



# DEVELOPMENT OF RESEARCH TOOL FOR MEASURING THE EFFECTIVENESS OF BLENDED LEARNING AMONG THE STUDENTS.

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## Abstract

The tool plays an important role in any type of research. It is with the help of tools that the researcher collects the data required for his/her research. Therefore, selection of an appropriate tool which can help in proper collection of data for any particular research is very important. The present paper focuses on the selection of an appropriate tool for the collection of data. The researcher wants to measure the effectiveness of Blended learning among the students of class VII and for this purpose experimental method of research was selected. For the collection of data, the most appropriate tool was Achievement test for students and this tool was implemented before and after the experiment. This helped the researcher in collecting the data and measuring the effectiveness of the Blended learning.

## Key words

Blended Learning, effectiveness, achievement.

## Introduction

There are various types of researches. For different stream the method of research is different. In other words, we can say that for different purpose research is carried in different ways. Nearly all types of researches deal with collection of data and their interpretation before coming to any conclusion. And for the collection of data the need of an appropriate tool is always there. Therefore, the researcher must select the research tool by keeping in mind the objectives of his research. Tests are the tools of measurement which guides the researcher in collection of data and also in their analysis. Although the tools differ in their complexity, design and administration but every tool is suitable for the collection of a particular type of information. The selection of proper and appropriate tool for research depends upon the researcher. Sometimes the available tools do not fulfill the certain requirement of the research and in that case the researcher opts to construct his own tool for research. There is a particular process of development of any tool for research. The present paper deals with the development of Achievement test for measuring the effectiveness of Blended learning among the students.

## Blended Learning

Education is an integral part of our life and with time change in the education system is also visible. The present era is of digital revolution and this has touched our education system also. The digital resources are being used in providing education to our children. In present time the use of digital technology along with the face-to-face interaction with teacher is also seen. This type of instructional system is known as Blended learning method. Basically, Blended learning method is a combination of traditional face-to-face instructions with the use of digital

technology while the students are present in the classroom. This type of learning has the merits of both the traditional and the online learning. The physical presence of the teacher provides moral support to the students. The teacher motivates the students and also clears their doubts and at the same time the students are also introduced with digital resources to get additional knowledge about their content. In this system the students are free to learn according to their own pace and convenience. The physical presence of teacher keeps the students focus on their aim and also provides them necessary instructions needed from time to time.

### Research Tools

Research tools are the devices which are used by the researcher to collect data necessary for his/her research. The proper selection of a tool is very critical for the success of any work. An appropriate and correct tool is like a paddle which takes the boat of research to its right destination. The tools are necessary for collection of data and the main objective of data collection is to collect quality evidence to find credible answer to the research questions. The tools are basically testing devices which helps in measuring the given situation. Such tools can be a questionnaire, interview etc. They help in accomplishing a task taken by the researcher. The tools are generally developed by keeping in mind the research question, the information which is to be collected and the size of the sample. The present paper aims at developing a research tool which will be appropriate for measuring the effectiveness of Blended learning among the students. The experimental research method was used for the research. For the collection of data achievement test was developed. Pre-test and post-test application of achievement test was done to measure the effectiveness of Blended learning.

### Achievement test

Achievement test measures how much a student has learned over time. These test measures how much a student has learned by analyzing his present performance. Achievement test can be regarded as the most appropriate test to measure and analyze the academic performance of a learner. Here the researcher aims to find out the effectiveness of Blended learning method on the performance of the students so achievement test is selected as a tool for collection of data.

### Introduction of the Tool-

#### Achievement test for class VII

The achievement test was constructed to find out the achievement level of the students after they were taught using Blended learning method. The test was prepared for the students of class VII. The test included three units of class VII RBSE S.St. course book. The units which are covered in the test were- Democracy and equality, State Government and Media and Democracy. The objectives of knowledge, understanding and application were given weightage. In the initial draft there were 70 questions which after seeking the advice and reviews of experts were reduced to 40. The final achievement test consisted of 40 questions. All the questions were objective types and carry equal weightage of marks. There was no negative marking for wrong answer.

### Construction of the Achievement test

The major steps which are involved in the construction of an achievement test are-

- a) Preparing the design of the test
- b) Writing of items
- c) Writing of the scoring key
- d) Question wise analysis

#### Preparing the design of the test

The researcher decided the objectives of the test, marks and the time which is to be employed. After making all these planning the design of the test was prepared. There are some important points that should be kept in mind while designing the test like weightage to objectives, content and form of questions. Weightage of objectives include the marks which are given according to the objectives. Objectives like knowledge, comprehension, application, skill etc. are considered while preparing the test. The questions in the test are formed keeping in mind these objectives. The weightage of content refers towards the different aspects of the content which is to be tested. The weightage given to different sections of the content comes under this category. The weightage to forms of questions indicates the different forms of questions which are included in the test. In a test different types of questions like objective type, short answer type, essay type can be used.

## Writing of the item

The items were selected keeping in mind the design of the test. The number of questions to be included is decided and this is also checked that these questions can be answered in the given time period.

## Writing the scoring key

The scoring key for the test was prepared. The questions prepared by the researcher were objective type and all the questions carry equal marks.

## Question wise analysis

The question wise analysis of the test was done. Analysis was done keeping in consideration the content, objectives, form of questions, difficulty level, marks and estimated time.

## Reliability and validity of the tool

### a) Reliability

Reliability refers to the consistency of results. If consistency of result is maintained when they are obtained using the same method under similar condition than the measurement is regarded reliable. Reliability is considered as one of the major characteristics of a test. When any test is prepared its reliability is found out. There are many methods like test-retest, split half method to find out the reliability of the test. The researcher used the KR<sub>20</sub> formula to find the reliability of the test. The KR<sub>20</sub> (Kuder Richardson 20) formula is applied when the test has dichotomous items i.e., right and wrong answers. The question of the test carries equal weightage of marks. For every correct answer 1 mark was given and for every wrong answer 0 marks were provided. The test consisted of 40 questions. For finding the reliability of the test a pilot study was conducted on 10 students.

### b) Validity

Establishing the validity of tool is also a very important step in the standardization of the tool. Validity refers that how well a test or technique measures what they are supposed to measure. An achievement test was prepared by the researcher. The test contained the units of class VII S.St. textbook of RBSE board. The test was constructed keeping in mind the objectives like knowledge, comprehension and application. The initial draft of the test consisted of 70 questions. The test was sent to different educationalists and subject experts for determining content validity. After receiving the reviews, suggestions and instructions by the experts the question formation and their language was modified. Finally, the test included 40 questions.

## Administration of the tool

After the standardization of the test, it was implemented on the students. For the research purpose experimental method was selected. The test was implemented on the students before the experiment. After the implementation of test students were given treatment. The achievement test was again implemented on the students after the completion of the treatment. The data was collected by using the test. After the collection of data, it was analyzed and the result was drawn. The pre and post test showed the change in the performance of the students when they were taught using Blended learning method. Therefore, in this type of research the achievement test played major role in determining the effectiveness of Blended learning method.

## Conclusion

The tools are the lighthouse which shows the correct direction to the researcher. The right selection of tool makes the work of the research easy and the wrong selection of tool makes it impossible to conclude the work correctly. Therefore, at the time of tool selection all the necessary points should be kept in mind and a proper and appropriate tool should be selected for the research topic.

## References

**Banerjee, Debajyoti** (2014). The Benefits of Using Online Research Toola and Online Survey Software. Retrieved from <https://www.7boats.com/the-benefits-of-using-online-research-tools-and-online-survey-software/>

**Best, John W. & Kahn, James V.** (2006). Research in Education; New Delhi, Prentice Hall of India (P) Ltd.

**Kapil, S.K.** (1975). Fundamental Elements of Statistics; Agra, Vinod Pustak Mandir.

**Kothari, C.R. & Garg, Gaurav** (2019). Research Methodology: Methods and Techniques; New Delhi, New Age International Publishers

**Pandey, Dr. Prabhat & Pandey, Dr. M.M** (2015). Research Methodology: Tools and Techniques; Romanic, Bridge Centre.

**Sharma, Dr. R.A. & Chaturvedi, Dr. Shikha** (2018). Study of Research Tools in Education & Psychology; Meerut, R.Lall Publisher

<https://icndbm.cikd.ca/research-tools-1-observation/>

<https://classroom.synonym.com/tools-used-research-8068736.html>

[https://en.wikipedia.org/wiki/comparison\\_of\\_research\\_networking\\_tools\\_and\\_research\\_profiling\\_systems](https://en.wikipedia.org/wiki/comparison_of_research_networking_tools_and_research_profiling_systems)

