



ORIGINAL RESEARCH ARTICLE

Addressing the Bottlenecks Encountered by Teachers and Learners
on Phonics Instruction to Early Graders in Tanzania

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ABSTRACT

This study examined the bottlenecks faced by teachers and learners in using phonics instruction in early classes in Tanzania. The study was undertaken in 25 public primary schools of Mbeya city and Rungwe district involving 85 Primary Early Grade Teachers (PEGTs) and. Random sampling technique was utilized to sample 180 class one and two pupils two primary school quality assessors (PSQAs) were obtained purposively. Mixed method approach which employed questionnaire, interview and observation as data collection method, was deemed relevant. Epi-data software version 3.1 and Statistical Package for Social Sciences (SPSS) version 20 helped in analysing quantitative data and qualitative data were analysed thematically. The findings indicated that teachers encountered uncondusive teaching environment including lack of teaching and learning resources, lack of inclusive skills, unrealistic teacher-pupils' ratio with congested classrooms. The study recommends for intensive training on 3Rs and accommodation of pupils with disabilities to all EGTs.

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1. Introduction

Reading constitutes one of the four vital language skills for non-native speakers. Other skills entail writing, listening and speaking. For early graders, the mastery of 3Rs namely reading, writing and numeracy are also crucial for mastering subsequent academic success and for professional development (Thaen-nga and Leenam, 2016). This paper focuses on reading and argues that children of the primary grade such as STD one and two, need to attain proficiency in reading after being effectively taught within barrier free systems.

The UNESCO Global Education Monitoring Report indicates that 18% of all primary school-age children in Central, South Asia and sub-Saharan Africa attain a minimum level of reading skills (UNESCO, 2017a; Uwezo, 2019). Likewise, children enter standard four without achieving the basics of reading (Uwezo, 2019; UNESCO, 2017b). In Tanzania, pupils' mastery of reading is also coupled with challenges as some of them cannot read properly (Mramboa and Ligembe, 2022; Uwezo, 2019).

A number of efforts by stakeholders have been made to address the challenges facing teaching and learning of literacy including reading. Nevertheless, these efforts vary from those made by the Government, Non-government organizations and donors. As a result, there have been a number of initiatives including those through Education Quality Improvement Programme in Tanzania (EQUIP-T), Literacy and Numeracy Education Support (LANES), EGRA (USAID), KIUFUNZA intervention, Research Triangle International (RTI, 2016). Others efforts include projects such as Tusome Pamoja and Tanzania 21st Century Basic Education Programme, yet the curriculum expected competencies are still farfetched (Komba and Shukia, 2021; Kamanzi and Seni, 2024). Other significant interventions include those by the Tanzania Institute of Education (TIE), Ministry of Education Science and Technology (MoEST), the Ministry of State Regional Administration, the Agency for the Development of Education Management (ADEM) and the United Nations Children's Fund (UNICEF) (Komba and Shukia, 2021; Kamanzi and Seni, 2024). Despite these efforts, literacy skills and reading have not attained the expected outcomes of these investments.

The purpose of this study was to assess the challenges faced by teachers and learners in the use of phonics instruction in early classes. It also set to examine the strategies used to overcome them. The study findings would contribute to the body of knowledge by establishing the challenges and enhance reading skills among early grade learners. It may also inform policy and decision makers on the prevailing practices and consequently inspire the provision of necessary and immediate support for improved reading skills learning outcomes among pupils. The researchers encountered the challenge when conducting fieldwork to obtain the necessary data in achieving the study purpose. These had to do with the remoteness of some schools in both Mbeya city and Rungwe district. This made the researchers spend a lot of money in transport so as to reach each school.

2. Literature Review

In this section, relevant literature is reviewed covering the theoretical review, empirical literature and the gaps.

2.1 Theoretical Underpinnings

Vygotsky (1896 -1934) is the proponent of socio-cultural learning theory (SCT). The main stance of the theory is that child learning is influenced much by interaction in socio-cultural setting. The socio-cultural setting, according to Vygotsky, grants the child with a diversity of activities and guide as well as engage the child through tools (Lukuwi and Seni, 2022). Tools for Vygotsky, are artefacts created by humans within specific cultural and historical conditions (Turuk, 2008). The theory puts significant importance on the learners' activeness in making meaning and solving problems. SCT recognizes the need for interplay between teachers, learners and tasks (Edward and Shukia, 2023). The social interaction leads to the existence of Zone of Proximal Development (ZPD). Consequently, the adults, teachers or

experienced peers observe the child's ability and scaffold to a higher level of competence (Moore, 2020; Lukuwi and Seni, 2022).

SCT guided this study as it is obvious that learning reading is a task-based activity. The main focus is on how a learner accomplishes a task and how interaction between learners and more knowledgeable others can scaffold to assist in reading process. This paper triangulated SCT with the bio ecological theory put forward by Bronfenbrenner in 1979. The theory regards relationships and environment as prerequisite and fundamental for child development (Bronfenbrenner and Ceci, 1994; Bronfenbrenner and Morris, 2007). Environment entails microsystem, mesosystem, exosystemic, macro system, and chronosystem (Bronfenbrenner and Morris, 2007; McCoy et al. 2017; Ndijuye & Tandika 2022b and Ndijuye, 2022). Conversely, the microsystem is the most powerful level, surrounding the child's immediate environment such as family and school. In this study, both the school and family environment are examined. The paper looks at how the two affect the child's learning to read. Consequently, the partnership of parents and teachers is examined as to how it impacts children's learning to read.

2.2 Challenges Encountered in Teaching and Learning Reading in Early Grades

A number of challenges exist in teaching reading as pointed out in various studies. The International Literacy Association points out shortage of review and repetition cycle, application to actual reading and writing experiences, and irrelevant reading resources to rehearse the target literacy skills as one of the common causes of phonics instructional failure (Blevins, 2019).

Teachers and Pupils' Attitude on Reading Using Phonics Instruction

In China; Zhong and Kang (2021) carried out a quantitative study on Chinese teachers' insight and practice of phonics instruction and found positive attitudes among teachers towards phonics and that improvement of teachers' educational background was crucial for predicting better phonics teaching effect. Using qualitative approach; Suminto and Bram (2021) explored how teachers were implementing methods of teaching reading using phonics and their views regarding the effects of teaching phonics to the elementary school pupils in Thailand. Their study revealed positive attitude on the use of phonics approach in teaching of reading. The study by Suminto and Bram (2021) however, did not point out what was actually done to make teachers hold such positive perception over phonics instruction and what was recommended for the few who did not perceive the approach positively.

In Ethiopia, Haile and Mendisu (2023) used mixed method approach to identify the drawbacks upsetting teachers in teaching phonological awareness. They revealed deficiencies in subject matter and pedagogy, shortage of teaching resources, shortage of in-service training and the presence of uncondusive environment as major encounters. However, their study was not guided by a theory in undertaking it. Consequently, the absence of positive attitudes among teachers constitute a challenge in teaching reading using phonics instruction.

Difficulties of Handling Pupils with Disabilities in Congested Classrooms

Guided by the cognitive learning theory by Jean Piaget; Mubanga et al (2020) conducted a study on the encounters teachers faced in teaching reading phonic and sight words in Zambia. They found that children were truants in the first days after being admitted to school. As a result, they could not easily catch up with reading. Less attention was given to slow learners and those with disabilities due to large class size and inadequacy of appropriate quality teaching and learning resources (Mubanga et al, 2020). Guided by the social constructivist theory and qualitative approach; Dagada (2022) researched on the teachers' impediments in teaching reading in South Africa and revealed that teachers encountered numerous challenges including congested classrooms and shortage of resources. While there are challenges for handling pupils with disabilities within congested classrooms, there are various mechanisms

which can be used by teachers to address these challenges. Teachers may consider devising spatial modifications such as having designated reading rooms for pupils with hearing or visual impairments and struggling readers to improve phonics instruction. Furthermore, assistive technologies and learning space adaptations that support struggling readers may be utilized to improve phonics instruction.

Mother Tongue Interferences

In Tanzania; Mramboa and Ligembe (2022) did a qualitative study concentrating on the problems pupils encounter in learning phonological skills and indicated that pupils encountered various challenges such as mother tongue interference. Other stumbling blocks were inadequacy of teaching and learning resources as pointed out by Ndiujye (2020); Ndiujye and Tandika (2022). Literature on early literacy and reading (Ndiujye and Rao, 2019; Shukia, 2016) also indicate marvellous challenges including overcrowded classrooms and limited appropriate instructional materials. These challenges resulted into children's failure to acquire reading and other literacy skills congruent to their grades level (Ndiujye and Rao, 2019; NECTA, 2020 & Uwezo, 2020).

Classroom Noise

Quartey et al (2021) who used mixed method approach, researched on noise exposure levels in basic school environments in a city in Ghana and found that the main sources of noise entailed vehicles, motorbikes and music vans all of which fell under traffic noise. Other sources of noise were music shops, vehicle repair, trading and hawking. To control the noise measures such as closing of doors and windows were adopted. Conversely, this could affect day lighting levels and natural ventilation use in the classrooms which would be detrimental to pupils' learning.

Mogas-Recalde et al (2022) researched on how classroom acoustics influence students and teachers with a focus on the relation between noise, teacher voice and classroom acoustics and pointed out that there are health consequences of noise exposure. It causes voice diseases, hearing diseases and stress-related health problems such as headaches and high blood pressure (Rudner, 2018). Massonnié et al (2022) studied on learning in noisy classrooms with a focus on children's reports of annoyance and distraction. They used mixed method approach and found that children were annoyed by noise and experienced hearing difficulties as well as interference with learning activities. Woolner and Hall (2010) studied a holistic approach on noise in schools and revealed that noisy settings led to negative effects on learning including language, reading progress, annoyance and distraction. It could be said thus, classroom noise either coming from within the classroom or outside, jeopardizes learning and teaching of pupils thus calling for teachers' pedagogical competency and flexibility to devise measures to minimize the noise consequences in the teaching and learning process.

Strategies for Overcoming Challenges Facing Teaching and Learning of Reading using Phonics Instruction Approach

There are various strategies that can be put in place to combat the challenges facing teachers in phonics instruction.

Proactiveness of Head Teachers in Monitoring Teaching and Learning

In order to develop the word reading skills of pupils, all teachers who teach literacy and reading particularly at primary school level calls for a need for reading stakeholders to possess relevant expertise to enhance effective instruction in early reading skills (Vaughn et al., 2022 & Lane et al, 2023).

Using documentary analysis and unstructured interviews; Guzman and Atutubo (2023) conducted a study on the strategies for teaching of reading using phonics in Thailand. Their

findings revealed a lack of training, insufficient materials, and poor study habits among the teachers which affected teaching reading in phonics. To overcome these, school heads were required to facilitate regular monitoring, feedback, coaching, and evaluation activities.

Effective Teaching and Supply of Teaching Materials

In the USA; Lane et al (2023) researched on the preparation of effective teachers in reading. Their study outlined the need for teachers' awareness of the segments of sounds in speech and letter formation. The need to teach decoding of words, analysing word parts, and writing and recognising words. Similarly, teachers had to capacitate learners to read connected text, to be fluent and master comprehension. They recommend for the teaching of sounds which could be blended and articulatory gestures. Likewise, they emphasized on the use of the Elkonin's method which is a proven effective method for improving phonemic awareness. Using library search, Sun (2019) conducted a study on the use of phonics to teach reading to lower graders in China and found that majority of Chinese early graders commence learning of English reading with the "ABC Song". Phonics instruction is effective for early graders learning English as a foreign language (Sun, 2019; Vaughn et al., 2022 & Lane, 2023). Another strategy is developing children's interest and desire to read (Sun, 2019).

Creating Conducive Learning Spaces

Conducive learning spaces enhance the efficiency of active learning and teaching, consequently, it is crucial to align pedagogies with physical learning spaces (Van Merriënboer et al., 2017; Donkin & Kynn, 2021). On physical spaces; designed Learning spaces should permit pupils and teachers' movement in the course of the lesson due to sizeable and flexible arrangement of desks (Rands and Gansemer-Topf, 2017). The physical space must embrace a diversity of students' activities for socialization of learners (Van Merriënboer et al., 2017; Vercellotti, 2018; Kolb & Kolb, 2017). The physical space is supposed to have conducive temperature, ventilation, light and desirable arrangement of desks and tables with sufficient space for pupils to stay and study comfortably (Kolb & Kolb, 2017; Gad et al, 2022) Regarding social spaces, peer learning and connection with the teachers is crucial in creating the interaction that is a sign to state of mind regarding acceptance and psychological esteem and should be consistent with the needs of each pupil (Trinh et al., 2021; Zhang et al. (2022). There is also digital space which presupposes investments in terms of technology, equipment and teachers' competence on using the same. Thus, schools need to possess desktop computers, laptop and tablets with YouTube contents in order to enhance interaction during teaching and learning (Lai & Bower, 2019; Sutanto et al, 2022). There are various benefits of using technology in teaching and learning including enhancing engagement of learners, collaboration, inclusion, differentiation, creativity and productivity (Mansori et al, 2024). Thus, an effective teacher needs to integrate these learning spaces to come up with an active and engaging teaching session.

Spatial Modifications for Pupils with Disabilities

Learners with disabilities can also be supported using spatial modifications such as setting aside designated reading areas for pupils with disabilities including those with hearing or visual impairments all of which can improve phonics instruction. Instructional strategies such as code-switching at the word, phrase, and story levels, can be used to enhance the reading skills of deaf or hard of hearing children in a designated classroom for pupils with disability (Bickham, 2015). However, to enhance inclusivity, children should be sent to a designated classroom occasionally and at times, be integrated in the main stream classroom which is healthy for their socialization. Conversely, all these require teachers who are innovative and trained in handling inclusive classes.

Assistive Technologies, Assistive Devices and Learning Space Adaptations

Teaching of reading skills for the visually impaired children is possible through the use of Braille, print, and technology, human readers and audio versions of printed material to enable them access information and develop the reading skills using phonics instruction. Likewise, assistive technologies for blind pupils entail refreshable Braille displays and screen readers, which read aloud all the content on the screen, as well as buttons, links, menus and images, if the images have alternative text on them. Speechify which is a text-to-speech software captures text and translates it into audio format. This is particularly useful for textbooks, PDF reading assignments and more can also be utilized to assist pupils with visual impairment. The software is compatible with the Chrome browser. Furthermore, the Seeing AI app from Microsoft is designed for the low-vision community and offers audio guidance in a vast array of situations. It reads a text aloud as soon as it appears in a smartphone's camera viewfinder. The audiobook readers are the other solution for reading textual material because they have negligible learning curves and so suitable in supporting pupils with vision challenges. Similarly, for pupils with hearing impairment through the use of sign language (Alasim, 2019). Assistive equipment and devices are such as customized or adjustable furniture, mobility equipment and resources, ability switches and switch-adapted toys, portable amplification equipment, literacy aids, communication software. Others entail wearing glasses, hearing aid and wheelchairs for pupils with visual, hearing and physical disabilities respectively. While assistive technologies and assistive devices are plenty, they presuppose investment in terms of teacher professional development and procurement of gadgets and facilities. All in all, teachers should be able to identify the conditions of children and devise relevant adaptive measures since disabilities manifest themselves in many different forms and severities.

Use of Learning Corners

Rahmawati and Abduh (2023) researched on the use of reading corners in instilling the pupils' reading interest in Nigeria. They used qualitative approach and case study design and found that reading corners were useful in enabling pupils to perform reading literacy tasks in class without going to the library to read books. Reading corners raise pupils' interests as they interact with various materials in the corners including thematic and story books. To develop pupils' interest in reading, interesting books and learning materials such as toys are crucial to be brought in the classroom. Consequently, phonics instructors should be flexible and innovative to attract learners' attention and close follow up of the lesson. Reading corners need to be decorated neatly and attractively with a pretty look to raise children's interest in reading books, book extracts and cuttings. Furthermore, the basic materials used to make a reading corner entail simple tools and materials to minimize cost. Thus, an unused table at the back of the classroom and other materials such as used bottles, may serve the purpose (Saipi et al, 2022).

Ningtyas et al (2024) conducted an experimental study on the influence of reading corner utilization on students' literacy skill and found that reading corners greatly raise pupils' enthusiasm for learning as they enhance a deep interest in books and reading activities. In addition, the reading corner, if well artistically prepared creates a conducive learning environment, thus making it effective in fostering a sustainable reading culture among students (Zakiya et al., 2023; Subardin et al., 2023; Awalina et al. (2022; Khan et al, 2023). It could be said that reading teachers should be strategically capacitated on the required preparation and use of reading corners to minimize the bottlenecks of large classes which are common in the global south including Tanzania.

3. Method

This part presents the methodology employed in conducting this study.

3.1 Approach and Design

Based on the nature of this study, the mixed research approach and cross-sectional descriptive study design, were used in which quantitative and qualitative data collection and analysis were merged in a one study of enquiry without changing the environment (Creswell et al, 2003; Burns and Grove, 2003). Cross-sectional designs are capable of describing variables and their distribution patterns and consumes a short period of time and enable examining numerous factors and outcomes in one study (Hulley, Cummings and Newman, 2013).

This study was conducted in Mbeya city council and Rungwe district of Mbeya region due to extreme cases in the performance on literacy and numeracy level in primary schools (Uwezo, 2013) Mbeya city has been doing well in literacy and numeracy. So, this study aimed to gather information on both areas to explore the challenges encountered in both settings.

For quantitative sampling, a proportion of 0.5 was used to compute the sample size of teachers and pupils (Cochran, 1977).

$$n = Z^2 \alpha / 2 P (1-P) / e^2$$

n= sample size

$Z_{\alpha/2}$ = is the probability distribution with level of significant $\alpha = 5\%$,

“P” = proportion of teachers and pupils with high phonics knowledge or high competence on sounding vowels and consonants and reading words and sentences.

(1-P) = proportion of teachers and pupils with low phonics knowledge or low competence on sounding vowels and consonants and reading words and sentences.

“e” = the level of marginal error.

Thereafter, computation of the representative sample of the population of pupils was estimated bearing in mind the proportion of pupils with high competence in reading and sounding =50%, a 95% confidence level or $\alpha = 0.05$ and acceptable boundary of error =0.08 and 10% non-response. Then, the required sample size was 167. To make it divisible by 8 schools, a sample size of 180 pupils was considered for this study.

Then, the calculation of the representative sample of the population of teachers was estimated considering the proportion of teachers with high phonics knowledge =50%, a 95% confidence level or $\alpha = 0.05$ and acceptable margin of error = 0.1 and 10% non-response. Then, the required sample size was 107. To make it divisible by two districts, a sample size of 108 (54 per district) teachers was considered for this study. For the EGTs, three respondents from Rungwe district and three from Mbeya city who were well knowledgeable of phonics instructional approach, were purposively selected to participate in in-depth interview. In addition, two PSQAs were recruited from two districts to respond to in-depth interview questions. Therefore, a total of eight (8) key informants participated in the in-depth interview.

Initially, the assumption was that each school had at least four PEGTs. Therefore, a total of 28 schools (14 from Mbeya city and 14 from Rungwe district) were needed for this study. A list of schools making a sampling frame was obtained from each district. Then, random selection approach was applied to obtain the required number of schools per district. Then, from each selected school, all PEGTs were approached and asked to participate in the study. In each district (Mbeya city and Rungwe) four schools were randomly selected and 20 pupils (10 females and 10 males) were systematically obtained from a list of STD I -II pupils. The study sample category distribution is presented in Table 1.

Table 1. Frequency and Percentage of the Respondents

Respondents	Frequency	Percentage
STD I-II pupils	180	67
PEGTs	85	32
PQAs	2	1
100	267	TOTAL

Source: Field Data

Table 1 displays that STD I-II pupils constitute majority of the respondents of this study by (67%), followed by EGTs who constitute (32%) and PQAs by only (1%). STD I-II pupils

and EGTs are majority of the respondents because the study focused on them as they had information regarding the enquiry.

3.2 Methods of Data Gathering

Information was gathered using interview, observation and questionnaire. Interview was used to collect information from eight (8) study participants using the interview. The use of interview was considered an efficient way of collecting voluminous data (Marczyk, DeMatteo and Festinger, 2005). It was also appropriate to collect information from people regarding their views, opinions and outlooks regarding diverse contexts (Ary et al, 2010). Despite its advantages, the shortcoming of interview is that the data collected may not be statistically analysed (Marczyk, DeMatteo and Festinger, 2005). Consequently, triangulation with observation and questionnaire was imperative to offset some of the shortcomings.

Observation method is classified by Urquhart (2015) as the method that may be unstructured or structured, non-participant or participant. In this study, participant classroom observation was used to capture data from pupils on reading and sound competence of vowels, consonants and words to vividly depict the challenges they were encountering. One of the uses of the participant observation is helping the researcher deduce no spoken expressions such as feelings, interactions and grasp the participants' communication (Schmuck, 1997). It was further important as it flexibly permits researchers to detect actions that participants are incapable or do not desire to share or describe in interviews (Marshall and Rossman, 1995). This is to say that participant observation was appropriate in developing a complete understanding of the phenomena under the investigation. Importantly, it was a useful way of increasing validity (DeWalt and DeWalt, 2002).

The researchers had a pre-observation meeting with the reading teachers after gaining a written consent from both the pupils and the teacher. The researchers categorically told the teachers that the classroom observation was exclusively for research purpose and no harm would come after their participation in the study. In this way, rapport was established and the presence of the researcher in the classroom did not make the classroom artificial and offensive to the reading teacher. Conversely, the observer and the observee, met for a conversation before the classroom observation was conducted to reach an agreement on the specific focus of the observation (Ya-nan, 2023). The observation was systematically guided by the observation checklist which stipulated key items to observe. A total of 25 classroom observations were conducted from the sampled schools. The researchers observed classroom space in relation to the number of pupils, sitting arrangements, ventilation, lighting and possibilities and actual practices of teachers' pedagogical innovations for handling large classes in relation to phonics instruction. Then the researcher kept the written observation notes to facilitate coding and analysis instead of taking a video or voice record aware that some teachers and pupils not familiar with being video recorded, may be inhibited and offended (Wragg, 1999).

Quantitative data were collected through questionnaire method. Oppenheim (1992) asserts that questionnaire is an instrument for data collection regarding a certain subject of curiosity. It is mainly made up of a list of questions, clear instructions and space for answers or administrative details. In this enquiry, questionnaires were administered to PEGTs to explore information on the challenges they were encountering in teaching reading through phonics approach in early grade classrooms. The use of questionnaire was due to the fact that the study employed a mixed research approach. The advantage of using this method is gathering of information in a standardized manner. Based on this understanding, , questionnaires are more objective and a quick method of collecting information (Marczyk, DeMatteo and Festinger, 2005).

3.3 Data Analysis

Responses in the questionnaires were coded by numbers and entered twice in a laptop using Epi-data software version 3.1. The coding processes was embarked to enable computer entries of responses for open questions and combinations of multiple responses to respective questions. Data were moved to Statistical Package for Social Sciences (SPSS) version 20 for windows for substantiating, data cleaning and analysis. Pearson Chi square statistics test and descriptive statistics were used to associate group differences for categorical variables. Bar graphs and tables were used for illustrative demonstration of the results and facilitating quick understanding of the data by the readers of this study. Thus, if p-value was <0.05 , as per dissimilarities or connotation between variables, it was considered statistically momentous.

Thematic analysis was thought relevant for analysing qualitative data. Kombo and Tromp (2006) regard the use of thematic analysis as effective in identification of major concepts or themes. In this study, the researchers categorized the main issues or topics and perused the data as per research questions and objectives. The transcripts were posted in the Nvivo software folder. According to Ezzy (2002), Middleton (2023), De Vos, Delpont, Fouché & Strydom (2005), validity is the quality of information gathering instruments or procedures that measure accurately. Guba (1981) recognized four main criteria for trustworthiness including credibility, transferability, dependability and conformability. Consequently, triangulation of data collection methods was used in this research. Spatial factors were captured and analysed using a photograph to indicate classroom space which hampered effective teaching and learning of reading using phonics instruction. The photographs helped to depict the classroom setting vividly and indicate the difficulties teachers would face to move within the classroom and assist individual pupils. Despite the fact that all respondents consented to be taken photographs, the researched masked their faces to enhance anonymity but yet portray the situation more vividly.

Reliability denotes the consistency or dependability of a measurement technique and whether the measurement is consistent (Andrich, 1981 and Leary, 2004). As a result, the researchers piloted the tools to ensure reliability of the study. The pilot was done at a government primary school in Mbeya region to test the data collection tools. The school was not one of the schools sampled in the main study. The conducting of pilot is in line with the recommendations by Brink (1996). The pilot study results enabled the researchers to improve, delete and add some of the items. Consequently, the rigor was enhanced before embarking on the major study.

The validity of the questionnaire was realized using a number of strategies where by judgement criterion was reckoned relevant in upholding the content validity. As argued by Rubin and Babbie (2001), content validity is confirmed on verdict grounds by researchers or other experts on whether the measure covers the pre requisite requirements. On this case, the questionnaire was constructed and passed to the three experts for scrutiny of the content before embarking on the field work. The comments that were given resulted into removal of the five items from the respective study tool. Moreover, to achieve reliability of the questionnaire, Cronbach's Alpha was run for internal consistency test. Consequently, the Cronbach's Alpha (α) was 0.76 and convinced the researchers regarding the reliability of the respective tool. Moreover, the researchers observed peer debriefing, member checking and sustained involvement (Taherdoost, 2016, Kamanzi and Seni, 2024). The trustworthiness of the interview guide and observation checklist were achieved by engaging two senior researchers' members of the faculty in Higher learning institution during the data collection tools inputs seminar. As a result, some questions were omitted and some were brought in to align with the research questions.

Ethical considerations were observed as an issue of paramount consideration in the entire process of this study as suggested by Cohen, Manion and Morrison (2000) and Fontana and Frey (1994). Thus, the researchers sought approval and permission from the Graduate Studies Office of the University of Dodoma as well as filling in special form for ethical

clearance for children. Also, the researchers sought for research permission from the Regional Administrative Secretary (RAS) of Mbeya Region to conduct this study. Through their approval and introduction letter given by the RAS to District Administrative Secretary (DAS) of Mbeya urban and Rungwe respectively, the researchers accessed schools where by head teachers (HT) of the respective schools were consulted and informed about the purpose of the study. The researchers accessed PEGTs, STD I-II pupils and PSQAs to participate in the study.

All participants were told of the purpose of the study and the researchers asked for their consensus to partake in the research. To guarantee anonymity and confidentiality, pseudonyms or letters were used to protect the identity of the respondents. For pupils who participated in this study, the researchers adhered to rules guiding children in research participation. According to UNICEF (2000), a child is a human being under 18 years. Rules for children participation in research include free will for a child to participate, informing a child of the advantage of the study and protection of the same from harm.

4. Findings

Data presentation and discussion are done based on the research objectives that guided the study.

4.1 Challenges Faced by Teachers and Learners in the Use of PIA in EGs

In this specific study objective, the researchers aimed at gauging and determining the encounters faced by PEGTs and pupils in using PIA learning and developing reading skills. The study findings revealed lack of enough pedagogical knowledge, mother tongue interferences, negative attitude of learners towards reading, overcrowded classrooms, children with hearing disorders, children with verbal disorders and poor learning environment as the major bottlenecks encountered by teachers and pupils in the reading lessons using phonics approach. These findings are presented by bar graph in Figure 1.

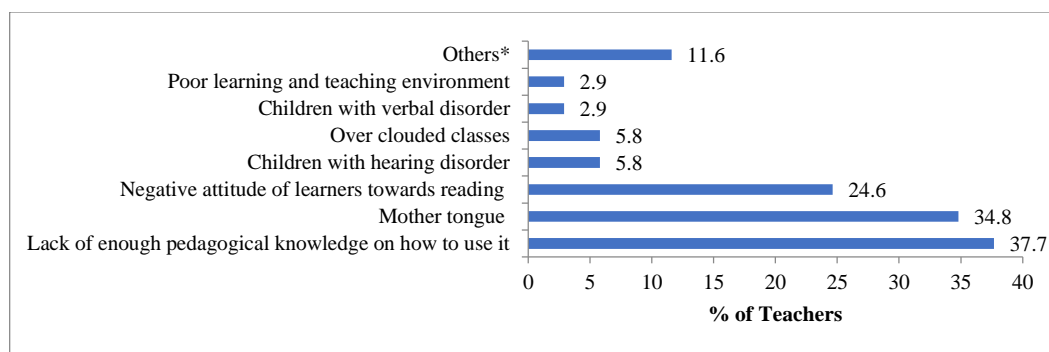


Figure 1. Challenges Faced by Teachers in Using PIA (N=69)

Source: Field Data

Study results in figure 1 show that PEGTs were facing various challenges in teaching reading using PIA. About 37.7% of the PEGTs reported inadequate pedagogical knowledge on using PIA. Conversely, 34.8% of the PEGTs claimed that their pupils were facing mother tongue interference which prohibited them from easily learning of reading in Swahili language. Negative attitude of pupils towards reading was seen as a challenge to PEGTs whereby 24.6% of them reported it. On the other hand, 5.8 % of the PEGTs asserted they were facing a challenge in teaching pupils with hearing disorder but also 5.8% reported overcrowded classrooms as being a problem. Again, 2.9% of the PEGTs mentioned poor teaching and learning environment and pupils with verbal disorder as their challenges. Moreover, 11.6% of the teachers reported other challenges including the fact that some pupils were still too young to grasp reading skills, unsupportive of home learning environment, change from old way of teaching to new one, effects of globalization, lack of training and story books.

Furthermore, the findings from interview of key informants corresponded with the findings from the questionnaire. During the interview, most of the respondents mentioned lack of “KKK” training (A training on reading, writing and numeracy i.e. 3Rs) and difficulties in teaching sounds of some consonants and diagraph.

In one of the interviews teacher S argued that:

What I can say is that there are many challenges including overcrowded classrooms. For my case, I have 80 pupils in my class. With all these pupils I have to make sure that within 30 minutes I help each individual pupil. It is not an easy task. Again, the time allocated for teaching is not enough for large classes like this. Further, despite the fact that we have enough books for reading but we don't have full access to them. Pupils are not allowed to have those books throughout; they are restricted to be used only during reading lesson. But I think it could be better if pupils owned those books, they could have ample time to read them at home and whenever they got time.

She added,

In the last year, I decided to use my own money to make some copies of reading books and distributed them to my pupils. This motivated them to read at home after school hours. Consequently, the whole class completed standard one with required competency in reading. Another challenge affecting pupils is home environment. Nowadays, there are many pupils that are being taken care by grandparents. These pupils have no food and so come to school empty-stomached and without school requirements.

On the same matter, teacher D explained that:

The challenge I see is on the teachers who did not get “KKK” training (3Rs training). They face difficulties in teaching reading because they have no pedagogical knowledge on how to teach reading by using the new approach. Even those who got training, the time was too short for them to acquire the needed competencies. Another challenge is on the mother tongue effects. For example, when you teach sound /r/ they read /l/ and sometimes they mix up “r” and “l”, ng'a and nga. This is because of the mother tongue effects. As a result, it takes time to help pupils. Some teachers face a challenge on teaching sound of diagraph letters such as gw', th, nyw', dh and the like which require more training and practices.

Insufficient pedagogical knowledge as presented in figure 1 signifies the presence of negative effects on teachers' practices in teaching reading and enhancing pupils' reading competencies. This is in line with Edward et al (2022); Ministry of Education, Science, and Technology (2022) and Ndijuye (2023) who found that in Tanzania, people were generally less willing to join that early grade teaching and teaching. Those who joined, remained with low quality due to inadequate training. Thus, the pedagogical deficiency found to teachers may be attributed to inadequate training on the use of phonics instruction in the teaching of early graders.

Conversely, the mother tongue interference in teaching and learning reading through phonics instruction are akin to those by Mubanga et al (2020) who point out that mother tongue intrusion affects reading proficiency. Pupils' negative attitude towards reading due to lack of intrinsic or extrinsic motivation on reading was also mentioned as a bottleneck to early graders and so to their teachers. If a pupil has negative attitude on reading, he/she cannot gain the intended competencies because he or she is not ready to read. Pupils develop negative attitude towards reading if they face difficulties in learning. Some studies confirm that pupils with reading difficulties develop negative attitudes towards reading, and so, reading achievement implies a positive reading attitude. Sande et al (2023) confirm that negative attitude of learners towards learning reading especially those with learning difficulties was among the challenges faced by teachers in helping pupils with reading difficulties. It is evident that acquisition of reading skills demands large amounts of motivation of pupils by themselves and motivation from other people like teachers, peers and parents. On the other hand; Zhong and Kang (2021) revealed that teachers held positive

views about the use of phonics instruction. This indicates that the positive attitude by teachers needs to meet a positive attitude of learners for achieving competency in reading. For the learners to develop positive attitude towards reading, they need to be encouraged by their teachers to have achievement in reading. Thus, developing children's interest and the desire to read is crucial for enhancing positive attitude among pupils (Sun, 2019).

Verbal and hearing disorders were also reported by EGTs as challenges faced by pupils in learning reading. On this regard, 5.8% and 2.9% of the EGTs reported that hearing disorder and verbal disorder respectively were the challenges which were facing pupils in learning reading. Pupils with hearing disorder for example, faced a challenge which had to do with hearing the sound of letter and how to read. The same issue was reported to verbally disordered pupils who failed to pronounce properly the letters of the alphabet even sounding them. These pupils were in regular classroom with little or no supportive equipment to support their learning reading. Although the new curriculum for STD I-II directs the use of supportive materials and equipment for pupils with special needs there were no such materials in schools. It describes that learning resources such as voice recorders, hearing aids, and Braille machines for learners with hearing and visual impairment need to be used (MoEST, 2016). Therefore, it was quite clear that teachers faced challenges in helping pupils with special needs to learn reading. Even if teachers used PIA to assist pupils in reading learning, without such supporting equipment for pupils with special needs, it was not easy to help them.

Additionally, the findings from questionnaire revealed that 2.9% of the PEGTs were faced with challenges of poor teaching and learning surroundings. It was found that inadequate teaching and learning setting limited their practice on teaching reading through PIA. The fact that only two (2) teachers equal to 2.9% of the PEGTs who participated in the study reported poor teaching and learning environment as being a challenge, indicates that PEGTs were comfortable with the current teaching and learning environment. Observation by the researchers revealed that PEGTs had teaching and learning materials such as books, prepared teaching aids, books shelves in the classroom and desks. In contrast however, observation revealed overcrowded classes whereby 3-4 pupils were found to be seated on one desk. This implies that the teaching and learning environment was worse in terms of what would be termed standards of good teaching and learning environment in connection to teacher-pupil ratios.

The findings that there were challenges associated with lack of appropriate study material including books and generally less conducive teaching and learning environment, reflect a failure to conform to the sociocultural environment aspects, which according to Vygotsky; the child should be within a variety of tasks and demands that engage him/her in his world through the tools (Lukuwi and Seni, 2022; Kamanzi and Seni, 2024); such as artefact created by people within precise cultural and antique circumstances. The findings that teachers were impeded by a number of challenges as they were executing their teaching duties, aroused some classroom management challenges as indicated subsequently.

4.1.1 Difficulties in Classroom Management

The findings show that almost in all schools there were overcrowded classes with more than 50 pupils per class thereby posing a classroom management challenge. Figure 2 indicates the number of pupils per classroom.

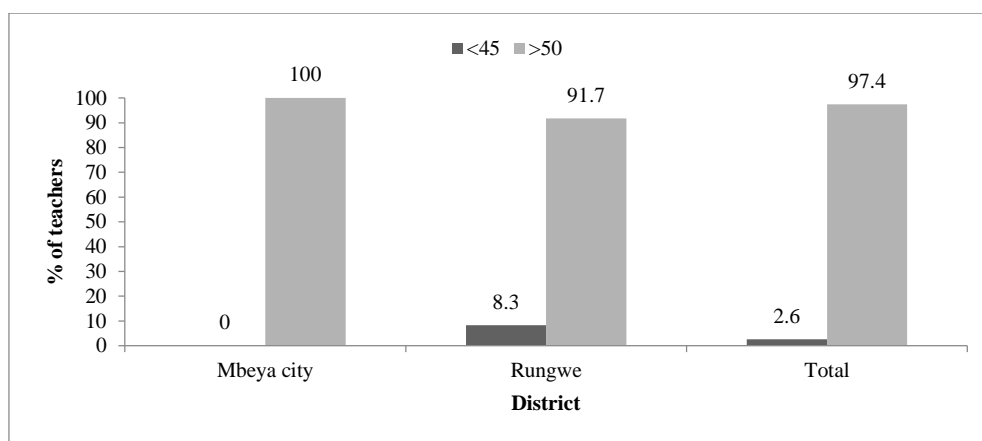


Figure 2. Number of Pupils in the Classroom

Source: Field Data

Figure 1 indicates the number of pupils enrolled in the sampled schools as were given by the PEGTs involved in the study in Mbeya city. The figure depicts that all the involved schools had more than 50 pupils in a class. Conversely, in Rungwe District, it was found that only 8.3% of the schools involved in this study had at or below 45 pupils, while 91.7% of the schools involved in the study had more than 50 pupils. Overall, the average shows that 97.4% of all PEGTs from both districts involved in this study, reported to have had more than 50 pupils in a class.

Such a large class is arguably hard to handle for teachers with limited training on pedagogy, difficulty in accommodation of diverse learners and mother tongue interference. The negative consequences of large class were also revealed by Küçükler and Kodal (2019); Ndijuye and Rao (2019) and Shukia (2016) who indicated that overcrowded classrooms and limited appropriate instructional materials can distress the instruction of reading at school.

The findings that classes had too many pupils indicate how classrooms in the studied schools impeded pupils and teachers' movement during learning and teaching as recommended in various literatures (Rands and Gansemer-Topf, 2017). The large classes make teachers experience a heightened stress and overwhelming workload thus leading to difficulties of providing personalized instruction. Similarly, pupils may feel disengaged and fail to participate effectively (Vakili et al, 2024). Again, classroom layouts, furniture arrangement, noise levels, and digital learning spaces greatly impact literacy acquisition including reading. Thus, the number of pupils should be consistent with the size of the classroom. Having too many pupils complicates teachers' ability to manage pupils' noise making and thus adversely jeopardizes effective learning of reading. Social spaces are easy to create with teachers' innovativeness and available furniture when children's sitting plan such as round table and semi-circle or U-Shape may be utilized to create a community of learning among children (Arghiani and Shakeri, 2021). Nevertheless, for too many pupils in the classroom, the options for flexible seating plans are too limited. This is to say that space constraints affect learning outcomes in addition to student-teacher ratios, it also impairs teachers' classroom management, pupils' flexible sitting arrangements, ventilation, light and noise control. Conversely, if effectively utilized, technology use in teaching enhances legibility and learners' concentration and interest once it is used in connection to the traditional chalkboard work. Sitting arrangement should permit teachers to move around the classroom. Nevertheless, the role of technology-enhanced learning spaces such as using tablets, digital whiteboards, and reading apps are crucial in mitigating the challenges of large classes. In this regard, interactive whiteboards are recommended in which a big screen increases pupils' engagement including those with low vision (Bourbour, 2023).

4.2 Strategies Used by EGTs to handle the Bottlenecks in Teaching Early Graders Using Phonics Instruction

The researchers were interested in determining the strategies PEGTs were using to handle large classes to ensure pupils effectively learn and develop intended competencies on reading.

4.2.1 Pedagogical strategies

Analysis of the responses given by the PEGTs reveals that PEGTs were using different strategies considered effective in the classroom management especially of large classes. Table 2 shows the strategies mentioned by PEGTs in handling large classes and frequencies.

Table 2. Strategies Used by Teachers to Handle Large Classes in Teaching Reading (class with > 50 pupils)

How to handle big class	Percentage	Frequency
Use participatory methods and teaching aids	45.4	35
Divide the class into small groups	25.9	20
Give them a lot of reading materials	23.5	18
Go through column and each desk	2.6	2
Use more than one teaching strategy	1.3	1
Use creativity	1.3	1

Source: Field Data

The results in Table 4.6 show that 35 (45.4%) EGTs were using participatory methods and teaching aids to handle and manage large classes while 20 (25.9%) PEGTs were using the strategy of dividing the class into small groups that were manageable to ensure reading lesson proceeded and ended successfully. On the other hand, 18 (23.5%) PEGTs reported that they were preparing and giving pupils a variety of reading materials. Although minimally, (2.6%, 1.3% and 1.3%) there was use of teacher free movement in the classroom by passing through column and each desk, use of more than one teaching strategy and use of own creativity as strategies for class management respectively. This indicates that PEGTs were using different techniques in classroom management, but most of them agreed on the use of participatory methods and teaching aids, dividing the classroom into small groups (which was among the participatory strategies used) and giving pupils reading materials for them to follow and for making them busy with the reading lesson. This indicates that although PEGTs had large classes, the application of different techniques was helping them handle and manage large classes for learning to occur.

4.2.2 Identifying and teaching pupils according to their learning abilities

The findings from the study revealed that another practice used by teachers was to identify their pupils according to their learning abilities as early as they started STD I. In teachers' view, early identification of pupils' learning abilities was helping PEGTs to teach pupils reading by considering their cognitive abilities. PEGTs asserted that meaningful learning progresses by identifying and teaching pupils according to their learning abilities so that they can help them individually. In connection to this, one of the teachers explained that:

I know my pupils according to their learning abilities. I group them so that I can help them learn. For example, those who are fast learners are in one column. I give them more independent activities, while I help those with learning difficulties (interview in school L).

This interview revealed that PEGTs were using a variety of strategies to ensure that children could learn and capture intended competencies in reading. They claimed that despite the fact that helping an individual pupil was challenging due to having overcrowded classes, they were trying their level best by using that strategy of grouping pupils according to their learning abilities. They further explained that by grouping the pupils; sometimes, they were teaching each other. Moreover, teachers were trying to help pupils with disabilities by using individualized instruction or scaffolding to help them learn.

4.2.3 Preparing reading lesson

Preparation of the lesson was among the activities teachers said to have been conducting. It was found that all PEGTs (100%) from all the districts revealed that they were preparing lesson

plans before going into a classroom to teach reading. It was found that as they were preparing for the class, they would first identify the topic to learn with its specific competencies and then, they would prepare teaching aids and other materials like books and print materials to support the specific lesson. On this regard, one of the teachers explained:

I prepare a lesson plan on how I am going to teach. Then I prepare teaching aids and other supporting materials. For example, if I want to teach letter “b” I prepare a song for preparing pupils to learn that letter “b”, then I prepare cards with letter “b”. After all these preparations, I start teaching letter “b”. It becomes easier for me to teach but also my pupils learn that letter quickly (Interview at school M).

In connection to the foregoing, another teacher said that;

If I want to teach vowel “a”, first I prepare songs related to “a”, then I prepare real things with names starting with vowel “a” such as “andazi”. Thereafter, I prepare my flash cards with vowel “a”. After preparation of all these things; I start teaching by introducing a song. After singing, I ask the children to look at that “andazi” and I ask them to sound it in loud voice “a-nd-a-z-i”. Because I want them to learn only vowel “a”, I stress the sound of the first letter of the word “andazi” which is “a” (Interview at school W).

It is evident from the study findings that teachers need to have thorough preparations before entering the classroom so that they can deliver and help their pupils acquire the needed the reading competencies. To minimize the effects of overcrowded classrooms, teachers need to ensure that they prepare a “classroom that speaks” with learning or reading corners for pupils to memorize the lessons.

4.2.4 Strategic Training of Teachers

The findings based on the interviews conducted with teachers indicated that there was a need for training on handling of large classes for them to be effective in teaching reading using phonics. Thus, one of the participant teachers said:

We need to be trained on handling large classes since our school has too many pupils who therefore require teachers to have additional pedagogical competencies to attain the teaching and learning goals of reading skills among pupils. Some teachers have been trained under the BOOST project. However, not all of us have attended these trainings (Interview at school C).

On the same note, one of the interviewed PQAS had the following to share in an interview session:

Teachers need to undergo a systematic training in form of seminars, workshops and short courses on teaching pupils within congested classrooms. The trainings have to comprise of the use of technology in teaching, accommodation of pupils with disabilities, the use of reading corners and so forth (Interview with a PQAS).

The findings that teachers require strategic training on classroom management to handle large classes are crucial for them to improvise spaces and to move flexibly within the classroom and give a room for pupils to stretch. Likewise, teachers should be fully capacitated on using digital devices such as projectors and pupils’ tablets to enhance legibility and concentrations of children in learning including phonics instruction (Tawfik et. Al, 2021). Despite the note with concern on the pivotal use of technologies in teaching and learning using phonics instruction, it is pertinently important to note the persistence of investment and technology gaps between the global north and the global south. Consequently, in some contexts such as rural schools in developing countries, investment in technology is still dismal where schools are not connected to the internet and some schools especially in the rural have no electricity. All in all, despite the variations in investment, creating optimal teaching and learning settings is an ongoing phenomenon which every nation strives to achieve quality education for all. Effective teachers should view integration of physical, social and digital learning spaces as vigorous providers in teaching and learning synonymous to a ‘third teacher’ (Yufiarti et al, 2022).

Effective Preparation and Use of Learning Corners

Classroom observations indicated that some teachers minimized the challenges of large classes by being creative and prepared learning corners through which pupils read various materials including books and extracts. In contrast, in most of the observed classrooms, teachers did not prepare any reading corners thus reinforcing the findings that only some teachers had received training on handling large classes. The reading corners build a reading interest and consequently become a reading habit (Zhao et al., (2018; Sari, 2018; Wati and Prawiro, 2022; Rohim dan Rahmawati, 2020). Again, reading corners are used to enhance accessibility of reading materials for children to learn reading within the class rather than going to the library searching for study materials (Rahmawati & Abduh, 2023). Conversely, the reading corner setting entails colourful decorations and comfortable seating to create an appealing situation and arouse pupils' interest to study (Pasu & Yuliana, 2024). Again, preparation of effective and high-quality reading corners requires teachers to be capacitated on how to prepare and use them. Despite the challenges of having a congested classroom, it is crucial for reading teachers to be innovative enough and prepare attractive learning corners for pupils to learn reading skill using phonics. As they keep on seeing reading materials, they build a reading culture, read repeatedly and so the target of reading competencies get stuck in their minds.

Use of Technology in Teaching and Learning

The study findings obtained from classroom observations revealed that only a few teachers were using technology in teaching but the majority remained in the traditional chalkboard instruction. Having technology assisted teaching and learning is key in making teaching and learning of reading using phonics instruction more effective. Due to the fact that youngsters are currently cute in the usage of electronic gadgets, its application in the classroom setting would help in triggering their interest and enhancing their participation extent. It brings engaging learning experience, thus making children remain more interested in the subject without being distracted. Being that fundamental, the utilization of projectors, computers, and other cutting-edge technical gear such as tablets, enhances fascination and entertainment for pupils (Haleem et al., 2022). It could thus be said that, regardless of little investment in technology integration in terms of facilities in most of the global south countries, the use of technology is not an option in contemporary teaching as it matches with the interests of the Generation Z (GenZ). Consequently, teachers should be innovative enough to use the contextually available technology including their smartphones and tablets to make their classrooms engaging. Visual Phonics as a strategy for representing sound in a visible and concrete manner may also be devised to help pupils with hearing impairments. Thus, handshapes that represent every sound in the language and written symbols to represent these sounds may be utilized (Cacciato, 2022). Despite the fact that a number of technologies are in place to support reading instruction, it is crucial to use those which are readily available in the context of many global south schools such as those in the study location. Consequently, teachers may use Microsoft word, tape recorders, speech synthesis, optical character recognition (OCR) and Variable Speech Control (VSC). These again presuppose teachers' training and availability of equipment. Generally, the important issue towards attainment of technology use in teaching and learning as well as provision of supportive devices rests on prioritization in which the government and donor community have embarked on supporting children with disabilities in a number of ways ranging from training teachers and provision of assistive devices.

Conclusion

In light of the research results and discussion, it appears that there were many challenges faced by teachers in their daily practices concerning instructional and methodological application in facilitating children reading learning. In this context, teaching reading was a very tough activity accompanied with a lot of challenges. These challenges were found to affect both

teachers' practices and pupils' learning. All in all, it appears that PEGTs had enough experience in teaching reading in EGs which was assisting their teaching practices. The lack of enough pedagogical knowledge due to unsatisfactory "KKK" (3Rs) training, arguably leads to lack of confidence in teaching reading and low reading abilities among pupils. The study findings have indicated the importance of well-designed learning spaces in phonics instruction including accommodation of pupils with special needs such as those with visual, hearing and physical impairment. Similarly, the findings have shown the importance of investment on teachers' training, equipment, technology and assistive devices to enhance effective teaching and learning of reading using phonics among pupils with disabilities.

Consequently, teachers need intensive training on new curriculum in general and reading pedagogy in particular so that their practices can be improved rather than relying on their teaching experience. The training given would help teachers teach confidently and know how to help pupils with reading difficulties.

More attention should be paid to pupils with special needs and those with reading difficulties so that they have equal opportunity of acquiring reading skills. This should be done by supplying assistive devices such as voice recorders and hearing aids. Technology should be integrated with literacy learning, especially on reading. This will help to reduce some challenges such as mother tongue effect on reading as pupils will hear how letters are sounded and also by seeing the movement of lips and the tongue. Technology will also simplify the teaching work in overcrowded classes. Technological equipment such as radio, video tapes, television, tablets and the like, should be used. This study focused on use of PIA for pupils reading, future research on how classroom design, noise control, and digital learning environments impact literacy development is imperative.

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The author declares that he has no competing financial interests or known personal relationships that would influence the report presented in this article.

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