka vezane uz samoprocjene profesionalnih kompetencija u nastavi likovne kulture prikazali smo deskriptivnu statistiku za rezultate dobivene na skali samoprocjenama profesionalnih kompetencija u nastavi likovne kulture (Tablica 5).

Tablica 5

Ono što možemo vidjeti iz Tablice 5 jest da učitelji uglavnom visoko procjenjuju svoje kompetencije. No ako bismo pregledali sve pojedinačne kompetencije, vidjeli bismo da učitelji procjenjuju da imaju izrazite kompetencije (4,5 ili više) samo za: Sposobnost prihvaćanja i uvažavanja mišljenja učenika, a koja se razlikuju od vašega ($M = 4,5$, $C = 5$, $D = 5$). Za sve ostale kompetencije procjenjuju da ih u većoj mjeri posjeduju (3,5 - 4,4). Dok nema kompetencija za koje kažu da su im osrednje, male ili vrlo male.

Rezultati Kolmogorov Smirnov testa pokazuju da se sve distribucije procjene svih kompetencija statistički značajno razlikuju od normalne raspodjele, stoga je u daljnjoj obradi korištena neparametrijska statistička obrada podataka.

Povezanost samoprocjene profesionalnih kompetencija u nastavi likovne kulture i stavova o utjecaju IKT-a na kvalitetu nastave likovne kulture

Da bismo provjerili postoji li statistički značajna povezanost između samoprocjene profesionalnih kompetencija u nastavi likovne kulture i stavova o utjecaju IKT-a na nastavu likovne kulture, izračunati su Spearmanovi neparametrijski koeficijenti

korelacije (Prilog 1- Tablica 6a i Prilog 2- Tablica 6b).

Dobivenim korelacijama možemo reći da je hipoteza 4 djelomično potvrđena, iako nisu sve korelacije statistički značajne, velik broj njih jest, a povezanosti su u očekivanom smjeru, pozitivne i niskoga do srednjega intenziteta. Navedeno možemo interpretirati tako da učitelji koji se samoprocjenjuju kompetentnijima u profesionalnim aspektima nastave likovne kulture također iskazuju i pozitivnije stavove o primjeni IKT-a u toj nastavi. Do sličnih nalaza došli su Tondeur i sur. (2017), koji ukazuju da postoji značajna veza između samoprocjene profesionalnih kompetencija učitelja i njihove spremnosti za integraciju digitalnih alata u nastavu. Ertmer i Ottenbreit-Leftwich (2010) dodatno ističu da su osobna uvjerenja i stavovi učitelja o uključivanju tehnologije u nastavne metode snažan prediktor stvarne uporabe IKT-a u učionici. OECD-ovo TALIS istraživanje (2021) pokazuje da učitelji koji se osjećaju profesionalno kompetentnima češće sudjeluju u inovacijama i prilagodbi nastave uporabom digitalnih alata. Dobivene korelacije u ovome istraživanju između percepcije profesionalne kompetentnosti i pozitivnih stavova prema integraciji IKT-a u nastavi nisu samo izdvojeni fenomen koji se tiče područja Republike Hrvatske gdje je istraživanje provedeno, već su rezultati u skladu s europskim i globalnim obrazovnim trendovima. U tom kontekstu, rezultati istraživanja podržavaju teorijski okvir prema kojem su profesionalne kompetencije temeljna pretpostavka za uspješnu i svrhovitu integraciju IKT-a u nastavni proces (European Commission, 2018).

Zaključak

U ovome istraživanju ispitani su stavovi učitelja o primjeni informacijsko-komunikacijske tehnologije (IKT) u nastavi likovne kulture te njihova povezanost s dobi, statusom, završenim studijem i samoprocjenom profesionalnih kompetencija. Rezultati su pokazali da učitelji u velikoj mjeri iskazuju pozitivne stavove prema IKT-u, osobito u kontekstu motivacije učenika, dostupnosti sadržaja i stvaranja poticajnoga okružja za likovno izražavanje. Većina postavljenih hipoteza djelomično je potvrđena. Statistički značajne razlike u stavovima o integraciji IKT-a u nastavu likovne kulture utvrđene su s obzirom na vrstu završenoga studija, pri čemu su učitelji s petogodišnjim studijem ili četverogodišnjim studijem s modulom iskazivali višu razinu pozitivnih stavova. Dob i status učitelja pokazali su složenije obrasce. Naime, stariji učitelji i oni višega statusa nisu nužno iskazivali pozitivnije stavove. Navedeno ukazuje na to da učitelji IKT ne percipiraju kao ključan alat za postizanje obrazovnih ciljeva u nastavi likovne kulture, osobito u segmentima koji se odnose na socijalizaciju učenika, razumijevanje likovnoga jezika i usvajanje likovnih pojmova, već ga smatraju jednim od mogućih didaktičkih sredstava. Iako motivacijski i vizualno poticajan, IKT sam po sebi nije dovoljan za osiguravanje kvalitete nastave. Dodatno, uočena je umjerena, ali statistički značajna pozitivna povezanost između samoprocjene profesionalnih kompetencija i stavova prema IKT-u, što potvrđuje da učitelji koji se percipiraju kompetentnijima u nastavi likovne kulture iskazuju i veću spremnost za integraciju digitalnih alata. Dobiveni

rezultati u skladu su s prethodnim istraživanjima (Tondeur i sur., 2008; Ertmer i Ottenbreit-Leftwich, 2010; Phelps i Maddison, 2008), koja ističu važnost obrazovanja i osjećaja osobne sigurnosti u digitalnim kompetencijama kao ključnih prediktora prihvaćanja IKT-a. Također, nalazi istraživanja podržavaju suvremene europske smjernice (European Commission, 2018), koje naglašavaju nužnost kontinuirane podrške učiteljima u području integracije IKT-a u nastavu. Ovo istraživanje doprinosi razumijevanju uloge učitelja u integraciji IKT-a u umjetničke predmete, ali i otvara prostor za daljnja istraživanja koja bi uključivala kvalitativne metode, longitudinalni pristup i komparaciju različitih obrazovnih konteksta.

Prilog 1 Tablica 6a

Spearmanovi koeficijenti korelacije između samoprocjene profesionalnih kompetencija u nastavi likovne kulture i stavova o utjecaju IKT-a na nastavu likovne kulture

	Informatičko-komunikacijske tehnologije (IKT) vizualno su privlačne učenicima.	IKT omogućuje laku dostupnost umjetničkih djela.	Korištenje IKT-a u nastavi LK potiče učeničku aktivnost.	Nastava LK uz IKT je zanimljivija učenicima.	Nastava LK uz primjenu IKT-a motivira učenike i privlači njihovu pažnju.
Sposobnost primjene suvremenih nastavnih strategija i metoda u nastavi likovne kulture.	0,29**	0,20*	0,14	0,24**	0,15
Sposobnost primjene informatičko komunikacijske tehnologije IKT-a u nastavi likovne kulture.	0,41**	0,27**	0,31**	0,30**	0,24**
Znanja iz područja likovnih umjetnosti potrebnih za određivanje teme, motiva, likovnih problema i sadržaja za poučavanje likovne kulture.	0,08	0,12	0,05	0,22*	0,14
Sposobnost odabira likovno-umjetničkoga djela (reprodukcije) za analizu i otkrivanje likovnih pojmova.	0,12	0,19*	0,19*	0,28**	0,19*
Sposobnost ostvarivanja ishoda učenja unutar satnice nastave likovne kulture propisane kurikulumom.	0,18*	0,15	0,16	0,27**	0,15
Sposobnost kritičkoga vrednovanja kurikula likovne kulture.	0,22*	0,24*	0,19*	0,28**	0,28**
Sposobnost planiranja nastavnoga procesa LK s preciznim ciljevima i očekivanim ishodima učenja.	0,26**	0,17	0,08	0,16	0,16
Sposobnost vrednovanja različitih strategija učenja i poučavanja u nastavi likovne kulture.	0,21*	0,21*	0,15	0,25**	0,24**
Sposobnost refleksije i samorefleksije o vlastitom radu i vrijednostima u nastavi LK.	0,22*	0,20*	0,14	0,17	0,15
Sposobnost razvoja i poticanja kreativnost i stvaralačkoga potencijala učenika u nastavi LK.	0,32**	0,30**	0,26**	0,21*	0,25**
Sposobnost razvoja i poticanja kritičkoga mišljenja i slobode izraza učenika u nastavi LK.	0,32**	0,29**	0,12	0,25**	0,19*
Obogaćivanje nastave LK posjetom muzejima i galerijama.	0,24**	0,20*	0,17	0,21*	0,20*
Sposobnost poticanja učenika na primjenu novih medija, digitalnih alata i aplikacija u nastavi LK.	0,36**	0,27**	0,21*	0,28**	0,25**
Sposobnost prihvaćanja i uvažavanja mišljenja učenika, a koja se razlikuju od vašeg.	0,22*	0,40**	0,03	0,23*	0,19*

	Motivacija učenika za kreativno likovno izražavanje veća je uz uporabu IKT-a.	IKT su bliske učenicima i njima se vješto koriste.	Jednostavnost primjene i korištenja IKT alata čini ih lakima za uporabu pri kreiranju vizualnih sadržaja.	Jednostavna primjena IKT-a pruža učeniku samostalnost pri kreiranju vizualnih sadržaja u nastavi LK.
Sposobnost primjene suvremenih nastavnih strategija i metoda u nastavi likovne kulture.	0,09	0,19*	0,18*	0,18*
Sposobnost primjene informatičko komunikacijske tehnologije IKT-a u nastavi likovne kulture.	0,16	0,37**	0,41**	0,39**
Znanja iz područja likovnih umjetnosti potrebnih za određivanje teme, motiva, likovnih problema i sadržaja za poučavanje likovne kulture.	0,06	0,06	-0,07	0,11
Sposobnost odabira likovno-umjetničkoga djela (reprodukcije) za analizu i otkrivanje likovnih pojmova.	0,09	0,16	0,14	0,15
Sposobnost ostvarivanja ishoda učenja unutar satnice nastave likovne kulture propisane kurikulumom.	0,12	0,20*	0,21*	0,13
Sposobnost kritičkoga vrednovanja kurikula likovne kulture.	0,14	0,19*	0,10	0,11
Sposobnost planiranja nastavnoga procesa LK s preciznim ciljevima i očekivanim ishodima učenja.	0,05	0,18*	0,13	0,09
Sposobnost vrednovanja različitih strategija učenja i poučavanja u nastavi likovne kulture.	0,12	0,19*	0,07	0,15
Sposobnost refleksije i samorefleksije o vlastitom radu i vrijednostima u nastavi LK.	0,09	-0,03	-0,02	0,04
Sposobnost razvoja i poticanja kreativnosti i stvaralačkoga potencijala učenika u nastavi LK.	0,14	0,16	0,15	0,20*
Sposobnost razvoja i poticanja kritičkoga mišljenja i slobode izraza učenika u nastavi LK.	0,12	0,11	0,13	0,19*
Obogaćivanje nastave LK posjetom muzejima i galerijama.	0,15	0,34**	0,33**	0,23*
Sposobnost poticanja učenika na primjenu novih medija, digitalnih alata i aplikacija u nastavi LK.	0,10	0,32**	0,33**	0,31**
Sposobnost prihvaćanja i uvažavanja mišljenja učenika, a koja se razlikuju od vašeg.	0,20*	0,08	0,20*	0,12

Legenda: ** - značajno uz 1 % rizika, x - značajno uz 5 % rizika

Prilog 2 Tablica 6b

Spearmanovi koeficijenti korelacije između samoprocjene profesionalnih kompetencija u nastavi likovne kulture i stavova o utjecaju IKT-a na nastavu likovne kulture

	IKT potiče učenike u nastavi LK na eksperimentiranje, istraživanje i kreativno izražavanje.	Primjena IKT-a u nastavi LK pospješuje učenička postignuća.	Primjena IKT-a u nastavi LK povećava suradničko učenje.	Primjena IKT-a u nastavi likovne kulture omogućuje bolje razumijevanje likovnoga jezika i likovnih pojmova.
Sposobnost primjene suvremenih nastavnih strategija i metoda u nastavi likovne kulture.	0,13	0,13	0,11	0,07
Sposobnost primjene informatičko komunikacijske tehnologije IKT-a u nastavi likovne kulture.	0,31**	0,31**	0,23*	0,23*
Znanja iz područja likovnih umjetnosti potrebnih za određivanje teme, motiva, likovnih problema i sadržaja za poučavanje likovne kulture.	0,05	0,09	0,04	0,06
Sposobnost odabira likovno-umjetničkoga djela (reprodukcije) za analizu i otkrivanje likovnih pojmova.	0,16	0,23**	0,07	0,20*
Sposobnost ostvarivanja ishoda učenja unutar satnice nastave likovne kulture propisane kurikulumom.	0,12	0,16	0,12	0,13
Sposobnost kritičkoga vrednovanja kurikula likovne kulture.	0,24**	0,23*	0,21*	0,22*
Sposobnost planiranja nastavnoga procesa LK s preciznim ciljevima i očekivanim ishodima učenja.	0,17	0,11	0,14	0,15
Sposobnost vrednovanja različitih strategija učenja i poučavanja u nastavi likovne kulture.	0,20*	0,16	0,18*	0,13
Sposobnost refleksije i samorefleksije o vlastitom radu i vrijednostima u nastavi LK.	0,02	0,12	0,17	0,11
Sposobnost razvoja i poticanja kreativnost i stvaralačkoga potencijala učenika u nastavi LK.	0,20*	0,23*	0,21*	0,15
Sposobnost razvoja i poticanja kritičkoga mišljenja i slobode izraza učenika u nastavi LK.	0,20*	0,08	0,16	0,12
Obogaćivanje nastave LK posjetom muzejima i galerijama.	0,21*	0,15	0,14	0,07
Sposobnost poticanja učenika na primjenu novih medija, digitalnih alata i aplikacija u nastavi LK.	0,29**	0,30**	0,31**	0,22*
Sposobnost prihvaćanja i uvažavanja mišljenja učenika, a koja se razlikuju od vašeg.	0,10	0,12	0,13	0,29**

	Primjena IKT-a u nastavi LK omogućuje pristup virtualnim šetnjama kroz galerije i muzeje.	Primjena IKT-a u nastavi LK omogućuje bolju interdisciplinarnost i međupredmetnu povezanost .	IKT omogućuje učiteljima stvaranje privlačnoga i motivirajućega sadržaja kao poticaja za stvaralaštvo.
Sposobnost primjene suvremenih nastavnih strategija i metoda u nastavi likovne kulture.	0,22*	0,26**	0,28**
Sposobnost primjene informatičko komunikacijske tehnologije IKT-a u nastavi likovne kulture.	0,30**	0,30**	0,44**
Znanja iz područja likovnih umjetnosti potrebnih za određivanje teme, motiva, likovnih problema i sadržaja za poučavanje likovne kulture.	0,18	0,12	0,15
Sposobnost odabira likovno-umjetničkoga djela (reprodukcije) za analizu i otkrivanje likovnih pojmova.	0,24**	0,20*	0,25**
Sposobnost ostvarivanja ishoda učenja unutar satnice nastave likovne kulture propisane kurikulumom.	0,26**	0,28**	0,23*
Sposobnost kritičkoga vrednovanja kurikula likovne kulture.	0,32**	0,30**	0,18
Sposobnost planiranja nastavnoga procesa LK s preciznim ciljevima i očekivanim ishodima učenja.	0,27**	0,24**	0,16
Sposobnost vrednovanja različitih strategija učenja i poučavanja u nastavi likovne kulture.	0,30**	0,32**	0,17
Sposobnost refleksije i samorefleksije o vlastitom radu i vrijednostima u nastavi LK.	0,21*	0,14	0,14
Sposobnost razvoja i poticanja kreativnost i stvaralačkoga potencijala učenika u nastavi LK.	0,33**	0,29**	0,19*
Sposobnost razvoja i poticanja kritičkoga mišljenja i slobode izraza učenika u nastavi LK.	0,38**	0,25**	0,19*
Obogaćivanje nastave LK posjetom muzejima i galerijama.	0,24**	0,25**	0,22*
Sposobnost poticanja učenika na primjenu novih medija, digitalnih alata i aplikacija u nastavi LK.	0,43**	0,29**	0,31**
Sposobnost prihvaćanja i uvažavanja mišljenja učenika, a koja se razlikuju od vašeg.	0,45**	0,25**	0,29**

Legenda: ** - značajno uz 1 % rizika, * - značajno uz 5 % rizika