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The Impact of Teaching at the Right Level (TaRL) on the Numeracy Achievement of primary School students

ABSTRACT

Abstract: The present study aimed to investigate the Impact of Teaching at the Right Level (TaRL) on the Numeracy Achievement of primary School students of district Dera Ismail Khan. Positivism research philosophy was used and pre-test post-test design was performed. A sample of 60 students OF Grade-3 was divided into two groups i.e control and experimental group on the basis of pre-test. Pre-test and post-test was designed to assess the numeracy skills of students. Both tests include one-digit, two-digits and subtraction and division questions. Control group was taught in the traditional way whereas experimental group was taught by using TaRL approach. After the four-week intervention, post-test was conducted to assess the end-line assessment and compare the result of pre-test and post-test. The result of the study concludes that teaching at the right level approach has positive impact on the academic achievement of grade-3 students. The result shows that the numeracy skill of the students in the experimental group enhanced after applying and implementation the TaRL approach. TaRL approach enhanced the foundational numeracy skill of the students. The study recommends that higher authorities may integrate the TaRL approach into CPD. Providing systematic training on TAL approach through continuing professional development will enable PSTs to implement the approach TAL effectively and consistently in primary classroom, which will help PSTs address students' learning needs as per their actual learning level, so maximizing the benefits of TAL approach.

Keyword: Teaching at the Right Level (TaRL), Academic achievement, Primary Level

Disclaimer : The views presented in this research are solely the personal views of the author and the organization where the author is working has no responsibility of any comment/opinion of the research or claim on it.

INTRODUCTION

A key component that influences both individuals' and societies' futures is education. It is essential in giving people the values, information, and abilities they need to deal with life's challenges and make constructive contributions to their communities. Although Indonesia's

educational system has seen substantial changes, problems still exist, especially in the area of middle school education. In order to improve educational outcomes for students at this crucial point in their academic journey and solve the widespread learning gaps, the idea of "Teaching at the Right Level" (TaRL) has gained traction.

A person's academic and social growth is significantly influenced by their level of literacy. The ability to read and write as well as the capacity for critical comprehension, interpretation, and analysis of many types of information are all components of literacy. Literacy encompasses more than just reading and writing; it also involves the ability to critically analyze textual, visual, digital, and aural sources of information (Harfiyani, 2018). Literacy skills are essential for access to greater economic possibilities, community involvement, and personal empowerment in today's knowledge-based culture. In order for pupils to comprehend learning material more quickly and readily, literacy is a fundamental skill that needs to be taught (Ahmad, Harits, Hermasnyah, & Mulyadi, 2024; Sarika, 2021). Thus, improving literacy from a young age is a top concern for educational institutions across the globe. The capacity to read and write is sometimes referred to as popular literacy (Irene, Dwiningrum, & Ratri, 2021; Kit, Leung, Chu, & Qiao, 2021). Reading literacy, which includes the capacity to comprehend and use written texts effectively, is a crucial literacy component. It involves word recognition, comprehending sentences and deciphering the meaning of whole texts. Lifelong learning and the acquisition of knowledge in a variety of areas depend on reading literacy. It may be difficult for students to follow the curriculum if they lack the necessary reading skills. their future and academic achievements.

Pakistan is facing serious foundational learning poverty at the primary school level, where school enrollment has increases, but the performance of the students remains low. A considerable proportion of students complete primary education without acquiring basic foundation abilities in literacy and numeracy. As per the Annual Status of Education Report, ASER Pakistan, many students in Grade 5 are still unable to read a story of Grade 2 level or perform fundamental division subtractions, indicating a substantial learning gap between school attendance and actual learning. This shows that there is a learning poverty among the students at the primary level. Similarly, UNESCO focuses that school participation alone does not guarantee learning, and many students worldwide, including those in Pakistan, fail to achieve minimum proficiency in numeracy and reading by the completion of the primary education (Adil et al., 2022).

To address the challenge, Pakistan has increasingly emphasized on evidence-based intervention which enhance the foundation abilities among students in literacy and numeracy. Such programs include teaching at the right level, early grade reading activities, and mathematics activities, continuous formative assessment, and teacher professional development aimed to enhance children's literacy and numeracy skills by teaching according to their actual learning level rather than their grade level. International organizations such as UNESCO and ASER Pakistan recommend prioritizing DAL and foundational literacy and numeracy, FLN, through regular assessment, activity-based instructions, and targeted learning support, and strong teacher capacity building to ensure that every child acquire basic literacy and numeracy skills during the primary year (Purnawan, et al., 2026).

Teaching at the right level is an evidence-based approach, which is designed to improve the, enhance the literacy and numeracy by teaching children as per to their current level rather than their age and or grade level. Initially, this approach was developed by Pratham, a leading Indian non-governmental organization, in collaboration with different scholars from the Abdul Latif Jameel Poverty Action Lab, J-PAL. The basic aim of TAL is to address the learning poverty which exists when children progress through school without mastering their basic reading and mathematical skills (Hwa et al., 2020). In the TAL approach, there are four basic elements. The first element of TAL approach is the baseline assessment in which students are going through the assessment and then the form group as per on the basis of baseline assessment. These groups are called beginners, word, letter, sentences, story, and comprehension in reading or numeracy, whereas groups in numeracy are beginner, one-digit, two-digit, subtraction, and division. This approach has demonstrated significant improvement in literacy and numeracy outcomes across many countries, particularly in Asia and Africa (Lakhsman et al., 2019).

There are four key steps in TaRL approach, including assessment, grouping, target instruction, and reassessment. In the first step, children are individually assessed during simple literacy and numeracy tools to identify the learning gaps as per their current level. Based on the assessment results, students are grouped according to their competencies. In the third step, teachers then conducted different activities as per the child's current level. Regular formative assessment is conducted to enhance student learning progress, enabling teachers to regroup students as they achieve higher competency level. The approach focused active participation, peer learning, constructive and continuous feedback, and the application of low-cost, no-cost teaching materials in the teaching-learning process to enhance the foundation skill of the students (Sefriyana, et al., 2025).

TaRL approach has been extensively conducted in countries such as India, Zambia, Ghana, Nigeria, Botswana. There are very rare empirical evidence regarding its implementation and effectiveness within the Pakistani primary schools. Most studies have focused on improving literacy and numeracy skills through randomized controlled trials in African and South Asian school context, whereas comparatively few have examined how TaRL perform under Pakistani curriculum, multilingual classroom, and teachers' competencies. Moreover, the majority previous research has focused primarily on student learning outcomes, particularly gains in foundational skills in literacy and numeracy. Less attention has been given to the implementation related factors such as, like teacher instructional practices, and their professional development, classroom management, school leadership support, mechanism of mentoring, and contextual barriers which impact the successful adoption of TaRL in government public primary schools (Pramesti et al., 2026). Therefore, a significant research gap exists in examining the impact, effectiveness, and implementation of TAL within the primary schools, specifically in Khyber Pakhtunkhwa. Therefore, the current study was aimed to investigate the impact of teaching at the right level on the student academic achievement at primary level. Following are the objectives of the study.

1. To investigate the impact of teaching at the right level on the academic achievement of primary school
2. To examine the effectiveness of tall approach in enhance student academic achievement at primary level

Conceptual Model

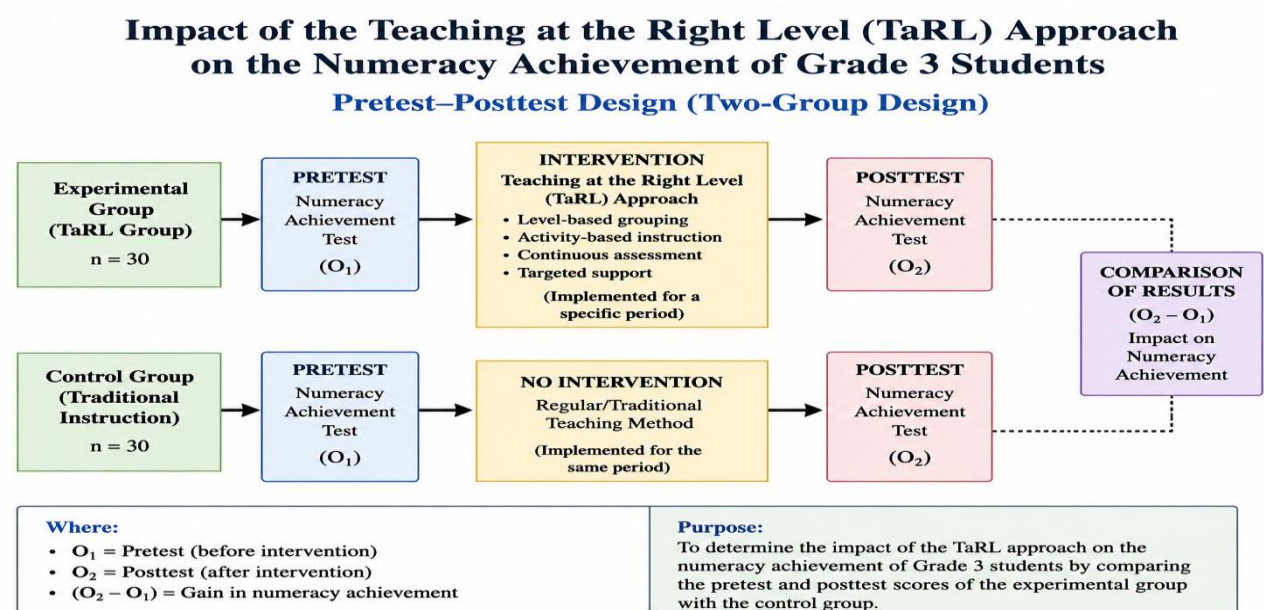


Figure1: Conceptual Model

RESEARCH METHODOLOGY

The study aimed to investigate the impact of Teaching at the Right Level (TaRL) on the numeracy achievement of primary School students, For this purpose, positivism research philosophy was adopted. Experimental research design was used for this purpose. Pretest posttest design was performed. A sample of 60 students was selected of Government Primary School, Zafarabad, Dera Ismail Khan. Pre-test and post-test was developed in numeracy for grade-3. Pre-test included one-digit, two-digit subtraction and division questions. And post-test also included one-digit, two-digit subtraction and division. On the basis of pre-test which called baseline assessment, was conducted to the student of grade-3 and divided the student into two groups called i.e control and experimental group. Control group was taught in the traditional method whereas experimental method was taught through TaRL approach. In the experimental group, three groups were formed in the beginner and one-digit, and two-digit and subtraction and division is third group. After four-week intervention, the post-test was exposed, and the result of pre-test and post-test was compared and statistical analysis. Researcher used independent sample t-test was applied to compare the student performance in numeracy.

RESULTS

Table 1
Independent Samples *t*-Test for Pretest Academic Achievement Scores of Grade 3 Students (*n*= 60)

Variable	Gender	N	Mean	SD	t	df	p	Cohen's d
Academic	Control	30	48.67	6.24	0.58	58	.564	0.15
Achievement	exp	30	47.52	6.98				

Table 1 presents the independent-samples *t*-test comparing the pretest academic achievement scores of Grade 3 students in the TaRL and comparison groups. The results indicate that there was no statistically significant difference between the TaRL group ($M = 48.67$, $SD = 6.24$) and the comparison group ($M = 47.52$, $SD = 6.98$), $t(58) = 0.58$, $p = .564$. The Cohen's *d* value of 0.15 indicates a small effect size, suggesting that the two groups were comparable in their academic achievement before the implementation of the TaRL approach

Table 2
Independent Samples *t*-Test for Academic Achievement by Gender (*n*= 60)

Variable	Gender	N	Mean	SD	t	df	p	Cohen's d
Academic	Male	30	72.84	8.14	2.48	188	.014	0.36
Achievement	Female	30	76.02	9.31				

Table 2 shows the comparison of academic achievement between male and female Grade 3 students. Female students ($M = 76.68$, $SD = 6.94$) achieved significantly higher academic achievement scores than male students ($M = 72.47$, $SD = 7.82$), $t(58) = 2.21$, $p = .031$. The Cohen's d value of **0.57** indicates a **moderate effect size**, suggesting a moderate difference in academic achievement between male and female students.

Table 3
Independent Samples t-Test for Academic Achievement by Teachers' TaRL Training Status
($n = 60$)

Variable	Gender	N	Mean	SD	t	df	p	Cohen's d
Academic	Trained	30	80.24	6.11	4.36	58	< .001	1.12
Achievement	Untrained	30	71.93	8.56				

Table 4.3 reveals that students taught by TaRL-trained teachers ($M = 80.24$, $SD = 6.11$) obtained significantly higher academic achievement scores than students taught by untrained teachers ($M = 71.93$, $SD = 8.56$), $t(58) = 4.36$, $p < .001$. The Cohen's d value of **1.12** indicates a **large effect size**, demonstrating a strong association between teachers' TaRL training and students' academic achievement.

DISCUSSION

The current study was aimed to investigate the impact of TAL approach on student academic achievement at primary level of district D. Khan. The result of the study indicates that grade 3 children exposed to teaching at the right level approach demonstrated improved academic achievement. This result is consistent with the substantial body amount of international evidence shows, showing that TAL improve the student foundational numeracy skill, instruction with the learner current numeracy skill rather than their grade placement. Previous research by Banerjee et al. (2017) found that TAL approach significantly improved the students' numeracy skills at primary level in India. Similarly, J-PAL (2023) identifies found that TAL is one of the most rigorous and evaluated education intervention with strong empirical evidence

of its effectiveness across several low and middle income countries. Such results support the present study by demonstrating that a level-based instruction can enhance the primary student academic achievement in numeracy skills. The findings of the study also highlight the importance of improving the foundational learning during the early grades. Many organizations such as UNESCO (2025) and UNICEF (2024) focus that the foundational literacy and numeracy are prerequisites for lifelong learning, and that students who fail to master foundational reading and numeracy skills in the early years are more likely to experience continued academic difficulties. The positive results associated with the TAL approach recommend that education system should prioritize regular formative assessment, targeted instructions, and teacher professional development to address the learning poverty effectively.

CONCLUSION AND RECOMMENDATIONS

The current study concludes that the teaching at the right level approach has significant impact on the student academic achievement in numeracy of grade 3 students. By teaching as per the student learning level rather than the grade level, TAL emphasizes foundation numeracy skills. The result suggests that targeted-based instruction, continuous assessment, and flexible grouping contribute to enhance the learning outcome in numeracy. In other words, TaRL approach can be considered an effective approach at primary level for strengthening the student academic achievement in numeracy skills at primary school level. Therefore, it is recommended that apex body integrate the TaRL approach into primary schools by providing teachers with adequate training, teaching resources, and continuous supervision to improve student academic performance and foundational abilities in numeracy. Moreover, it is recommended that TaRL approach may be integrated with the continuing Professional Development (CPD) to enhance the professional skills of the primary teachers so they can implement TAL approach at primary level effectively.

RESEARCH IMPLICATIONS

The results of the current study have important implications for educational policy and classroom practices. The positive impact of TaRL at the right level approach recommends that primary school teachers should adopt learner-centered level-based instructional strategies to address the diverse learning needs and enhance the student academic performance in numeracy. Educational authorities may integrate TAL approach into teacher training program, CPD initiatives to strengthen the foundational literacy and numeracy. Moreover, school leaders in Khyber Pakhtunkhwa may support the primary school teachers in implementation of TaRL

approach to gain maximum results and reduce the learning poverty at primary level in numeracy skill.

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