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# ICT ENRICHED TEACHING VS. TRADITIONAL TEACHING IN PRIMARY SCHOOL

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## Abstract

The conducted research aimed to identify differences between classes held in a traditional way and contemporary classes held using information and communication technology. Besides that, pupil's preferences related to traditional and contemporary teaching methods and teaching aids were questioned. The sample of participants consisted of 42 students from 7th and 8th grade in elementary school. The number of pupils in 7th grade was 23 and in 8th grade 22. Seventh grade pupils evaluated the class held in a traditional way (using blackboard, chalk, printed worksheet and textbook) and eight grade pupils evaluated the class held in a contemporary way (using online tool Kahoot, learning scenario, a smart board and video materials). The classes were evaluated in four categories – clarity of content, usefulness of content, interestingness of the class and active participation during the class. Class evaluation results are very similar in all categories, but contemporary class showed better results in clarity of content and interestingness of the class and traditional class showed better results in active participation during the class. The results of pupil's preferences related to traditional and contemporary teaching methods and teaching aids imply that they prefer using information and communication technology for solving tasks and practicing and they prefer smart board over blackboard but they are hardly accustomed to the e-textbook which means they prefer printed textbooks.

Keywords: ICT enriched teaching, traditional teaching, primary school.

## 1 INTRODUCTION

With development of information-communication technology, education has undergone major changes. Contemporary education is a specific process in which the roles of teachers and students have completely changed. The teacher's role is no longer fundamental to the educational process, but teacher rather becomes a mediator between the student and the teaching content while the students are no longer passive observers but the main bearers of all activities. Besides the roles, the way of teaching has also changed, and it was enriched with information-communication technology. That enabled more efficient transfer of knowledge and increased interest of students in teaching content.

The study of technology implementation in organizations started around the 1950s when technology started to develop rapidly. Initially, the studies were based on the implementation of technology in school's as business systems but later the ideas about implementation of technology in the educational process started to appear. One of the most significant researches was conducted by Wheeler [1] in 2001 and results showed that the use of ICT in teaching increases student's memory, motivation and understanding of the teaching content. Anderson [2] claims that using ICT in education makes students and teachers better prepared for learning and contributing to a learning community and Schultz-Zander, Buchter & Dalmer [3] claim that ICT can help in cooperative and collaborative learning environment. Observing from teacher's perspective, findings from research conducted by Kale & Goh [4] suggest there is a need for infrastructural improvements, workload adjustments, and increased professional development opportunities which would allow teachers to implement Web 2.0 technologies in their teaching practice. Lucas [5] in his research presents that contemporary students prefer active learning strategies. Therrell & Dunneback [6] indicate that majority of contemporary student (58%) prefer interactivity in teaching which help them achieve better learning outcomes.

## 2 METHODOLOGY

### 2.1 Research Objectives

Main objectives of this research were to identify differences between classes held in a traditional way and contemporary classes held using information and communication technology, evaluate traditional

and contemporary classes and determine pupil's preferences related to traditional and contemporary teaching methods and teaching aids.

## 2.2 Participants

The sample of participants consisted of 42 students from 7th and 8th grade in elementary school at Brestovec Orehoški. The number of pupils in 7th grade was 23 (51%) and in 8th grade 22 (49%). Male students prevail in both classes – 25 in total (56%) and 20 female students (44%). Seventh grade pupils evaluated class held on 30<sup>th</sup> of May 2018 in a traditional way (using blackboard, chalk, printed worksheet and textbook) and eight grade pupils evaluated class held on 5<sup>th</sup> of June 2018 in a contemporary way (using online tool Kahoot, learning scenario, a smart board and video materials).

## 2.3 Instruments

For research purposes, a survey questionnaire was constructed that consisted of three groups of questions – Group 1: General, Group 2: Class evaluation, Group 3: Pupil's preferences.

In Group 2 the classes were evaluated in four categories using the Likert scale – clarity of content, usefulness of content, interestingness of the class and active participation during the class. In Group 3 pupil's had to choose one out of two teaching methods and teaching aids which they preferred.

## 3 RESULTS

### 3.1 Class evaluation

In the questionnaire, participants were required to evaluate the lesson taken immediately prior to the survey. They were supposed to evaluate four statements using the Likert scale and answer an open type question. Seventh grade pupils evaluated class held in a traditional way using blackboard, chalk, printed worksheet and textbook and eight grade pupils evaluated class held in a contemporary way using ICT - online tool Kahoot, learning scenario, a smart board and video materials.

#### 3.1.1 Traditional class

The results of Group 2 obtained after the evaluation of traditional class are shown in Table 1. The class was evaluated by 23 pupils.

Table 1: Traditional class evaluation

<b>Group 2: Class evaluation – traditional class</b>						
	(1)	(2)	(3)	(4)	(5)	Average
	<b>strongly disagree</b>	<b>disagree</b>	<b>neutral</b>	<b>agree</b>	<b>strongly agree</b>	
<b><i>I understood the content of the class.</i></b>	1	0	2	9	11	4.26
<b><i>The content I learned will be useful to me.</i></b>	0	0	4	6	13	4.39
<b><i>Today's lesson was interesting to me.</i></b>	1	1	4	6	11	4.09
<b><i>I participated actively in the class.</i></b>	2	0	3	10	8	3.96

Comparing the results from the second group of questions related to the traditional class, it can be noticed that out of the four characteristics that were evaluated - clarity of content, usefulness of content, interestingness of the class and active participation during the class; usefulness is predominant (most participant strongly agrees with it), followed by the clarity of content (with almost the same ratio of agree and strongly agree) and interestingness. The worst results were shown in active participation during the class.

In the open question, participants were supposed to indicate the activity that was most interesting during the class. Most of them suggested solving tasks on the blackboard as well as solving the printed worksheet. Some even pointed out the teacher's person, which is a very interesting fact, assuming that the physical person grabs more attention from the pupils than virtual one (eg. video lectures).

### 3.1.2 Contemporary class

The results of Group 2 obtained after the evaluation of contemporary class are shown in Table 2. The class was evaluated by 22 pupils.

Comparing the results from the second group of questions related to the contemporary class, it can be noticed that out of the four characteristics that were evaluated - clarity of content, usefulness of content, interestingness of the class and active participation during the class; clarity of content is predominant (65% strongly agree). Next is interestingness (with mostly agree and strongly agree) and usefulness. Active participation during the class gave the worst results with mostly agree, but also the only disagrees (9%) in this assessment.

As the most interesting activity in the contemporary class, all participants suggested working with the online tool Kahoot.

Table 2: Contemporary class evaluation

Group 2: Class evaluation – contemporary class						
	(1)	(2)	(3)	(4)	(5)	Average
	<b>strongly disagree</b>	<b>disagree</b>	<b>neutral</b>	<b>agree</b>	<b>strongly agree</b>	
<b><i>I understood the content of the class.</i></b>	0	0	1	6	15	4.64
<b><i>The content I learned will be useful to me.</i></b>	0	0	4	4	14	4.45
<b><i>Today's lesson was interesting to me.</i></b>	0	0	2	6	14	4.55
<b><i>I participated actively in the class.</i></b>	0	2	4	9	7	3.95

### 3.1.3 Comparison of the traditional and contemporary class

Comparing the results obtained for the first of the four characteristics evaluated – clarity of content, it can be noted that the content processed with the help of information-communication technology and other aids was more comprehensible to the participants. However, the difference is not as big in general as most of the answers remain in the upper part of the scale, primarily in agree and strongly agree.

The difference between the usefulness of content is almost imperceptible – the responses for the both class types remained in strongly agree (60%), agree and neutral. It can be concluded that pupils understand that all the content they learn will be useful regardless of the medium used for its presentation.

Bigger difference can be seen regarding the interestingness of the class. As expected, it turned out that contemporary class was more interesting than the traditional one. Over 60% of participants from the contemporary class strongly agreed with that statement while only 40% of participants from the traditional class did the same. Other results from the contemporary class stayed in the upper part of the scale, while there was some who disagreed or strongly disagreed regarding the traditional class.

The results also showed that the participants were more active during the contemporary class. Regardless, it should be taken with a grain of salt because pupils can be (un)interested in the subject, not only the way the content is transferred. Nevertheless, about 90% of participants from the

contemporary class agreed / strongly agreed with the statement, whereas less than 70% from traditional class did the same.

Even though the results in all categories were similar, contemporary class showed better results regarding the clarity of content and interestingness of the class. Similar results were achieved in both groups regarding active participation during the class and usefulness of content.

### 3.2 Pupil's preferences

In Group 3, the participants were given a table. The table consisted of five rows and in each row they were offered two terms. In the left column, there were traditional teaching methods and teaching aids and in the right column there were the equivalents of these teaching methods and teaching aids in contemporary education. The participants needed to choose one of the two methods in each row.

The following methods were offered:

*Table 3: Classical vs. contemporary teaching methods*

TASKS / EXERCISES IN NOTEBOOKS AND WORKSHEETS	DIGITAL EXERCISES
PRINTED TEXTBOOK	E- TEXTBOOK
BLACKBOARD	SMARTBOARD / PROJECTOR
TRADITIONAL CLASSROOM	INTERACTIVE / PRESENTATION CLASSROOM
LISTENING TO THE TEACHER	PARTICIPATION IN CLASS

The results of the fourth group showed the following. The biggest difference is seen in the first row where participants chose between the tasks or exercises in the notebook/worksheets or those with the help of technology. Digital exercises were selected by 38 participants (84%) and the other ones only 7 (16%).

Next is the third row where the participants chose between the smartboard and the blackboard. As many as 32 participants (71%) chose a smartboard, while only 13 (29%) preferred using a blackboard.

Unexpectedly (with regard to the results of group 2 results related to the active participation during the class), the third largest ratio appeared in the fifth row where participants needed to choose between listening to the teacher and actively participating in the class. Thirty participants (67%) chose participation in class, while only 15 (33%) chose listening to the teacher.

The ratio is further reduced in the fourth row where a traditional classroom and an interactive / presentation classroom were offered. The contemporary classroom is preferred by 27 participants (60%), and the traditional classroom by 18 students (40%).

In the second row, the ratio is almost equalized, and it is a choice between printed textbooks and e-textbooks. Only 25 respondents (55%) selected e-textbooks, and 20 printed textbooks (45%).

Comparing the results of group 4 it can be noted that participants mostly accept the use of modern teaching methods and teaching aids to solve tasks and exercises and the use of a smartboard while they don't really get along with e-textbooks.

## 4 CONCLUSIONS

The research results have shown that the students in a class which used modern methods perceive that they achieved better results in the clarity of content and interestingness of the class, while both have shown equal results in usefulness of content and in active participation during the class. Post experimental interviews showed that most of the students learn more easily with the help of ICT and prefer to take part in the class when ICT is used. Several researches have shown that contemporary students prefer active learning and interactivity so contemporary teachers should try to implement ICT in their teaching because it can help them use various active learning strategies in their teaching and provide their students with improved level of interactivity which will motivate them to achieve better learning outcomes.

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