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COMPARE TRADITIONAL METHODS OF TEACHING MATH WITH UNCONVENTIONAL ONES.

Reema Bisnoi

Msc mathematics

Guru Jambheshwar Universiry of science and technology Hisar

Abstract:

The customary showing approaches are by and large instructor coordinated where understudies are educated in a way helpful for sitting and tuning in. The facts confirm that customary methods of reasoning frequently permit us to proceed with the talk based model for certain helpful outcomes. Anyway it isn't unexpected contended that the conventional methodology may not give understudies significant abilities. The instructing of math that is normally alluded to or called modern uses constructivist reasoning as its premise; this ensnares methodologies in which an individual is sorting out their universe. So the understudy is a functioning member, which might help create, build or rediscover information – a significant objective that can be a tedious cycle whenever taken in a real sense for every understudy; then again, there is likewise a philosophical position known as friendly constructivism proposes bunch work, utilizing an expert language of the field, and talk learning its social structure; social intercourse and critical thinking being the main piece of learning process. It is contended that the forward thinking instructing is finished utilizing a critical thinking or request based methodology; where the student is the issue solver. In this way, e-learning is viewed as additional in accordance with the contemporary methodologies than the conventional. This paper basically surveys the writing on math and designing learning as far as these methodologies and looks at them. The paper explicitly looks at the benefits/detriments of the methodologies also the way in which they impact execution of understudies in arithmetic and designing courses.

Keywords: *Customary, Non-conventional, E-learning, Higher Education,*

Introduction

This paper is as much a reflection upon over 20 years of in class instructing of understudies in both secondary school and tertiary in a few nations, as a top to bottom and basic assessment of ongoing exploration on arithmetic instructing with an attention on advanced education in STEM subjects; considering the progressions in innovation so far (Science, Technology, Engineering and Mathematics) (Tularam and Keeler, 2006; Tularam and Ilahee, 2007, 2008; Tularam, 2011, 2013ab, 2010, 2015). In the beyond thirty years specifically, there has be a coordinated work to foster understudies' applied understandings of math frequently to the detriment of training, memory, and adversely marked instrumental learning. The instance of belittling any instructing connected with repetition learning, instrumental or procedural arrangement has been upheld (see, Abdulwahed et al, 2012; Kelson and Tularam, 1998ab; Tularam, 1997, 1998, 2015). The beyond thirty years have seen many changes in the

arrangement of conveyance in schooling around the world. As a rule, the philosophies will more often than not be gotten from principally the accompanying constructivist creators: Piaget's comprehension, Vygotksy's socio-social and vonGlaserfield (Piaget among others) constructivism. It is said that the customary showing strategy isn't reliable with the abovementioned and consequently various new techniques have been contrived over the long haul (Abdulwahed et al, 2012). The new innovation has likewise empowered such methods of reasoning to persevere inclassrooms of today yet there are various burdens just as benefits and these are to be featured in this paper. The fundamental point of this paper is to think about the customary and e-learning approaches and further to inspect whether the shift towards showing arithmetic has moved excessively far from the middle in the utilization of innovation as method for accomplishing the best for science and designing understudies. Have we gained from previous oversights of history given the current circumstance of such low levels in both arithmetic and science in Australia? Have we fittingly evaluated the hypothetical positions embraced (even that of constructivism) according to the math instructed in designing and sciences all the more for the most part.

This exploration project inspects the contrasts between two showing strategies—dynamic and customary—in the instructing of arithmetic in a specialized curriculum classes at standard primary schools in the Arab area of Israel. The two techniques endeavor to help educational accomplishments in science, from the parts of understanding review materials and the capacity to take care of issues. It ought to be noticed that the dynamic showing technique proposes another way in educating—a way with which one can energize and help understudies encountering challenges and furthermore fa-cilitate in the impression of study materials.

Math is viewed as one of the more troublesome subjects considered in school—maybe even the most troublesome—as understudies are needed to take care of verbal issues, adapt to investigate tasks, current circumstances utilizing outlines and numerical portrayals, comprehend the properties of ideas and the connections among them, and that's only the tip of the iceberg. Subsequently, the understudy should have solid capacities in coherent reasoning. Dynamic showing stresses social connections among concentrate on members in a school climate, just as understudy activities in ac-cordance with his/her own review progression, advancement of an adaptable report program that compares to understudy needs, improvement and association of assorted review materials and the utilization of options in instructing.

Every one of these should fill in as variables helping with showing math and in improving on concentrate on materials for understudies with challenges. The exploration objective was to inspect the proportion of progress that ought to happen in the numerical understudy utilizing the dynamic showing strategy, as per the RTI model (Response to Intervention).

To analyze the impact of showing strategies on academic accomplishments, this exploration project assessed four specialized curriculum classes considering inside the standard rudimentary training structure—two classes stu-passed on math as per the dynamic showing approach, and the other two as per the conventional educating approach. The exploration speculation was that distinctions would be recognized in academic accomplishment because of the distinctions in educating strategies.

Because of the absence of data on the novel attributes of showing strategies and the connection among them and the supporting of academic accomplishments in arithmetic in a custom curriculum, the current exploration en-gaged in the meaning of these showing draws near and inspected the proportion

of effect of the different showing techniques on educational accomplishments in math among understudies in a custom curriculum. The meaning of dif-ferences between the qualities of dynamic and customary showing approaches might empower a superior under-remaining of the connection between institutional parts and academic accomplishment, and a more proficient plan of the instructive framework.

. E-learning and background to traditional teaching

There are a number of definitions of e-learning (likewise called elearning or eLearning) however definition appears appropriate for mathematics education. "Elearning involves the delivery of a learning, preparing or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some method for giving preparing, educational or learning material." (http://www.derekstockley.com.au/elearning-definition.html) Clearly, the genuine procedures used in E-learning environments can be varied like online preparing or education, Internet or an Intranet, CD's and DVD's, etc. It seems that distance education was one of the first areas that used e-learning in quite a while delivery. Interestingly, the learning of e-learning is considered "on demand" accordingly overcomes a large number of the issues that plague the modern tertiary student attending lectures on time, trying not to stop at universities and other difficulties faced in traveling to places of learning for example.

A mix of different methods, including traditional based online day in and day out lectures and instructional exercises can likewise be included e-learning however this type of combined effort is generally referred to as blended learning. In a nutshell, a computer that permits students to interact online and in real time might be referred to as an elearning environment. A few dimension figure can be very useful in demonstrating geometrical work and diagramming in mathematics and engineering. The algebra controls may likewise be presented in a more vivid and perhaps meaning ways utilizing computer software, for example, Matlab and Mathematica etc.

While not being concrete objects (of real life), it is truth be told possible to represent pictorial and 3d diagrams that truly do help carry mathematics to real life all be it in two dimensions for the most part (Hollebrands and Lee, 2012). There are numerous examples of such e-learning environments in mathematical (e.g., The Geometer's Sketchpad, GeoGebra, Cabri); and factual environments (e.g., Fathom, TinkerPlots). In such projects students might be able to manipulate objects etc. albeit not actual real life objects (Hollebrands and Lee, 2012). The software programs are designed to help students understand relationships, develop deductive and legitimate arguments involving numerous examples for practice. It is argued that the projects might help reinforce mathematical interconnections with exercises that provide practically instantaneous feedback. The pictures and objects tend to concretize mathematical concepts so the learner can explore mathematical relations between variables (Baccaglini-Frank and Mariotti, 2010; Hennessy and Deaney, 2008). Some research shows that students do from deeper and a more interconnected mathematical understanding in e-learning environments (Dick and Hollebrands 2011; Duval, 2006).

Comparison of traditional teaching and e-learning

An older concentrate by Harrington (1999) observed that traditional face-to-face course did well overall, yet the student GPA was the significant predictor of success. The discoveries showed three primary differences in that the online students were predominantly female, older with more experience

than the face-to-face guidance bunch. The online completions had a greater college credit hours than face-to-face completions (F=3.76, df=3/97, pThe face-to-face withdrawers had earned significantly fewer credit hours than online withdrawers. In both delivery types, the course completers who failed had fundamentally lower cumulative GPAs than either successful completers or withdrawers.

Academic exhorting or personal contact with the teacher was significant, especially for who negligible students. Benard et al (2004) stated that foundation variables essentially contributed to the academic performance for both online and face-to-face students. Inactive decision making meant that students set themselves up for failure by essentially not being prepared enough for the courses chosen however those who accomplished the work were not prejudiced by methodology. Additionally there was no difference in withdrawal or failure rates. Zang (2005) examined the effectiveness of computer assisted guidance (CAI) versus traditional lecture-type guidance on triangles (younger students). The students in the benchmark groups were shown the concepts of triangles in their traditional classes, while the students in experimental gatherings were instructed in a computer lab. No measurably huge difference was found between the students' achievement. Shall cross and Harrison (2007) examined Chemistry lectures from years 1-4 for differences between three delivery methods - Category 1: used just electronic media to deliver courses, Category 2: used a mixture of electronic and non-electronic; and Category 3: which used non-electronic as it were. The students and lecturers both preferred non-electronic methods however no critical differences were noted among the methods. However, students felt that the material covered a great deal of work and student needed printed copies of the notes for learning. Some felt the outlines used were rather complicated and on occasion seemingly irrelevant images were being used. Likewise, the online lectures were presented rapidly.

Review of Literature

Tunstall and Bosse (2016) compared a traditional, lecture-based college algebra teaching with an online quantitative literacy learning method; the e-learning based on weekly news conversations just as problem-based learning projects including information examination. The survey showed differences in students' mathematical demeanor, attitude, and point of view toward the use of mathematics; with the online gathering showing favorable outcome in each, which suggests that project-based e-learning environment is a promising strategy for fostering the affective component of quantitative literacy. However, they argued substantially more research is needed to capture the mechanisms through which such development happens. Academic partnerships (2011) note that while there is evidence that students perform too online than inside a traditional teaching setting, there are equally many studies that show little or no critical difference between both. There are studies that show that the lecturer is the more significant component in that the educator assures multimodal learning (Jackson, 2014; Walker et al, 2011; McCann, 2006); in which there is a lot of student and teacher interaction (Bidaki et al, 2013; Abdous and Yen, 2010) inside the teaching and learning process. It then seems that an effective teaching might be the main reality regardless of which delivery or teaching and learning method is used. Temple (2013) noted the blended type flipping homeroom teaching and learning methodology together with speedy student feedback on assessments led to substantially less lower grades and comparatively low withdrawal rates from courses. The students tended to take less attempts to pass and were well satisfied with courses they took.

Up to now, no review has been conducted exactly under the subject of the present review. However we bring up to some studies on collaborative learning which has been done either inside or outside of the country.

Talebi (2005) in a review on second grade guidance school students contemplating in Urmia, Azerbaijan, Iran, compared the effect of traditional methods and cooperation learning method of teaching on academic achievement and learning attitudes of students toward mathematics. His research discoveries indicated that the academic achievement of students who were trained through cooperation learning method of teaching was altogether higher than students who were tested by traditional method.

Esfandiari (2009) in his review on the relationship between students' active cooperation in the process of teaching and academic achievement showed that there is a positive relationship between students' investment and their academic achievement (Yosefipour, 2013) [8]. In a review entitled "The effect of cooperation learning method of teaching mathematics on enhancing students' confidence in problem-addressing of Math (I) course in young ladies secondary school of Sanandaj", Mafakheri (2013) showed that moving teaching method to cooperation method alone can't be effective on enhancing confidence and problem tackling capacity.

Through the examination of all extracted factors from the questionnaires, his concentrate additionally revealed that, the elements of indifference and the feeling of failure to solve the problem had led to these results. Winston (2002, as cited in You sefipour, 2013) in a review entitled "the effects of cooperation learning on progress and attitude of 5th grade students in different cultures of United States", came to this resolution that cooperation learning positively affects students' attitudes towards mathematics and their academic achievement in this course Tracey et al. (2010) conducted a large-scale review in UK and observed no huge difference in learning 4th and 5th grade mathematics between classes utilizing cooperation learning method and control classes.

However, the use of this method was generally poor, and it was necessary to make this methodology more consistent with the educational program and culture of Britain 拟 Aziz and Hossain (2010) compared traditional teaching method and collaborative teaching method on Malaysian second grade secondary school students' achievement in mathematics. The results showed that compared to traditional teaching methods, cooperation teaching method creates greater academic achievements in students.

Objectives

1) To Study in Comparison of traditional teaching and e-learning
2) . To Study in E-learning and foundation to traditional teaching

Methodology

The methodology used in this study should be consistent with the points of the study which is to evaluate the performance of 6th grade students in taking care of problems utilizing collaborative learning method. As per the point and nature of this study, populace included all 6th grade elementary male students studying in Fath-al-Mobin school in Dezful city during the academic year 2014-2015. To select the sample in this study, we used non-random testing method, the type of utilizing available samples, in other words, the researcher chose the school he was teaching there which was consisted of three 6th grade classes. Two classes were selected randomly from among these three classes. These two classes were then randomly chosen to be used as control and experimental groups. The benchmark group consisted of 30 students and the experimental group additionally consisted of 30 students. The

Standard number related test was used as research instrument. This test was developed by experts and teachers of mathematics and the all out score is 20.

- Procedure

In this study, study cards-based methodology was used and the study conducted as follow.

More often than not students were trained in larger groups comprising more than 4 students.

Each student was required to explain to his partner about the manner in which he solved the exercise, wherein the student relying on and based on the previous card had gained experience to solve, listening to the explanations provided by one of the members in his group and additionally the method for dealing with new card based on the already solved exercise. Each student was required to solve the already solved exercise which his friend was explained to him and called upon, and if necessary to inquire as to whether he could handle observing the answer for the question he is helping him to solve before or not.

After the completion of work on a couple of cards,潼students joined their partners in the group, which helps the members of each group to have the chance to play both the roles of student and teacher.

Study Card Preparation

Since, in this study the collaborative learning method is based on the use of study cards in the group following issues can be raised to explain the content of these cards and the manner in which they were prepared: Each set of cards makes a learning unit. Each set comprises of 2, 4 or 6 study cards. The order in which the cards can be used isn't significant. Each card contains 2 or 3 sections.

Section 1 contains a solved example. The descriptions on the card depends on the students' level and their learning - based experience in the subject.

Section 2 contains a problem/exercise like the solved example in the initial segment of the card, serving for individual and separate arrangements of the students

Section 3, if necessary, includes an extra problem to be solved by more advanced students. For each study card there exists a homework card also. In collaborative learning method based on the use of study cards, the learning environment can be grouped into two primary structures groups of experts, and groups for the exchange of knowledge, which are elaborated below:

Group of Experts

The number of students in this group isn't more than 6 students. Each student in a specific group achieves a comparable card. Number of students who receive different cards are equal. These large numbers of groups include students with different levels of success. The teacher makes sure that a student is at the highest level of success.

Through thusly, the students can help the teacher to screen the issue and the precision of teamwork The teacher likewise screens crafted by these students, with the goal that the person is responsible for reviewing crafted by all members of the group. Students should understand the solved problem in the initial segment of the card, and are needed to solve the questions in second part independently. Each

student might seek any needed help. Students compare their answers in their groups and correct their answers. The work in expert group is completed when students agree upon their answers to questions to some extent 2 of the cards in their group. Then students work in new groups to continue their scientific exchange

Group of Knowledge Exchange

The number of students in one group should be equal to the number of cards in the learning unit. Like in Puzzle method, each student has experienced the data on the card differently from the cards of the other students in the group of knowledge exchange. For example, assuming four cards be in a card series, the group comprises of 4 students. Each student has a different card. Those students with high success rate work and learn in homogeneous groups, while low-level and intermediate students learn and work in heterogeneous groups to work as indicated by their needs. This arrangement enables students with low achievement to feel more comfortable and believe that they can succeed in mathematics. Those with high success rate can learn extra subjects through the exercises to some degree 3 of the cards. Intermediate students can enhance their self-trust and confidence in their math abilities with the help of other students拟 In the group of knowledge exchange, students fill in as all day partners.

DATA ANALYSIS

Descriptive Statistics

To analyze the discoveries in this section, we first deal with the estimation of the descriptive parameters, for example, mean, standard deviation and mode for scores of pre-test and post-test for the two methods of traditional teaching method and cooperation learning method of teaching in the control and experimental groups, results of which are displayed in Table 1:

Table 1: Results of descriptive statistics

Teaching method	Traditional method		Cooperation learning method	
	Pre-test	Post-test	Pre-test	Post-test
Number	30	30	30	30
Mode	4.25	9	10	15.5
Mean	12.31	10.02	12.69	14.07
Standard deviation	4.8	4.45	4.74	3.58

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As displayed in Table 1, obviously in the pre-test of the two cases of traditional and cooperation learning, the mean of the scores in both control and experimental groups, had no critical difference. In the post - tests as displayed above, the score mean of collaborative learning method is higher than traditional method. Moreover, the highest mode belongs to the posttest of the group trained through cooperation learning method. The lowest score appropriation likewise belongs to the post-test of the group trained through cooperation learning method.

Conclusion

The studies have clearly shown that the e-learning choice is more famous when compared with traditional study hall learning yet there are many studies that show not really huge improvement discoveries or even no difference between the two methods also. The studies show a number of advantages and disadvantages with several issues highlighted, for example, discipline to discipline differences, absence of "real" interaction and collaborative learning opportunities, gender differences as females might lean toward online learning, differing personal learning styles causing difficulties in the two cases, detachment factor especially in distance learning, absence of student preparation for online study, or inappropriate choice of online courses, withdrawal rates from online courses are greater than traditional ones, nature of student self-directedness and inspiration levels, fear of or inadequate knowledge of the apparatuses of technology - frightening off numerous to use online courses are only a few significant ones. For example, the students who require flexible schedules, independent workplaces, and possess solid inspiration levels prefer e-learning method. However, when students value real life explanations, printed copy notes, "real" interactive conversation and conversations with others during learning or tackling problems, the traditional method is appropriate. The mathematics discipline generally dislikes both e-learning and traditional methods. The online students tend to be older and perhaps working more hours than others who are full time. In any case, numerous students might have had long break from studies and due to the hole in mathematics knowledge find learning problematic; the cumulative nature of mathematics knowledge lead to large holes in knowledge and such difficulties are not able to be effectively solved online. In mathematics, great quality online mathematics courses with appropriate learning and assessments instruments are hard to develop without subsidizing, whereas the course can be easily delivered and monitored involving computer technology by a teacher for what it's worth in online videos for example – however, the many hidden aspects of interacting live with students is then lost of course; an expert teacher who uses computer based material to bestow knowledge might be less exorbitant and more effective in a blended learning model for example.

References

1) Abdous, M. and Yen, C. (2010). A predictive study of learner satisfaction and outcomes in face-to-face, satellite broadcast, and live video-streaming learning environments. The Internet and Higher Education, 13(4) 248-257. http://dx.doi.org/10.1016/j.iheduc.2010.04.005.
2) Academic Partnerships (2011). Research on the Effectiveness of Online Learning: A Compilation of ResearchonOnline Learning [White Paper]. Accessed via http://www.academicpartnerships.com/sites/default/files/Research%20on%20the%20Effectiveness%20of%20 Online%20Learning.pdf on 8 June 2016
3) Albano, G., Coppola, C, and , Pacelli, T. (2013). The use of e-learning in pre-service teachers' training. "Quaderni di Ricerca in Didattica (Mathematics)", n. 23 Supplemento 1, G.R.I.M. Department of Mathematics, University of Palermo, Italy.
4) Aral, A., and Cataltepe, Z. (2012). Learning Styles for K-12 Mathematics e-Learning. Conference: 4th International Conference on Computer Supported Education, CSEDU 2012
5) Bernard, R., Abrami, P., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P., Fiset, M., & Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of empirical literature. Review of Educational Research, 74, 379-439.

6) Bidaki, MZ., Sanati, AR., Semnani, MN. (2013). Students' Attitude Towards Two Different Virtual Methods of Course Delivery, Procedia – Social and Behavioral Sciences, 83: 862- 866. http://dx.doi.org/10.1016/j.sbspro.2013.06.162.
7) Z. Aziz, A. Hossain, A comparison of cooperative learning and conventional teaching on students achievement in secondary mathematics, Procedia social and Behavioral Sciences, 9 (2010) 53-62. http://dx.doi.org/10.1016/j.sbspro.2010.12.115
8) . Yosefipour, The study of using cooperative learning procedure via teachers views at Elam city in 2012-2013 academic year, Master dissertation of Islamic Azad University, Dezful branch, (2013).
9) [H. Allamolhodai, Mathematics education principles, Jahane Farda publication: Mashhad, (2009).
10) [R. Fazli, Converting threat to opportunities (with the view of cooperative methods in teaching-learning process of multi-ages), Elementary teaching journal of development, 14 (8) (2011).
11) M. R. Keramati, Cooperative learning (learning via cooperation), Faraangizesh publication: Mashhad, (2005).
12) Sh. Mafakheri, The study of the effect of cooperative learning in mathematics education on promoting self-confidence in problem solving of Math (1) at girly high school in Sanandaj, Master dissertation of Islamic Azad University, Science and Research branch, (2013).
13) Montague, M. (2010). Cognitive Strategy Instruction in Mathematics for Students with Learning Disabilities. Journal of Learning Disabilities, 46, 13-21.
14) Geary, D. C. (2010). Teaching Algebra to Students with Learning Disabilities. Journal of Learning Disabilities, 46, 31-37.
15) Bourke, S. (2007). Abnormalities and Prejudice: The History of Special Education in the World. Tel Aviv: YaronGulan. (In Hebrew)