DEVELOPMENT AND EFFECTIVENESS OF MULTIMEDIA PACKAGE IN SANSKRIT GRAMMAR FOR STD IX STUDENTS

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Abstract:

Teachers primarily require access to learning resources, which can support concept development by learners in a variety of ways to meet individual learning needs. The development of multimedia technologies for learning offers new ways in which learning can take place in schools and the home. Enabling teachers to have access to multimedia learning resources, which support constructive concept development, allows the teacher to focus more on being a facilitator of learning while working with individual students. Extending the use of multimedia learning resources to the home represents an educational opportunity with the potential to improve student learning.

Introduction:

The world in which we live is changing rapidly and the field of education is experiencing these changes in particular as it applies to Media Services. The old days of an educational institution having an isolated audio-visual department are long gone! The growth in use of multimedia within the education sector has accelerated in recent years, and looks set for continued expansion in the future.

The elements used in multimedia have all existed before. Multimedia simply combines these elements into a powerful new tool, especially in the hands of teachers and students. Interactive multimedia weaves five basic types of media into the learning environment: text, video, sound, graphics and animation. Since the mode of learning is interactive and not linear, a student or teacher can choose what to investigate next. For example, one does not start on the first page of a linear document and read to the end. Interactive multimedia learning mode is more like constructing a spider's web, with one idea linked to another, allowing choices in the learner's path.

IMPORTANCE OF SANSKRIT

The language of Sanskrit is of a wonderful structure, more perfect than Greek, more copious than Latin and more exquisitely refined than either.

- The oldest surviving documents written in an Indo-European language are written in Sanskrit. Its grammar is the closest to Proto Indo-European, as it has, for example, retained more of Proto Indo-European's cases than other Indo-European languages have.

- It is the cornerstone of scholarship recognizing the deep linguistic affinities between Europe and Asia.

- The importance of the Sanskrit language for the study of Asia can hardly be overestimated; what Greek and Latin have been to Western history, Sanskrit is to the histories, religions, cultures, and societies of Asia.

- Its "discovery" by British colonialists in India was instrumental in generating the field of comparative linguistics.

- For more than three millennia Sanskrit was the lingua franca of the Indian subcontinent, the language of science, knowledge, and culture.

- It formed the basis of several of the world's great religions — Hinduism, Buddhism, and Jainism, and was the primary language for the production of knowledge in these traditions.

- It would be difficult to study any of these religions in their South Asian phases without knowledge of Sanskrit.

- Its spread formed the basis for literacy in much of South and Southeast Asia, as well as Tibet and even today its influence can be widely evident in these areas.

- One of the great classical languages of the world, the Sanskrit language is renowned for the sophistication of its phonetic structure and is the basis for many of modern South Asia's languages—Hindi, Gujarati, Marathi, Punjabi—as well as the classical Prakrit and the language of Buddhist scripture, Pali

Various measures have been taken to uplift the position of Sanskrit by Government as well as private bodies. The national Anthem of India, Jana Gala Mana, composed by Rabindranath Tagore, is 90% Sanskrit and hence is understood all over India. The' Government of India have officially adopted Sri and Samriti as official forms of address. The motto of the Lok Sabha is Dharma chakra pravartanaya (''For the promulgation of the Wheel

of Law"). The All India Radio has adopted as its guiding principle and motto the Sanskrit expression Bahujana-hitaya bahujana-sukhaya ("For the good of the many and for the happiness of the many"). The Life Insurance Corporation's motto is Yogaksemam vahamy aham, which is a quotation from the Bhagavad Gita, meaning "I take responsibility for access and security". The Indian Navy has accepted as its motto the Vedic prayer: sam no Varunah. The great principle of India's foreign policy is expressed by the Sanskrit term Panca Sila. In several other departments of public life-as for instance on formal occasions like the laying of a foundation stone or the holding of a University Convocation-Sanskrit is slowly coming up, as a fitting expression of our national aspirations. In order to maintain our position in the comity of nations, the use of Sanskrit is supported as being conducive to the restoration of our sense of self-respect.

Since Sanskrit is a repository of unlimited invaluable knowledge of ancient Indian heritage, it must get due respect and regard from all of us. The mindset among a majority that Sanskrit is dead has to be changed by the view that "Sanskrit was part of our lives centuries back and even today in some or the other way, it is connected to us."

Sanskrit Grammar

The grammatical tradition of Sanskrit (**vyākaraṇa**, one of the six Vedanga disciplines) began in late Vedic India and culminated in the **Aṣṭādhyāyī** of Pāṇini, a work which consists of 3990 sutras or aphorisms. Kātyāyana composed Vārtikas (explanations) on Pāṇini's sūtras. Patañjali, who lived three centuries after Pāṇini, wrote the *Mahābhāṣya*, the "Great Commentary" on the Aṣṭādhyāyī and Vārtikas. Because of these three ancient Sanskrit grammarians this grammar is called **Trimuni Vyākaraṇa** or "grammar of three sages". To elucidate the meaning of the sūtras, Jayaditya and Vāmana wrote the commentary named Kāsikā 600 CE.

Pāṇinian grammar is based on 14 Shiva sutras. Here whole Mātrika (alphabet) is abbreviated. This abbreviation is called Pratyāhāra.[1]. Kaiyaṭa's (12th century AD) commentary on Patañjali's Mahābhāṣya also exerted much influence on the development of grammar. But more influential was the *Rupāvatāra* of Buddhist scholar Dharmakīrti which popularized simplified versions of Sanskrit grammar.

The most influential work of the Early Modern (Mughal) period was *Siddhānta Kaumudi* by Bhaṭṭoji Dīkṣita (17th century) and its various derivate versions by Varadarāja.

European grammatical scholarship begins in the 18th century with Jean François Pons and others, culminating in the exhaustive expositions by 19th century scholars such as Otto Boehtlingk, William Dwight Whitney, Jacob Wackernagel and others.

Multimedia in Education

It is very tempting to use the latest computer wizardry to represent information and develop computer enhanced learning materials. However, the instructional design of these systems should be based on a careful examination and analysis of the many factors, both human and technical, relating to visual learning. When is sound more meaningful than a picture? How much text is too much? Does the graphic overwhelm the screen? For a student, this allows them to test all of their skills gained in every subject area. Students must be able to select appropriate multimedia tools and apply them to the learning task within the learning environment in order for effective learning to take place.

A *Multimedia Learning* environment involves a number of components or elements in order to enable learning to take place. Hardware and software are only part of the requirement. As mentioned earlier, multimedia learning integrates five types of media to provide flexibility in expressing the creativity of a student and in exchanging ideas (See Figure 1).

Text

Out of all of the elements, text has the most impact on the quality of the multimedia interaction. Generally, text provides the important information. Text acts as the keystone tying all of the other media elements together. It is well written text that makes a multimedia communication wonderful.

Sound

Sound is used to provide emphasis or highlight a transition from one page to another. Sound synchronized to screen display, enables teachers to present lots of information at once. This approach is used in a variety of ways, all based on visual display of a complex image paired with a spoken explanation (for example, art – pictures are 'glossed' by the voiceover; or math – a proof fills the screen while the spoken explanation plays in the background). Sound used creatively, becomes a stimulus to the imagination; used inappropriately it becomes a hindrance or an annoyance. For instance, a script, some still images and a sound

track, allow students to utilize their own power of imagination without being biased and influenced by the inappropriate use of video footage. A great advantage is that the sound file can be stopped and started very easily.

Video

The representation of information by using the visualization capabilities of video can be immediate and powerful. While this is not in doubt, it is the ability to choose how we view, and interact, with the content of digital video that provides new and exciting possibilities for the use of digital video in education. There are many instances where students, studying particular processes, may find themselves faced with a scenario that seems highly complex when conveyed in purely text form, or by the use of diagrams and images. In such situations the representational qualities of video help in placing a theoretical concept into context.

Video can stimulate interest if it is relevant to the rest of the information on the page, and is not 'overdone'. Video can be used to give examples of phenomena or issues referred to in the text. For example, while students are reading notes about a particular issue, a video showing a short clip of the author/teacher emphasizing the key points can be inserted at a key moment; alternatively, the video clips can be used to tell readers what to do next. On the other hand, it is unlikely that video can completely replace the face-to-face lecture: rather, video needs to be used to supplement textual information.

One of the most compelling justifications for video may be its dramatic ability to elicit an emotional response from an individual. Such a reaction can provide a strong motivational incentive to choose and persist in a task.

The use of video is appropriate to convey information about environments that can be either dangerous or too costly to consider, or recreate, in real life. For example: video images used to demonstrate particular chemical reactions without exposing students to highly volatile chemicals, or medical education, where real-life situations can be better understood via video.

Animation

Animation is used to show changes in state over time, or to present information slowly to students so they have time to assimilate it in smaller chunks. Animations, when

combined with user input, enable students to view different versions of change over time depending on different variables.

Animations are primarily used to demonstrate an idea or illustrate a concept. Video is usually taken from life, whereas animations are based on drawings. There are two types of animation: Cel based and Object based. Cel based animation consists of multiple drawings, each one a little different from the others. When shown in rapid sequence, for example, the operation of an engine's crankshaft, the drawings appear to move. Object based animation (also called slide or path animation) simply moves an object across a screen. The object itself does not change. Students can use object animation to illustrate a point – imagine a battle map of Gettysburg where troop movement is represented by sliding arrows.

Graphics

Graphics provide the most creative possibilities for a learning session. They can be photographs, drawings, graphs from a spreadsheet, pictures from CD-ROM, or something pulled from the Internet. With a scanner, hand-drawn work can be included. Standing commented that, "the capacity of recognition memory for pictures is almost limitless". The reason for this is that images make use of a massive range of cortical skills: color, form, line, dimension, texture, visual rhythm, and especially imagination.

STATEMENT OF THE PROBLEM

Development and Implementation of CAI in Sanskrit for Std IX Students

OBJECTIVES OF THE STUDY

➢ To develop Multimedia Package on Sanskrit Grammar for Standard IX Students.

➢ To study the effectiveness of the Multimedia Package in terms of achievement of Std. IX Students in Sanskrit Prose.

➢ To study the reactions of the Standard IX Students on the Multimedia Package developed by the investigator.

HYPOTHESES

1) There will be no significance difference in the mean gain scores of experimental and control group of the students on written pre-test and post-test.

2) There will be no significance difference in the mean scores of experimental group and control group of the students on oral post-test.

3) There will be no significant difference in the observed frequencies and frequencies expected against equal probability against various statements of the reaction scale.

DELIMITATION OF THE STUDY

The present study is delimited to Sanskrit Prose Section of Std. IX of GSHEB.

RESEARCH DESIGN

Pre-test, Post-test experimental and control group design was employed for the study for the written test. Further post-test only experimental and control group design was employed for oral testing.

POPULATION

All the Gujarati medium schools of Gujarat State under GSHEB were the target population of the present study.

SAMPLE

Students of Std. IX of Nutan Vidyalaya constituted the sample for the study. One of the Std. IX sections (60 Students) was treated as experimental group, whereas, another section as control group (60 Students).

TOOLS AND TECHNIQUES

Following tools were constructed to realize the above objectives:

1 Achievement test:- Achievement tests, written was constructed by the investigator. The written test was constituted on Grammar. Covering the contents of 9th std Grammar.

Achievement test in Sanskrit is prepared for administering pre-test and post-test. This achievement test is prepared by the researcher keeping in mind content of the Sanskrit Grammar, which is selected for purpose of preparing Multimedia Package. This achievement

consists of 5 Question, Types of Question was open ended and close ended. The achievement has the total weight age of 20 marks. The researcher has considered 30 minutes of time for solving the test. The prepared test was be referred to the experts in the field of education and Sanskrit for its content validation and modification. Considering the suggestions by the experts, the final achievement test was be prepared.

2 Reaction Scale:-

In order to study the reactions of the students towards the developed Multimedia package, objective-3 the researcher constructed a five point-Strongly agree, agree, disagree, undecided, strongly disagree reaction scales.

DATA ANALYSIS TECHNIQUES EMPLOYED

1) The significance of difference between the mean gain scores of experimental group and control group on written test was studied through' test.

2) The significance of difference between the mean scores of experimental group and control group on oral post test was studied through' test.

3) Chi-square test was employed to study the observed frequencies against each statement of the reaction scale with respect to the frequencies expected against equal probability.

FINDINGS

1) The mean gain score of experimental group has been found significantly greater than the mean gain score of control group on the Sanskrit Grammar.

2) The mean score of experimental group on "Reading from Text" has been found significantly greater than the mean score of control group at .01 level.

3) The mean score of experimental group on "Reading Difficult Words" has been found significantly greater than the mean score of control group at .01 level.

4) The mean score of experimental group on "Reading Similar Sounding Words" has been found significantly greater than the mean score of control group at .01 level.

5) The students were found to have favorable reactions towards the Multimedia Package in Sanskrit.

IMPLICATIONS OF THE STUDY

- The Multimedia Package developed by the investigator in Sanskrit for Std. IX students on Sanskrit Grammar can be widely deployed.
- The teacher should be trained in developing and utilizing Multimedia Package on Sanskrit.
- The various Text Book Boards can attach CDs of such computer software with the Text Books.

CONCLUSION

The study conducted by the investigator has revealed that the Multimedia Package developed by the investigator on the selected chapters of class IX Sanskrit Grammar was found to be effective in terms of the achievement of the learners and their reactions. Such Softwares need to be developed and widely deployed for the revival of Sanskrit. Such attempts need to be made at a large scale at all levels of Education.

BIBLIOGRAPHY

Adhikari , R. (1992). Development of computer aided instructional material on cell reproduction for class IX. In Goel, D.R.(2000). Educational media in India. Delhi: Bharatiya kala prakasha.

Apte,D.G. and Dongre, P.K.(1960). *Teaching of Sanskrit in secondary school*. The M.S. University of Baroda: Acharya book depot.

Balasubramaninan,N.(2001).*Relative effectiveness among different modes of computer based instruction.* Experiments in Education, Vol XXIX, (2) Feb.2001, pp.27-31.

Barot,H.(2005). To study the effectiveness of CAI in Sanskrit for std. VIII students. unpublished M.Ed. dissertation. Vadodara:CASE. The Maharaja sayajirao University of Baroda.

Barot,H.(2009). Development and effectiveness of CAI in Sanskrit standard IX

students. An unpublished Ph.D. thesis Vadodara:CASE. The Maharaja sayajirao
University of Baroda.

Bharadwaj. S.(1982). *Linguistic study of Dharmasutras*. Printed in India by shubolanker
Marjpure Delhi: Manthan publication Rohtak.

Bhatt,B.D. (1994) . Modern encyclopedia of educational technology Delhi: kanishka
publisher and Distributors. VOI.IV.

Casanova, A. (2004). Conducted a study entitled *An analysis of computer media
communication technologies as tool to enhance learning.* Dissertation Abstract
International 65(12).

Crews, J.M. (2003). Helping poor readers : A study of computer assisted instruction.
Retrieved from http//www.jcrews @cmi. Arizona.edu/.

Coulsom.M.(1976). *Sanskrit an introduction to the classical language*. Britain: Oxford
University press

Das, A. (1998). Exploring effectiveness of computer assisted learning material on rhymes
in different modes. An unpublished Ph.D. thesis, Vadodara: CASE, the M.S.
University of Baroda.

Galvis, A. T. (2007) *Computer- assisted instruction (CAI) as teaching tool for occupational
therapy education: A guide to understand CAI design and effectiveness.* (Ph.D
Thesis, Texas Women's University,2007) Dissertation Abstract International,
Vol.68, no.7, 2907-A.

Gilbert, D. W. (2006) Effectiveness of computer- assisted instruction blended with class-
room teaching methods to acquire automotive psychomotor skill. (Ph.D. Thesis,
Southern Illionis University at Carbondale,2006) Dissertation Abstracts
International, Vol.67, no.8. 2907-A.

Goel, D.R. (2000) Educational media in India. New Delhi: bharatiya kala prakashan.

Crews, (2003), EFFECTIVENESS OF COMPUTER ASSISTED INSTUCTION.

In www.chinagmai.ac.th/abstract199926.html

Himmani(1990). *Development of Computer Aided Instructional Material on mincrobes*

for class VIII. In Goel,D.R.(2000). Educational Media in India. Delhi: Bharatiya Kala Prakashan.

Hsu, J.J. (1994). Computer Assisted Language Learning (CALL) the effect of ELS students use of instructional modification on listing comprehension. Dissertation Abstracts International, Vol.55, no.4,p-851.

Jeyamani, P. (1991). *Effectiveness of simulation modes of teaching through CAI.* In

NCERT (1992). Fifth Survey of Research in Education , New Delhi:NCERT.

Joshi, Anuradha and Mahapatra, B.C. (1995). *Effectiveness of computer Software in terms of higher mental ability in science.* Indian Journal of Psychometric and Education, Vol.26(2) , 105-108.

Khirwadkar,A . (1998). Development of Computer Software for Learning Chemistry at

Std. XI. Unpublished Ph.D. thesis. CASE:MSU.

Kulkarni, S.S. (1996). a pioneer of educational technology in India. In ruhela, S.P.(1999). Essentials of educational technology. New Delhi : Indian publication distribution.

M.H.R.D. (1968). National policy of education. New Delhi: government of India.

M.H.R.D. (1986). National policy of education. New Delhi: government of India.

Nimtrakul, (1999). Effectiveness of computer assisted instruction on atomic structure in chemistry. In www.chinagmai.ac.th/abstract199926.html

Parikh,P.D. (2006). Development and implementing Computer Assisted Learning

Material for 11ᵗʰ std commerce students on subject Introduction to book-keeping and Accountancy prescribed by GSEB. An Unpublished M.Ed. Dissertation. Vadodara: CASE. The Maharaja sayajirao University of Baroda.

Rathwa, M.(2007). Development and Implementation of Multimedia Package for

Teaching Gujarati subject. An unpolished M.Ed. Dissertation. Vadodara: CASE The Maharaja Sayajirao University of Baroda.

Robkob (1999). Achievement and Retention in science of prathom Suska 5 students in science studying through CAI. Retrieved from www.chinagmai.ac.th/abstract199926.html

Rose Anotny Stela V.(1992). Effectiveness of computer- Assisted Instruction with special Reference to underachievers. Ph.D. Education Bharathidasan University. Fifth Survey of Rescarch in Education, New Delhi:NCERT.

Shah,Beena and Agrawal,Rashmi.(1994). Teacher's attitude towards computer assisted instruction and computer education in relation to sex, organization and experience. Journal of Indian Education, Vol.20(3), 40-45.

Sharma,B.(2002). *Modern Methods of Teaching Sanskrit*. Sarup & Sons, New Delhi:

Published by sarup & sons.

Sharma,D.(2003). A study of the effectiveness of computer Assisted Learning (CAL) in Chemistry for the students of standard XI. An unpolished M.Ed. dissertation. Vadodara: CASE. The Maharaja Sayajirao University of Baroda.

Singh R.D, Ahluwalia, S.P and Verma, S.K(1992). Teaching of mathematics. Effectiveness of Teaching Mathematics through Computer Assisted Instruction and Conventional method of Instruction. Indian Educational review, Vol 26(4): 15-34.

Suwanma (1991). Construction of computer Assisted Instruction in sciences on topic "Earth and Changing" for Mathoyom Suska 2. Retrieved from http://www.chinagmai.ac.th