THE STUDENTS' OPINIONS TOWARD INTERACTIVE LECTURES

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Abstract

The research purpose was to create and test the interactive lectures for lower secondary schools based on the characteristics of interactive ICT-supported education. First verification was carried out in the December 2018 on specialized school-board information technologies in Karaganda (Kazakhstan). The sample included two of eighth grade classes chosen, in total 26 respondents participated. The students' opinions toward interactive lectures in this study were tested using simple questionnaire survey. The results showed that more than 70 % of the students enjoy working in an interactive environment and this positively affects their opinions towards the subject.
Keywords*: interactive lecture, secondary school, students' opinions.*

Introduction

Despite the fact that pedagogic theory has changed significantly in the last decades, it resulted in a shift away from traditional lecture to more interactive teaching strategies (AAAS, 2011). Moreover, the variety of learning styles and temperaments of students (introverts and extroverts) suggest that an assortment of interactive learning strategies must be employed to effectively reach all students (Murphy et al., 2004).

An interactive approach may range from questions during the lecture and group work up to more complex activities that involve hands-on experience with material. These strategies are consistently linked to the improved measures of learning (e.g., Connell et al., 2015; Anderson et al., 2011), and it is widely acknowledged that active learning strategies will better serve the diverse learning patterns of the student population. Interactive lecture implies active involvement and participation by the audience so that students are no longer passive in the teaching process. Learners can communicate with the teacher, give him/her feedback, and can thus actively influence the teaching (Vališová & Kasíková, 2007). Because of this, their interest can be improved and their intellectual abilities stimulated (Petruţa, 2013). The students are allowed to use their personal devices such as mobile phones, tablets and laptops that allow for similar interactive lecture styles using these technologies (Sadykov & Čtrnáctová, 2018).

Whereas little has been written about the benefits and application of interactive lecturing for schoolteachers.

Schwerdt and Wuppermann (2011) examined whether the time that teachers spend on lecturing style teaching can influence the performance of U.S. students. The study showed that students benefit when their teachers spend more time on lecturing style teaching. Traykov and Galcheva (2017) stated that students from 9th grade at the "Dr. Petar Beron" School of Mathematics in Varna enjoy working in an interactive environment (69%) and this positively affects their attitude towards the tasks.

Addressing the issue of efficient use of interactive lecture lies not only in analysis of learning outcomes through assessments, but also in feedback provided by students (Hake, 1998; Sokoloff & Thornton, 1997). Therefore, *the aim* was to create and test interactive chemistry lectures for lower secondary schools based on the characteristics of interactive, ICT-connected education.

Research Methodology

First verification was carried out in the December 2018 on specialized school-board information technologies in Karaganda (Kazakhstan). The main objective of the educational program of the school is the development of individual, creative and research abilities of students in the active study of the use of information and communication technologies. This school services 292 students in grades 7–9 (2 classes in Russian language and 2 classes in Kazakh language are taught in each year). The specialized IT school board is located in a large town (Karaganda), but despite this, the participating students came from rural as well as urban areas, and there was no selection as regards their intellectual or achievement level for them to participate.

The sample included two of eighth grade classes chosen, in total 26 respondents participated (11 female adolescent and 15 male adolescent). One class of eighth grade consisted of 6 female adolescent and 8 male adolescent, another class of eighth grade consisted of 5 female adolescent and 7 male adolescent, which entailed a total of 4 hours of experimental action per student. Their age ranged from 14 to 15 years old.

It was aimed to study the students 'opinions on the basis of 2 interactive lectures (classification of chemical reactions, factors influencing the rate of chemical reaction). The questionnaire used in this research consisted of six closed-ended questions:

1. Do you like interactive lecture with the use of computer for presentation?
2. Do you think that interactive lectures are more interesting than the traditional lesson?
3. Was explanation in the interactive lecture clear, and therefore, I understood the topic well?
4. Do you think that the interactive lecture had too much information, diagrams and images, so I found it difficult?
5. Would you like if interactive lecture like this could be carried out more often?
6. Were you interested in solving the tasks using a mobile phone or a tablet?

A three level rating scale from 1 to 3 as follows: 1-Disagree, 2-No opinion, 3-Agree was selected as being the most appropriate to measure participants' opinions.

Research Results

The interactive lectures on the topics "Classification of chemical reactions" and "Factors influencing the rate of chemical reaction" were posted on the educational site: http://interactive-chemistry.ru. The lessons from interactive course consisted of text, pictures, animation, questions and tasks in interactive exercises, which are available in each stage of the lesson.

The figure 1 illustrates overall students' opinions toward interactive lectures. It shows separate answers for all six questions. The students' answers to the question were as follows:

More than three-quarters of the students (76%) like interactive lecture with the use of computer presentation and understand the topic well, while approximately one in five of the students (23%) say they have "no opinion" in this area.

Similarly, 73 % of the students believe that interactive lectures are more interesting than the traditional lesson and would like the interactive lecture to be carried out more often, while less than (27%) say they have "no opinion" in this area. Only 8 % of the students rate themselves as "disagree".

It is interesting to note, more than half of the students (54 %) do not think that the interactive lecture had too much information, diagrams, and images.

As a final point, it is not surprising that approximately 77 % of the students like using a mobile phone or a tablet while solving interactive tasks.

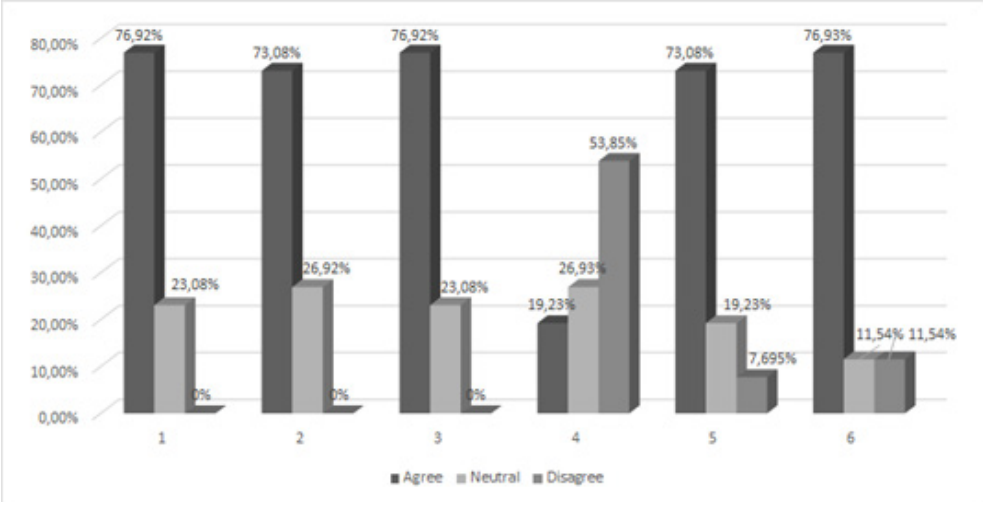

Figure 1. The overall students' opinions toward interactive lectures.

Conclusions

Firstly, we developed and adapted interactive lectures for lower secondary schools, which could be used in various parts of chemistry lessons. Secondly, the students' opinions toward interactive lectures in this study were tested using a simple questionnaire survey. First verification on school showed that more than 70 % of the students enjoy working with interactive lectures and this positively affects their opinions towards the subject. In the next part, we will therefore focus on verification of the use of interactive lectures in other schools in both Kazakhstan and the Czech Republic.

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