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Phonemic Awareness Knowledge and Skills among English Medium Primary School Teachers in Dar es Salaam, Tanzania

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Abstract
Phonemic awareness (PA) is widely recognized as a critical foundation for early literacy development; however, many teachers lack the requisite knowledge and skills to teach it effectively. This study examined the levels of PA knowledge and skills among English Medium Primary School teachers in Dar es Salaam, Tanzania. Utilizing two adapted instruments, the Phonemic Awareness Knowledge Survey (PAKS) and the Phonemic Awareness Skills Survey (PASS), the study assessed the theoretical understanding and practical abilities of 45 teachers across 15 schools. The findings revealed substantial gaps in both PA knowledge and skills. Majority of the participants exhibited limited understanding of PA concepts, instructional strategies, and assessment methods, with 73.9% demonstrating a lack of awareness of key aspects of phonemic awareness. Furthermore, while participants performed adequately on simpler PA tasks, they struggled with more complex skills such as phoneme counting and segmenting, highlighting a discrepancy between their perceived and actual competencies. These findings underscore the urgent need for comprehensive teacher training programs that integrate both theoretical and practical elements of PA instruction. The study recommends targeted professional development initiatives, ongoing support mechanisms, and structured interventions to strengthen teachers' PA instructional skills, thereby enhancing students' reading outcomes.

Keywords: *Phonemic Awareness (PA), phonemic awareness skills, phonemic awareness knowledge, literacy instructions*

Introduction

Phonemic Awareness (PA) refers to the understanding that speech is composed of individual sounds, known as phonemes, which can be manipulated to form words (Fitzpatrick, 1997; Ehri et al., 2001). PA encompasses the ability to detect, segment, and blend phonemes, as well as to manipulate their positions within words (Snow et al., 1998; Lane & Pullen, 2004). There is a growing consensus among researchers that PA plays a crucial role in reading achievement (Adams, 1990; Snider, 1995). Longitudinal studies have consistently shown that PA abilities in early childhood, particularly in kindergarten, are strong predictors of later reading success (Troyer & Yopp, 1990; Torgesen, 2002). This underscores the importance of mastering the alphabetic principle, which posits that letters in printed words correspond to sounds in spoken language.

PA, or sensitivity to the sound structure of spoken words, helps students grasp the alphabetic principle. For example, a child with PA knowledge and skills will not only recognize that the spoken words “bat” and “pat” sound different but also understand that the difference lies in the initial sound unit, or phoneme. Similarly, a child who is phonemically aware will understand that “bat” and “got” share a final phoneme (Moats, 1994; McCutchen & Berninger, 1999). Research suggests that once students develop such awareness on phonemes and their corresponding graphic representations, further reading instruction can heighten their language awareness, enhancing their PA skills which include the ability to identify and manipulate phonemes within words.

However, teaching PA presents challenges because phonemes are not discrete sounds but are co-

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articulated with other speech sounds within words. This requires teachers to have a strong understanding of PA and the pedagogical skills to effectively teach these concepts. As Foorman and Moats (2004) assert, effective PA instruction demands that teachers possess deep knowledge and skills in PA, along with the ability to diagnose and address the diverse instructional needs of their students. Therefore, it is essential that teachers are well-prepared with the requisite knowledge and skills in PA to apply this understanding through various instructional strategies and PA tasks.

Despite the recognized importance of PA, research consistently indicates that many teachers lack the necessary knowledge and skills to teach PA effectively (Troyer & Yopp, 1990; Moats, 1994; Mather et al., 2001; Tibi, 2005;). Although some recent studies suggest that teacher preparation programs are beginning to address this gap, the process of translating theoretical knowledge into effective teaching practice has been slow (McCutchen & Berninger, 1999). This study therefore seeks to examine the level of PA knowledge and skills among English Medium Primary School teachers in Dar es Salaam.

This investigation is particularly relevant in light of the growing prevalence of English Medium Primary Schools (EMS) in Tanzania, a trend that accelerated following the 1995 Education Amendment Act. Prior to this act, primary education was predominantly delivered in Kiswahili, with only two government schools which are Arusha and Olympio, and other nine private primary schools permitted to use English as the medium of instruction. However, pupils were still required to sit for the final Primary School Leaving Examination in Kiswahili (Rubagumya, 2003). The liberalization of the education sector has since led to the rapid expansion of EMS, largely driven by parental demand for English-medium education, which is often perceived as a gateway to quality education (Muhdhar, 2002; Rubagumya, 2003). In this context, phonemic awareness (PA) plays a pivotal role, as it underpins students' ability to acquire reading skills in English, an alphabetic language in which letters correspond to sounds. Accordingly, this study seeks to contribute to a better understanding of the extent to which English Medium Primary School teachers are equipped with the necessary PA knowledge and skills that are critical for effective reading instruction.

Methodology

This study was conducted in Dar es Salaam, because over the years, the city has experienced rapid urbanization and a concentration of resources, making it fertile ground for the rise of English medium schools, reflecting its metropolitan nature and global aspirations. Consequently, there has been a growing demand for English medium education, leading to a greater proliferation of such schools in Dar es Salaam (Rubagumya, 2003). The study focused on 15 English medium primary schools purposively selected from Kinondoni, Ilala, and Temeke districts of Dar es Salaam. Five schools were selected from each district based on the willingness of their teachers to participate in the study. From each school, three English language teachers were purposively selected, resulting in a total of 45 participants. The selected teachers were those teaching English in grades one, two, and three, as these lower-level teachers are primarily responsible for teaching language to beginners.

Given the need for explicit knowledge and skills in Phonemic Awareness, two primary instruments were adapted for this study: Phonemic Awareness Knowledge Survey (PAKS) and Phonemic Awareness Skills Survey (PASS). The PAKS, adapted from Taylor (2008), was employed to examine teachers' understanding of PA, particularly regarding the importance of PA, its assessment, and instructional methods. The survey consisted of six open-ended questions designed to assess two key areas of knowledge: understanding the construct of PA and knowledge of PA pedagogy (Moats, 1994). Participants were asked to define key terms, provide examples of PA assessment, and describe instructional practices related to PA.

The PASS, adapted from the work of Moats (1994) and Moats and Foorman (2004), was designed to assess teachers' abilities to identify and manipulate phonemes within words. The survey included 25 questions divided into five sections: phoneme counting, phoneme identification, phoneme matching, phoneme segmenting and blending, and phoneme deletion. The survey consisted of multiple-choice and fill-in-the-blank questions, focusing solely on PA skills without delving into other aspects of reading acquisition.

The data collection involved administering the PAKS and PASS surveys to participants in a single phase, allowing for simultaneous collection of qualitative and quantitative data. Initially, participants completed a

demographic survey, followed by the PAKS and PASS. The participants were given as much time as necessary to complete the surveys but were not permitted to collaborate with peers or take the surveys out of the room to ensure the integrity of their responses. After completion, the surveys were collected by the researcher.

The PAKS responses were scored using a rubric adapted from Taylor (2008), which rated answers on a scale from zero to three. A score of zero indicated no knowledge or insufficient details, while a score of three represented an expert level of knowledge. The PASS was similarly scored using a rubric adapted from previous studies on teachers' knowledge and skills in PA.

The data were analyzed using both qualitative and quantitative methods. Qualitative analysis involved making judgments and drawing conclusions about the PA knowledge and skills of the teachers based on their survey responses. The quantitative data, analyzed using SPSS and ANOVA, provided numerical insights that enriched the qualitative findings. By integrating these two methods, the researcher was able to gain a comprehensive understanding of the teachers' PA knowledge and skills, with the data being presented in tables and percentages for clarity.

Findings and Discussion

Phonemic Awareness Knowledge Survey (PAKS)

The survey consisted of six open-ended questions designed to assess participants' understanding of the importance of phonemic awareness (PA), as well as their knowledge of PA assessment and instructional strategies. Participants were given unlimited time to complete the survey, with most taking approximately 45 minutes to compose their responses. The surveys were scored using a rubric on a scale from zero to three, adapted from similar studies focusing on teachers' knowledge and skills in PA.

The results revealed a notably low level of knowledge regarding PA. Specifically, 73.9% of the responses were incorrect, indicating that participants were unaware of the meaning of Phonemic Awareness, the instructional strategies related to it, and the methods used for assessing it. Table 1 provides a detailed distribution of participants' responses on PA knowledge.

Table 1: Distribution of Participants' Responses on PA Knowledge

Questions	Correct		Wrong	
	F	%	F	%
What is phonemic awareness?	28	60.9	17	39.1
Why is phonemic awareness important?	12	28.3	33	71.7
What phonemic awareness skills are most important?	10	21.7	35	78.3
How can phonemic awareness be assessed?	8	17.4	37	82.6
What instructional methods could be used to develop phonemic awareness?	7	15.2	38	84.8
Describe the instructional methods you use to develop students' phonemic awareness skills?	6	13	39	87

Question 1: Participants were asked to explain the concept of phonemic awareness (PA). Of the respondents, 39.1% provided incorrect answers, describing PA merely as knowledge of phonemes. Such responses reflect a limited understanding of PA among these teachers. Additionally, some participants

confused PA with phonics, indicating the misconception that PA involves the use of letters, whereas it is in fact an auditory skill that can be taught without print. In contrast, 60.9% of participants offered accurate definitions, identifying PA as the ability to hear, identify, and manipulate individual sounds in spoken words.

Question 2: Participants were asked to explain the importance of PA. A substantial proportion (71.7%) of the participants responded incorrectly, claiming that PA is important because it helps students pronounce different morphemes in various words. In contrast, only 28.3% of the participants provided accurate responses, recognizing that PA is essential for teaching students how to blend and segment sounds in words. These respondents also correctly identified PA as a foundational skill for reading acquisition. The finding supports the widely accepted view that PA is one of the strongest predictors of children's reading success (Ehri, 1989; Adams, 1990; Yopp, 1992; Snow et al., 1998; Moats, 1999; Adgar et al., 2002).

Question 3: Participants were asked to identify the most important PA skills. Majority of the respondents (78.3%) responded incorrectly, citing pronunciation, reading, and listening skills as the most important skills. These responses suggest a misunderstanding of the specific auditory skills that constitute PA. Only 21.7% of participants answered correctly, identifying sound blending, sound segmenting, and sound isolation as the core components of phonemic awareness.

Question 4: Participants were asked to explain how PA can be assessed. A significant proportion (82.6%) of the participants responded incorrectly, suggesting that observing students' word pronunciation or using teacher-made tests were the most effective assessment methods. These responses indicate a limited understanding of how to evaluate PA, which primarily involves auditory tasks rather than print-based or general observation methods. Only 17.4% of the participants provided accurate responses, identifying appropriate assessment strategies such as blending and segmenting spoken language, and recognizing words that begin with the same sounds.

Question 5: Participants were asked to describe instructional methods that can be used to develop PA. Majority of the participants (84.8%) responded incorrectly, citing general teaching strategies such as the audio-lingual method, classroom observation, increased speaking practice, participatory approaches, and behaviorist techniques. These responses suggest a lack of understanding of the specific, evidence-based methods used to teach PA. Only 15.2% of participants provided accurate responses, identifying key instructional techniques such as isolating individual sounds, identifying phonemes, and segmenting and blending sounds in spoken words.

Question 6: The final question required participants to outline how they implement PA instruction practically, including specific details about instructional time, grouping strategies, teaching techniques, assessment methods, and targeted PA skills. The majority of the participants (87%) responded incorrectly, citing general approaches such as 40–80 minutes of instruction per day, large-group teaching, observation, dictation, the audio-lingual method, and guided reading. These responses suggest a lack of familiarity with structured, evidence-based PA instruction. Only 13% of the participants provided appropriate responses, describing practical strategies such as delivering 15–30 minutes of instruction, 3–5 times per week, using small-group formats, and employing techniques like blending, segmenting, and substituting phonemes to form new words.

The findings from the Phonemic Awareness Knowledge Survey (PAKS) revealed a significant and concerning gap in participants' understanding of essential aspects of phonemic awareness (PA). Specifically, majority of the participants struggled to accurately define PA, articulate its importance, identify critical PA skills, describe effective assessment methods, or suggest appropriate instructional strategies for developing these skills. This lack of foundational knowledge has serious implications for the effectiveness of teaching practices related to PA in educational settings.

These results suggest that the participants generally lacked the necessary knowledge related to PA, likely due to insufficient preparation within teacher education programs. The finding raises concerns about the curricula used in teacher training colleges and universities, which may not be adequately designed to

include comprehensive instruction in PA. Without addressing these gaps in teacher preparation, the effectiveness of PA instruction in classrooms may remain compromised, potentially impacting students' reading development.

The findings of the current study align with previous research, underscoring a pervasive and troubling deficiency in teachers' PA knowledge that has been consistently observed across various research contexts. For instance, studies by Moats (1994), and Bos et al. (2001) demonstrated that both pre-service and in-service teachers, regardless of their experience, often struggled with fundamental aspects of PA, including defining the term accurately, recognizing its importance, and distinguishing it from related concepts such as phonics.

Moreover, research by Spear-Swerling and Brucker (2004) and Taylor (2008) suggest that even targeted training and advanced academic qualifications do not necessarily ensure a strong understanding of phonemic awareness (PA) among teachers. Educators with higher degrees frequently exhibit limited knowledge of PA, pointing to a systemic issue within teacher preparation programs. A consistent finding across these studies is that insufficient emphasis on PA during pre-service education and professional development is a major contributor to this persistent knowledge gap.

Phonemic Awareness Skills Survey (PASS)

The questions on the PASS were adapted from Moats (1994) survey which was also used by Bos et al. (1999). This survey asked participants 25 questions about phoneme manipulation, which included multiple-choice and fill-in-the-blank items. The survey was divided into five sections, each focusing on different phonemic awareness (PA) skills: phoneme counting, phoneme identification, phoneme matching, phoneme segmenting and blending as well as phoneme deletion. The PA skills survey was administered to 45 participants and scored using a rubric adapted from Moats (1994) survey, with participants receiving one point for each correct answer. Table 2 illustrates PASS frequency distribution.

Table 2: PASS Frequency Distribution

Correct Items	Frequency	(%) Percent
6	1	2.2
11	3	6.6
12	1	2.2
13	2	4.4
14	3	6.6
15	4	8.8
16	7	15.4
17	5	11
18	1	2.2
19	6	13.2

20	4	8.8
21	2	4.4
24	2	4.4

Table 2 indicates that more than half of the participants (59.4%) answered at least 15 out of the 25 items correctly, while less than half (40.6%) answered 14 or fewer items correctly. The scores ranged from 6 to 24; only one participant answered 6 items correctly, and two participants answered 24 items correctly. Therefore, no participants achieved a perfect score on the survey.

Phoneme Deletion

The first section on PASS required the participants to delete phonemes in different words. The words included in this section were meat, driver, ghost and frenzy. Consider Table 3.

Table 3: Distribution of Participants' Responses on Phoneme Deletion

Statements	Correct		Wrong	
	F	%	F	%
Saying ***meat*** without sound ***t***	42	93.5	3	6.5
Saying ***driver*** without sound ***v***	42	93.5	3	6.5
Saying ***ghost*** without sound ***s***	42	93.5	3	6.5
Saying ***frenzy*** without sound ***y***	40	87	5	13

As shown in Table 3, the item with the lowest percentage of correct responses in the phoneme deletion section was the word "frenzy". This item required respondents to say the word "frenzy" without the sound /y/ (representing the long /e/ sound). In total, 87% of the participants responded correctly to this item, while 13% responded incorrectly. The remaining items in this section were answered correctly by 93.5% of participants, with only 6.5% of responses being incorrect for each item. This shows that most participants were able to successfully delete the specified phonemes from the given words.

The mean percentage of correct responses across all items was 91.88%, indicating a strong overall understanding of phoneme deletion skills among the participants. Conversely, the mean percentage of incorrect responses was only 8.13%. These results suggest that while the majority of participants demonstrated proficiency in this phonemic awareness skill, there were still a few challenges, particularly with the word "frenzy," where more participants struggled compared to other items. Overall, the high percentage of correct responses reflects a solid grasp of phoneme deletion skills among the surveyed group.

Phoneme Counting

The second section on Phonemic Awareness Skills Survey (PASS) was about counting phonemes; it required the participants to say how many speech sounds are in each of these words: tie, laughed,

chalk, mix, thrown and kitchen. Consider Table 4.

Table 4: Distribution of Participants' Responses on Phoneme Counting

Statements	Correct		Wrong	
	F	%	f	%
How many speech sounds are in ***tie***	27	60.9	17	39.1
How many speech sounds are in ***laughed***	28	60.9	17	39.1
How many speech sounds are in ***chalk***	28	60.9	17	39.1
How many speech sounds are in ***mix***	30	65.2	15	34.8
How many speech sounds are in ***thrown***	23	51	22	49
How many speech sounds are in ***kitchen***	30	65.2	15	34.8

Based on the data in Table 4, the phoneme counting section of the PASS reveals that participants faced more challenges compared to other phonemic awareness tasks. The total number of correct responses across all six items was 166, while the number of incorrect responses was relatively high at 103. This suggests that a significant number of participants struggled with accurately identifying the number of speech sounds in the given words.

The mean percentage of correct responses was 60.68%, indicating that just over half of the participants were able to correctly count the phonemes in the words provided. Conversely, the mean percentage of incorrect responses was 39.32%. The item with the highest number of correct responses in this section was the word "mix," which required participants to count the number of phonemes in the word. In this case, 65.2% of participants answered correctly. The data shows that participants were more likely to make errors when counting phonemes, particularly in words like "thrown," which had the lowest correct response rate at 51%. Overall, the results suggest that while some participants were proficient in phoneme counting, many found it challenging, highlighting an area where further support or instruction might be beneficial.

Phoneme Identification

The third section on Phonemic Awareness Skills Survey (PASS) required the participants to identify the third speech sound in different words. The words included joyful, scratch, protect, folks, sheets and lightning. Consider Table 5.

Table 5: Distribution of Participants' Responses on Phoneme Identification

Statements	Correct		Wrong	
	f	%	F	%
What is the 3rd speech sound in the word ***joyful***	29	63	16	37
What is the 3rd speech sound in the word ***scratch***	34	73.9	11	26.1

What is the 3rd speech sound in the word ***protect***	28	60.9	18	39.1
What is the 3rd speech sound in the word ***folks***	23	51	22	49
What is the 3rd speech sound in the word ***sheets***	38	82.6	7	17.4
What is the 3rd speech sound in the word ***lightning***	34	73.9	11	26.1

Based on the data in Table 5, the phoneme identification section of the PASS reveals that participants generally performed well but faced some challenges with certain items. The total number of correct responses across all six items was 186, while the number of incorrect responses was 85. This indicates that most of the participants were able to identify the third speech sound in the given words, but there was still a notable number of errors.

The mean percentage of correct responses was 67.55%, showing that majority of the participants correctly identified the targeted phonemes in the words provided. However, the mean percentage of incorrect responses was 32.45%, highlighting that nearly a third of the responses were incorrect. Some words, such as "folks," had a higher rate of incorrect responses, with only 51% of participants identifying the third speech sound correctly. In contrast, the word "sheets" had the highest correct response rate at 82.6%, suggesting that participants found this item easier. Overall, while the participants demonstrated a relatively strong ability to identify specific phonemes, there remains room for improvement, particularly with more challenging words.

Phoneme Matching

The fourth section on Phonemic Awareness Skills Survey (PASS) was about phonemematching which required the participants to select and underline the words on the line that contained the same sound. Consider Table 6.

Table 6: Distribution of Participants' Responses on Phoneme Matching

Statements	Correct		Wrong	
	F	%	F	%
Underline words with the same sound (***weigh, pie, height, raid & friend***)	30	65.2	15	34.8
Underline words with the same sound (***does, miss, nose, votes & rice***)	40	87	5	13
Underline words with the same sound (***pitch, fly, hair, lip & kite***)	41	89.1	4	10
Underline words with the same sound (***far, march, scary, flare & pillar***)	34	73.9	11	26.1

Based on the data in Table 6, the phoneme matching section of the PASS shows that participants generally performed well in identifying words with the same sound. Across the four tasks, the total number of correct

responses was 145, while the total number of incorrect responses was relatively low at 35. This indicates that most participants were successful in matching phonemes across different words, reflecting a good understanding of phonemic awareness matching skills.

The mean percentage of correct responses was 78.8%, suggesting that the majority of participants were able to accurately identify phoneme matches. Conversely, the mean percentage of incorrect responses was 21.0%, which indicates that while most of the participants understood the concept, there was still some level of difficulty for a minority. The task with the highest correct response rate was "Underline words with the same sound (pitch, fly, hair, lip & kite)," where 89.1% of participants answered correctly with only 10% of incorrect responses. In contrast, the task with the lowest correct response rate was "Underline words with the same sound (weigh, pie, height, raid & friend)," with 65.2% correct responses, showing that this particular set of words posed more of a challenge. Overall, the results highlight a strong performance in phoneme matching, with some variability depending on the specific task.

Phoneme Segmenting and Blending

The fifth section on phonemic awareness survey (PASS) was about phoneme segmenting and blending. The items in this section required the participants to reverse the sequence of speech sounds in teach, pitch, sigh, pillars and cafe. The participants were required to write the new word next to the line of the word presented, and they were supposed to think of the sounds, not the letters. Table 7 illustrates the findings.

Table 7: Distribution of Participants' Responses on Phoneme Segmenting & Blending

Statements	Correct		Wrong	
	F	%	F	%
Write a new word next to ***teach***	39	84.8	6	15.2
Write a new word next to ***pitch***	29	63	16	37
Write a new word next to ***sigh***	2	4.3	43	95.7
Write a new word next to ***pillars***	22	47.8	23	52.2
Write a new word next to ***café***	24	54.3	21	45.7

Based on the data in Table 7, the phoneme segmenting and blending section of the PASS reveals that participants had a mixed performance, with a nearly equal distribution of correct and incorrect responses. In particular, the total number of correct responses across all five items was 116, while the total number of incorrect responses was 109. This close balance indicates that participants found these tasks challenging, reflecting a varied understanding of phoneme segmenting and blending skills.

The mean percentage of correct responses was 50.84%, suggesting that, on average, about half of the participants were able to correctly complete the tasks. Conversely, the mean percentage of incorrect responses was 49.16%, highlighting the considerable difficulty experienced by many participants. The task "Write a new word next to sigh" was particularly challenging, with only 4.3% of the participants responding correctly and 95.7% responding incorrectly. In contrast, the task "Write a new word next to teach" had the highest correct response rate at 84.8%. These results indicate that while some tasks were manageable for most of the participants, others posed significant challenges, underscoring the need for further instruction or support in these areas of phonemic awareness.

The questions on PASS examined the teachers' skills in PA, the mean score for PASS was 17.7 out of a possible 25. The scores ranged from 6 to 24. Therefore, none of the teachers received a perfect score on the survey and also none got 0 out of the 25 items. Teachers responded appropriately in most of the items on PASS whereby more than half (59.4%) of the participants answered at least 15 of the 25 questions correctly. Less than half of the participants (40.6%) answered 14 or fewer questions correctly. However, there were questions which had lower correct responses such as aquestion in the "phoneme blending and segmenting" section which required the respondents to reverse the sounds of the word "sigh". There were only 4.3% of correct responses and 95.7% of incorrect responses in which most of the participants indicated that "high" was the reverse of the sounds of the word sigh while the correct response was "ice". Therefore, this item was incorrectly answered by most of the teachers. This indicates that this item was difficult and was not relating well with the total test score.

Three items in the phoneme deletion section yielded the highest percentage of correct responses. The first item required participants to delete the /t/ sound from the word "meat" to form a new word. Acceptable responses included me, mea, and mee. Although the spellings varied, all responses were phonetically accurate, preserving the remaining phonemes and demonstrating appropriate phonemic manipulation. Notably, 93.5% of participants answered this item correctly. The second item required participants to delete the /v/ sound from the word "driver", with acceptable responses including drier and dryer. Again, 93.5% of participants responded correctly. The third item required participants to delete the /s/ sound from the word "ghost", with goat being the correct response. This item also received a correct response rate of 93.5%. These results suggest that participants were generally more proficient with phoneme deletion tasks compared to other phonemic awareness skills.

The findings provide a nuanced understanding of participants' capabilities across different phonemic awareness skills tasks, reflecting a range of proficiencies and challenges. The strong performance in the phoneme deletion tasks on the PASS, where participants achieved a mean correct response rate of 91.88%, suggests a robust understanding of this skill. The finding is consistent with Moats (1994), who observed that although teachers frequently encountered difficulties with abstract aspects of phonemic awareness, they demonstrated greater accuracy when performing more concrete tasks such as phoneme deletion. The participants' difficulty with the word "frenzy," however, mirrors the challenges identified by Moats, where certain phonemic tasks that require nuanced understanding of sounds can still pose difficulties even for those generally proficient in phonemic tasks.

In contrast, the phoneme counting section of the PASS revealed significant difficulties, with a mean correct response rate of only 60.68%. The finding is consistent with the challenges documented by Cunningham et al. (2004), where teachers overestimated their phonemic skills, particularly in phoneme counting and segmentation. The low performance in phoneme counting tasks on the PASS indicates a need for targeted training, echoing Bos et al. (2001), who found that both pre-service and in-service teachers lacked sufficient knowledge in this area despite feeling prepared to teach it. This disconnect between perceived and actual skill levels in phoneme counting highlights a critical area for professional development.

The phoneme identification tasks on the PASS showed relatively good performance, with a mean correct response rate of 67.55%. However, the variability in success across different words indicates that some phoneme identification tasks are more challenging than others. This aligns with the findings of Spear-Swerling & Brucker (2004), who demonstrated that specific phonemic tasks, like identifying the third phoneme in a word, can be particularly challenging. The higher error rates for words like "folks" on the PASS suggest that participants, like the teachers in Moats (1994), might struggle with phonemic awareness at a more granular level, particularly when phoneme-grapheme correspondence becomes less transparent.

Phoneme matching tasks on the PASS revealed strong performance, with a mean correct response rate of 78.8%. This suggests that participants were generally capable of recognizing phonemic similarities across words, a skill found to be crucial by Tibi (2005), who noted that while basic phonemic skills were often present, more complex skills like phoneme blending were less well-developed. The challenges faced in certain matching tasks on the PASS, such as identifying phoneme matches in words with less

straightforward phonetic patterns, reflect the findings of Troyer & Yopp (1990), who found that while teachers understood the importance of PA skills, their practical knowledge was inconsistent.

Phoneme segmenting and blending tasks on the PASS presented a mixed picture, with nearly equal rates of correct (50.84%) and incorrect (49.16%) responses. This is particularly indicative of the difficulty that many educators face with these more complex phonemic tasks, as noted by Taylor (2008), who found that even experienced teachers often lacked the skills necessary to effectively teach phonemic awareness, particularly in areas requiring segmentation and blending. The task requiring participants to segment and blend sounds to create a new word had a notably low success rate, mirroring findings from Moats (1994) that highlighted widespread misconceptions about how speech sounds map onto written language.

Overall, the findings from the PASS align closely with the empirical research on phonemic awareness skills among educators. While there is a solid understanding of basic skills like phoneme deletion and phoneme matching, there are notable challenges in more complex tasks such as phoneme counting and phoneme segmenting and blending. These results underscore the need for targeted professional development that addresses these specific areas of difficulty, providing educators with both the knowledge and practical skills necessary to enhance their teaching of phonemic awareness. Moreover, the findings highlight the importance of aligning teachers' self-assessments with their actual skills, as discrepancies in this area can lead to gaps in instructional quality and student outcomes in early literacy.

The findings from the Phonemic Awareness Knowledge Survey (PAKS) and the Phonemic Awareness Skills Survey (PASS) collectively highlight significant gaps in both the knowledge and practical skills of participants regarding phonemic awareness (PA). The PA knowledge and skills findings provide a comprehensive picture of the participants' understanding and application of PA concepts, revealing critical areas for improvement.

The PA knowledge results indicate a substantial lack of foundational knowledge among participants regarding key aspects of phonemic awareness. For example, 73.9% of participants were unaware of the meaning of phonemic awareness, its instructional strategies, and assessment methods. This aligns with findings from Moats (1994) and Bos et al. (2001), which similarly identified gaps in teachers' conceptual understanding of PA, including a frequent conflation of phonemic awareness with phonics or general knowledge of phonemes. Moreover, PAKS results show that participants struggled to identify the importance of phonemic awareness and effective instructional strategies, with only 28.3% correctly recognizing PA's role in teaching blending and segmenting sounds, skills fundamental to reading. This suggests that many participants lack a deep understanding of PA's role in literacy development, an issue that has been repeatedly highlighted in studies such as those by Taylor (2008) and Cunningham et al. (2004).

These deficiencies in knowledge are further reflected in the PA skills results, where participants' practical skills in PA were tested. The PA skills results demonstrated that while participants were proficient in simpler tasks like phoneme deletion, as evidenced by a mean correct response rate of 91.88%, they struggled with more complex skills such as phoneme counting (mean correct response rate of 60.68%) and phoneme segmenting and blending (mean correct response rate of 50.84%). This pattern mirrors the findings from PAKS, where a lack of understanding about what constitutes effective PA instruction and assessment suggests that participants are not well-prepared to apply PA concepts in practice.

The challenges participants faced in both surveys, particularly with complex phonemic tasks, highlight the discrepancy between theoretical knowledge and practical application. For instance, while the PAKS revealed that 84.8% of participants were unable to correctly identify instructional methods to develop PA, the PASS showed that participants similarly struggled with tasks requiring a more nuanced understanding of phoneme segmentation and blending. These results suggest that the knowledge gaps identified in PAKS directly translate into difficulties in applying PA skills, as evidenced by the PASS outcomes. This reflects the findings from Spear-Swerling & Brucker (2004), who noted that even when teachers receive targeted training, their understanding of specific phonemic tasks often remains limited, especially in areas that require more intricate manipulation of sounds.

Furthermore, both surveys underscore a critical issue identified in previous research: the gap between perceived knowledge and actual ability. Many participants in the PAKS seemed unaware of their deficiencies, as evidenced by their incorrect answers and misunderstandings of PA concepts. This was similarly observed in the PASS, where participants' performance did not align with their self-reported confidence in teaching PA skills. This discrepancy between perceived and actual knowledge is consistent with the findings of Bos et al. (2001) and Cunningham et al. (2004), who found that both pre-service and in-service teachers often overestimate their understanding of PA, leading to gaps in effective instruction.

Overall, the findings from the PAKS and PASS illustrate a need for comprehensive professional development that addresses both the theoretical and practical components of phonemic awareness. The alignment of these findings with empirical studies reinforces the notion that improving PA instruction requires more than just knowledge acquisition; it necessitates a deeper understanding of how to effectively teach and assess these skills in classroom settings. By bridging the gap between knowledge and practice, educators can better support early literacy development, ultimately leading to improved student reading outcomes.

Conclusions and Recommendations

The study highlights significant gaps in both the knowledge and practical skills of English Medium Primary School teachers in Dar es Salaam regarding Phonemic Awareness (PA). The findings from the Phonemic Awareness Knowledge Survey (PAKS) and the Phonemic Awareness Skills Survey (PASS) indicate that teachers often lack a comprehensive understanding of PA concepts and the ability to effectively teach these skills.

The PAKS results revealed that the majority of the participants were unaware of the foundational aspects of PA, such as its definition, instructional strategies, and assessment methods. This lack of knowledge is concerning, as it directly impacts the quality of PA instruction that teachers can provide. The PASS results further demonstrated that even when teachers had some knowledge of PA, their practical skills were inconsistent, particularly with more complex tasks like phoneme counting and segmenting. The discrepancy between theoretical knowledge and practical application suggests that many teachers are not adequately prepared to teach PA, which could adversely affect students' reading development.

These findings are consistent with existing research that highlights the persistent deficiencies in teachers' knowledge and skills related to PA. The lack of adequate preparation in teacher education programs, as indicated by studies such as those by Moats (1994) and Bos et al. (2001), remains a critical barrier to effective PA instruction. The results of this study underscore the importance of comprehensive teacher training that not only covers the theoretical aspects of PA but also provides practical skills and strategies for teaching these concepts in the classroom.

The study recommends that teacher education programs should include comprehensive modules on phonemic awareness that cover both theoretical knowledge and practical skills. These programs should emphasize the importance of PA in early literacy development and provide hands-on training on how to teach PA effectively. Incorporating PA-focused workshops, demonstrations, and interactive sessions could help bridge the gap between theory and practice.

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