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Computer Aided Instruction to Teach concepts in Education

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ABSTRACT: 21st century education is entirely different from the classical education. Education now a day is accompanied by technology. Hence, schools without computer technology has considered lame. This study assessed the effectiveness of computer aided instruction towards students behaviour and achievements in Mathematics. This study used a quasi-experimental method of research. The researcher assigned a group using traditional teaching and learning, and a group of respondents using computer-aided instruction. The data obtained were analyzed using weighed mean, standard deviation and T-test and it was tested at 5% level of significance two-tailed test if there exist a performance mean difference between the Traditional learning and teaching and CAI used in the group of respondents. This present research work is a critical evaluation to determine the effectiveness of CAI as alternatives instructional methods in teaching. This study will help educators to consider using an alternative delivery mode of teaching in meeting the desired outcomes. Results have shown that CAI is meeting the expected learning outcomes and it shows the more promising effect in terms of effective teaching in the multiplicative skill multiplying two- to three-digit numbers by one digit number to the grade three students while in multiplicative skill solving routine and non-routine word problems both traditional approach in learning, and CAI are effective in teaching the students. Through this, the teachers should use CAI in teaching. To address, issues and concerns, the school should have a training workshop on how to use the computer during presenting the lesson by power point presentations.

Keywords: Computer aided instruction (CAI), mathematics teaching, multiplicative skill.

I. INTRODUCTION

With the technological progressions in place, innovative teaching methods are inevitable as results of the needs in education. For instance, technological advancement has brought us to adopt change and to meet the needs in our educational system, through technology we innovate and employed various pedagogies [5]. With the modernization of societies, people have become more concerned about the systematized teaching-learning techniques and training about different topics in different fields especially in dealing with numbers.

With the advent of educational technology in the school. Educational institutions are now shifting from traditional perspective which focuses more on teachers as the source of knowledge and information and students are just only recipient of knowledge and information. Today's age, schools are now adopting and integrating computer in the classroom to elevate the students' understanding and maximize their learning. Computer aided instruction as new ways of teaching has been viewed that it helps learners to become imaginative, more attentive and motivated to learn [2].

Nowadays, several considerations were observed that using computer in teaching has significantly elevated the understanding of the students [1]. In addition, NCTM, (2000 p. 24) noted that integrating computer technology in the learning process has changed the way students learn, they become more imaginative, adaptive and motivated to learn, most especially in mathematics subject [22]. Moreover, computer in the classroom adds more additional perspective in the students view and picture out the information into the reality. Prior research suggests that with the aid of computers in the classroom, it makes learning more engaging and productive. Students now actively participate in the learning process, develop their knowledge and understanding into the highest level at their own time and availability independently. This leads also to develop a sense of responsibility on the students end to take charge of their learning [6]. Likewise, looking into brighter perspective previous studies show that integrating computer technology in the classroom or showcasing the computer aided instruction is better than conventional guidance regarding its consequences for learning and mentalities towards science [7, 17, 20, 33]. Hence, the compelling coordination on PCs in arithmetic training is significant. Then again, figuring out how to encourage science with innovation is best realized when innovation mixed into the educational program [6]. The utilization of computers in teaching-learning exercises increments in corresponding to the improvements of educational technology. As of late, the utilization of computers and their going with innovations to help showing exercises by field teachers, in corresponding with the expansion in the product that can be utilized in class condition, have a quickening potential. Computer Assisted Instruction (CAI) has been characterized in different ways. At the point when these definitions are mulled over, it is seen that it gives a ground to learning exercises to be realized in the digital environment, and it is a sort of instruction that is utilized to help the instructor as an instructive apparatus to educate exercises. Since CAI builds accomplishment just as the improvement of cutting-edge thinking abilities in understudies, and in light of the fact that it urges understudies to learn by perception rather than by remembering [26].

This was supported by numerous studies, it significantly improves the student's understanding when using computers in the classroom, utilization of mixed media in teaching-learning process stimulates students' level of understanding in terms of visual and intellectual structures. Positive results show that the computer helps students to understand difficult ideas, through computer aided instruction; it gives students a clearer picture about the topic [11]. Furthermore, numerous pertinent national and global investigations, it underscores that computers helped better to elaborate and expand the content in a clearer picture compare to the traditional system of instruction [8, 25, 37, 38]. Previous research showed that computers aided instruction has improved students' accomplishment as opposed to customary educating [27]. PC additionally might be viable in different zones as a general instructive guide that supplements normal showing strategies [16]. There was a huge contrast between the academic accomplishments of the students' in mathematics who were shown utilizing computer aided instruction and the individuals who were still using the traditional strategy for teaching [19].

However, though CAI has shown significant contribution and statistically improved the students engagement and understanding in achieving the learning outcomes. Prior research suggests that in terms of education, traditional methods or traditional approach in learning compared with CAI in the classroom, has nearly the same outcome. However, it only focuses on limited content and processes. Most early studies argued that when using CAI in the classroom it only produced minimal improvements in students' comprehension compared to the traditional approach or methods [9, 23]. However, there have been numerous studies that noted that there is no significant evidence that shown that CAI and traditional approach in learning are equally delivered students' comprehension and achievement [28].

Overview of Computer Aided Instruction: Computer-aided instruction (abbreviated as CAI) alludes to guidance or remediation introduced on a computer, utilizing intuitive apparatuses, and delineates an idea through appealing liveliness, sound, and show. With PC programming's application in the present day instructing, CAI is a procedure or technique that includes examining showing content with understudies in a conversational mode, arranging to show forms, and bringing through educating works out. In CAI, PC assumes a significant job in helping the educator achieve instructing errands. These innovations can help encourage information development in the study hall and guide learner exercises, leaving educators the chance to connect using the small class and to analyze challenges [35]. For instance, a study conducted and showed guarantee that innovation based learning could help build up students' dynamic and critical-thinking abilities, data-processing skills, and communication abilities [36]. In student-centered study classrooms with the guide of the computer, students can team up, to utilize basic speculation and to discover options answers to issues [14]. Lately, there has been interests manifest in science education reform, which focuses on the needs for integrating computer technologies into learning and teaching [13]. The term computer-aided instruction (CAI) was used in this study to focus a methodology where data is conveyed by the computer in a way like customized learning, and that is the focus on students' accomplishment of explicit, instructional objectives through the systematic guidance [31]. As of now computer based innovation is (and will probably turn out to be progressive) a part of school and university classroom. A few capacities of computers, for example, giving individualized instruction, practice, update, educating and critical thinking, and recreation amidst the applications and quick input, make computer technology helpful instructional devices for achieving desired learning results [10]. An additional purpose of CAI is that the educator can utilize computers at various occasions and places as per the qualities of the topic, the students, and accessible programming and equipment [21]. Previous studies have shown the importance of adapting CAI in the teaching-learning process; however, to the best of our knowledge, no studies thus have examined the effectiveness of CAI in the Philippines. The results of the study will help the Philippine school to develop flat form that integrate computer technology in the teaching learning process.

II. METHODOLOGY

A. Objective of the Study

This study is designed to assess the students' performance in Mathematics using computer aided instruction in teaching and learning process. In addition, issues and concerns were identified when integrating computer aided instruction in the school.

We set out 4 specific objectives:

(a) The performance of the students using the traditional approach of teaching and learning as to:

– States basic multiplication facts for numbers up to 10,
– Applies the commutative property of multiplication,
– Applies the associative property of multiplication,
– Visualize the basic multiplication and division
– Multiplies 2 to 3 digits, and
– Solves routine and non- routine numbers

(b) The performance of the students using computer aided instruction (video and power point presentations) with an interactive learning approach. As for the following skills above.

(c) Examined the significant mean difference of the students' performance in using traditional and experimental approach.

(c) The issues and concerns in using computer aided instruction.

B. To this end, 1 Hypothesis was developed

The study was tested at 5% level of significance two-tailed test if there exists a performance mean difference between the Traditional learning and teaching and Computer-aided instruction used in the group of respondents.

Ho: There is no significant mean difference between group respondents' performances in Mathematics.

C. Method

This study applied a quasi-experimental method of research. The researchers assigned a group using traditional teaching and learning. The first group as the experimental group whilst the second group as the control group.

The study was used 5% level of significance two tailed tests if there exists a performance mean difference between the Traditional learning and teaching CAI used in the group respondents. The performance of the students (students' performance in traditional teaching and learning as to multiplication and significant mean difference in students' performances) was tested by mean and standard deviation and significant mean difference were treated using T-test of the two independent samples by the aid of the statistical software.

D. Instruments and Participants

Responses were collected using the adapted research instruments, taken from the learner's material, standard questionnaires for summative tests and was validated by the help of a statistician. The research respondents were students in selected schools in Cebu, Philippines. During the actual gathering of the data, the researcher ensured that the respondents were doing their honest and sincere responses as they were assured of the confidentiality of their identity and responses. The researcher also ensured that there was no outside influence on the way the respondents give their responses; hence the researcher did not allow those who are not respondents to be present during the actual data gathering.

E. Flow of the Study

The input includes the performance of the students in Mathematics using the traditional teaching and with computer aided instruction as to multiplication and division, the significant mean difference in their performances and the issues and concerns in using computer aided instruction in teaching and learning process. The process includes the preparation, validation, administering the questionnaire, collation and tabulation of data, and statistical treatment and interpretation. After the research questionnaires were accomplished, they were collated and the data tabulated and statically treated with the aid of statistical software, then analyzed and interpreted as to their significance to the study.

III. RESULTS

Technology in the classroom, specifically CAI has brought improvements in teaching and learning. It develops a bridge that fills the gaps of classical and modern perspective in education.

Table 1: Students Performance in Using Traditional Method.

Variable	Mean	Deviation Standard
States basic multiplication facts for numbers up to 10.	3.83	1.20
Applies the commutative property of multiplication	4.00	1.76
Applies the associative property of multiplication	2.81	1.24
Visualize the basic multiplication and division facts up to 10	3.39	1.55
Multiplies 2 to 3 digits by multiples of 10, 100 and 1,000	3.00	1.85
Solves routine and non-routine problems	1.19	0.82

Table 2: Multi Aided Instruction in Teaching and Learning.

Variable	Mean	Deviation Standard
States basic multiplication facts for numbers up to 10.	4.17	1.13
Applies the commutative property of multiplication	4.06	1.85
Applies the associative property of multiplication	4.17	1.36
Visualize the basic multiplication and division facts up to 10	3.94	1.09
Multiplies 2 to 3 digits by multiples of 10, 100 and 1,000	3.39	1.76
Solves routine and non-routine problems	2.27	0.81

Table 3: The significance mean difference of the student's performance using traditional teaching and using PowerPoint and videos.

Scale and Subscale.	Experimental Group		Control Group		
	M	SD	M	SD	P value
States basic multiplication facts for numbers up to 10	4.17	1.13	3.83	1.20	0.231 NS
Applies the commutative property of multiplication	4.06	1.85	4.00	1.76	0.896 NS
Applies the associative property of multiplication	4.17	1.36	2.81	1.24	0.000033 S
Visualize the basic multiplication and division	3.94	1.09	3.39	1.55	0.083 NS
Multiplies 2 to 3 digits	3.39	1.76	3.00	1.85	0.364 NS
Solves routine and non-routine problems	2.27	0.81	1.19	0.82	0.0000365 S

Table 4: Issues and concerns in using CAI.

Indicators	Frequency (f)	Percentage (%)
Lack of knowledge in using the computer aided instruction	35	97.00
Lack of instructional materials for computer aided instruction	29	80.56
No proper training in using the computer aided instruction materials	13	36.11
Low performance of the learners in specific subject areas	4	11.11
Tardiness and absenteeism is manifested	4	11.11
Students are lack of focus in the teaching and learning	2	5.56

IV. DISCUSSIONS

From Table 1 shows the performance of the respondents using traditional methods of teaching and learning amounting to 3.04, (SD) of 1.40. Further, item 2 which refers to apply the commutative property of application got the highest average of 4.00, with a standard deviation of 1.76 compared to item 3 with the lowest average of 1.19 with a standard deviation of 0.82. This implied that the using traditional methods of teaching and learning in teaching mathematics have improved the understanding of the respondents; however, there are some certain topics that needs to elaborate using traditional methods. Furthermore, the advancement and development of an effective and efficient classroom environment is not an easy task and it requires continuous and simultaneous renewal of teaching methods that requires students to explore and engage with technology in order for them to really understand the concepts of mathematics [34]. This traditional framework appears to remunerate students for learning the principles, yet doesn't offer students the chance to really do the mathematics [36]. Further, traditional techniques, and their paper-and-pencil works out, cause social confinement and reliance on educators rather than their own insight [15]. Overall, the previous studies propose, that teaching mathematics with traditional techniques is likely not applicable nowadays to the students because of the advent of educational technologies. [30] noticed that innovation in educating gives dynamic chances to innovate in teaching mathematics. It can upgrade the learning procedure and make ideas wake up through connecting with and interactive media platform. It likewise offers additional supports to address the necessities of the students and make meaningful learning experiences. Along these lines, it very well may be noticed that conventional strategies for educating and learning are as yet pertinent. Nevertheless, it must be accompanied with the integration of technology. The overall performance of the learners as to traditional methods of teaching and learning got an overall weighted mean of 3.04, which noted as satisfactory. The finding implies that the traditional methods of teaching and learning are still effective but needs to integrate with technology to let the learners improved and see the application of mathematics in the real world.

Table 2 shows the performance of the learners using the PowerPoint presentation in the teaching - learning process. Data shows that learners were able to gain more understanding and able to solve the problem. Item 1 and 3 got the highest average with 4.17 (SD= 1.36). Moreover, the data suggest that learners were able to solve problems related to commutative property which has a mean of 4.06 (SD=1.85) which described as outstanding, basic multiplication and division, which has a mean of 3.94 (SD=1.09) and solve routine and non-routine problems involving multiplication and division which has a mean of 2.27 (SD=0.81). Additionally, in light of the results of the study of the investigation, [12] it was noticed that by utilizing the power point presentation in your teaching can expand enthusiasm for learning, just as the simple ingestion of the material with the goal that it can improve student learning results in teaching elementary mathematics. Further, utilizing PowerPoint to address students' needs, just as the educator's needs, by moving from a passive, teacher focused (accordingly lecture style) classroom to an interactive, student-centered classroom is highly fundamental [32]. Moreover, in the light of reported that students learn easily to solve math problem when they are guided on how to do and with integration of technology [3]. The drives of the students to learn are skyrocketing and leads to advantage on the educational side rather than the technology. Students perceived PowerPoint presentation passed in generously less of talk process, in correlation in addresses utilizing the traditional way of presenting an information. Succeedingly a study underpins the position portrayed above, showing that students favored PowerPoint over-chalkboard-based lectures, on the grounds that the "intrinsic insufficiency of every strategy is repaid by the other [18]. This has been proved on the previous study that PPT is the most acceptable and advanced tool for learning [4]. For instance, [24] concluded in their investigation that students learned better if the course material was introduced through some visual instruments. They, likewise, announced that educators accepted that PowerPoint introductions made the substance additionally engaging; along these lines, they helped them to take students' consideration [26] The finding implies that using PowerPoint and videos are more effective as the traditional method of teaching and learning. Compared to the latter learners performed lesser understanding on understanding basic mathematics. Therefore, the researcher concludes that PowerPoint can be beneficial to the overall understanding of the learners. Moreover, by having and utilizing educational technology in giving instruction specifically mathematic subject, it certainly makes students to become active and enthusiastic. It will build significant learning that continues to their journey in the school. Technology in the classroom is undeniably brought confidence between the teachers and the students in dealing with difficult content. With this, the teachers and the students go hand in hand to explore and understand the importance of mathematics in our daily lives. Through CAI in the classroom, the learning is not just only exist, but enthusiasm in the face of the students to learn new things.

Moreover, with the integration of computer in the classroom, the environment becomes totally new, learning transcend beyond the classroom settings. Students engage in a new setup that reflect the reality. In mathematics the students perceived the beauty of each paradigm. Difficult content would now elaborate and dissected from easy to difficult perspective. By the aids of CAI in the classroom, it would totally make education more engaging and beyond the instruction. CAI on the other hand, develops thinking that promotes higher order thinking skills. Students engage and reflect to the application and real world application of mathematics. The development of CAI has totally reshaped and aligns education to what is to be taught and to be learned in the context of reality. CAI totally develops student imagination and creativity in this digital age.

As can be reflected from Table 3, the proportions of learners correctly answering the items using computer aided instruction is higher than traditional teaching. Further, the multiplying two-to three-digit by one digit number skill in multiplication shows a P value lower than the level of significance (0.007466 < 0.05) warrants that null hypothesis must be rejected therefore data showed significant differences. Meanwhile the solving routine and non-routine word problems with multiplication shows a P value greater than the level of significance (0.071762 > 0.05) hence, it was failed to reject the null hypothesis. The mean of the performance of the students using the power point and videos is greater than the mean performance using the traditional teaching and learning. This implies that using power point and videos are more promising and effective in dealing with mathematical concepts than the traditional teaching and learning. Evaluation of the test scores using t-test, found no statistically significant difference.

Meanwhile, in Table 4, there are five issues and concerns in integrating CAI. The main issue and concern raised was the lack of knowledge in using CAI which has the frequency of 35 which is 97% of the total number of respondents. Second was the lack of instructional materials for computer aided instruction which has the frequency of 29 which 80.56% of the total. And the third issues and concern addressed to no proper training in using the computer which has the frequency of 13, 36.11% of the respondents. This implies that the three main issues and concerns in using the CAI need to be considered in order to produce quality learning and effective instruction.

V. CONCLUSIONS

In this study, the effect of computer aided instruction (CAI) on students' accomplishment in multiplicative skills with CAI has shown statistically improved. The results of this current research have shown that CAI is more effective than traditional teaching method in terms of teaching mathematics. Further, the interests of the students and teachers were elevated and statistically contributed to the overall learning of the students. Through this, the teachers must consider CAI in teaching. However, a number of issues have encountered by the teacher in using CAI. To address the issues and concerns, the school should have a training workshop on how to use the computer during presents the lesson by power point presentations. This research helps the education sector to strive and strengthen to integrate CAI into the school. Technology integration in the school will likely achieve its goals and objectives. The researcher encourages future researchers to focus on the issues and the problem and its relationship to the teachers' capability to use CAI.

VI. FUTURE SCOPE

Some future recommendations of this present research may be suggested as per the following points:

– This would help the school to recognize the importance of computer aided instruction in the teaching and learning process.

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REFERENCES

[1]. Alkan, C. (1995). National Council of Teachers of Mathematics (2000). Principles and Standards for School Mathematics. Reston, Va: Athor.

[2]. Aqda, M. F., Hamidi, F., & Rahimi, M. (2011). *The comparative effect of computer-aided instruction and traditional teaching on student's creativity in math classes. Procedia Computer Science, 3,* 266–270. doi:10.1016/j.procs.2010.12.045

[3]. Andrianingrum, F., & Suparman (2019). Design iof Interactive Learning Media Based on Contextual Approach to Improve Problem Solving Ability in Fourth Grade Students. *International Journal of Scientific and Technology, 8*(1), 3900-3905.

[4]. Ankolekar, V. H., Souza, A. D., Souza, A. S. D., & Hosapatana, M. (2017). Effectiveness of power point presentations in teaching anatomy: A students perspectives. *Advanced Science Letters, 23*(3), 1977-1979.

[5]. Barik and M. Mondal, (2010). Object identification for computer vision using image segmentation. *2010 2nd International Conference on Education Technology and Computer*, *Shanghai,* V2-170-V2-172.

[6]. Baki, A. (2000). Preparing student teachers to use computers in mathematics classrooms through a long-term pre-service course in Turkey. *Journal of Information Technology for Teacher Education, 9*(3), 343–362

[**7**]. Birgin, O., Kutluca, T., & Gorbuz, R. (2008). The effects of CAI on the students achievement in mathematics at seventh.

[8]. Chang, C. Y. (2002). Does Computer-Assisted Instruction + Problem Solving = Improved Science Outcomes? A Pioneer Study. *The Journal of Educational Research, 95*(3), 143-150.

[9]. Collis, B. (1992). Anticipating the Impact of multimedia in education: lessons from the literature, computers in adult education and Training, *2*(2), 136-149.

[10]. Ertepinar, H. (1995). The relationship between formal reasoning ability CAI and chemistry achievement. Hacettepe. *Journal of Education,11*, 21-24.

[11]. Harwood, W., & MacMahon, M. (1997). Effects of Integrated iVideo Media on Student Achievement and attitudes in High School Chemistry. *Journal of Research in Science Teaching, 34* i(6), 617-631.

[12]. Hasan, B. (2017). Teaching Elementary Mathematics using Power Point Based Screencast 0-Matic Videos. https://doi.org/10.31227/osf.io/728v9.
[13]. Herman, W. (1996). Assessing the impact of computer based learning in science. *Journal of Research ion Computing in Education, 28*(4), 461–486.
[14]. Jaber, W. (1997). A survey of Factors which Influence Teachers use of Computer-Based Technology. Dissertation Virginia Polytechnic Institute and State University. *Science Education and Technology, 13*(2), 207-213.
[15]. Kami, C., Lewis, B. A. (2003). Single-digit subtraction with fluency. *Teaching Children Mathematics, 10*(4), 230-236.
[16]. Kiboss, J. K., Ndirangu, M. & Wekesa, E. W. (2004). Effectiveness of a Computer-Mediated Simulations Program in School Biology on Pupils' Learning Outcomes in Cell Theory. *Journal of Science Education and Technology, 13*, 207–213.
[17]. Kulik, J. A. (1983). Synthesis of Research on Computer Based Instruction. *Educational Leadership, 41*(1), 19-21.
[18]. Kumar, M. P. (2013). Preferences of undergraduate medical students; e;electronic and non-electronic teaching methods in pathology. *International journal of Research in Health Sciences*, *1*, 239-241.
[19]. Lashley, L. (2017). *The Effects of Computer-Aided Instruction in Mathematics on the Performance of Grade 4 Pupils. SAGE Open, 7(3), 215824401771277.* doi:10.1177/2158244017712775.
[20]. Liao, Y. C. (2007). The effects of Computer-assisted instruction on students achievement in Taiwan: *A meta-Analysis computers @ Education, 48*(2), 216-233.
[21]. Morgil, I., Özyalçin Oskay, Ö., Yavuz, S., & Arda, S. (2003). The Factors That Affect Computer Assisted Education Implementations in the Chemistry Education and Comparison of Traditional and Computer Assisted Education Methods in REDOX Subject. *Turkish Online Journal of Educational Technology-TOJET*, *2*(4), 35-43.
[22]. National Council of Teachers of Mathematics (2000). Principles and standards for school mathematics. Reston, VA: Author.
[23]. Niemies, R. P. & Walburg, H. J. (1992). The Effects of Computers on Learning. *International Journal of Educational Research, 17*, 98-108.
[24]. Ozaslan, E. N., & Maden, Z. (2013). The use of PowerPoint presentation in the department of foreign language education at Middle East technical university. *Middle Eastern & African Journal of Educational Research*, *2*, 38-45.
[25]. Özmen, H., & Kolomuç, A. (2004). BİLGİSAYARLI ÖĞRETİMİN ÇÖZELTİLER KONUSUNDAKİ ÖĞRENCİ BAŞARISINA ETKİSİ. *Kastamonu Eğitim Dergisi*, 57.
[26]. Renshaw, C. E, & Taylor, H. A. (2000). The educational effectiveness of computer-based instruction. *Computers and Geosciences,* 677-682.
[27]. Rutherford, D. & Lloyd, W. J. (2001). Assessing a Computer-Aided Instructional Strategy in a World Geography Course. *Journal of Geography in Higher Education*, *25*(3), 341-355.
[28]. Reeves, T. C. (1991). Ten Commandments for the evaluation of interactive multimedia in higher education, *Journal of Computing in Higher Education, 2*(2), 84-113.
[29]. Senteni, A. (2004). Mathematics and Computer-aided Learning. *Academic Exchange Quarterly, 8*(2), 194-199.
[30]. Scharaldi, K. (2018). What are the benefits of using technology for math instruction? Education consultant. Retrieved from: https://www.texthelp.com/en-gb/company/education-blog/march-2018/what-are-the-benefits-of-using-technology-for-math/
[31]. Simonson, M. R., & Thompson, A. (1994). Educational computing foundations (second ied.). New York: Merrill Company.
[32]. Smith, Y. (2016). College based case studies in using powerpoint effectively, cogent education,3:1, https://doi.org/10.1080/2331186x.2015.11277
[33]. Tjadem, B. J & Martin, C. D. (1995). Learning Effects of CAI ion College Students. Computer and Education, *24*(4), 271-277.
[34]. Van de Walle, J. A. (1998). *Elementary and middle school mathematics: Teaching developmentally*. Addison-Wesley Longman, Inc., 1 Jacob Way, Reading, MA 01867; toll-free.
[35]. Williams, M., Linn, M. C., Ammon, P., & Gearhart, M. (2004). Learning to teach inquiry science in a technology-based environment: A icase study. *Journal of Science Education and Technology, 13(*2), 189–206
[36]. Whitworth, S. A. & Berson, M. J. (2003). Computer Technology in the Social Studies: An examination of the effectiveness literature. Contemporary issues in technology and teacher education. Computer technology in the social studies: An examination of the effectiveness literature (1996–2001). Contemporary issues in technology and teacher education, retrieved August i15, 2003, from http://www.citejournal.org/ vol2/iss4/social studies/article1.cfm.
[37]. Yigit, N. & Akdeniz, A. R. (2003). Fizik ögretiminde bilgisayar destekli etkinliklerin ögrenci kazanimlari üzerine etkisi: Elektrik devreleri örnegi. *GÜ Gazi Egitim Fakültesi Dergisi*, *23*(3), 99-113.
[38]. Yalçnalp, S., Geban, Ö., & Zkan, Ö., (1995). Effectiveness of using computer-assisted supplementary instruction ifor teaching the mole concept. *Journal of Research in Science Teaching, 32,* 1083-1095.

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