

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

Summer 4-3-2021

Effects of an Enriched Library strategy on Teaching Mathematics Enhancing the B.Ed. Trainees 'Achievement in Mathematics

S ANBALAGAN
andalanbu@gmail.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

ANBALAGAN, S, "Effects of an Enriched Library strategy on Teaching Mathematics Enhancing the B.Ed. Trainees 'Achievement in Mathematics" (2021). *Library Philosophy and Practice (e-journal)*. 5407. <https://digitalcommons.unl.edu/libphilprac/5407>

Effects of an Enriched Library strategy on Teaching Mathematics Enhancing the B.Ed. Trainees ' Achievement in Mathematics

S. Anbalagan, Assistant Professor of Mathematics, Thiagarajar College of Preceptors, Madurai

Abstract

This article reviews existing Effects of an Enriched Library strategy on Teaching Mathematics Enhancing the B.Ed. Trainees 'Achievement in Mathematics. The sample consists of 40 B.Ed. teacher trainees. In the present-day study, the sample contains of 40 B.Ed. trainees at Madurai district, Tamil Nadu the researcher was adopted a purposive sample technique for this study. The investigator used the experimental design. The experimental design was the pre-test and post-test non-equivalent group. The experimental group was taught using An Enriched Library strategies, whereas the control group was taught using conventional teaching methods. In this study a significant found that difference between Post- tests mean scores of Experimental group and the Control B.Ed. trainee's achievement in Mathematics. Experimental means score ($M= 22.35$) better than the control group ($M=16.15$) in their post-test mean scores. Enriched Library strategies on Teaching Mathematics were found effective during the intervention. In this study significant found that difference between Post- tests mean scores of the Experimental group and Control B.Ed. trainee's achievement in Mathematics in their effect size. The effect size reveals that the mean of the control group in the post-test is 16.15 and the experimental group is 22.35. The effect size is found to be 4.65 which represents the large effect. Hence, Experimental group performance is superior than the control group.

Keywords:

Enrich Library strategies, Teaching, Mathematics, Achievement and B.Ed. Trainees.

SIGNIFICANCE OF THE STUDY

Education is an incredible weapon to change the world. The library adds to improved understudy maintenance. Library guidance enhances an understudy's drawn-out educational practice. The library advances scholarly affinity and understudy engagement. The utilization of the library universe relates emphatically to understudy learning and achievement. A library is an important wellspring of

information for energetic personalities in schools. It develops the important propensity for reading among the understudies. School libraries help to affect determinedly on the scholastic achievement of the understudies. Understudies can perform better during examination by reading different books. The foundations for defenseless academic execution can be outer or inner. Outside causes include the school climate, social association, educators and instructing methods. Individuals are not a single technique for learners" blended strategy for instructional procedures needed for the two students and instructors to encourage the Teaching and Learning Cycle. Eventually, the study is entitled Effects of Enriched Library strategies on Teaching Mathematics Enhancing the B.Ed. Trainees' Achievement in Mathematics

STATEMENT OF PROBLEM

Integrating technology into teaching can assist with bringing quality education to everyone, wherever a critical objective of the education for all initiative of the 21st century. The innovative instructional strategies play an essential part in enhancing the Teaching and Learning Process. Innovative instructional strategies are utilized to make Learning meetings interactive, motivating and fascinating. Nowadays "People are not a single method of learners" mixed method of instructional strategies required for both students and teachers educators to facilitate the Teaching and Learning Process. Eventually, the study is entitled "Effects of an Enriched Library strategy on Teaching Mathematics Enhancing the B.Ed. Trainees' Achievement in Mathematics"

METHOD FOR STUDY

The researcher used it in experimental design. The experimental design was the pre-test and post-test equivalent group e were adopted by the investigator. The experimental group was taught using An Enriched Library strategies, whereas the control group was taught using conventional teaching methods. The groups were made equivalent by utilizing their previous achievement in Mathematics. B.Ed. College, Madura District in Tamil. The previous achievement was collected from the student the' scores of the previous College examination from the College records. Groups so formed were confirmed by teachers' rating of students in each group. The two groups were exposed to the treatment stage accidentally. One of these groups was treated as an experimental group (Enrichment college library) and the other was treated as a Control group (Traditional learning).

B.Ed Trainees

B.Ed Trainees: Persons who are pursuing a Bachelor of Education (after graduation 10+2+3) are called as B.Ed Trainees. In the present study First Year B.Ed. Trainees were selected from the college of education, Madurai district.

Achievement

Achievement: In this study, achievement refers to gain scores obtained by B.Ed. trainees in the content of Mathematics in first year B.Ed syllabus of Tamil Nadu Teachers Education University, Tamil Nadu.

POPULATION

The population for this present study comprises of B.Ed. Teacher trainees of College of Education, in Tamil Nadu affiliated to Tamil Nadu Teacher Education University (TNTEU), Chennai.

SAMPLE

A sampling process is a method of choosing a sample from a particular population. The sample for the current study contains 40 B.Ed trainees at Madurai district, Tamil Nadu. The investigator has used the purposive sampling technique.

TOOLS USED FOR STUDY

The following tools were constructed, validated by the investigator

TOOL 1: ACHIEVEMENT TEST IN MATHEMATICS

An achievement test was constructed in Mathematics and validated by the investigator to evaluate achievement on educational psychology among student teachers. The test was constructed for 4 topics of Pedagogy of Mathematics as a method of teaching in Inductive method and Deductive method. The best method of teaching was also Analytic method and synthetic method. Above topics of Educational Psychology confined to any particular university of B.Ed curriculum, this is common topics/titles covered by Tamil Nadu Teachers Education University, Chennai, India.

SCORING

The teacher made achievement test consists of 25 objective types of questions in Mathematics. Each right answer carries one mark and wrong responses zero marks secured by B.Ed. Trainees.

EXPERIMENTATION

Phase I

The investigator after the scouting visit of B.Ed. colleges in Madurai district chosen the two colleges of education namely Thiagarajar College of Preceptors, Madurai. There are 40 B.Ed. trainees are chosen for the research and 20 B.Ed. trainees were learning through the Experimental group. The twenty B.Ed. trainees were learning in Control group. The investigator equally randomized both groups before measuring the pre-test in their Achievement in Mathematics.

Phase II.

The investigator has given preparatory classes (20 days) to the experimental group. In the preparatory class, the investigator highlighted the basics of Enrich library strategies among B.Ed. trainees of the experimental group while for the control group no preparatory classes were given by the investigator.

Phase III

After randomization of two groups, the investigator has administered effectiveness enrich library teaching strategies treatment to the experimental group while face to face instruction alone to the control group. The selected topics were taught to both the groups for 20 days and the Library assumes a critical part in the plan of education homeroom teaching should be supplemented with the dissemination of knowledge through the library. In arithmetic, the students are needed a ton of training work which they can do so most efficiently in the math library. Different kinds of books in the arithmetic library can assist the students with tackling a wide range of issues emerging from different subjects endorsed in their prospectus. They are additionally acquainted with different kinds of approaches in the investigation of the issues. Study hall teaching in some cases leaves many holes and questions. The students utilize upstanding books obtainable in the library. Distinct arrangement of arithmetic library benefits to transport efficiency in the organization of library administration. Math instructor remains in constant touch with the most recent books in math and also to include interest in the subject. The student improves library offices and similarly, it helps the exercises of the math club. It very well may be useful to blessing and brilliant students. The endorsed Coursebooks of math for the different classes learning Mathematics. The Books on teaching arithmetic meant for instructors like books of an exclusive expectation. The Books on life stories and the history of math are very useful for learner. The Books showing the contribution of math to different fields and Arithmetic Journals were learnt through library strategies.

Phase IV

In the fourth phase, after experimentation, the post-test was administered for both the group of library teaching strategies and the conventional method.

Phase V

In the fifth phase, after one month gap of the treatment, the investigator has conducted a delayed post-test to both the experiment and control group of B.Ed. trainees Achievement in Mathematics to ascertain the effectiveness of enriching library strategies on teaching through retention capacity between B.Ed trainees.

REVIEW OF RELATED LITERATURE

Thorpe, Angie; Lukes et al. (2016) investigated on the Effect of the Academic Library on Pupil Achievement. In a time of assessment and accountability, scholarly libraries feel a lot of strain to demonstrate their worth conferring to innovative academic capacities of pupil academic achievement. This investigation depicts a procedure for in what way libraries may inspect pupil connections with administrations to survey whether reference library utilization impressions pupil score opinion averages (GPAs) and retention rates.

Massengale, Lisa et al. (2016) conducted a study to identify and articulate the library impacts to understudy accomplishment, College and Exploration Libraries. Alluring in continuing valuation is critical to collections signifying their value to organizations. This homework is the first stage in a STEM public library longstanding zone of computing the library's joining to, and influence on, researcher hypothetical accomplishment indications like holding and perseverance. The first results exhibited that the library utilization was continuously supplemented by a somewhat great achievement in GPA.. Results will fill in as benchmarks for additional investigation.

Park, Hae Seong; Yau, Jenny(2014) investigated that the Connection between the Library Usage and Educational Accomplishment of Spanish-Speaking and English Hispanic American Students. Authors determined that the relationship between school library usage and the educational accomplishment of Hispanic pupils. The study abuses data from the current year and development of the academic longitudinal research. A progression of various leveled relapse investigation is integrated to analyze the idea of relationship between the factors in this examination. The outcomes indicate that Hispanic pupil's school library used for the class which had positive relationship in educational achievement, whereas pupil's library usage for diversion had a negative relationship. Nonetheless, the impact of the patron's library usage on

academic achievement was more prominent for Spanish speaking Hispanic students than for English speaking Hispanic students.

Marzoli, Rita; Papa, Ornella(2017) conducted a study on School Library usage and Students' achievement, with the association to go in to mode of online. The study revealed that the relationship between School Library usage and pupils achievement on a populace test of 9,896 School students. Numerous global kinds of exploration set the significance of the School Library usage for pupils learning skills. As of late the IEA PIRLS overview has revealed a positive connection between the Reading understanding execution and the size of the School Library assortment. The examination affirms a positive association with every school's score and the two subjects' areas of examination.

ANALYSIS

Ho: 1

There is no significant difference between the mean scores of the control group and experimental group B.Ed. trainees" achievement in Mathematics in their pre-test.

Table: 1
mean scores of the experimental group and control group B.Ed. trainees
achievement in Mathematics in their pre-test

Test	N	Mean	SD	df	't' value	Remarks
Pre-test	20	12.65	1.76	19	0.16	NS
Pre-test	20	12.55	1.96			

Table: 1 shows that control and experimental group mean values are 12.65 and 12.55 and standard deviation of 1.76 and 1.96. The 't' value calculated ($t=0.16$) is less than the table value , $df=19$. at 0.05 level. Henceforth the null hypothesis is accepted. Hence there is no significant difference between pre-tests mean scores of the Experimental group and Control B.Ed. trainees' achievement in Mathematics. This is maybe due to fact that Both group students have similar knowledge level.

Ho: 2

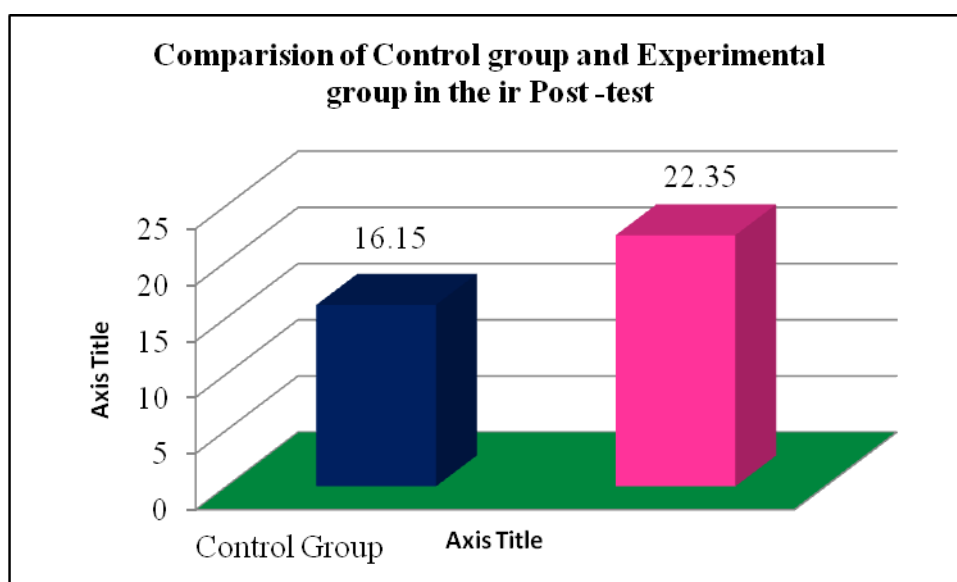
There is no significant difference between the mean scores of the experimental and control group B.Ed. trainees achievement in Mathematics in their Post-test.

Table: 2
mean scores of the experimental group and control group and B.Ed. trainees achievement in Mathematics in their post-test

Test	N	Mean	SD	df	't' value	Remarks
Post -test	20	16.15	1.14	19	14.75	S
Post -test	20	22.35	1.50			

Table: 2 shows that control and experimental group mean values are 16.5 and 22.35, with a standard deviation of 1.14 and 1.50. The "t" value calculated ($t=14.75$) is more than the table value with $df=19$. at 0.05 level. Hence, the null hypothesis was rejected. Hence there is a significant difference between Post- tests mean scores of the Experimental group and Control and B.Ed. trainees achievement in Mathematics. Enriched Library strategies on Teaching Mathematics were found effective during the intervention.

Figure: 1



Ho: 3

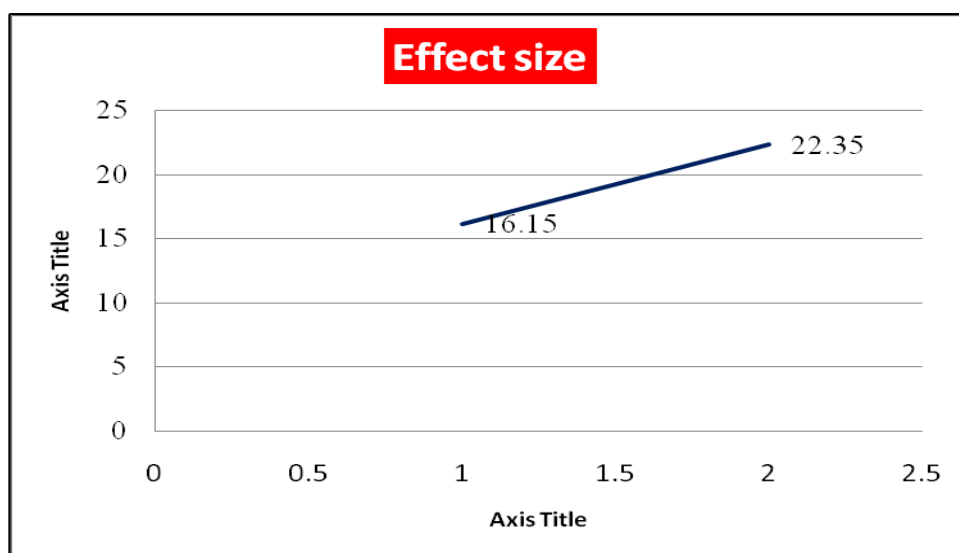
Impact size investigation an impact size is a method of ascertaining the difference between two gatherings. The import of impact size differs by setting, however the typical clarification possible by Cohen (1988) is: 0.8 = huge, 0.5 = moderate and 0.2 = little impact size. In this study, the examiner used exploratory treatment and other has not (the "control"), at that point the Impact Size is a proportion of the adequacy of the treatment.

Table: 3
Effect Size is a measure of the effectiveness of control group and experimental group post-test.

Test	N	Mean	SD	Effect Size(r)	Effect
Pre-test	20	16.15	1.14	4.65	Large
Pre-test	20	22.35	1.50		

The close perusal of the above table: 3 reveal that the mean of the control group in the post-test is 16.15 and the experimental group is 22.35. The effect size is found to be 4.65 which represents the large effect. Hence, the Experimental group presentation is superior than the control group.

Figure 2



FINDING

1. Significant found difference between pre-tests means scores of Control and Experimental group B.Ed. trainees' achievement in Mathematics. This is maybe due to fact that both group students have similar knowledge level.

2. Significant found difference between Post- tests mean scores of the Control and Experimental group B.Ed. trainee's achievement in Mathematics. Experimental means score (M= 22.35) better than the control group (M=16.15) in their post-test mean scores. Enriched Library strategies on Teaching Mathematics were found effective during the intervention.
3. Significant found difference between Post- tests mean scores of the Control and Experimental group B.Ed. trainee's achievement in Mathematics in their effect size. The effect size reveals that the mean of the control group in the post-test is 16.15 and the experimental group is 22.35. The effect size is found to be 4.65 which represents the large effect. Hence, the Experimental group performance is superior to the control group.

DISCUSS AND INTERPRETATION

The finding of the present study points out the significant difference between Post- tests mean scores, the group of Control and Experimental in their B.Ed. trainee's achievement in Mathematics. The experimental group means score (M= 22.35) better than the control group (M=16.15) in their post-test mean scores. Enriched Library strategies on Teaching Mathematics were found effective during the intervention. Hence, it is proven that Enriched Library strategies have tremendously improved the knowledge of students in Mathematical achievements to a greater level. This finding is in agreement with the finding of the studies by

The finding of the present study points out the significant difference between Post- tests mean scores of the group library teaching strategies group and conventional in their B.Ed. trainee's achievement in Mathematics with respect to effect size. The effect size reveals that the mean of the control group in the post-test is 16.15 and the experimental group is 22.35. The effect size is found to be 4.65 which represents the large effect. Hence, The Experimental group presentation is superior to the control group. It helps to improve independent learning. It provokes the reasoning capability of the student. Enriched Library strategies usage attractions and immense curiosity of learners as natural motivators to stay involved in their learning. Enriched Library strategies, the instructional method engages technology and makes learning scientific and attractive with in-class discussions, group activities. This finding is in agreement with the finding of the studies by Mesmer, Cunningham, & Hiebert(2012) O'Connor et al., (2002) Baker & Wigfield(1999 as Trelease (1989) and Soria, Krista M.; Fransen, Jan; Nackerud, Shane.

CONCLUSION

A viable college library increases pupil learning results by providing a range of material, reference book, journal and projects, offices and assets which support teaching and learning. It likewise supports and encourages students' reading, referring, and search got more experiences through library. In this study probable to influence students' use of the college Library with enrich activities and programme with teaching and learning process. It is inferred from this study that pupils' academic achievement has two dimensions: one that result from learn and teaching and use of college library and other which emphasized that effect an enrich library strategies can influence academic achievement. The study therefore recommends that good academic achievement of B.Ed. students particularly those in the faculties of education can be influenced by students' achievement library use and the contributions of effect and library strategies. Effect and library strategies can include the college teachers and parents alike.. It would not be a alteration in the event that it is said that a library is a fundamental pre-imperative for Fruitful subjective improvement of advanced education regarding this study in college. Without the assistance and ready co-activity of a library no formal educational program in college can be effectively run. From the cradle to the grave and from the essential stage to the most elevated phase of learning, library fills in as an unfailing buddy. Each educational program should be proceeded by the arrangement of library administration. The public expenditure on conventional education is to be utilized and justified in a legitimate way. The library is the second instructional staff in its significance for top caliber guidance and examination. The current study isn't only a push to assess the job of library, rather the findings of this study which will assist with drawing out a viable guide line of the modalities of the working of the library, so library can maximally be used and exploited with the end goal of education exceptionally in advanced education.

REFERENCE

1. Janssen, J., Verhelst, N., Engelen, R., Scheltens, F. (2010). Wetenschappelijke verantwoording van de toetsen LOVS Rekenen-Wiskunde voor groep 3 tot en met 8 [Scientific justification of the mathematics test for Grades 1 till 6. Arnhem, Netherlands: Cito.
2. Kothari, C.R. (2004) Research Methodology: Methods and Techniques. 2nd Edition, New Age International Publishers, New Delhi.

3. Marzoli, Rita; Papa, Ornella(2017)School Library and Students' Achievement: A Relationship to Go Into, Online Submission, Paper presented at the Conference "INVALSI data: a research tool", Florence, Italy, Nov 17-18, 2017.
4. Massengale, Lisa; Piotrowski, Pattie; Savage, Devin (2016) Identifying and Articulating Library Connections to Student Success, *College & Research Libraries*, v77 n2 p227-235 Mar 2016.
5. Meelissen, M. R. M., Netten, A., Drent, M., Punter, R. A., Droop, M., Verhoeven, L. (2011). PIRLS- en TIMSS-2011: Trends in leerprestaties in Lezen, Rekenen en Natuuronderwijs [PIRLS- and TIMSS-2011: Trends in learning achievements in Reading, Mathematics and Science education]. Nijmegen: Radboud Universiteit Nijmegen.
6. Park, Hae Seong; Yau, Jenny(2013)The Relationship between Library Use and Academic Achievement of English and Spanish-Speaking Hispanic American Students, *Educational Research Quarterly*, v37 n4 p3-18 Jun 2014.
7. Soria, Krista M.; Fransen, Jan; Nackerud, Shane (2013) Library Use and Undergraduate Student Outcomes: New Evidence for Students' Retention and Academic Success, *portal: Libraries and the Academy*, v13 n2 p147-164 Apr 2013.
8. Stone, Graham; Ramsden, Bryony(2013)Library Impact Data Project: Looking for the Link between Library Usage and Student Attainment, *College & Research Libraries*, v74 n6 p546-559 Nov 2013.
9. Thorpe, Angie; Lukes, Ria; Bever, Diane J.; He, Yan(2016) The Impact of the Academic Library on Student Success: Connecting the Dots, *portal: Libraries and the Academy*, v16 n2 p373-392 Apr 2016.
10. Wong, Shun Han Rebekah; Webb, T. D (2011)Uncovering Meaningful Correlation between Student Academic Performance and Library Material Usage, *College & Research Libraries*, v72 n4 p361-370 Jul 2011.