Research Article

Effects of the contemporary interpretation of epic poems on the attitudes of students towards computer mind maps

Abstract

The work consists of two parts: theoretical and research. The theoretical part of the paper analyzes concepts related to the motivation of students to study the epic poems, as well as students' attitudes towards the use of computer mind maps in interpreting the epic poems. The goal of the research is to investigate the effects of contemporary interpretations of folk epic poems on student scores on a scale of attitudes towards computer mind maps. Sample experimental research makes 284 students Elementary school, Vlasenica, who had classes of Serbian language and literature in the traditional and the modern way. Comparing the results on a scale of attitudes towards computer mind maps it was found that there are significant differences between students of different gender and belonging to the experimental or control groups.

Keywords: modern teaching, epic poems, e-learning, computer, students' attitudes, teaching methods, thematically integrated, flexibility, modernization of teaching, dynamics, pedagogical knowledge

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Introduction

Modern education has to include changes in the content of learning and teaching methods. The integration of technology in the teaching process is conditioned by the development of new technologies. By combining pedagogical and technological knowledge, teachers are catching up with the changes. Modern teaching integrates electronic teaching, individualized teaching, and thematically integrated, team teaching and learning, in which we use mind maps. Our goal is to examine the effects of this teaching. E-learning is now very widely used in different activities of modernization of teaching because it is specifically in relation to other ways of learning (flexibility in the use of learning materials, choice of time for learning, personal responsibility for the dynamics and structure). The development of new technology causes the integration of technology into the teaching process. "Effective integration of technology into the teaching process requires teachers not only to use their knowledge about the use of technology in the learning process, but also to combine and integrate the technological and pedagogical knowledge".[1] E-learning is a revolutionary turning point in the education system. "The development and maintenance of effective e-learning can be even more challenging in the era of great technological progress".[2]

The fact is that the modern web Technologies use communication, collaborative opportunities that are easily accessible and very popular among the younger generations, so that they can become a substitute to current methods of teaching and learning.[3] And in some cases, e-learning can be more effective than of the traditional and confirm the following results: "E-learning of word studying proved to be more effective than traditional teaching. Based on the measurement of achievement of the participants it was concluded that there was no statistically significant difference between the two groups (t=-3672, df=36, p=0.001) in favor of electronic teaching, which was confirmed by the test that was given two months later".[4] John Keller and Katsuaki Suzuki (John M. Keller and Katsuaki Suzuki, 2004) defined the concept of e-learning in a broad sense, so that it applies to almost any learning environment in which electronic media, such as computers, are used as a component of educational delivery systems.[5] Successful teaching with technology is a multidimensional process that "requires an understanding of the representation and formulation facilities of technology use, pedagogical techniques that use technologies in constructive ways to teach content; knowledge about what makes the content difficult or easy to learn and how technology can help; knowledge of students' prior knowledge and theory, epistemology , and understanding how technology should be used to build on existing knowledge and to develop new".[6]

Divergent thinking and epic songs

Epic folk songs through its symbolism, fiction, the epic heroes, through descriptions of duels, wealth, style and language enrich vocabulary of students, encourage the development of speech, and through speech they develop thinking, because these are two inseparable processes which affect the formation and development of concepts,[7] leading to zone of advanced development posing in front of students philosophical problems.[8,9] Students in this way attain the highest levels of knowledge, from the aspect of Bloom's revised taxonomy this is synthesis, the ability to create something new (Figure 1). The impact of polyfunctionality of poem is crucial for the development of mental abilities of students.[10,11] One of the indicators of the results of methodical interpretation of folk epic poems are also artistic and literary works of students of the experimental group from Elementary School *Vuk Karadžić*, Vlasenica (Attachment 1, 2, 3). By observation and cognitive mediation of the relationship between behavior and consequences of the behavior, people are constantly learning. "People process and transform passing experiences by means of verbal, imaginal and other symbols into cognitive models of reality that serve as guides for judgment and action. It is through symbols that people give meaning, form, and continuity to the experiences they have had. Symbols serve as the vehicle of thought".[12] Serbian epic poems have a lot of symbols (Figure 2).

Figure 1 Fairy wheel, Sara Mekić 4-2, Elementary school Vuk Karadžić.

Figure 2 Falcon and ruddy shelduck, Ivona Sladoje 4-2, Elementary school Vuk Karadžić.

Mind maps

Processing new information using mnemonics involves the use of imagination, the ability to imagine and enforce connections (associations) with something that is familiar and concrete (Slika 3) (Figure 3). The authors use different terms to define the concept of mind maps: way, method, skill, means, techniques, systems, strategy, diagram. The most common elements of the definition of mind maps can be summarized as follows:

I. More efficient methods of learning and problem solving by a multi connecting major and minor terms,

II. Way to a better and more successful learning, memory,

III. A system for organizing your own thoughts,

IV. Means for displaying thoughts and information using pictures and words,

V. Way of organizing large amounts of information,

VI. Organization notes using colors, images, words.

Mind maps can be defined as the conceptual maps, associative schemes, and cognitive maps (Picture 4). The benefits and importance of mind map for modern teaching is best reflected in the following:

I. More successful learning and memory—separate the essential information and connecting the unit.

II. It encourages creativity in creating new ideas

III. ketch table, if class is organized as mind maps it looks simple, efficient, organized and convenient.

IV. Rational use of learning time and materials - in a small space you can find a large amount of information.

V. A computer created mind maps have the following advantages:

VI. Branches of mind maps can be easy to organize and reorganize (supplemented, move, link, re-painted ...) magnifying, zooming;

VII. Computer-created mind maps can be very interesting and useful printed material (teaching papers) (Figure 4).[13]

Figure 3 A mind map - Epic heroes.

Figure 4 A mind map–Fairies in epic poetry

Method

Research question

We have defined the problem of our study through question: Could the results students on the scale of attitudes about mind maps be increased by introduction of modern methodical approach in methodical interpretation of folk epic poems? For the subject of research, we chose to investigate the effects of modern teaching on the scale of attitudes about mind maps of elementary school students. We choose experimental factor as the independent variable (by using modern teaching in the interpretation of the folk epic) to test the transfer of modern teaching (comparing modern and traditional) on the performance of students on the scale of attitudes about mind maps. According to such a formulated case studies we have collected basic general information about students (age, success, sex); data on the

level of performance results from the initial and final measurements on the scale of attitudes about mind maps; we have checked whether there is a correlation between the results and ways of teaching, depending on the age and sex of pupils.

The aim of the research is to examine the effects of the experimental program: modern classes (electronic, integrated, classes in which we use mind maps, research tasks, individualized teaching) compared to traditional teaching (classes in which is represented a frontal forms of work and monologue method)—in the interpretation of the epic songs on student scores on the scale of attitudes about mind maps. Tasks of research: Determine the level of student performance results of attitudes about mind maps at the beginning and end of the experimental research.

The general hypothesis is Modern teaching (electronic, integrated, classes in which we use mind maps, individualized teaching, problem teaching) is more efficient than traditional classes (classes in which he represented a frontal forms of work and monologue method) in achieving the positive results of attitudes about mind maps.

The techniques we used in research surveys, testing and scaling. For the study we used the integrated instrument that consists of a questionnaire of basic information about students and attitudes Likert-type scales. The questionnaire we collected data on: the age of students, gender, the overall success of the semester, proficiency assessment of computer use in teaching, knowledge of computer programs, assessment of how teachers use computers in the classroom, mind maps, etc. The questions in the questionnaire are closed and consist of a questionable sentence in which it is necessary to choose one of the answers. We used the the scale of attitudes about mind maps.

Experimental method

In our research, we applied the experimental method. The experimental testing was conducted in the Republic of Srpska, in elementary school *Vuk Karadžić*, Vlasenica; where the experimental group teachers use more sophisticated ways to interpret national epic poems (integrated learning, electronic learning, the use of mind maps, and use of research tasks) but also the traditional way in the control group. At the beginning of the experiment, both groups had initial examination to scale of attitudes about mind maps. After the introduction of the experimental factors testing was repeated on a scale of attitudes about mind maps in both groups of students (experimental and control). The experiment was carried out in March, April, May and June 2015. Classes of reading and interpretation of epic poetry in a modern way for two hours per week were introduced in the experimental group. Classes were organized with the use of e-learning, using mind maps, teamwork, integrated teaching (integration of history and Serbian language). The aim was to compare the effect of different types of classes (traditional and modern). The difference in the effects of two different ways of teaching was compared to the difference in the initial and final state. Group K is a control, and group E is an experimental group in which experimental factor was introduced: a modern approach to methodical interpretation of the folk epic poem. The statistical procedure that we used for calculating the effects of the experimental work is: analysis of covariance. Analysis of Covariance[1] is a statistical method which is used for:

I. Harmonization of statistical groups and

II. Longitudinal tracking of effects experimental factors.

Participants

Examining the effects of modern teaching (electronic, integrated, classes in which we use mind maps, research tasks, individualized teaching) in the interpretation of the epic poems, in comparison to traditional teaching (classes in which is represented a frontal forms of work and monologue method), the performance on a scale of mind maps, the structure of the sample was determined (Table 1) of experimental (E) and control group (K) by sex and age (from 4th to 9th grade). K is the control group from *Vuk Karadžić* Elementary school in Vlasenica. The statistical procedure that we used for calculating the effects of the experimental work is analysis of covariance. Analysis of covariance is a statistical procedure that is used in statistical harmonization of groups and longitudinal monitoring of the effects of experimental factors.

Table 1 Structure of the sample by gender and age of the experimental and control groups

CLASS							
EK_SEX	**4**	**5**	**6**	**7**	**8**	**9**	**TOTAL**
EM	8	10	16	17	13	12	76
EF	13	9	12	10	12	7	63
KM	10	14	16	14	15	14	83
KF	13	9	12	10	10	8	62
TOTAL	44	42	56	51	50	41	284

Results and discussion

Results of the scale of attitudes about mind maps for E and K groups of different sexes

Examining the analysis of variance on the scale of attitudes about mind maps (Table 2), we have found that between the experimental and control group on initial examination there were statistically significant difference ($F_x = 9.194$, p =0.000), in the final one, after the effects of the experimental factors, there is a statistically significant difference ($F_y = 5.480$, p=0.001). The analysis of covariance established that students (male and female) experimental groups better on the scales for testing attitudes about mind maps (Table 3), but this difference was not statistically significant ($F_{yx} = 0.971$, p=0.407). The male students of the experimental group (EM) achieved better results of the experimental research My=90579 then the students of control group (KM)=82 301. Female students of the experimental group (EF) have achieved better results at the end of the experimental research My=93.286 then students from the control group (KF) My=90,048. We conclude that the effects of modern teaching (electronic, integrated, classes in which we use mind maps, research tasks, individualized teaching) in the interpretation of the epic poems, has positive influence on students' attitudes toward mind maps.

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[1]The program of calculation of the covariance analysis was done by Professor scientist Alexa Brkovic using Garrett's (1959) formula.

Table 2 The scale of attitudes about mind maps

Source of variation	df	SSx	SSy	MSx (Vx)	MSy (Vy)	Fx	p	Fy	p
Between groups (b)	3	7539.50	5103.25	2513.17	1701.08	9.194	0.000	5.480	0.001
In groups (w)	280	76541.50	86915.75	273.36	310.41				
Total (T)	283	84081.00	92019.00						

Table 3 Average values of the initial and final tests

Group	N	Mx	SDx	My	SDy	Myp
EM	76	91.487	16.059	90.579	18.870	89.912
EF	63	95.143	12.504	93.286	12.770	90.463
KM	83	82.627	19.571	82.301	18.739	86.858
KF	62	94.452	16.244	90.048	18.688	87.633
		90.356	17.237	88.644	18.032	

Note the meaning of the mark:

E - Experimental group

K - Control group

M - Males

F - Females

Mx - initial testing

My - final examination

Myp - adapted My

Conclusion

Serbian epic poems are a treasury of terms related to the language, history, culture, customs, ethics, family, family relationships, social relationships, mythology and as such need to be on the central place in education of future generations of young people using available and near sources. With a modern interpretation of folk epic poems we get together two worlds, two ways of thinking, two ways of life between which are centuries in the minds of students. It is necessary to train the students to distinguish between good and bad, that nowadays they gain digital wisdom. They need to be empowered to adopt courses with understanding and knowledge that these are used in the appropriate opportunity.

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Conflict of interest

The author declares there is no conflict of interest.

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