EFFECTIVENESS OF MOBILE LEARNING TECHNOLOGY ON COLLABORATIVE SKILLS OF IX STANDARD STUDENTS

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Abstract: The study sought to investigate the effectiveness of mobile learning technology on Students' Collaborative Skills. The IX standard students from a private school of Bengaluru Metro City considered as population. A sample of IX standard students has been utilized as subjects to teach biological concepts by using traditional method of teaching as well as Mobile Learning Technology as a method of teaching. Randomized matching Control group Pre-test Post-Test group design was used. Totally 56 subjects were selected and they are divided into two groups, namely experimental (Teaching with Mobile Learning Technology) and controlled (traditional method of teaching) groups to give treatment after administering pre test to them. Simple random sampling technique was used for the study. Collaborative Skills Scale (CSS) was a 48 item scale in six dimensions that has been developed to measure the students' collaborative skills. Items were rated on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability was assessed through Cronbach's alpha and it was found reliable. The obtained data was analyzed descriptively and inferentially by calculating by independent 't' test. The results concluded that teaching with mobile learning was more effective than conventional method of teaching in developing collaborative skills of IX standard students. Teachers and parents can offer new opportunities for children to collaborate inside and beyond the traditional instructor-oriented educational paradigm for development of collaborative skills

Index Terms - Effectiveness, Mobile Learning Technology, Teaching, Collaborative Skills

INTRODUCTION

Today's students are all native speakers of the digital language of computers, video games and the Internet. New instructional technologies are frequently used by students for learning and constructing knowledge as well as collaborative skills. In the present scenario students were used computers, video cams, mobiles devices, musical players and variety devices of the digital age (Prensky, 2001). The transmission of general information through use of mobile technologies is more common at educational institutions. Mobile learning is a learning technology that uses a variety of learning approaches and tactics across multiple contexts and social interactions (Vygotsky, 1978) with personal electronic devices (Crompton, 2013). MoLoNET (2007) defined mobile learning as "the exploitation of ubiquitous handheld technologies together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning."

M-learning focuses primarily on how society, universities and institutions can support an increasingly mobile population. Mobile learning provides online instructor with more mobility and interactivity to online students. The use of mobile tools in M-learning is a vital part of informal learning (Trentin & Repetto, 2013). Teaching with mobile learning stratregy can develop collaborative skills among children.

Trust is an important aspect of teamwork and collaboration. Trusting one another gives each member the benefit of the doubt while eliminating conflict of interest. Having trust makes things easier when all members take part in getting things done. It is easier to rely on others and increases confidence among members as it relates to their abilities. One of the most relevant implications of mobile learning is the inherent collaborative processes arisen during the learning activity. Computer based learning has become a mature research field in educational technology that focuses on the use ICT as a mediation tool within collaborative methods of learning (Koschmann, 1998). In developing online environments that support collaborative learning, several issues must be taken into account in order to ensure full support to the online learning group. Indeed, the proliferation of

mobile phones and other handheld devices has transformed mobile collaborative learning from a researcher-led endeavor to an everyday activity, whereby mobile personal tools help people learn everywhere through either formal training or informal support, collaboration and conversation (Hulme and Traxler, 2002). As a result, by the addition of mobility and the support of mobile technologies, the M-learning prototype has appeared.

The number of those teachers and students who have begun to use them as a teaching and/or learning tool is growing tremendously. Most students have started overcoming their difficulties regarding the place and time of lectures via the effective exploitation of their mobile phones or what has been so called 'Mobile Learning.' Since the 21st century classroom encourages learners to learn their lessons in an inductive manner, educators become facilitators instead of authorities in the topics they teach. In this sense, teachers must allow learners of the 21st century classroom leeway and control in their learning. Therefore, the present study, taking into account these preliminary considerations of mobile learning merits, has set an aim to determine the effectiveness of mobile learning technology on students' collaborative skills.

NEED OF THE STUDY

The world is ever changing due to the advancement in the realm of science and technology. These days it seems hard to escape the presence of technology. Rapid change and incredible development in the information and telecommunication technologies have affected all fields of life. Learning environments have tried to make use of all these technologies. Portability and accessibility of mobile devices in this digital era have attracted many scholars to apply them in the educational settings. These devices are reshaping users' daily lives in different ways. But the development of digital technologies has so far been limited to social communication and few people have regarded m-learning as a core pedagogical activity in school institutions of learning. Collaborative strategy can be a feasible alternative approach to teaching biology as it fairly addresses issues of interaction in the classroom (Adejimi; Nzabalirwa and Shivoga, 2021). Students taught Biology using collaborative instructional strategy had better achievement and interest ratings, than those taught with the conventional method (Onu; Anyaeghunam and Uzoigwe, 2020). Learning model was needed that can empower students' collaboration skills (Ilma et al., 2020). Effectiveness of using technology in teaching-learning process helps in the development of collaborative skills (Piniuta, 2019). From the studies it was shows relation between mobile learning and collaborative skills. The present study was made to identify the effectiveness of mobile learning technology on developing collaborative skills. Hence, the present study.

STATEMENT OF THE PROBLEM

The study sought to investigate the effectiveness of mobile learning technology on students' collaborative skills.

OBJECTIVES

The aim of present research is to compare the Collaborative Skills of students taught through Mobile Learning Technology (MLT) and Traditional Method (TM).

HYPOTHESES

1. There exists no significant difference in the mean pre test scores of Collaborative Skills of IX standard students in experimental (MLT) group and control group (TM) teaching using mobile learning technology and traditional method.

2. There exists no significant difference in the mean post test scores of Collaborative Skills of IX standard students in experimental (MLT) group and control (TM) teaching using mobile learning technology and traditional method.

METHODOLOGY

Randomized matching Control group Pre-test Post-Test group design was used. The IX standard students from a private school of Bengaluru Metro City considered as population. A sample of IX standard students has been utilized as subjects to teach biological concepts by using traditional method of teaching as well as Mobile Learning Technology as a method of teaching. Totally 56 subjects were selected and they are divided into two groups, namely experimental (Teaching with Mobile Learning Technology) and controlled (traditional method of teaching) groups to give treatment after administering pre test to them. Simple random sampling technique was used for the study. Collaborative Skills Scale (CSS) was a 48 item scale in six dimensions that has been developed to measure the students' collaborative skills. Items were rated on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability was assessed through Cronbach's alpha and it was found reliable. The obtained data was analyzed descriptively and inferentially by calculating by independent 't' test.

RESULTS

Table-1: Table shows effect of teaching with mobile learning technology technique on Collaborative Skills between pre test and post test mean scores of IX standard students of both Control and Experimental groups.

Group	No.	Control Group			Experimental Group		
		Mean	Standard Deviation	't' Value	Mean	Standard Deviation	't' Value
Pre Test	28	110.214	22.569	1.51^{NS}	108.357	25.110	2.94**
Post Test	28	115.285	21.920		129.071	27.553	

^{NS}Not Significant ** Significant at 0.01 level

The above table shows statistical analysis related to control and experimental groups regarding pre test scores of students' collaborative skills and it was found that difference in the mean scores of Collaborative Skills was not significant as the obtained 't' value of 1.51 was less than the table value of 2.01 at 0.05 level confidence (df=54). This indicates equivalence between the two groups regarding baseline knowledge of having collaborative skills, which in turn support validity of this trial.

On the same format, statistical analysis related to control and experimental group s regarding post test scores of students' collaborative skills and it revealed that the difference in the mean scores of collaborative skills was significant as the obtained 't' value of 2.94 was greater than the table value of 2.68 at 0.01 level confidence (df=54). The post test scores of experimental group students' collaborative skills have obvious difference from their pre test scores.
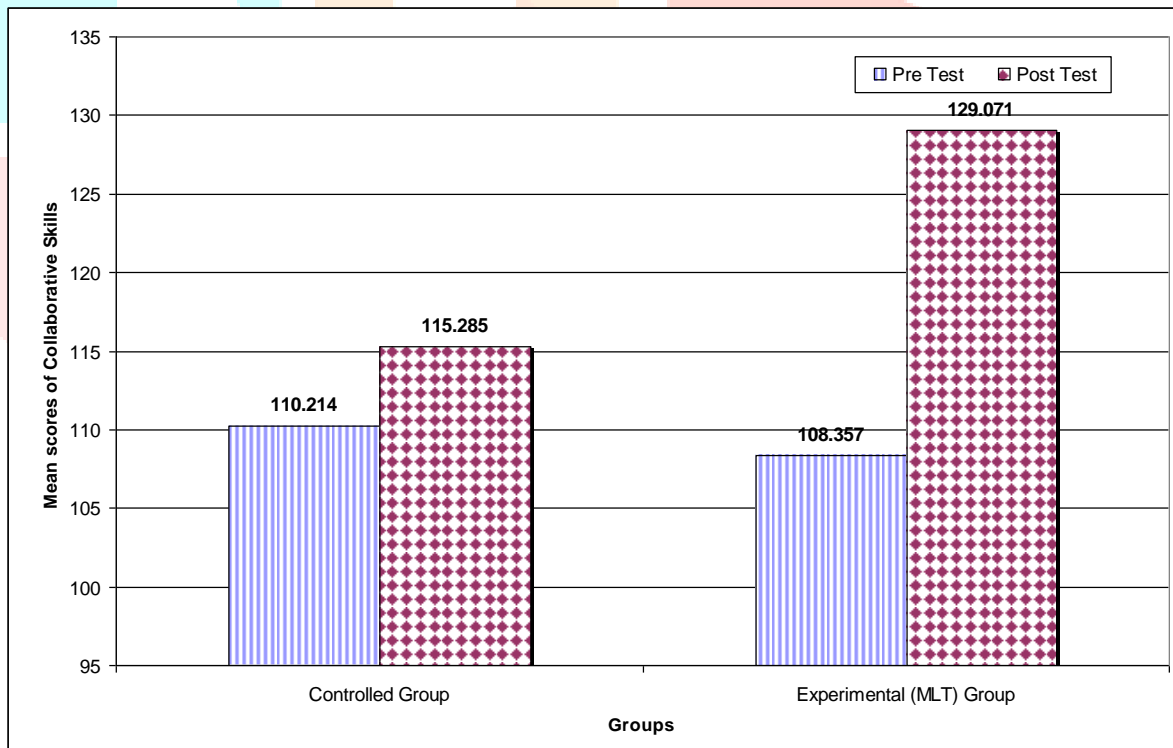

Fig.1: Graph shows comparison of pre and post test mean scores in Collaborative Skills of Controlled and experimental Groups.

FINDINGS

From the analysis of data, the following findings emerged.

1. There was no significant difference in the mean pre test scores of Collaborative Skills of IX standard students in experimental (MLT) group and control group (TM) teaching using mobile learning technology and traditional method.

2. There was a significant difference in the mean post test scores of Collaborative Skills of IX standard students in experimental (MLT) group and control (TM) teaching using mobile learning technology and traditional method.

DISCUSSION OF RESULTS

The statistical technique proved that teaching with mobile learning technology was more effective learning strategy than the traditional method to develop students' collaborative skills. The comparable consequences established with result by studies by Nasution and Siddik (2020) found that mobile learning through android applications shows more effective in developing collaborative skills. Collaboration skills play a big part in building vital social skills for students. Parents as well as school teachers need to be patient to teach and reinforce teaching method through mobile learning while guiding children to be more collaborative. Biology educators would need to be aware of usage of mobile learning technology approach to teaching-learning process at secondary level education.

CONCLUSION

The results concluded that teaching with mobile learning technology was more effective than traditional method of teaching in developing students' collaborative skills.

IMPLICATIONS AND SUGGESTIONS

The following suggestions ended by the researcher

1. A strategic use of mobile learning is important, such that learner can benefit from its impact to develop collaborative skills. Educators should consider incorporating mobile learning into their pedagogical plan so as to enhance the learning experience of the learners, which in turns improve their collaborative skills.

2. Teachers and parents can offer new opportunities for children to collaborate inside and beyond the traditional paradigm for development of collaborative skills.

3. The results are benefit to science teachers as a guideline for developing and evaluating students' collaboration skills through mobile learning.

4. This research is important in term of helping students to assess and perceive their collaboration skills which is one of the essential learning skills in the 21st century through mobile learning.

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