



RESEARCH ARTICLE



'ARCS' APPROACH TO DEVELOP READING SKILLS THROUGH MULTIMEDIA PROGRAMME – AN EMPIRICAL STUDY

Dr. SUNEETHA YEDLA

Assistant Professor of English, University College of Engineering and Technology, Acharya Nagarjuna
University, Nagarjuna Nagar, India



ABSTRACT

Computers are used in many aspects of teaching English Communication Skills. When computers are used for teaching English, students get a vivid vision and effective instructional result. Its impact is evident in every fibre of activities of the students and teachers. A wide range of expectations are formulated in the minds of the students. Usually teachers tend to nourish desirable and socially acceptable activities that will enrich the use of various scientific technologies and gadgets. Therefore, it has become important to investigate deep into the impact of multimedia on the development of desirable social, emotional and educationally accepted behaviors. Therefore, the present study has been undertaken with a view to find out the impact of multimedia on the development of reading skills of engineering students.

The aim of this study is to find out the impact of multimedia on the development of reading skills of Professional Students. The sample consists of engineering students of Acharya Nagarjuna University College of Engineering and Technology. The pre-test and post-test equivalent group design was followed for this study. The data has been subjected to descriptive and differential analysis. The study shows that the students learn with the help of multimedia are better in their reading skills than the students learning through conventional method.

Key Words: Reading Comprehension, Conventional Method, Multimedia, Instructional Systematic Design (ISD) Procedures, ARCS Approach,

Article Info:

Article Received: 24/06/2014

Revised on: 29/06/2014

Accepted on :30/06/2014

©KY Publications

INTRODUCTION

Computers are used in many aspects of teaching English Communication Skills. When computers are used for teaching English, students get a vivid visualization and effective instructional result. Its impact is

noticeable in every aspect of activities of the students and teachers. A wide range of opportunities are formulated in the minds of the students while they are working on assigned activities. Teachers tend to nourish attractive and socially acceptable activities that will enrich the use of various scientific technologies and gadgets. Therefore, it has become important to investigate deep into the impact of multimedia on the development of desirable social, emotional and educationally accepted behaviors.

Interactive multimedia provides a unique avenue for the communication of engineering concepts. Although most engineering materials today are paper-based, most of the educators are examining ways to put into action of publisher-generated materials, self-developed digital utilities into their curricula. It is vital that engineering educators continue to integrate new avenues in their curricula. In general, multimedia has been relatively flourishing instrument because it influences more than one of the five human senses, predominantly the two vital fundamental senses for information reception are – sight and sound. Due to the influence on vital fundamental senses a spark attention and motivation is created in the mind of learners in the process of multimedia programme. Therefore, the present study has been undertaken with a view to find out the impact of multimedia on the development of reading skills of engineering students.

Objectives:

The study has been done by keeping the following objectives in view to enhance reading skills for engineering students:

- To develop a multimedia program for the teaching of English communication skills to engineering students.
- To find out whether there is a significant difference between the experimental group and control group in their reading skills at the pre-test.
- To find out whether there is a significant difference between the experimental group and control group in their reading skills at the post-test.
- To find out whether there is a significant difference between the Mean scores of reading skills of pre-test and post-test for the experimental group.
- To find out whether there is a significant difference between the Mean scores of reading skills of pre-test and post-test for the control group.

Hypotheses:

The following hypotheses have been formulated:

- There is no significant difference between the experimental group and control group in their reading skills at the pre-test.
- There is a significant difference between the experimental group and control group in their reading skills at the post-test.
- There is a significant difference between the Mean scores of reading skills of pre-test and post-test for the experimental group.
- There is a significant difference between the Mean scores of reading skills of pre-test and post-test for the control group.

Sample Study & Tools Used for Study:

Sample of the study consists of 180 students studying engineering in three different disciplines under Acharya Nagarjuna University College of Engineering and Technology in Guntur district. The sample includes both boys and girls of different disciplines. Special Multimedia program was developed by the investigator for the teaching of the concepts in technical English topics included in the engineering syllabus.

Development of Multimedia:

The multimedia program has been developed in K-Van Solutions Software. It provides multimedia platform to attract the senses of the learner for easy and happy learning. Activities to enhance skills in Reading Comprehension of engineering standard were broken down into 60 small learning modules. All the learning modules were arranged based on the principles of learning i.e., proceeding from easy to difficult, simple to complex and from the known to the unknown. Before going to take up modules the learner has to go through of formulas such as IEI (Informative, Elimination, Inference) formula, MLE (Motive, Locative, Elimination)

formula and MIEI (Motive, Informative, Elimination, Inference) formulas to comprehend the passages given without any difficulty. Method adopted to analyze reading skills in learners is Experimental design. For the experimentation, pre-test was conducted and the sample was divided into two groups --- experimental group and control group. The students of the experimental group were taught with the computer multimedia program and the control group through the conventional method. After the experimentation period post-test was administered. The collected data was subjected to statistical analyses and the results obtained were interpreted.

Testing of Hypotheses:

Hypothesis 1:

There is no significant difference between the experimental group and control group in their reading skill at the pre-test. 't' test is applied to test the significance of difference between the Mean scores of reading skills of the experimental group and the control group at the pre-test.

Table-1: Mean Scores of Reading Skill of the experimental group compared with that of the control group at the pre-test

| Group | N | Mean | S.D. | 't' value | Level of Significance at 0.05 level |
|--------------------|----|-------|-------|-----------|-------------------------------------|
| Experimental Group | 90 | 154.2 | 29.04 | | |
| Control Group | 90 | 152.5 | 23.89 | 0.42 | Not Significant |

The above table indicates that the 't' value (0.42) is not significant at 0.05 level. Hence, it can be inferred that there is no significant difference between the experimental group and control group in their levels of Reading skill at the pre-test.

Hypothesis 2:

There is a significant difference between the experimental group and control group in their reading skill at the post-test. 't' test is applied to test the significance of difference between the Mean scores of reading skill of the experimental group and the control group at the post-test.

Table-2: Mean Scores of reading skill of the experimental group compared with that of the control group at the post-test

| Group | N | Mean | S.D. | 't' value | Level of Significance at 0.01 level |
|--------------------|----|-------|-------|-----------|-------------------------------------|
| Experimental Group | 90 | 185.6 | 24.60 | | |
| Control Group | 90 | 153.4 | 25.74 | 8.57 | Significant |

The above table reveals that the 't' value (8.57) is significant at 0.01 level. Hence, it can be inferred that there is a significant difference between the two groups. As indicated by the Mean value, it can be inferred that the students of the experimental group are better in their reading skills than the students of the control group after experimentation. This again clearly shows that the students learning with the help of multimedia fared better in their reading skills than the students learning through the conventional method.

Hypothesis 3:

There is a significant difference between the mean scores of reading skills of pre-test and posttest for the experimental group. 't' test was applied to test the significant of the difference between the mean scores of reading skills of the pre-test with that of the post-test for the experimental group.(Table 3)

Table-3: Mean Scores of reading skill of the pre-test compared with that of the post-test for the Experimental Group

| Group | N | Mean | S.D. | 't' value | Level of Significance at 0.01 level |
|-----------|----|-------|-------|-----------|-------------------------------------|
| Pre-test | 90 | 154.2 | 29.04 | 8.39 | Significant |
| Post-test | 90 | 185.6 | 24.60 | | |

Table 3 indicates that the 't' value (8.39) is significant at 0.01 level. Hence, it can be inferred that there is a significant difference in the mean scores of reading skills of the posttest shows that the students learning with the help of multimedia are better in their reading skills than the students learning through conventional method.

Hypothesis 4:

There is no significant difference between the mean scores of reading skills of pre-test and post-test for the control group. 't' test was applied to test the significant of the difference between the mean scores of reading skills of the pre-test with that of the post-test for the control group. (Table 4)

Table-4: Mean Scores of reading skill of the pretest compared with that of the posttest for the Control Group

| Group | N | Mean | S.D. | 't' value | Level of Significance at 0.05 level |
|-----------|----|-------|-------|-----------|-------------------------------------|
| Pre-test | 90 | 152.5 | 23.89 | 0.30 | Not Significant |
| Post-test | 90 | 153.4 | 25.74 | | |

Table 4 indicates that the 't' value (0.30) is not significant difference between the Mean scores of the reading skills of the pre-test and post-test for the control group.

Findings:

1. There is no significant difference between the experimental group and control group in their reading skills at the pre-test.
2. There is a significant difference between the experimental group and control group in their reading skills at the post-test. The students of the experimental group are better in their reading skills than the students of the control group. This shows that the students learning through multimedia are better in their reading skills than the students learning through the conventional method.
3. There is a significant difference between the Mean scores of reading skills of the pre-test and post-test for the experimental group. The higher Mean value in the posttest indicates that the students learning through the multimedia are better in their reading skills than the students learning through the conventional method.
4. There is no significant difference between the Mean scores of reading skills of the pretest and posttest for the control group.

CONCLUSION

As a result of the experiment done we should know that multimedia modules stimulate learners to enhance their reading skills at best. It is the duty of a teacher to cater the needs of a learner by identifying suitable teaching methods to achieve their goals. At present Engineering students do not have enough involvement in enhancing their reading skills. Design of Creative assignments and interesting projects in multimedia make them to enhance their ability in reading skills even though it does not consider the learner to be actively thinking about what is being presented. Tools such as linear videos or slide-based reading modules simply provide knowledge in an easy way without burdening the student. Although engineering course content provide it well to interactive multimedia techniques for deliveries, most of the course materials are still traditionally based. Thus students have grown up in the information age are easily bored with traditional

presentations. They may “turn off” traditional presentations because they become disappointed with the method of presentation. Thus, engineering educators must begin to utilize interactive multimedia more broadly in design of curriculum materials. Although the use of interactive multimedia is increasing, the rate of student expectations for technology integration has exceeded the rate of teacher’s implementation of technology within the classroom. Teachers must proactively find, review, evaluate and implement interactive technologies within the classroom with the newly equipped instructional systematic design (ISD) procedures such as multimedia programmes. As John M. Keller’s ARCS Model – attention, relevance, confidence and satisfaction has been carefully considered while designing the instructional material to ensure learner’s motivation. By this method we can find a wide scope for joyful learning of the learner.

REFERENCES

- Alderson, J.C. 2000. *Assessing Reading*, Cambridge: Cambridge University Press.
- Alessi, S.M. and S.R. Trollip. 1985. *Computer-Based Instruction: Methods and Development*, New Jersey: Prentice Hall, Englewood Cliffs.
- Atkinson, R.C., and H.A. Wilson (eds.) 1982. *Computer- Assisted Instruction: A Book of Readings*, New York: Academic Press.
- Burger, J. 1993. *The Desktop Multimedia Bible*. New York: McGraw-Hill.
- Dreyer, C., & Nel, C.2003. “Teaching Reading Strategies and Reading Comprehension within a Technology – Enhanced Learning Environment”, *System*, 31 (3), 349-365.
- Keller, J. M. 2010. *Motivational Design for Learning and Performance: the ARCS Model Approach*, New York: Springer.
- Pagani, Margherita, 2001. *Encyclopedia of Multimedia Technology and Networking*. United Kingdom: Idea Group Inc...