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Impact of use of technology in mathematics lessons on student achievement and attitudes

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Abstract

These days, it is accepted that when innovation is utilized suitably in study hall guidance, it has a positive effect on understudy accomplishment or achievement. In addition, utilizing innovation in training or showing assists instructors with giving quick input to understudies and inspires dynamic understudy learning, joint effort, and participation. It additionally assists educators with giving individualized learning openings and adaptability for their understudies.

About portion of the understudies were undecided in their perspective towards use of development, around 33% of the assemble delighted in using informative advancement in exercise; yet reasonable over a fourth of the understudies imparted negative perspectives towards using enlightening advancement. As far as tendency, about portion of the understudies supported the use of informative advancement in exercise, in a manner of speaking 16.5% of them didn't support the use of development, and reasonable more than 33% of them were uncertain.

My study exploring student success with the use of educational technology was conducted using mathematics as the subject, and it could be repeated with other school subjects. The findings in this study can shed light on the use of educational technology for teaching mathematics in similar education systems around the globe, in order to encourage education administrators to implement use of educational technology in mathematics lessons.

Keywords: mathematics, educational technology.

Impact of use of technology in mathematics lessons on student achievement and attitudes

We know that 21st century is the time of technology, where everything in our life depends on it. Most of people can't image their daily routine without any device. Especially, the young generation. As we know, the kids who were burn in 2000th years are the new generation. In education and psychology, it calls "Z generation". They are kids of technology, who can easily use and adapt to any device.

As we know, math it the one of difficult subjects and being successful here is rareness. Definitely, for those, who are smart and have special skills it is not a problem, but in real life in the classroom levels of students are mixed, and the weak part of students are faced with some problems during the lesson. If some of them can't get the topic even they want, other ones just are not interested in that subject. Considering the fact that the kids in our classroom are technology addicted, we can change our teaching method. If usually we use just a boards on the lesson, now it is time to change the format of the lesson.

So, this research is about survey what students think about the new format of learning and how does it affect on their academic performance?

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To examine the impact of using teaching technology in mathematics lessons on student achievement, we put the following research questions:

A) What impact does the use of mathematics lessons in education technology have on student achievement?

B) What is the attitude of the students towards the education technology in which they are employed

Method

This research aims to gain insight into the relationship between using of technology and students' performance. During the research work so many articles of successful teachers and professors were read. Because, I was interested in that topic and want my work was qualified and useful. So, there I collected some important opinions:

"Innovation use in study halls in this day and age is accepted to have a positive effect on understudies' prosperity and their perspectives towards exercises." Ramadan Eyyam and Huseyin Yaratan, East Mediterranean University, 2014.

In article of Timo Tossavainen and Ewa-Charlotte Faarinen, Lulea University of Technology, 2019: There is composed that in likelihood and measurements, tables and graphs ought to be utilized for depicting results from studies with just as without advanced devices. In grades 4-6 advanced devices are truly utilized. A stressing certainty is that lone a little level of Swedish instructor has enrolled in a class to study programming. In this way, the utilization of ICT in science training fluctuates a ton and relies upon both accessibility of advanced instruments and educators' decisions and capacities to utilize them. The creators recommended utilizing Ipads for young men, since they found that concentrating with tablet PCs and discovered an expansion particularly in young men's characteristic qualities in contemplating arithmetic, yet the two young men and young ladies couldn't help contradicting that tablet PCs is simpler approach to learn science. Further, young ladies unmistakably wanted to examine arithmetic with paper and pencil. It implies there are contrasts about the qualities and inspirations among young ladies and young men.

Concerning concentrating with ICT, the mean contrasts between gender are contrasted and the methods for the customary instructing. In any case, young ladies are still additionally ready to contribute additional time and exertion to contemplating arithmetic, however a significant finding is that the most critical change in the qualities is identified with young men and the inherent worth. Young men express higher characteristic inspiration in arithmetic when ICT is utilized.

Experiment design[1]

The method of research was “Quasi-experimental”. It is a kind of experiment where the experimenter does not directly affect the participants or the conditions of the experiment, but uses already existing groups to study the processes of interest to it. If the researcher is interested in the results of two different methods of teaching reading in primary school, he can either divide children into two groups and control the training (real experiment), or study existing groups that learn to read by different methods (quasi-experiment). Both methods allow the researcher to reach certain conclusions, but the conclusions obtained from the quasi-examination are more speculative due to weak control over the situation and factors of possible impact. Quasi-expert types:

1. No preliminary group equalization procedure.
2. Absence of the controlling group.
3. The impact is a real event that happened to the subject.

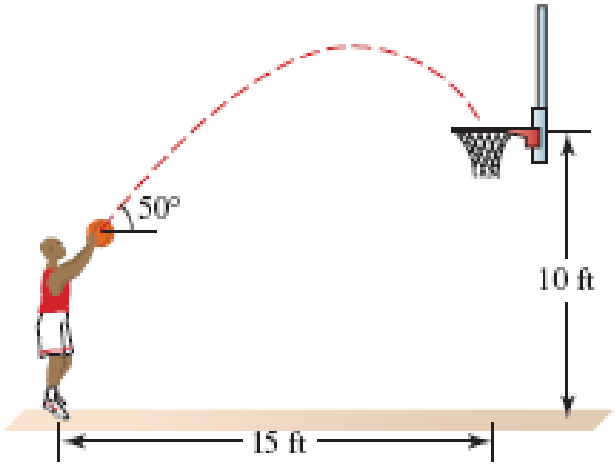
My instrument for the experiment was “achievement test”. In this study I investigated students’ attitudes towards technology use in class and whether the use of technology improved their academic achievement completed a pretest and a posttest. I chose the the topic “quadratic equation” and before to start it I got pre test and after finishing I got posttest to compare the result .

My questionnaire part was “survey”. After my experiment, I took survey questions from experimental group and got some feedback. It was so useful, because the test answers take important role in research, it helped me to make an analysis.

Data collection

I had 1 experimental and 1 control group (25 students in each group). For the experimental groups, lessons were designed using several technological tools, for example, I explained some topics of chapter with videos, we searched different examples for topics and in the end of chapter (topic) to conclude it we played games by gadgets. For this group everything was interested and unusual. They became more active on the lesson. But the control group was taught using traditional teaching methods. Before the starting chapter I got the pre test from the both groups, after finishing I got post test to compare results. And got a survey and feedback as well.

Our experimental topic was “Non-linear equations: graph of quadratic equations”. With 1st group here, as an example, we have used ipads on the lesson to draw graphs (in interned sites) and we related that topic with the real cases from the video. For most of students (90%) lessons were interestinf and clear. With 2nd group we study all everything just from the book. I took tests before and after. Students answered for survey questions and gave their feedback about our lessons.



Analysis

After pro-test analysis showed that results of experimental group was really better. It means teachnology impacts on their achivement and level of understanding.

During the experiment girls,who don't have technology skills were unconfidents and had I littele bit negative attitude. But then we solved that problem. It means skills take role.

Moreover, girls with engagement and confidence in both groups got good results.
Similarities:
Students with high science accomplishment showed significant levels of arithmetic confidence, unequivocally positive degrees of full of feeling commitment and social commitment are not confident in utilizing PCs, seem to have an uplifting demeanor to learning arithmetic with PCs.
Students with amazing science accomplishment exhibited exceptionally elevated levels of arithmetic confidence, firmly positive degrees of full of feeling and social commitment, are very confident in utilizing PCs and they have an inspirational demeanor to learning science with PCs.
Dissimilarities:

Students in the 2nd (control) group, they do not believe that the use of technology will enable them to improve their performance. Students with negative mentalities toward arithmetic,

low science accomplishment, low degrees of arithmetic confidence and low degrees of full of feeling commitment and conduct commitment, showed confidence in utilizing PCs and inspirational demeaner to learning arithmetic with PCs. Further research is required to recognize the best educating and learning conditions for understudies in this class. The two factors that appear to be related with the improvement of an inspirational demeaner to learning arithmetic with PCs are science confidence and full of feeling commitment.

Suggestion:

- School should provide the class with technology to change traditional educational system to modern.Because lack of tools will no get positive attitudes and results.
- Students and teachers shoul have digital literacy to easily use any technology.
- Students must be interested in lessons, therefore teachers should explain importance of the lesson, bu what students will be motivated and have desire.

Conclusion

My expectations were approved. Because, as you see, technology, different modern tools make every lesson interesting, especially, for new generation. In my experiment, some girls changed their attitudes toward mathematics. If this class was so passive before, now they are interested in math. After 2nd term they started to do PBL about math. And have successfully finished it. All of these mean that in 21th century we should forget about traditional methods, we should develop teaching/learning skills to make our lesson full of interesting things and knowledge.

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