



Effectiveness of Various Self Learning Materials With Reference to Teaching Sanskrit Grammar

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Abstract

According to Taittiriya Upanishada 'स्वाध्यायः परमो तपः' means self learning is best way to learn any things. New methods and techniques in education are having an increasing effect on the traditional approach to teaching and learning. Among the new approaches and innovations that have gained great acceptance in recent years are Work card and Programmed learning. The present study found the effectiveness of programmed learning and Work Card materials for 'Sandhi' unit of Sanskrit grammar among standard 9th students. The objectives of the study were (1) to develop programmed learning and Work Card materials for 'Sandhi' unit of Sanskrit grammar (2) To study the effectiveness of Work card Material and the Programmed Learning Material on Sanskrit grammar achievement with reference to types of school. The experimental design of the study was two equivalent group post test. The type of research is applied. This is an experimental study So that limited students were select as a sample. For that two Schools of Ahmedabad city select by the purposive sample technique. The researcher has chosen 105 Students for the study. Tool of research in this study was Achievement Test constructed by researcher. In present research, the score on achievement test of the Sandhi unit of Sanskrit grammar of the students of grade IX Were the raw data. Based on the score, the mean score will be calculated for each group. To compare the mean score of the group's t-test calculated. After the data collection investigator concludes that; there was significant difference between control and experimental group students in their mean score. The 't' test result also shows that the students learned through programmed learning material were more superior than students learned through work card material as far as achievement of Sanskrit grammar concern. In grant in aid school both the programmed learning and work card materials were equally effective In conclusion, the present study indicated that the Programmed learning and Work card materials learning environment have satisfactory property to use as a tool of self learning.

Key Words: Programmed Learning, Work Card, Self- Learning Materials.

1. Introduction:

According to Taittiriya Upanishada 'स्वाध्यायः परमो तपः' means self learning is best way to learn any things. New methods and techniques in education are having an increasing effect on the traditional approach to teaching and learning. Among the new approaches and innovations that have gained great acceptance in recent years are Work card and Programmed learning. Today, we need such self learning materials in education that the students can learn independently even without the help of teachers and others. Work card and Programmed learning are such types of self learning techniques that the learners can study with their own speed and pace.

Due to corona pandemic students not go to school regularly. At that time face to face education could not be done in schools. Students were finding it difficult to learn abstract concepts in online education. As a result, the students started to struggle in learning the basic concepts of those subjects. Now day's face to face teaching has started in schools. But, the learning that remains need to filled. Face to face teaching is not enough to fill this learning gap. Students can learn better if additional material is provided for it. If these materials are also self learning material, students can learn at their own pace outside of schools.

B. F. Skinner developed programmed learning technique for the practical use of his theory of operant conditioning. This was established as very effective technique for self-learning. **Susan Markle (1969)** defined Programmed Learning as follows: "It is method of designing a reproducible sequence of instructional events to produce a measurable and consistent effect on behavior of each and every acceptable student." Researchers showed the effectiveness of programmed learning at worldwide. **Dan Rita (1972)** defined Work card as follows: "A curriculum work card is a single unit of topic initially outlined by a teacher and selected from the predetermined course of study. It is expanded or restricted for use based on the teachers diagnosis of each child's academic strengths, weakness and learning style"

In Gujarat state only three lectures a week are available to teach Sanskrit subject in secondary school. As a result grammar teaching cannot be imparted effectively. Grammar is the base for learning any language. If we prepare the programmed learning and work card material, will the effectiveness of it be increased? If we use programmed learning and work card materials in Sanskrit, will it help to increase the achievement of students in Sanskrit? Such questions were raised in the mind of the researcher and hence researcher decided to do present research. So the investigator selected the topic 'Effectiveness of various self learning materials with reference to teaching Sanskrit grammar'

2. Review of literature:

There were several researches carried out in the field of programmed learning and work card material. Here some research showed which were carried out in past decade. **Sakhiya,R.B.(2006)** conducted a study on, "Effectiveness of Work-card and Programmed Learning as a Self Learning technique with reference to Teaching of English Grammar". The major objectives of the study were (i) to construct the Programmed learning material on the three units of English grammar like Active & Passive voice, Tenses and Clauses. (ii) To study the effectiveness of the Work card material and the Programmed learning material on English grammar achievement with reference to the achievement level and sex of the students. The result of the study indicates that in teaching of English grammar, the work card method was more effective than the programmed learning method and the lecture method in all the four experiments. **Patel N.R.(2020)** conducted study on "Effectiveness of Programmed Learning for the teaching of unit alankar and chhand in Gujarati grammar of std. X" he founded that in teaching of Gujarati grammar linear and Branching both types of programmed learning were equal effective. **Desai, J.A.(2014)** conducted study on "A Study of the Effectiveness of Computerized Programmed Learning on the Achievement of the Students of Grade-9 in Social Science" main objectives of the study was development of linear and branching programmed learning in social science. The result of the study indicates that in teaching of social Science the CPLM method was more effective than traditional method. **Joshi,H.H.(2021)** conducted study on "Construction and effectiveness of self learning material on difficult unit of subject elements of accountancy for standard eleventh" the result of the study indicates that in teaching of elements of accountancy, the self learning material was more effective than the traditional method.

3. Operational definition of Key Words:

Work card: Work card is self learning technique through which students can learn without the help of teachers. With the help of work card students can learn the any units effectively with their own speed and pace. The students study the work card one by one completing the exercise given at the end of work card.

Programmed Learning: Programmed learning material is one kind of self learning method. In this method the content matter is arranged in form of frames. Each frame presents some information and has some objective type questions. The answers of questions are provided on the top of next frame. In present research frames are prepared of programmed learning by systematic analysis of the selected unit of Sanskrit grammar. This was considered as programmed learning material for the present research. This programme will be arranged according to the principle of linear programmed learning.

Self- Learning Materials: In self learning material the learner studies independently without the help of teachers. Students learn with their own speed and ways. In absence of teachers, this material can be very helpful. In the present study Work card and Programmed learning material were considered as the self learning materials.

Educational Achievement: Score obtained by the student in achievement test prepared by the researcher for the 'Sandhi' unit of Sanskrit grammar is considered as an educational achievement of the student for the present research.

4. Objectives of the Study

The objectives of the study were as follows:

1. To prepare the Work card material on the 'Sandhi' unit of Sanskrit grammar.
2. To develop Programmed learning Material 'Sandhi' unit of Sanskrit grammar.
3. To study the effectiveness of Work card Material and the Programmed Learning Material on Sanskrit grammar achievement with reference to types of school

5. Hypothesis of the study

In scientific type of research to frame hypothesis is quite necessary. The null hypotheses are of framed relevant to the objectives and the nature of the research.

H₀1 There is no significant difference between the mean scores of the students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.

H₀2 There is no significant difference between the mean scores of the Grant in Aid school students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.

H₀3 There is no significant difference between the mean scores of the Self Finance school students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.

6. Variables of the Study

1. Independent Variable: the independent variables of the study were self learning material 1. Work card material 2. Programmed Learning material

2. Dependent variable: the independent variables of the study was Sanskrit grammar achievement

3. Controlled variable: the following variables were controlled during the treatment. They were namely: Standard, Medium, Subject, and Unit.

4. Moderator Variable: the moderator variable of the study was type of school.

7. Population

In the present research, researcher aimed to find out the effectiveness of programmed learning Material and work card material with reference to teaching of Sanskrit grammar. The study was carried out on the students of the grade nine. The researcher selected the Gujarati medium schools of Ahmedabad city. Here the researcher delimited the population of the present research. Thus, the population of the present research was the students of grade nine studying in Gujarati medium schools in the Ahmedabad City, Gujarat.

8. Sampling Method and Sample

The researcher had to check effectiveness of Programmed Learning Material and work card material (developed by researcher) on the students of Grade nine in Sanskrit grammar. The researcher had to conduct an experiment on students of Grade nine. There are 585 schools in Ahmedabad city according to DEO office of Ahmedabad district. For the present research two schools were selected by stratified random sampling method, in which one was Grant-In-Aided (Vajjnath School) and another was Self-Financed (Somnath vidyalaya). Two groups were formed randomly by applying lottery method in each school. After that by tossing a coin, it was decided that, which group has to be learned through the programmed learning material and which group has to be learned through the work card material. The detail about the sample has been tabulated in table-1

Table-1
Sample of Study

Type of School	Grant-In-Aided		Self Finance	
	Experimental(PLM)	Control(WCM)	Experimental(PLM)	Control(WCM)
No. of Students	25	25	27	28
Total Students	50		55	

9. Research Method:

In the present research the researcher had to check effectiveness of his self developed Programmed Learning Material and work card material. So researcher had to perform an experiment on different groups treating by Programmed Learning Material and then to compare it with work card material respectively. So the researcher had chosen experimental method to perform his research. For that, the researcher adopted randomized two equivalent groups, post test design.

10. Data Collection and analysis:

Experimental group and controlled group were formed for the try-out of the programmed learning and work card material

At initial stage researcher had taken permission to carry out experiment from the school principals of the selected schools. After that both groups were learned through programmed learning material and work card material. After experiment, both the groups were given the achievement test on the 'Sandhi' unit of Sanskrit grammar constructed by researcher. Necessary instructions were given to the students to fill up achievement test. After the completion answer sheets were collected back. Thus, data was collected from the entire sample.

After collecting data, collected data were classified according to variables. Descriptive statistical measurements were calculated based on the frequency distribution of each group. For testing null hypothesis t-ratio was used. For statistical calculation MS-Excel was used.

11. Results:

To perform t-test MS-Excel program was used. The result of t-test was below:

H₀1 There is no significant difference between the mean scores of the students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.

Table 2
Analysis of the Sanskrit achievement tests scores of the students

School	Group	N	Mean	SD	SE _D	t-value	Significant level
GIA & SF	PLM	52	19.34	4.49	0.49	2.37	0.05
	WCM	53	18.16	8.44			

The calculated t-test for the mean scores of the students taught by Programmed Learning Material and Work card material as shown in table 2.0 is found 2.37 that is more than t-table value 1.96 required for significant level 0.05. therefore “There is no significant difference between the mean scores of the students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.” is rejected. Further by comparing the mean scores of both groups it was concluded that the students learned through Programmed Learning material have higher achievement in Sanskrit than students learned through Work card material.

H₀₂ There is no significant difference between the mean scores of the Grant in Aid school students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.

Table- 3
Analysis of the Sanskrit achievement tests scores of the Grant in aid school students

School	Group	N	Mean	SD	SE _D	T value	Significant level
Grant in Aid	PLM	25	18.72	5.80	0.80	0.04	N.S.
	WCM	25	18.68	10.53			

The calculated t-test for the mean scores of the students learn by Programmed Learning Material and Work card material as shown in table 3.0 is found 0.04 that is less than t-table value 1.96 required for significant level 0.05. therefore “There is no significant difference between the mean scores of the Grant in Aid school students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.” is not rejected. Further by comparing the mean scores of both groups it was concluded that the students of Grant In Aid schools learned through Programmed Learning material and Work card material are equal effective in Sanskrit achievement.

H₀₃ There is no significant difference between the mean scores of the Self Finance school students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.

Table- 4

Analysis of the Sanskrit achievement tests scores of the Self finance school students

School	Group	N	Mean	SD	SE _D	T value	Significant level
Self Finance	PLM	27	19.92	2.58	0.56	3.94	0.01
	WCM	28	17.71	6.13			

The calculated t-test for the mean scores of the students taught by Programmed Learning Material and Work card material as shown in table 4.0 is found 3.94 that is more than t-table value 2.58 required for significant level 0.01. therefore “There is no significant difference between the mean scores of the Self Finance school students of grade nine, in achievement test of Sanskrit grammar, learned through Programmed Learning Material and Work card material.” is rejected. Further by comparing the mean scores of both groups

it was concluded that the students learned through Programmed Learning material have higher achievement in Sanskrit than students learned through Work card material.

12. Findings:

The 't' test result also shows that the students learned through programmed learning material were more superior than students learned through work card material as far as achievement of Sanskrit grammar concern. In grant in aid school both the programmed learning and work card material were equally effective. It was known in context of finding in past researches that equality had been seen in findings of all researches, positive attitude towards the programmed learning and more achievement score of students learning by traditional teaching method. In the research of **Pancholi, Aparna (2016)** finding similar, she showed that CPLM was more effective on achievement of students of experimental group than controlled group. **Jain, Shivani (2017)** also founded their finding that computer assisted learning and programmed learning was more effective than traditional method. Teachers should make maximum use of linear programmed learning material teaching Sanskrit grammar. In conclusion, the present study indicated that the Programmed learning materials learning environment have satisfactory property to use as a tool of self learning.

13. References:

- Chopra, Punam. (2016). Programmed Learning. New Delhi : A P H Publishing Corporation.
- Desai H.G. and K.G. Desai (1997). Research Methods and Techniques. Ahmedabad : University Granth Nirman Board.
- Desai, J.A. (2014) A Study of the Effectiveness of Computerized Programmed Learning on the Achievement of the Students of Grade-9 in Social Science. Ph.D. Ahmedabad: Gujarat University.
- Dunn, Rita & Dunn Kenneth (1972) Practical Approaches to individualizing Instruction. New York: Parker publishing Company.
- Jain, Shivani. (2017) Effectiveness of Programmed Learning and computer assisted instruction as self learning techniques in teaching of English grammar at secondary level. Ph.D. Maharshi Dayanand University.
- Joshi, H.H. (2021) Construction and effectiveness of self learning material on difficult unit of subject elements of accountancy for standard eleventh. Ph.D. Rajkot: Saurashtra university.
- Pancholi, Aprana (2016) "A study of the effectiveness of Computerized programmed learning on the achievement of the students IX in English" Journal Of Education (KCG), *Issue-8*, p. 01-07.
- Patel, N. R. (2020) Effectiveness of Programmed Learning for the teaching of unit alankar and chhand in Gujarati grammar of std. X. Ph.D. Rajkot: Saurashtra University.
- Patel, R.S. (2008). Statistical Methods for Educational Research. Ahmadabad: Jay Publication.
- Sakhiya, R.B. (2006) Effectiveness of work card and Programmed Learning as a self learning technique with reference to teaching of English grammar. Ph. D. Rajkot: Saurashtra University.
- Shah.G.B. (2000). Programme Learning. Ahmadabad, University Granth nirman board.
- Shukla.S.S. (2012-13). Principles and Techniques of Teaching and Learning. Agra: Agrawal Publication.