Comparison of Conceptual Ability of Students Learning Through Literacy and Numeracy Drive and Traditional Method in Tehsil Gujarkhan District Rawalpindi

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Abstract

This study set out to assess the success of the Literacy and Numeracy Drive (LND) in Gujar Khan District. the study aimed to compare the assessments conducted through the LND system and the traditional method. The importance of this study lies in the fact that the LND Programmed was put in place to raise the cost of education in primary schools. With the aid of quantitative and descriptive survey design, this research was completed. Gujar Khan's public elementary school teachers, who were in charge of training children in LND subjects (Urdu, English, and Mathematics) at the elementary level, made up the entire population. A process called random sampling recruited the participants in this study. 307 primary school teachers from 328 schools in the LND were selected as a representative sample to take part in the study. Using a Likert scale with five points, the survey's results were analyzed using SPSS version 24. The total population of objective 2 was taken from 327 schools. The total population of students from 327 schools was 6540. The sample of the objective 2 was scores of 364 students by Literacy and Numeracy Drive and traditional method. The instrument of the study was self-developed questionnaire. For objective 2 the scores of students by Literacy and Numeracy Drive and traditional method were taken. To analyze the data, the researcher used mean, median, mode, standard deviation and t-test. The findings of the study showed that the conceptual ability of learning of students enhanced by using traditional

methods and LND. It is concluded on the basis of findings that conceptual ability of learning of students is enhanced by traditional method.

Keywords: literacy, Numeracy, Teaching, Learning, understanding.

INTRODUCTION

Background of Study

The online real time data of Literacy and Numeracy Drive (LND) system developed by the Punjab Information Technology Board (PITB) in collaboration with School Education Department for quality teaching and learning in the Province of Punjab (Saif, 2018). Traditional methods of teaching is defined as a method of instruction in which the teacher transmits knowledge to students through lectures, reading or other form of presentation. Traditional methods are also known as the lecture- based or didactic approach.

Education is s continuous social practice that aims to improve one's knowledge, skills, and abilities in order to achieve a set of present goals. Every individual has an inherent and inalienable right to expand their knowledge and abilities in a range of life domains. In a democratic society, education is one of the most powerful factors in the formation of public wisdom. It allows the protagonists to carry out their responsibilities in the most beneficial conditions that can be imagined for humanity. Individual aptitude, family life, marriage history, lineage, restitution, travel, and other life events all contribute to an individual's education level and culture (Makwinja, 2017).

From birth to death, a person interacts with a wide range of entities, including items, societies, organizations, and concepts. He is successful in obtaining new knowledge, and his performance improves because of applying these talents. Education is all about developing these various skills (Eze, Chinedu-Eze & Bello, 2018).

As a result, education has been the primary focus of every government in Pakistan, since its inception (Haider & Amjad, 2020). The government works hard to improve the contents, syllabi, and curricula of all educational levels, whether elementary, secondary, or higher education, in order to raise the overall level of quality in educational settings, particularly those managed by the government (Zirkel & DuPaul, 2007).The first eight years of a child's life are widely regarded as critical for the child's physical, verbal, cognitive, and expressive development. Early childhood education (ECE) lays the groundwork for the development of lifelong skills and knowledge (Yousafzai, 2019). One stage of fundamental education is known as primary, while the other is known as elementary. Both of these stages are in Pakistan. In these eras, teachers are referred to as primary school instructors (PST) and elementary school teachers (EST).

Children are examined at the elementary level by the Punjab Examination Commission (PEC), Assistant Education Officers (AEO), and Assistant Monitoring and Evaluation Assistants (Khattak, 2012). The MEA's visit schedule is reshuffled monthly, preventing the MEA from developing personal ties with school personnel in a certain location (Kasif et al., 2019).

Literacy is commonly defined as a strong command of both reading and writing. Literacy is commonly defined as the ability to read, write, spell, communicate, and listen clearly (Keefe & Copeland, 2011). Reading and writing abilities are essential for individual and societal success, as well as the economy. Simple education is the only method to assure that all ethnic groups have an equal opportunity at happiness.

Literacy is defined as the capacity to read, writes, and performs mathematical operations for oneself or for the benefit of society as a whole. To be deemed literate, one must be able to maintain all of the behaviors that necessitate literacy for optimal performance, whether for oneself or for their community (Velardo & Drummond, 2017).

Literacy may benefit both individuals and societies, which is why it is seen as a fundamental human right. A group cannot give a comprehensive examination of literacy. There are several problematic definitions, and they are always evolving and altering in unexpected ways (Campano, 2019).

Problem Statement

Impact of Educational

Methods: Knowledge about the relative efficacy of various teaching strategies, particularly those that contrast traditional teaching methods with Literacy and Numeracy Drive (LND) programs, is becoming more and more popular.

Goal:

To ascertain whether the Literacy and Numeracy Drive considerably enhances students' conceptual understanding when compared to more conventional approaches.

Focus on Conceptual Understanding:

The study will compare how well students understand the fundamentals of reading and numeracy using the two teaching approaches.

Research Objectives

1. To find out the perception of teachers about conceptual ability of learning of students by using Literacy and Numeracy Drive (LND) and traditional method.
2. To compare assessment of students done by Literacy and Numeracy Drive (LND) and traditional method (Assessment done by teachers).

Research Hypothesis

H1: There is significant difference between assessment of students done by Literacy and Numeracy Drive (LND) and traditional method.

Delimitation of the Study

Study will be delimited to:

1. Public primary schools of Gujarkhan.
2. Public primary schools having LND in three class.
3. PST Teachers.

Significance of the Study

- Literacy programs are important to teach children how to read and write so that they can continue to help their society and country grow.
- This study will inform teachers and parents to understand the importance of the Literacy and Numeracy Drive (LND) test, which is essential for setting up primary education.
- This study will inform Punjab government that conceptual ability of students enhanced by traditional method as compare to LND.

LITERATURE REVIEW

The importance of receiving quality education has increased globally since the start of the twenty-first century. In the growth and development of education, a number of steps have been taken nationally and internationally (Huang et al., 2011). Pakistan has endorsed and agreed to the Millennium Development Goals, the Dakar Forum, and Education for All (EFA) (MDG).

Pakistan's educational system is still insufficiently effective despite all of these pledges and efforts. One out of every ten children in Pakistan is unable to attend school elsewhere in the world. The Pakistani government has pledged to eradicate illiteracy, yet there is a significant discrepancy between what they say and what they actually accomplish (Hussain, 2012).

Reading and math proficiency are intrinsically related to high levels of schooling. The earliest point in a student's academic career is the ideal time to master the aforementioned abilities. An accurate assessment of a person's reading and math abilities might provide insight into how well they are being taught in the classroom. Everyone who participated in the Dakar Framework for Action in 2000 agreed that education and learning ought to be enhanced so that everyone can learn to read, write, and perform math operations, among other crucial abilities.

If primary school pupils are to receive a better education, they must grasp the fundamental skills of literacy and math. According to the 2013 Annual Status of Education Report (ASER-Pakistan), around half of Islamabad's fifth-grade kids can only read at the second-grade level and can only answer division problems at the third-grade level. 38% of kids in class 3 couldn't accurately match the word "chair" with its image, according to a 2014 ASER-Pakistan survey.

These findings highlight the dire state of American education at the moment. Compared to prior years, the ASER findings for 2015 were a little bit better, but the situation at the national and provincial levels of fundamental learning are still concerning.

At the national level, 45% of kids in class 5 were unable to read class 2 stories in Pashto, Sindhi, or Urdu. The percentage in 2014 was 54%. In 2011, 51% of children in class 5 were unable to understand English sentences at the standard anticipated for class 2. The percentage in 2014 was 58%. The math skill level indicates that 50% of students in class 5

are unable to divide by two digits. This is fewer than the 60% of class 2 students who were unable to complete it in 2014.

People can better understand the natural and human worlds and how they relate by using mathematical ideas like algebra, functions and relations, logic, mathematical structure, and mathematical reasoning. All of these are just as important as each other. When it comes to understanding, fluency, reasoning, modelling, and solving problems, the math that students learn gets more complicated and advanced as they get older. Students who have these skills will be competent to use their knowledge of math to deal with both familiar and new situations.

They will be able to use arithmetic to make good decisions and solve problems. More and more research show that other parts of development, like tenacity and resilience, are important for success in numeracy at school (VCAA, 2017).

Factors of conceptual ability of students learning through traditional method

- Reasoning
- Communicating
- Visualizing
- comparing

Reasoning ability of students learning through traditional method

God's gift of technology may be His second-greatest blessing after giving us life. It is the source of all languages, cultures, and scientific fields. Innovation has changed our way of life in significant ways. It has changed how life is and what it means to be alive. Technology is essential in many areas of life because it can automate many tedious tasks.

In the same way, modern technology makes doing many essential but complicated tasks easier and faster. Using innovation to improve living conditions has led to a positive change. You cannot say enough about technology's importance in the classroom. Technology has changed the way people learn. Students play more online games now that there are more web-based and modernized innovations, like the Internet.

Communicating ability of students learning through traditional method

Vygotsky, like Piaget, thought that people build knowledge and that this new building is based on what people already knew. Vygotsky's ideas were mostly about how learning happens in groups. Since learning involves moving from the social to the individual planes, they said knowledge has a social component.

For example, acquiring involves studying the social linguistic (Leach et al., 2019), interacting with others (Pritchard et al., 2010), and developing your way of speaking and thinking about society (Leontiev, 2019). Vygotsky's theory was based on the idea of the zone of proximal development (ZPD). The ZPD was defined as "the difference among the expected level of development, as measured by solving problems with an adult's help or with the help of a

more capable peer, and the actual level of development, as measured by solving problems on their own" (Vygotsky, 2020). The ZPD says that students who work in groups do better than those who work alone.

Visualizing ability of students learning through traditional method

Numerous studies have been undertaken over the past six decades to study how people learn new ideas. Jean Piaget and Lev Vygotsky's study has a tremendous effect on how scientists think about learning and other fundamental notions. Personal constructivism was the basic way that Piaget and his followers used to develop their theoretical knowledge. This includes the procedures of assimilation and accommodation, the application of prior knowledge, and the fulfilment of intelligible, credible, and effective standards (Posner et al., 2018).

Comparing ability of students learning through traditional method

Many studies have shown that inquiry-based learning helps students learn more about science, especially compared to standard lab training, which does not seem to meet educational goals (Bybee, 2019). There is a lot of empirical and theoretical suggestion that inquiry-based instruction helps students find their own meaning and can help all children do better in school (R. D. Anderson, 2019). Von Secker and Shymansky (1983) looked at all of the research articles that had been done on inquiry-based learning to find out what it was suitable for.

Factors of conceptual ability of students learning through LND method

- Reasoning
- Communicating
- Visualizing
- comparing

Reasoning ability of students learning through LND

Acknowledged the variations in approaches to class arrangement between male and female teachers. A study of male and female teachers' teaching through LND methods and students' academic performance related to classroom management. Female teachers experience more behavioral issues than men teachers do (Green et al., 2008)

Researcher found no differences in class management between male and female teachers (Yazuz, 2009). Researchers found no evidence that the gender of
teachers affects students' achievement (Carrington etal., 2008). The students can evaluate teachers who are credited with them in terms of their teaching through LND methods (Centra & Gaubatz, 2000).

Communicating ability of students learning through LND

Education research has also shown that each student is a distinct individual with their own learning preferences that rarely align with the teaching methods through LND of their teachers. They all share a shared classroom but come from various socioeconomic and cultural backgrounds to Grasha (2002). Asserts that insufficient physical conditions in

institutions lower teachers' morale (Banmeke, 2006). Found no correlation between teacher gender and students' grades. Mullola et al., (2011). According to male teachers evaluate their students more favorably than female teachers. Due to their greater qualifications and subject-matter expertise than female teachers, male teachers placed a strong emphasis on the cognitive growth of their students claim that teachers maintain classroom leadership by extreme self- control (Driessen, Chudgar & Sankar 2008)

Visualizing ability of students learning through LND

A highly complicated teaching-learning process is shaped and ensured to be successful primarily by instructional methods (Artvinli, 2010). In addition to this paradigm, learning through LND have been more popular recently, and other models are made to shade a more significant original version. For instance, Peacock (2001) gives the following styles in a more elaborate framework: the dictatorial manner; The various forms of participatory style: democratic style; consultative style. A teacher's conduct showed up in formal, non-formal, and casual settings (Tefan, 2006).

Comparing ability of students learning through LND

Recent studies in the field of education show creative techniques that demand students to participate actively, take responsibility for their education, and use their cognitive capacities (TaNn, 2008). These ideas contend that people connect their most fundamental memories to all new information they acquire through their interactions with their environment. Because this association alters both old and new knowledge, students shape the material in their own unique ways (Bilgin & Bahar, 2008).

RESEARCH METHODOLOGY

Research Design

The research design was descriptive in nature. A descriptive survey defines the gathering of information to respond to inquiries about the current state of the study. Because descriptive research is suitable for educational data, it was chosen. Discovers and provides a great compact of correct information. Quantitative methods of research be adopted due to compiling data through various categories of schools and number of participant students. In a descriptive study, an effort is made to paint a mental picture of a scenario, a person, or an event to explain how different qualities are connected and to describe how specific components behave in their natural environments (Blumberg, Cooper & Schindler, 2014). Descriptive research is best suited for sites that are new to the topic of study or are unknown. This is so because descriptive research cannot tell us why a certain occurrence happened there. Descriptive research aims to accurately and systematically describe a population, situation or phenomenon. It can answer what, where, when and how questions, but not why questions. A descriptive research design can use a wide variety of research methods to investigate one or more variables. Descriptive research is therefore best suited for places that are new to the topic of investigation or are unknown. Descriptive research is therefore advised for investigating recently discovered or unexplored areas (Saunders & Thornhill, 2007). So, this study was descriptive in nature.

Population of the Study

The total population of objective 1 was taken from primary schools in tehsil GujarKhan. All of these 328 primary schools in tehsil Gujarkhan fulfilled the study requirements. These are the schools where the provincial government has implemented the LITERACY AND NUMERACY DRIVE (LND) approach. All the teachers teaching the students of LITERACY AND NUMERACY DRIVE (LND) were the actual population of this study and these were 1500 teachers. The total population of objective 2 was taken from 328 schools. There were 6540 students studying in these schools.

Sample and Sampling Techniques

Sample is a segment of the population that is meant to be representative. Without researching the entire population, researchers will be able to learn more about the population by analyzing the sample. Simple random sampling method was applied for sample selection. Moreover, the sample size was 307. All these were the teachers at primary schools of Gujarrkhan where LITERACY AND NUMERACY DRIVE (LND) has been implemented. These teachers teach Math, English, and Urdu. The sample of the objective two was 364 students according to Kejice and Morgan table.

Research Instrument

For objective 1 researcher used a self-developed likert-style questionnaire with 32 close ended questions. A self-developed questionnaire on the five point leaked scale was used as the research instrument:

a) Strongly Disagree
b) Disagree
c) Neutral
d) Agree
e) Strongly Agree

The variables of the study were identified through literature such as Reasoning, Communicating, Visualizing, and Comparing. The research instrument for objective two was compare assessment tool. Researcher taken the scores of students from teachers about three subjects; English, Urdu and Math through traditional method and three subjects English, Urdu and Math through LND system.

Table 3.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha	N of Items
.936	.941	32

Table 3.2: ***Reliability Statistics***

No. of Items	Cronbach's Alpha if Item Deleted	No. of Items	Cronbach's Alpha if Item Deleted
1.	.904	18.	.903
2.	.912	19.	.914
3.	.910	20.	.904
4.	.917	21.	.916
5.	.904	22.	.903
6.	.901	23.	.913
7.	.915	24.	.901
8.	.902	25.	.902
9.	.906	26.	.909
10.	.911	27.	.905
11.	.908	28.	.913
12.	.915	29.	.905
13.	.907	30.	.903
14.	.903	31.	.910
15.	.915	32.	.914
16.	.914	33.	.915
17.	.900	34.	.912

Data Collection

Research area was the public primary schools in Gujjar Khan having LND in three class. Data was personally collected through questionnaire from 307 teachers and test scores of 364 students was collected from corresponding teachers Primary and secondary data collecting methods are two main categories of data collection techniques. The data collection method is a series of steps that the researchers must complete in order to collect or extract data for the execution of the research study. Researchers have used primary data collection methods because they can help in
organizing different types of data from the respondents and molding it for research purposes in this research study. Research area was the public primary schools in Gujjar Khan having LITERACY AND NUMERACY DRIVE (LND) in three class.

In Pakistan, the focus of selecting the primary schools of Gujjar Khan was the diversified area for people that are divided into both the rural and urban area. This combination has provided unique characteristics that are linked with the elements of rural and urban areas data was collected through questionnaire from the population of objective 1 is 307 teachers and the sample was 307 teachers and the data collection method has helped in extracting the relevant responses that have helped in addressing the research questions. The data in the form of scores was collected from teachers of two groups i.e. LND and traditional. Each group has 364 students.

Data Analysis

For Objective 1

In objective 1 researcher use questionnaire as a tool and respondents were teachers. For objective one the researcher used descriptive technique to analyse the data. In descriptive technique researcher used frequency, percentage, mode and standard deviation.

For Objective 2

The researcher used the scores of students and compares their results. For objective 2 the researcher used inferential technique to analyze the data. Researcher used t-test. As sample size was more than 30 and have two samples. Therefore, in the study used independent Z-test. As in this, both samples were independent. As, used SPSS tool in analysis and in this tool only allow t-test and when sample size is large t- test (n1=n2) gives the same results like Z-test. So here sample size was more than 30 values, t-test is equal to z-test. So researcher used t-test for it.

DATA ANALYSIS AND INTERPRETATION

Demographic Information

The participants in this study were recruited by a process called random sampling. 307 primary school teachers from 328 schools in the LND were selected as a representative sample to take part in the study. Using a Likert scale with five points, the survey's results were analyzed using SPSS. For objective 2 To compare assessment done by LND and traditional method. The participants in this study were recruited by a process called random sampling. The total population of objective 2 comprised of 328 schools. The population of the study was 6540.

Table 1: *Description of the participants' Gender*

Gender of Respondent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	128	41.7	41.7	41.7
	Female	179	58.3	58.3	100.0
	Total	307	100.0	100.0	

According to table 1 there were 307 total participants in this study. They belonged to different schools, having different gender, teaching different subjects, and having different teaching experiences. Table 4.1 shows that out of the 307 participants, there were 128 (41.7%) male and 179 (58.3%) were female teachers. This shows that in the study most of the participants were females 179 (58.3%).

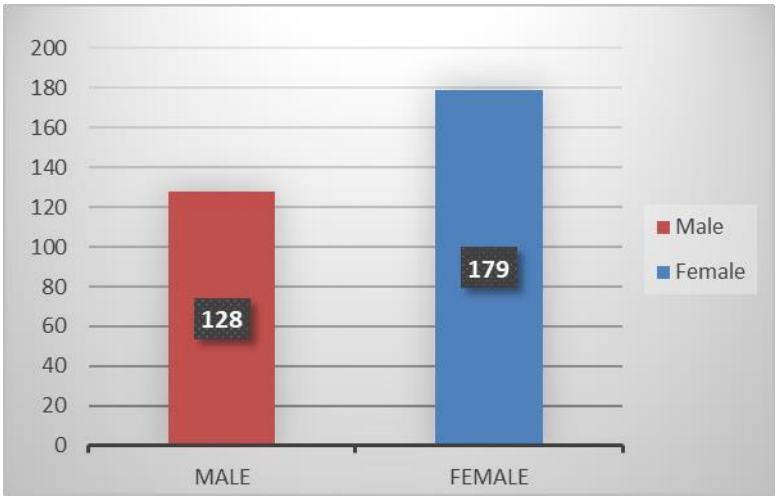

Figure 1: Participants' Gender

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Table 2: Subjects of the Participants

Subject of Respondent		Frequency	Percent	Valid Percent	Cumulative
Valid	English	109	35.5	35.5	35.5
	Urdu	113	36.8	36.8	72.3
	Math	85	27.7	27.7	100
	Total	307	100.0	100.0	100.0

According to table 2 there were 307 total participants in this study. They belonged to different schools, having different gender, teaching different subjects, and having different teaching experiences. Table 4.2 shows that out of the 307 participants, there were 109 (**35.5**%) teachers taught English subject, 113 (36.8%) taught Urdu subject and 84 (27.4%) taught math subject. Moreover, table 4.2 displays that in the study most of the participants taught 113 (36.8%) Urdu subject.

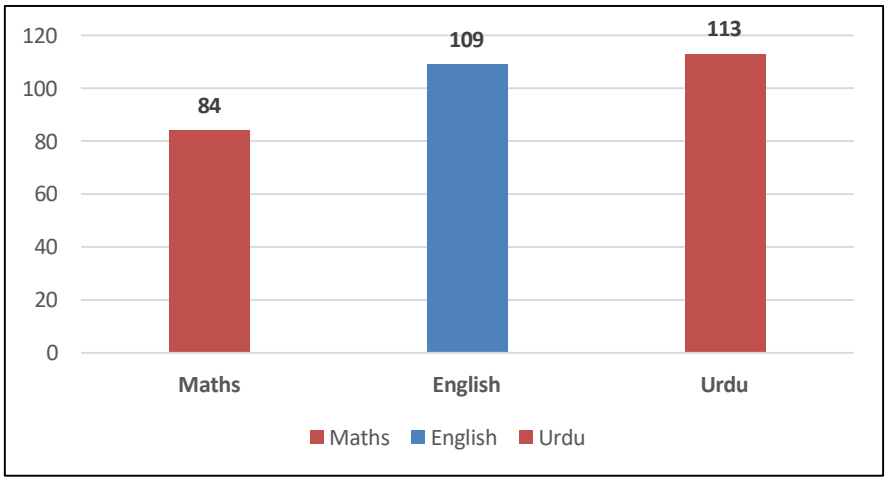

Figure 2: Subject Wise Categorization of Respondents

According to figure 2 there were 307 total participants in this study. They belonged to different schools, having different gender, teaching different subjects, and having different teaching experiences. Table 4.2 shows that out of the 307 participants, there were 109 (**35.5**%) teachers taught English subject, 113 (36.8%) taught Urdu subject and 84 (27.4%) taught math subject. Moreover, table 4.2 displays that in the study most of the participants taught 113 (36.8%) Urdu subject.

CONCLUSION

It is concluded based on findings that conceptual ability of learning of students is enhanced by traditional method. It is concluded that there is a significant difference between traditional and LND method. The research concluded that teaching through traditional method, the learning of three class students enhanced. If the students on the position in the class, i.e. the teachers have effective teaching methods can help the students of three class to be more diligent in understanding and learning tasks, and so as the result, learning can be more effective and advanced. The outcome of this can also be witnessed in the student's behavior, which is usually not present in classroom seating.

RECOMMENDATIONS

Based on the study's results and recommendations, the following recommendations were made:

1. It would be useful to have more data that could be compared with the study's findings.
2. A bigger sample size increases the likelihood that alternative perspectives on a teacher's teaching methods will be obtained, which will aid in determining whether there is a connection between students' perceptions and their usage of strategies.
3. Research like this would help teachers in the classroom better understand the individual learning styles and needs of their pupils, particularly when those needs are related to a particular subject.

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