Video- Assisted Instruction and Performance in Science and Health of Grade 6 Pupils at Naawan Central School

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Abstract

This study sought to find out the effects of the video-assisted instruction in the performance in Science and Health of grade 6 pupils at Naawan Central School. The subject consisted of 40 pupils who were grouped equally into the control group (the lecture method) and the experimental group (the video-assisted instruction) based on their performance in the pre-test. The instrument used in this study included the self-made test questionnaire, the lesson plans, the self-made visual aids, and the video clippings. Simple descriptive statistical tools such as the percentage, the mean, and the t-test to compare the performance of the pupils were utilized. The pre-test scores of the pupils showed that majority of the learners had prior knowledge already considering the fact that 50% of them obtained almost one-half of the test items in either of the methods used. While the result of the post-test scores signified that pupils had learned from the teacher's discussion as shown in the increase of their post-test scores. The increase in their scores pointed that pupils had processed and understood the science concepts. The result showed that there is no significant difference (p=0.85 and t= 0.19) in the pre-test scores of the pupils taught using the video-assisted instruction and the lecture method in teaching Science and Health. Also, the result manifested that there is no significant difference in the post-test scores between video-assisted instruction and lecture method (p= 0.60, t=0.53).However, the result showed that there is a significant difference between the pre-test scores and the post-test scores of the pupils taught using the video-assisted instruction and the lecture method,(p=1.12E-10, t=1.79) and (p=1.30E-12, t=1.73), respectively .Consequently, several trials should be made in order to compare the effectiveness of using videos in other countries and in the Philippines.

Keywords: Performance, treatment, lecture method,

1. Introduction

Video technology offers a considerable potential for improving the quality of education and stimulating interest and involvement in academic excellence. Since most of the schools have the gadgets, this experience has helped the teachers to be equipped in using video programs in their classrooms. Technology provides students with multiple pathways to learning. Today, educators accept the fact that the computer has indeed succeeded in providing an individualized learning environment that is too difficult for a teacher handling whole classes (Lucido, 2007).This is so, since the computer is able to allow an individual student to learn at their own pace and remain motivated in learning through the challenging virtual learning environment (Lucido, 2007).In the past, students solely learn through traditional teaching. Today, as innovations in teaching-learning have been developed, teachers have integrated these current technologies along with the other innovative teaching methods in their classrooms. Computer-assisted instruction, particularly the video technology, is now a primary and eye-catching instructional material in schools.

This type of instruction enables the learners to go through the learning process step by step.However, teachers still play important role for they serve to facilitate the auto-instructional process or supplement the learning process in its entirety (Navarro and Cruz, 2000).With so many positive claims, video-assisted instruction could become powerful in socializing effects on students, and indeed, brings more interactive learning into the crowded classroom (Columbus, 2002).

Technology is here and the trend nowadays is clear. Using computer for instruction is quite novel, innovative, and new. Therefore, the advent of computers through video-assisted instruction has made great impact on many fields of human endeavor, including education (Salandan, 2006).There has been considerable optimism expressed concerning the future use of computer, mostly the video-assisted instruction in education (Gerlach, 2005).Along with this new innovation there is a need to evolve certain clear guidelines for the future trends and criteria for consideration in the matter of developing and validating video software for teaching and learning of Science and Health. In teaching, it is very important to keep abreast with technology because learning can be fed and stored into them (Wenceslao, 2006).Nowadays, learners are generically termed as electronic learners wherein the teacher will utilize instructional tools such as the electronic media, including phone, bridging, audio and video tape and a video, as well (Khanser, 2003).There are many positive effects of using video-assisted instruction in preparing blackboard augmented lesson (Chaudari, 2013).It adds action to the information which students receive through one way process and help students see the unseen, to test the theoretical concepts, and to comprehend abstract ideals. Students taught with computer-assisted instruction had better attendance rates, showed higher motivation, and cooperated better with peers (Chaudari, 2013).This student-centered approach technology provides multiple pathways of learning. Lastly, as the number of computers in the classroom increases, students are given opportunity to engage in a variety of learning modalities (Jeffs, 2006).

Computer technology for school purposes has already been available, but it is only in the last few years that computers have begun to have a major impact on classrooms and schools (Ornstein, 2002).Using computers for instructional purposes have become routine for many educators and if used properly, computer holds great promise. Its potential far surpasses that of such prior instructional innovations as television, teaching machines, and projectors. Although better visual images can be obtained with slides, and better sound from audio equipment, there are things the computer can do that are beyond the capabilities of the former. While a large mainframe computers are still used and will probably still be needed for several years to come, the growth of video technology would allow learners to have completely different types of experiences (Navarro and Cruz, 2003).The computer can be a tutor, in effect, relieving the teachers of many activities in their personal role as personal tutors. It should be made clear, however, that the computer cannot totally replace the teacher since the teacher shall continue to play the major roles of information deliverer and learning environment controller (Lucido, 2007).It is in this premise that this study was conducted to give teachers essential information about the impact of video assisted instruction to pupils' learning.

2. Methodology

Permission to conduct the pre- testing of the questionnaires was requested from the Principal of Initao Central School. Self-constructed and semi-detailed lesson plans on Galaxy and Constellation were made. These were checked as to the sequence of lesson presentation. The lessons were taught to the pupils for an hour, and another hour was utilized in validating the 50- item multiple choice tests. Item analysis was done, the reliability, and the index of discrimination were also obtained, thus only 25 items were finally administered as pre-test and post-test for both the experimental and the control groups. One section of 48 grade 6 pupils was used in the study. The class was divided into two groups. There were only twenty pupils taken for each of the control group and the experimental group because some pupils were absent during the conduct of the study. As the other group was taught, the resource teacher was requested to manage the other group. The grouping of pupils was based on their performance in the pre-test such that each group was equally represented as to their ability. Three sessions were allotted for the topics on Constellations and Galaxy. The first session was intended for the pre-test, the second session was for teaching the lessons, and the last session was for the post-test.

3. Results and Discussion

The result on the pre-test scores of the pupil's shows that majority of the learners seemed to have prior knowledge considering the fact that 50% of them obtained almost one-half of the test items in either of the methods used.

Somehow, the result also tells that 50% of the pupils do not know the Science topics taught and thus have no exposure on those particular science lessons. One can infer from the results that they have stock knowledge on the science topics which they could have obtained from reading or viewing similarly-related information since most of them belong to the Honor's List and thus, some of them have been contestants in Science Quiz Competition several times where they could have read the topics in Science and Health in advance. Seemingly, the interest of the pupils on the subject could also be attributed to the result.

Table 1: Frequency and percentage distribution of pre-test scores between the video-assisted instruction and the lecture method of the grade 6 pupils in Science and Health

Range of Score	Video-assisted instruction (n=20)		Lecture method (n=20)	
	Frequency	Percent (%)	Frequency	Percent (%)
4-7	7	35%	6	30%
8-11	10	50%	10	50%
12-15	2	10%	4	20%
16-19	1	5%		
20-23				
24-25				
Total	20	100%	20	100%

The post-test scores signified that pupil learned from the teacher's discussion as shown in the increase in their post-test scores. The increase in their scores would point that pupils had processed and understood the science concepts although their performance in the post-test did not vary that much. However, when the pupils' performance in the post-test using either of the methods is compared, only a slight difference was observed. This difference might be attributed to a good teaching pedagogy and the interest-catching video technology used in teaching.

Table 2: Frequency and percentage distribution of post-test scores between the video-assisted instruction and the lecture method of the grade 6 pupils in Science and Health

Range of Score	Video-assisted instruction (n=20)		Lecture method (n=20)	
	Frequency	Percent (%)	Frequency	Percent (%)
4-7				
8-11				
12-15	1	5%	2	10%
16-19	7	35%	3	15%
20-23	8	40%	14	70%
24-25	4	20%	1	5%
Total	20	100%	20	100%

Table 3 reveals that there was no significant difference ($p=0.85$ and $t= 0.19$) in the pre-test scores of the pupils taught using the video-assisted instruction and the lecture method in teaching Science and Health. The table also shows the mean difference of 0.50 between the total mean of video-assisted instruction and that of the lecture method. It is to be noted here that the computed mean in the pre-test performance with the video-assisted instruction was higher than the computed mean in the pre-test performance with the lecture method. Therefore, the hypothesis is accepted.

The result of this study is similar to that of what Kanmani (2013) found out that there was no significant difference in the pre-test achievement scores between the control group and the experimental group. The result of this study implies that the two groups taught with video-assisted instruction and the lecture method had more or less similar understanding of the science concepts in Galaxies and Constellation. Seemingly, this could also mean that the pupils in these two groups have the same exposure in those topics.

Table 3: Difference between the pre-test scores between the video-assisted instruction and the lecture method

Method Mean Mean differencet-value p-value Remarks
Video assisted instruction9.15
0.150.190.85Not significant
Lecture method9.0

The result presented in Table 4 reveals that there was no significant difference in the post-test scores between video-assisted instruction and lecture method (t= 0.53, p=0.60).The scores obtained as observed in the table were closer with each other as shown in their score mean difference of 0.50.Findings in this study are in contrast with the results in the study of Jadal (2011).In his study, the use of video-assisted instruction is statistically significant because the t-value 6.95 is greater than the t-critical t-value 2.567 at 0.01 level of significance. The students taught with video method performed better than the students taught with lecture method in learning the concepts.

In this study, a difference is observed between the use of the two teaching methods in teaching Galaxies and Constellation. Although the result is not statistically significant, there is an increase in the performance of the pupils. The results of this study could be attributed to several factors, such as the following: first, the speed of the narrator; second, the video is not in the Philippine setting and that the words are delivered in American accent, thus, pupils have difficulty in comprehending the content of the subject.

Table 4: Difference between the post-test scores between the video- assisted instruction and the lecture method

Method Mean Mean differencet-value p-valueRemarks
Video assisted instruction20.30
0.500.530.6016Not significant
Lecture method19.80

In Table 5, it shows that there is a significant difference between the pre-test scores and the post-test scores of the pupils taught using the video-assisted instruction (t= 1.79, p= 1.12E-10).One can infer that the instruction is well-delivered and concepts are well-understood. Furthermore, it appears that using a video in teaching Science subject is effective as shown in the increase of the scores. Thus, the null hypothesis is rejected.

Table 5: Difference between the pre-test scores and the post-test scores with the video-assisted instruction

Lecture method Mean Mean difference t-value p-value Remarks
Pre-test9.15
11.151.791.12E-12Highly significant
Post-test20.3

Table 6 shows the increase in the scores of the pupils' post-test scores. The result showed a high significant difference (t=1.73, p= 1.30E-12). Although, the method used in teaching was the lecture, it can still be effective depending on the teacher handling the subject. It seems to show that the teacher is a good science teacher where he explained the lessons well to the pupils using the visual aids. It could also be said, that the quality or a character of a teacher in terms of knowledge content and pedagogy could be comparable to the use of technology.

Table 6: Difference between the pre-test scores and the post-test scores with the lecture method

Lecture method Mean difference t-value p-value Remarks
Pre-test9
10.81.731.30E-12Highly significant
Post-test19.8

4. Conclusion

This study sought to find out the effects of the video-assisted instruction in the performance in Science and Health of grade 6 pupils at Naawan Central School. The subject consisted of 40 pupils who were grouped equally into the control group (the lecture method) and the experimental group (the video-assisted instruction) based on the pupils' performance in the pre-test. Different instruments were used in this study. These include the self-made test questionnaire, the lesson plans, the self-made visual aids, and the video clippings. Simple descriptive statistical tools such as the percentage, the mean, and the t-test to compare the performance of the pupils were utilized.

The pre-test score of the pupils showed that majority of the pupils that is 50% of them obtained almost one-half of the test items in either of the methods used. This implies that the pupils have already prior knowledge on the topics taught. There is an increase in the pupils' post-test scores. This signified that pupils have learned from the teacher's discussion as shown in the increase in their post-test scores. The increase in their scores implies that pupils had processed and understood the science concepts. The results showed that there is no significant difference (p=0.85 and t= 0.19) in the pre-test scores of the pupils taught using the video-assisted instruction and the lecture method in teaching Science and Health. The results manifested that there is no significant difference in the post-test scores between video-assisted instruction and lecture method (t= 0.53, p=0.60).Based from the results it showed that there is a highly significant difference between the pre-test scores and the post-test scores of the pupils taught using the video-assisted instruction (t= 1.79, p= 1.12E-10). The result showed a highly significant difference (t=1.73, p= 1.30E-12) between the pre-test scores and the post-test scores of the pupils taught using the lecture method.

5. Recommendations

Video-assisted instruction can be used as a teaching tool provided that the speed of narration of the story board has to be regulated to the speed of mental processing of the pupils. Several factors have to be considered with regard to video-viewing like expose pupils to viewing English Science videos to attune pupils to the use of it. The speed in the conversation and in dubbing must be regulated or adjusted to Filipino pupils. Use more authored video in various topics so that the Filipino pupils can cope with the English language used. Whereby, the author recommends expanding the scope of the study so that there can be an adequate proof to support the results. A co relational study between the pupils' attitude towards the video assisted instruction and the lecture method is suggested. It is highly recommended that several trials should be made in order to compare the effectiveness of using videos in other countries and in the Philippines and highly recommended that lower sections will be used as respondents to compare which of the two methods will work for the fast and low-performing groups. Lastly, it is recommended that video-assisted instruction will be compared with other innovative tools in teaching.

References

Abu Naba'h, R. 2009. The effect of computer-assisted language learning in teaching English grammar on the achievement of the secondary students in Jordan. P. 431.

Alsultan.2006.Developed a computer aided instruction package in remote sensing educational. Qassim University, College of Computer sciences and Information Technology, Saudi Arabia. Volume 36.P. 29.

Al-Mansour, N. 2009.The effect of computer-assisted instruction on Saudi University students' learning of English. Language Instructor-Language Unit Department, College of Language sand Translation, King Saud University, Saudi Arabia. p. 1.

Angagao, N. 2014. Personality traits of teachers. Midanao State University at Naawan, Naawan Misamis Oriental.P.14.

Atkinson, R. and D. Hansen, 2014. Computer- assisted instruction in initial reading: the standford project. Stanford University and Florida State University's. 9.

Basturk, R. 2005. The effectiveness of computer- assisted instruction in teaching introductory statistics. Educational and Society.p. 170.

Chaudari, P. 2013. Computer-assisted instruction: development of instructional strategy for biology teaching. Irao University of Vanda, India.Pp. 106.

Columbus, O. 2002.Classroom application of microcomputers. Merril Publishing Corporation. p. 3.

Crews, J. 2003.Helping poor reader: a case study of computer- assisted instruction reading tutorial. University of Arizona.P. 618.

Fajardo, A. 2014. Multimedia- assisted instruction in developing English language skills: cbsua experience. Asia Pacific Journal of Multidisciplinary Research. Volume 2.P. 124.

Gerlach, V. S. 2005. Teaching and media: A systematic approach 2nd edition. Prentice Hall Inc. p. 388.

Jadal, M. 2011.Use of video-assisted instruction in primary schools. Indian Streams .Research Journal p. 1.

Jeffs, T. 2006. An action research of computer- assisted instruction within the first grade classroom. East Carolina University. Snow Hill primary School, Snow Hill Inc. p. 80.

Khanser, M. A. 2003. Electronic learning in the Philippines. Computer Times Publishing Inc. and Khanser Publishing House. pp. 16-17.

Konukman, F. 2003. The effects of multimedia computer-assisted instruction on teaching tennis in physical education teacher.Virginia Polytechnic Institute University.pp. 1.

Lucas, Ma. R. D. 2011. Facilitating learning: A metacognitive process, 2nd edition. Lorimar Publishing Inc. p. 51.

Lucido, P. 2007. Educational technology II.Lorimar Publishing House Inc. p. 62.

Mioduser, D. and H.Tur- Kaspa, 2000. The learning value of computer- based instruction of early reading skills. Tel- Aviv University. Journal of Computer Assisted Learning. p. 54.

Moosavi, S. 2009. A comparison of two computer- aided instruction methods with traditional instruction in freshman college mathematics classes. University of Alabama.

Navarro, R. L., and A. A. Cruz. 2000. Principles of teaching and instructional technology. Philiine Association for Teacher Education and Katha Publishing Co., Inc. p. 114.

Ornstein, A. C. 1990. Strategies for effective teaching. Navotas, Metro Manila: Harpercollins Publishers, Inc. p. 375.

Ragasa, C. 2008. A comparison of computer-assisted instruction and the traditional method of teaching of basic statistics. University of the East Manila.Journal of statistics Education Volume 16.p. 1.

Ramani, P. 2012. Effectiveness of computer assisted instruction in teaching arithmetic. Navarachana University, Vadodara, Gujharat India. International Journal of Scientific Research Publication, Vo.2, Issue 11. P. 1.

Salandan, G. G. 2006.Methods of teaching. Lorimar Publishing Co., Inc. p. 359.

Santos, R. 2007. Assessment of learning 1. Published by Lorimar Publishing Inc. p.55- 57.

Sujamthamalini.2013. Video assisted instructional strategy to improve academic achievement in Zoology among six standard students.Alagappa University College of Education, Alagappa University, Karaikudi. Volume 2.P. 103.

Suppes, P. 1968. Computer- assisted instruction: an overview of operations and problems Institute for mathematical studies in the social sciences, Stanford University, Stanford California. pp. 1103.

Walpole, P. 1997. Introduction to statistics. Lorimar Publishing, Incorporated. 776 Aurora Blvd., Cubao, Queon City.p. 46.

Wenceslao, R. 2006 . Principles and practices of teaching .Katha Publishing Co., Inc. p. 258.

Zulueta, F.and J. Perez, 2012. Methods of research thesis writing and applied statistics. Mandalyong City. Printed by Navotas Press. pp. 1-247.