

Impact of Multimedia on Learners' Engagement: An Experimental Study

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Abstract

John Dewey's approach towards education spoke about 'Learning by Doing'. The learners can only learn when they themselves apply their knowledge in practical situation. The teacher who is expected to be a facilitator in the class is therefore tethered towards engaging the learners in the classroom learning environment. In the modern digital era classroom learning also demands the integration of technology, as mentioned in the National Curriculum Framework (2005). The present study therefore attempted to analyse the impact of Multimedia by developing a Multimedia Package for Instructional Purpose and implemented it in the classroom, engaging learners and showcasing the extent to which the required learning has occurred.

Keywords: *Learners, Multimedia Package, Engagement*

With the increase in the popularity of technology in the modern digital era, the use of technology in the field of education was initiated. This led to the demand for new competent teachers who are well versed in handling and operating classroom learning with the help of technology. The conventional teacher-centred and text-oriented teaching though not completely thwarted, but was considered to result in monotony, low level of motivation and low efficiency among learners compared to that 'teaching' which was accompanied with technology. The teachers using the conventional method of 'chalk-talk' though were not seen as ineffective but their teaching was expected to be enhanced with the help of technology and 'Multimedia'.

'Multimedia' is defined as the integration of various digital media types such as text, images, sound and video, for interactive application or presentation to convey a message or information to an audience in a more understandable manner. In other words, multimedia means "an individual or a small group using a computer to interact with information that is represented in several media, by repeatedly selecting what to see and hear next" (Agnew, Kellerman and Meyer, 1996).

Reisman (1994), described multimedia as a ray of “computer driven interactive communication system, which create, store, transmit and retrieve, textual, graphic and auditory networks of information. Multimedia could be interpreted as a combination of data carriers, for example video, CDROM, floppy disks, Internet and software in which the possibility for an interactive approach is offered (Smeets, 1996; Jager and Lokman, 1996).

Fetterman (1997) identified four important characteristics of multimedia as:

- Multimedia systems are computer controlled
- Multimedia systems are integrated
- The information content must be represented digitally
- The interface to the final presentation of media.

The development of multimedia technologies for learning offers new ways in which learning can take place in schools. The integration of multimedia with conventional teaching method supports constructive concept development, thereby assigning the teachers, role of a facilitator of learning while working with individual students. Multimedia is an instructional interactive method which involves presenting, learning and directing to additional materials, catering to the need of the students.

The essence and power of multimedia lies in the fact that it is multisensory, thereby stimulating all senses of the audience. It is interactive, enabling the end users of the application to choose and control flow of information. This has huge impact on the educational system and the way we communicate information to the learners (Neo and Neo, 2000).

Ogunbote and Adesoye (2006) expressed that multimedia technology adds new dimension to learning experiences because concepts were easier to present and comprehend when the words are complemented with images and animations. Stating further that it has been established that learners retain more when a variety of senses are engaged in impacting knowledge; Intensity of the experience aids retention and recall by engaging social, emotional and intellectual senses.

Therefore, use of internet based instructions, web pages, web bulletin boards, graphics, videos, sounds, animation, texts, all of which fall under multimedia package provides varieties of audio-visual presentations along with the content that would make learning interesting, interactive and self-paced. It is considered in the 21st century context that knowing the subject or the pedagogy of teaching is not just ‘the criteria’ for being a good teacher, but integrating ‘Multimedia’ in their teaching would help them keep themselves on par with the coming generation, their learning interests, the modern world.

Importance of Teaching (in this context English Prose and Grammar) with the help of Multimedia to Secondary School Students

Secondary school students in this digital era needs to have access to technology and get used to it in order to compete the ever enlarging and widening sphere of 'knowledge' across the globe. Textbooks or supplementary readers are no more the only source of knowledge as technology has proven to be a worthy partner. In an era where information can be drawn within few seconds through technology, the classroom which is a source of information or knowledge for the secondary school students who still don't have access to internet or needs to have proper guidance in browsing and collecting the correct information, the initiation and blending of technology in the form of Multimedia Instruction Package is essential. Teachers too can create totally different and lively teaching learning experiences by using multimedia inside the classroom to provide instructions that would aid in achieving the stipulated objectives of the lessons to be taught.

Multimedia as discussed earlier appeals to all the senses of a learner and therefore the use of a Multimedia Instruction Package to teach English Prose and Grammar would demand a total involvement of the learner in the classroom teaching-learning process which is relevant to the

Educational scenario of the present digital era. In case of English prose the pronunciation, intonation, vocabulary can be grasped well when perceived in the form of a video or audio. The prose can be enjoyed more when it takes the shape of a movie, making it more relatable; imagination and creativity can be enhanced when an audio or visual is used to motivate and ooze the senses of the learners. Moreover, when Grammar is taught through multimedia, it is expected to have more clarity in terms of rules, examples, illustrations and activities through the help of multimedia, increases the attention span of the learners, as full participation is demanded by the Multimedia Instruction Package (MMIP).

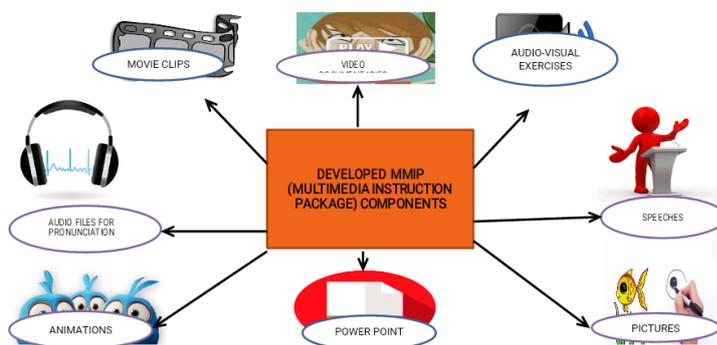


Figure 1: Madhurima's Multimedia Instruction Package (MMIP)

Methodology

The researcher chose experimental method as it is a scientific method and provides a systematic and comprehensive way for answering the research questions. It is the best way of establishing cause and effect relationships between variables.

The chosen sample was selected from the population of secondary school Class VIII students randomly, the sample being the class VIII students of Kendriya Vidyalaya, CMERI, Durgapur, West Bengal and they were treated as the experimental group (33 students). The MMIP was utilized to teach English Grammar and Prose which differed from their conventional method of learning through traditional approach. At the end of the treatment reflections were collected from the students which were then quantified by tallying, under the eight components of class participation rate and engagement (as comprehended by the researcher): *Interest, Analytical ability, Grammar competency, Spontaneity in learning, Content knowledge, Concept Understanding, Pronunciation and Joyful learning.*

Data Analysis

The researcher here used qualitative analysis to find out the effect of Multimedia Instruction Package on student's class participation rate. As the participation rate is based on the learning that is attained, the absorption of the concept of learning in order to categorise it into various domains is necessary.

Learning is defined as "the acquisition of habits, knowledge and attitudes. It involves new ways of doing things, and it operates in an individual's attempts to overcome obstacles or to adjust to new situations" (Crow and Crow, 1973).

Qiu argues that enhanced interest in reading, combined with changes in concept learning, ensures a reader's greater concentration on the focus and subsequently facilitates concept learning (Qiu, 2010).

Two main aspects of language learning is form and phonology, or in simplest terms grammatical accuracy and pronunciation skill. The teacher along with students needs to know language analysis in order to use it meaningfully in the appropriate context (BBC, 2017).

The "joyful learning" is a kind of learning experience which could make learner feels pleasure in the learning process. A suitable learning environment with proper learning sequence is essential for learning, especially for children who are still in the early development period (Singh.S, 2014).

An inspection of these statements from various sources led to the conclusion that learning involves interest of learners in order to make them gain content knowledge and understand concepts with spontaneity. The aspect of analytical ability of learning makes

learners earn grammatical accuracy and pronunciation skill too, with phonemic awareness. The entire learning process needs to be joyful for learners to stay motivated and participate more.

The participation rate therefore has been categorized into eight domains: Interest, Analytical ability, Grammar competency, Spontaneity in learning, Content knowledge, Concept Understanding, Pronunciation and Joyful learning. At the end of the treatment the researcher collected learners' reflections on the treatment programme (Multimedia Package used to provide instructions). The content of the reflection was then analysed and quantified based on the above categorised domains.

Table 1 :The percentage of participation of the students as calculated in terms of learners' interest, analysing, learning grammar easily, rate of learning, gaining knowledge, understanding, improving pronunciation and joyful learning

Sample Size	Elements of learning influencing participation	Percentage (%) of existence
33	Interest	78.8
	Analytical ability	51.5
	Grammar competency	69.7
	Spontaneity in learning	54.5
	Content Knowledge	60.6
	Concept Understanding	66.7
	Pronunciation	39.4
	Joyful learning	75.8

It is inferred from the above table that 78.8% of learners found the Multimedia Instruction Package was effective in building interest, 51.5% of learners agreed that it helps in developing analytical skills, 69.7 % of learners found it helpful in learning grammar accurately, 54.5% found it effective in grasping, 60.6% said it helped in gaining knowledge beyond textbook, 66.7% opined that it provides a better understanding of concepts, 39.4 % stated it helped in learning pronunciation and 75.8% agreed that learning during the treatment period was no more a burden but joyful.

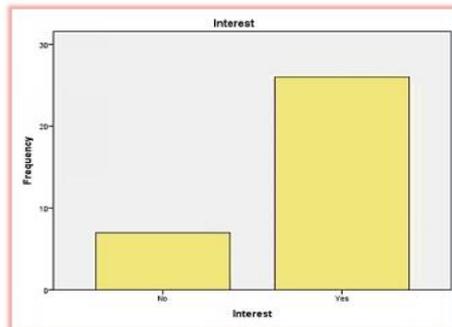


Figure 2: Distribution of the percentage of students who found the Multimedia Instruction Package effective in building Interest

It is inferred from the above figure that 78.8% of students found the Multimedia Instruction Package helpful in building interest in learners and 21.2% disagreed. Since the percentage of positive response of students is more, it is inferred that Multimedia Instruction Package can be concluded as helpful in building learners' interest.

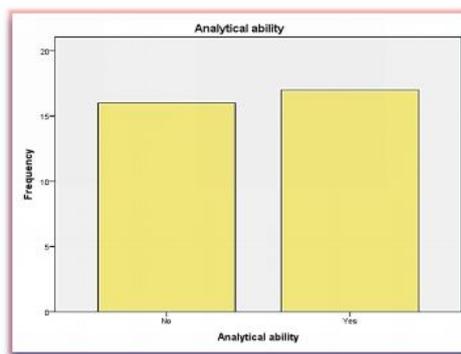


Figure 3: Distribution of the percentage of students who found the Multimedia Instruction Package effective in building Analytical ability

It is inferred from the above figure that 51.5% of students found the Multimedia Instruction Package helpful in building analytical skill in learners and 48.5% disagreed. Since the percentage of positive response of students is more, it is inferred that Multimedia Instruction Package can be concluded as helpful in building learners' analytical skill.

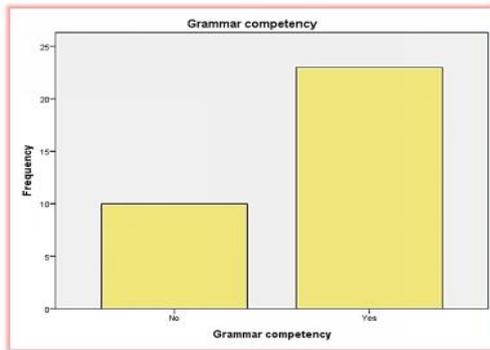


Figure 4: Distribution of the percentage of students who found the Multimedia Instruction Package effective in building grammar competency

It is inferred from the above figure that 69.7% of students found the Multimedia Instruction Package helpful in learning grammar easily and 30.3% disagreed. Since the percentage positive response of students is more, it is inferred that Multimedia Instruction Package can be concluded as helpful in building learners' grammatical accuracy.

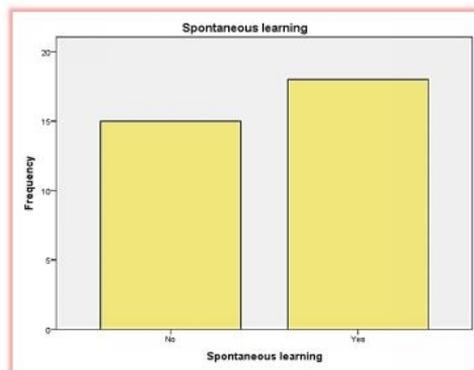


Figure 5: Distribution of the percentage of students who found the Multimedia Instruction Package effective in learning spontaneously

It is inferred from the above figure that 54.5% of students found the Multimedia Instruction Package helpful in learning quickly and 45.5% disagreed. Since the percentage of positive response of students is more, therefore Multimedia Instruction Package can be concluded as helpful in grasping content.

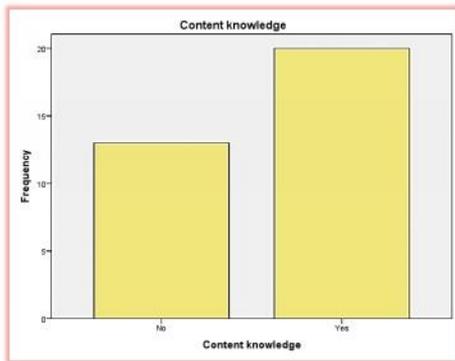


Figure 6: Distribution of the percentage of students who found the Multimedia Instruction Package effective in enhancing content knowledge

It is inferred from the above figure that 60.6% of students found the Multimedia Instruction Package helpful in enhancing knowledge and 39.4% disagreed. Since the percentage of positive response of students is more, it is inferred that Multimedia Instruction Package can be concluded as helpful in enhancing knowledge.

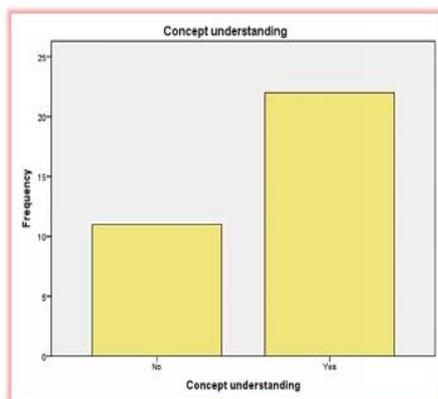


Figure 7: Distribution of the percentage of students who found the Multimedia Instruction Package effective for better concept understanding

It is inferred from the above figure that 66.7% of students found the Multimedia Instruction Package helpful in better comprehension or understanding and 33.3% disagreed. Since the percentage of positive response of students is more, it is inferred that Multimedia Instruction Package can be concluded as helpful in better comprehension or understanding.

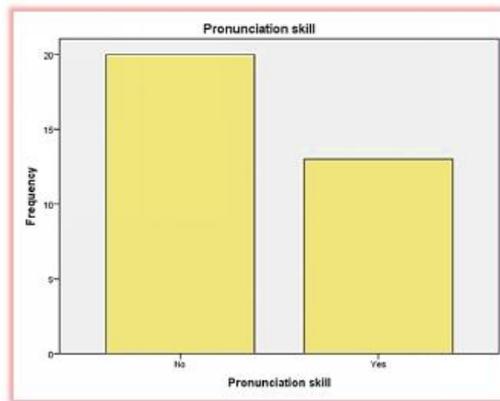


Figure 8: Distribution of the percentage of students who found the Multimedia Instruction Package effective for improving pronunciation

It is inferred from the above figure that 39.4% of students found the Multimedia Instruction Package helpful in improving pronunciation and 60.6% disagreed. Since the percentage of negative response of students is more, it is inferred that Multimedia Instruction Package can be concluded as not much helpful in improving pronunciation in this context.

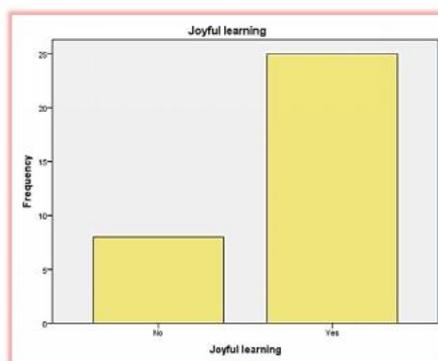


Figure 9: Distribution of the percentage of students who found the Multimedia Instruction Package effective for making learning joyful

It is inferred from the above figure that 75.8% of students found the Multimedia Instruction Package helpful in making learning joyful and 24.2% disagreed. Since the percentage of positive response of students is more, it is inferred that Multimedia Instruction Package can be concluded as helpful in making learning joyful.

Findings obtained from qualitative analysis

The participation rate of students is higher when they are taught with MMIP

The participation rate was categorized into eight domains; Interest, Analytical ability, Spontaneity in learning, Grammar competency, content knowledge, concept, Pronunciation and Joyful learning. The learner's reflection on the treatment as a whole was taken to analyze and reach the conclusion that except the pronunciation skill, the Multimedia Instruction Package has been extremely effective in learning English Prose and Grammar as the percentage of students who conformed is higher than the ones who denied. As a whole it can be concluded that Multimedia Instruction Package helps in improving or increasing the participation rate of the students and engage them in learning.

Acknowledgement

I sincerely acknowledge the Principal of Kendriya Vidyalaya, CMERI, Durgapur, West Bengal, India for allowing me to conduct the experimental study for a stipulated time frame.

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