Attitudes of Students, Future Teachers, to the Importance of Using Media in Teaching

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Abstract - **The media are introduced into teaching based on knowledge of theories of learning and teaching. A stimulating learning environment is important to ensure an appropriate learning culture, in this context a stimulating multimedia environment. An innovative approach to the teaching process implies a selection of appropriate teaching media, approaches, methods and teaching strategies, with regard to the defined outcomes and characteristics of individual media within the stimulating environment. In this paper the attitudes of students of the Faculty of Teacher Education in Rijeka to the use of digital media in the teaching process was examined, with an emphasis on self-assessment of the use of digital technology. Based on the assessment of their own ability to recognize different media, the results indicate that students choose media in accordance with the teaching content and that they believe their digital skills are sufficient for quality implementation of media in teaching. Student attitudes are that the lessons in which the media are used are more interesting. According to students' answers, the conclusion is that they believe that greater importance should be given to the use of digital media in the teaching process because they enable individualization of work, contribute to collaborative learning, game - based learning and project learning.**

Keywords– digital media, digital technology, teaching, students

I. INTRODUCTION

For purposeful teaching, focused on the interests and activities of students, importance should be given to constructivist teaching with a multimedia environment and competent teachers. Teachers' competencies are reflected in planned activities that, with the choice of collaborative methods and work strategies and with the help of the media, enable the contentment of individual needs of students. Multimedia in teaching as a separate factor in teaching is not a measure of the effectiveness of the teaching process, but in addition to technology and digital media, individual characteristics of students, didactic organization of teaching and learning and desired learning outcomes are also important [6]. Given the defined learning outcomes, teaching is well complemented by various media, among which digital media play a major role. Primary school teachers should possess skills to implement contemporary approaches and adapt them in order to enable young students to carry out active learning [7]. "Student's enthusiasm, involvement and willingness to learn greatly relies on the material that the teacher used in the classroom" [1]. That is why teaching materials presented by appropriate media should improve the quality of learning for every student.

This paper presents the features of multimedia in the context of the teaching process with consideration for a stimulating environment for the application of digital media.

II. MULTIMEDIA IN EDUCATION

The development of information and communication technologies enables the use of auditory, visual, and audio-visual media with an emphasis on digital media, as a joint activity of students and teachers in the teaching and learning processes. The student's enthusiasm, involvement, and readiness for the learning process relies heavily on the medium the teacher uses in the classroom. As technology has emerged in all school subjects, not only Computer science teachers are allowed to use it. Digital tools ensured an application of new opportunities in the educational process. Active learning by using technology enables a faster realization of certain activities [7]. Teaching media must serve as a means to improve the quality of learning for each student [1].

Multimedia can be defined as a specific combination that refers to the combination of image, sound, animation and video, while multimedia teaching [6] indicates teaching that uses two or more media that complement and enrich each other within appropriate learning strategies regarding the desired outcomes to be achieved. The aim of using multimedia in teaching is to present certain information more interesting and attractive. The possibility of searching and realizing multiple views on data is an advantage of multimedia, which should be used whenever possible and necessary [12]. There are many benefits of the use of multimedia in the teaching process, which encompasses attracting and maintaining student concentration, leading to increased student interest, facilitating the presentation of more complex concepts and creating long-term knowledge that students will be able to apply in real situations [4].

III. ENCOURAGING ENVIRONMENT FOR THE APPLICATION OF DIGITAL MEDIA

One influential element in the contextualized nature of learning and teaching that encourages and enables creative action is also the learning environment [13]. It is necessary to equip the learning environment with digital media that will stimulate the development of students' cognitive abilities as well as their reasoning within the learning process. The role and optimal use of digital media within multimedia teaching is important in a stimulating classroom atmosphere that contributes to interpersonal relationships, thereby choosing teaching methods through forms and methods of work and creative design of teaching activities, planning classes with clearly defined learning outcomes and implementation of didactic and methodical activities [10].

It is the use of digital media in teaching that enables specific individualization of work, but also collaborative and research learning. The use of technology or digital tools in the educational process has become indispensable in order to be able to carry out certain activities more successfully and more quickly. Such activities support active learning in students as a form of Inquiry Based Learning and Game Based Learning, that is, active approaches to learning that request students' research and finding answers for assigned questions [8]. Digital media enables learning by action, learning to solve problems, achieving learning goals, improving the roles of teachers and students in teaching and activities. Very specific are also social forms of work, articulation of the educational process and evaluation of learning outcomes [6]. Therefore, a significant role is given to the teacher, who in planning selects didactically, and shapes the media and environment for teaching students and organizes activities in which students learn how to solve problems by research and thinking [3], [11]. Continuous education of teachers is necessary for the application and design of educational media because teachers are the links between students and the media [9], [5].

In order to point out to students, the future school teachers, the importance and opportunities provided by the use of digital technology and media in teaching, students are introduced to the contents of multimedia didactics as well as knowledge and skills of using digital technology and digital media within the program of Teacher Training Study. The development of teaching competencies and digital competencies of students will enable future successful planning and implementation of classes teaching using contemporary forms, methods and strategies of teaching and learning with the appliance of technology and media. In the context of the importance of the use of technology and media in teaching, a survey was conducted among students of the Teacher Training Study that examined the attitudes of students to the use of media in teaching.

IV. ATTITUDES OF TEACHER TRAINING STUDY STUDENTS ON THE APPLICATION OF TECHNOLOGY IN TEACHING

The aim of the research was to determine the self-assessment of students of the Teacher Training Study on their abilities to use technology in teaching and to examine students' attitudes to the use of media in teaching.

Two hypotheses have been set:

H.1 Students are assessed as competent to apply technology in teaching.

H.2 Students express positive attitudes about the use of media in teaching.

The research was conducted at the Faculty of Teacher Education in Rijeka during 2020 through a designed questionnaire on the application of digital technology and media in the teaching process. As part of this paper, two questionnaire scales are analyzed. The first one consisted of 9 particles on which students self-assessed their own digital skills on technologies in teaching with the Likert-type scale (1- "I completely disagree" to 5- "I completely agree"). The second scale consisted of 12 items with which students expressed their opinions on the importance of using the media in teaching on the same Likert-type scale. The survey also included an open-ended question in which students expressed their opinion on the positive aspects of using the media in teaching.

The sample consisted of a total of 133 students of the Teacher Training Study of the Faculty of Teacher Education in Rijeka, namely 127 female respondents (95.5%) and 6 male respondents (4.5%). According to years of study the sample consisted of the following respondents: 38 first-year students (28.6%), 32 second-year students (24.1%), 17 third-year students (12.8%), 17 fourth-year students (12.8%) and 29 fifth-year students (21.8%).

TABLE I. STUDENTS' SELF-ASSESSMENT ON THE SKILLS OF USING DIGITAL TECHNOLOGY IN TEACHING

Statement	N	MIN	MAX	M	SD
1. I have experience in making presentations for teaching / presentation purposes.	133	1	5	4.70	0.707
2. My computer skills are sufficient for quality implementation of media in teaching.	133	1	5	4.43	0.791
3. I have experience in the development of games and quizzes for educational purposes.	133	1	5	4.24	1.001
4. I recognize different media and aim to choose the media that I use for the purposes of presentation / teaching.	133	2	5	4.20	0.776
5. I improved my digital skills during my studies.	133	1	5	3.86	1.001
6. I use new technologies in the environment.	133	1	5	3.85	0.925
7. The use of digital media additionally motivates me.	133	1	5	3.62	0.942
8. Using the media in front of other students makes me uncomfortable.	133	1	5	2.09	1.111
9. My computer skills are weaker compared to other students.	133	1	5	2.08	0.958

The results of the students' self-assessment of the skills of using digital technology in teaching (Table I) indicate that students assess their computer skills and knowledge more than sufficient for quality implementation of the media in teaching (M = 4.43). They also highly evaluated the ability to recognize different media and targeted selection of media that are used for the purposes of presentation / teaching (M = 4.20).

The students assess that they have experience in making presentations for teaching/presenting purposes (M = 4.70) as well as in creating games and quizzes for educational purposes (M = 4.24). This can be linked to positive attitudes to the use of new technologies in the environment (M = 3.85) and to a significant agreement that they improved their digital skills during their studies (M = 3.86).
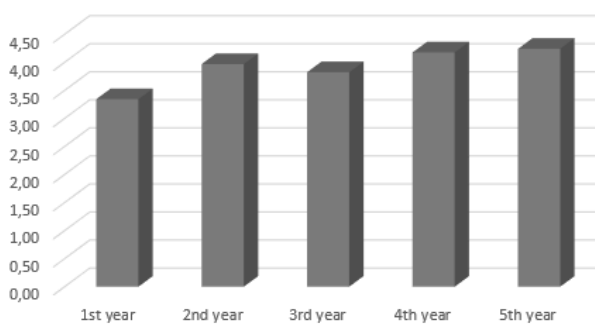

Figure 1. Students' self-assessment of digital skills improvement

Figure 1 shows that the self-assessment of digital skills improvement grows through years of study (from 1st to 5th year of study), as well as the assessments of experiences in creating presentations, games and quizzes (Figure 2), which indicates the importance of education and acquisition of learning outcomes aimed at developing digital skills as part of IT courses.
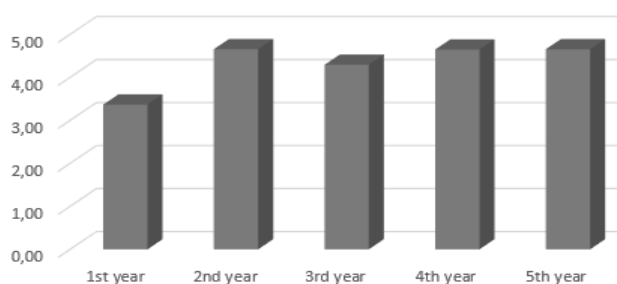

Figure 2. Students' self-assessment of experiences in creating games and quizzes

The positive assessment of one's own ability to use digital technology in teaching is also visible through the low mean value (M = 2.08) of the particle "9. My computer skills are weaker compared to other colleagues"

as well as the particle "8. Using the media in front of other students makes me uncomfortable" (M = 2.09).

It was surprising that the mean value (M = 3.62) of students' self-assessment on the particle "7. The use of digital media additionally motivates me" was so low. Given the opportunities that the digital media offer when planning teaching and learning, only 19.5% of respondents fully agree, while as many as 36.1% of students are undecided about motivation. Based on the obtained results, the hypothesis: "The students are assessed as competent to apply technology in teaching" is accepted.

The arithmetic means of the particles on the scale of students' attitudes about the importance of using digital media in teaching (Table II) indicate students' opinions that classes in which media are used are more interesting (M = 4.05) and that it is desirable to use media in teaching (M = 3.96). The students find it preferable to use the media in classes (M = 3.96), but believe that the effectiveness of media assisted teaching largely depends on teachers' competences (M = 4.05).

TABLE II. STUDENTS´ OPINIONS ON THE IMPORTANCE OF USING THE MEDIA IN TEACHING

Statement	N	MIN	MAX	M	SD
1. Teaching with the use of media is more interesting.	133	1	5	4.05	0.834
2. The effectiveness of teaching using the media largely depends on the competence of teachers in using it.	133	1	5	4.05	0.815
3. It is desirable to use the media in teaching.	133	1	5	3.96	0.753
4. Multimedia didactics knowledge is important in the teaching process.	133	1	5	3.94	0.833
5. The use of media increases teaching activity.	133	1	5	3.70	0.914
6. The use of media in teaching contributes to a more relaxed teaching atmosphere.	133	1	5	3.56	0.873
7. Modern teaching is inconceivable without the use of media.	133	1	5	3.27	1.181
8. Teaching preparation with the use of media is more demanding than the preparation of the classical form of teaching.	133	1	5	3.24	1.081
9. The use of media in teaching enhances educational success.	133	1	5	3.17	0.780
10. The implementation of teaching with the use of media is more demanding than the implementation of classical teaching.	133	1	5	2.80	0.971
11. The use of media in teaching violates discipline.	133	1	5	2.66	0.920
12. The use of media in teaching is superfluous.	133	1	5	1.92	0.849

Giving importance to the modernization of teaching via using digital media is reflected in the students´

attitudes that the knowledge of multimedia didactics is important in the teaching process (M = 3.94) because the use of media increases activity in teaching (M = 3.70).

By comparing the attitudes of students from different years of study related to giving importance to the knowledge of multimedia didactics, it can be seen (Figure 3) that the third and fourth year students who have attended the course Didactics attach greater importance to the knowledge of multimedia *and Plan Teaching*, certainly with the help of digital technology.

4. Multimedia didactics' knowledges are important in the teaching process.
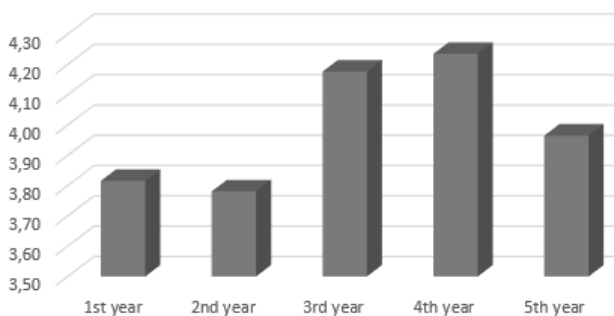

Figure 3. Comparison of students´ attitudes to the importance of the knowledge of multimedia didactics

Moreover, compared to the years of study, there is a more positive attitude of second-year students (M = 3.91) to the importance of using media that increase teaching activity, compared to the attitudes of first-year students (M = 3.32), which contributes to educational content from IT courses and outcomes achieved by students in one year of study (Figure 4).

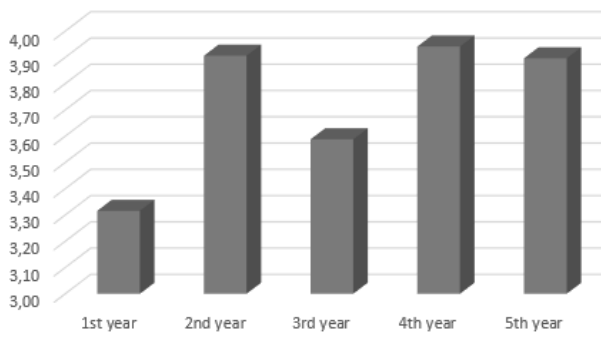### 5. The use of media increases teaching activity.

Figure 4. Comparison of students´ attitudes to the importance of using media that increase teaching activity

The students´ attitudes to increasing the active participation of children in the use of media, as expected, cannot be linked to the attitudes of students whether the use of media affects children´s success, while as many as 79 students (59%) are undecided whether the use of media in teaching promotes school success in children (M = 3.17) because the respondents feel that they do not have

experience of teaching and monitoring in connection with the use of media.

The students' attitudes towards two closely related particles: "8. Teaching preparation with the use of media is more demanding than preparation of the classical form of teaching" (M = 3.24) and "10. The implementation of teaching with the use of media is more demanding than implementation of classical teaching" (M = 2.80) indicate to the attitude that the preparation of teaching in which the media will be used requires increased teachers´ efforts in planning and preparation than classical teaching, while on the other hand the implementation of teaching with the help of digital media, according to 46% of respondents, should not be more demanding.

It was assumed that the mean values of students' opinions of the contribution of media use to a more relaxed teaching environment (M = 3.56) would be higher given the modern approach to teaching supported with the use of media that encourages collaborative forms and work strategies. The students also mostly disagree with the statement that the use of media in teaching violates discipline (M = 2.66) as well as with the statement that the use of media in teaching is superfluous (M = 1.92).

When expressing opinions on the open-ended question about presenting the positive aspects of using the media in teaching, students' state the following aspects: curiosity, modernity, motivation, accessibility, activity, relaxation, dynamism, creativity, visuality, interactivity…

The common opinion of the students is that the use of media in teaching contributes to the modernization of the teaching process in which the teacher is the organizer of teaching and the moderator of the teaching process during which students should come to conclusions, thus encouraging their critical thinking and development of attitudes. Visualization with the help of media influences students' interest by providing a clearer picture of the content that is systematized, by interacting with both participants in the teaching process and with media content, which motivates participants to be more involved during the teaching and learning process. A stimulating and positive atmosphere is created in which the use of various media sources encourages children to be creative. The obtained results that indicate positive attitudes of students to the use of media in teaching are in agreement with the results of the research on the attitudes of primary school teachers and students to the use of educational technology in teaching [2], which showed that primary school teachers have a slightly negative attitude to the application of educational technology as opposed to students who are yet to become teachers.

The above results, which indicate the students' opinions of the importance of using digital media in teaching, confirm the hypothesis "Students express positive opinions on the use of media in teaching".

V. CONLUSION

Digital technology and modern media in teaching pose challenges to future teachers in choosing

approaches, methods and strategies of teaching with regard to the characteristics of individual digital media and the factors of the stimulating environment. According to the research, students, future teachers, self-assess that they have sufficiently developed computer skills to implement the media in teaching and that they have improved their computer skills during their studies. They recognize different media and purposefully choose the medium they use for teaching purposes and have experience in creating digital games and quizzes. They are of an opinion that the lessons in which the media are used are more interesting and that the effectiveness of teaching with the help of the media largely depends on the competence of teachers in using it. The findings of multimedia didactics are important in the teaching process because the use of digital media in teaching contributes to the modernization of the teaching process. Future teachers point out that the use of digital teaching content contributes to a more relaxed teaching atmosphere. The student's motivation, involvement, and readiness for the learning process relies heavily on the medium the teacher uses in teaching.

In an effort to promote the use of digital media that enrich the teaching process, it can be concluded that an important role is played by the teacher, who should adapt teaching to the abilities and interests of his students and effectively coordinate selected media with the environment in order to motivate students, encourage research and creative work toward achieving the learning outcomes.

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