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A Pilot Study on Methods and Researcher Practice in Exploring Teachers' Cognition and Practices of Mobile-Assisted Language Learning (MALL)

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Abstract of the Article

This paper reports on a pilot study conducted as part of a larger doctoral research project that explores Malaysian ESL primary school teachers' cognition and practices toward Mobile-Assisted Language Learning (MALL). The pilot study was designed to test and improve three research methods: semi-structured, video-stimulated recall and focus group interviews. Two in-service teachers with experience using MALL were selected for the pilot. The pilot study helped in identifying issues such as unclear wording in the interview questions, leading questions and challenges in using video-stimulated recall interview method. It also revealed the importance of building trust with participants and being aware of how the researcher's background might influence the data. Revisions were made to interview prompts and practical lessons were learned. The pilot study also involved a process of critical reflection on the researcher's assumptions, practices and ethical responsibilities.

Keywords

Mobile-Assisted Language Learning (MALL),
Teacher cognition,
Pilot study

Introduction

As an ESL primary school teacher, I have developed a passion for integrating technology, particularly mobile devices, in my teaching. This interest first emerged in 2020 during the COVID-19 pandemic when most teaching had to be conducted remotely. Many of my pupils lived on the outskirts of town where limited household income meant they could not afford devices such as laptops or computers. As a result, mobile phones became the main tool for teaching and learning. This experience opened my eyes to the potential of Mobile-Assisted Language Learning (MALL) approach, especially in under-resourced settings.

MALL refers to the use of handheld devices to support language teaching and it offers flexible and context-sensitive opportunities for learners and teachers alike (Kukulska-Hulme, 2013; Pérez-Paredes et al., 2018). As mobile technologies continue to transform educational landscapes in both the classroom and online, it is important to explore how language teachers conceptualise and implement MALL (Parsons et al., 2024). Their approaches in using MALL vary widely depending on their context and preferences including teaching style, pupils' needs and the tools that are available (Okumuş Dağdeler, 2023).

Research Rationale and Theoretical Framing

While many studies on MALL have emerged in recent years, much of this research has concentrated on higher education settings, especially concerning university students and adult learners (Morgana and Kukulska-Hulme, 2022). In contrast, there is limited research exploring MALL within primary school settings, especially in the Malaysian context (Mustaffa and Sailin, 2022).

Existing literature tends to prioritise learners' outcomes or technological implementation with less attention given to the voices and experiences of teachers themselves (Morgana and Kukulska-Hulme, 2022). As educators play a central role in the integration of MALL, it is crucial to understand their beliefs, knowledge and classroom practices (Borg, 2006).

For this reason, my doctoral study is grounded in the concept of language teacher cognition as explained by Borg (2006) and complemented by the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra and Koehler, 2006). Borg (2006, p. 81) defines teacher cognition as "what teachers know, believe and think" about all aspects of their work. The model explains that teacher cognition is shaped by four interrelated, including schooling and pre-service experiences, in-service professional coursework, classroom teaching and contextual factors.

My study is grounded in the language teacher cognition framework to explore both the origins and the ongoing shaping of teachers' cognition towards MALL. While Borg's model explains how cognition forms and interacts with practice, the TPACK framework allows me to analyse what types of knowledge underpin that cognition when teachers use MALL. TPACK breaks down teacher knowledge into three domains: Technological Knowledge (TK), Pedagogical Knowledge (PK) and Content Knowledge (CK) and the intersections between them. By integrating the two frameworks, my study examines both the beliefs and experiences that shape teachers' beliefs about MALL

and the knowledge structures they draw on when implementing it. This dual framing helps me connect what teachers say they believe and know with what they do in the classroom.

Research Aim and Research Questions

The aim of my study is to explore Malaysian primary school English teachers' cognition and teaching practices of MALL and to examine how schooling, pre-service and in-service training and contextual factors influence their use of MALL in English language teaching.

Thus, the research questions of the study are:

1. What are Malaysian primary school English teachers' cognition toward MALL?

2. How do schooling, pre-service training and in-service training influence their cognition toward MALL?

3. How do contextual factors influence their cognition toward MALL?

4. In what ways do they practise MALL to teach the English language?

5. What is the relationship between their cognition and their teaching practice using MALL?

Why Pilot Study: Testing Data Collection Protocols

Pilot studies play a vital role in qualitative research where they serve as a preparatory phase to enhance the quality and feasibility of the main study (van Teijlingen and Hundley, 2002). They are particularly important for testing the instruments, procedures and overall research design to ensure they are clear, appropriate and effective for addressing research questions (Given, 2016).

In the context of my research, the pilot study aimed to trial the interview questions developed for the three data collection methods used in my study. Although these instruments were carefully constructed based on established literature and theoretical frameworks, piloting them was necessary to ensure their clarity, coherence and suitability for the research context (Given, 2016; Malmqvist et al., 2019). Testing the instruments in advance allowed me to identify issues such as leading questions, unclear words or phrases or overlaps between interview questions.

Testing Participant Logistics

The pilot study also provided a valuable opportunity to anticipate and address potential logistical and practical issues. Since all the participants in my main study would be involved in all three research methods, and they have existing professional commitments with their schools, piloting offered insights into time management, scheduling feasibility and participant engagement (Given, 2016; Malmqvist et al., 2019). For example, it allowed me to assess the realistic pacing of interviews and stimulated-recall sessions within school-based constraints.

Testing Researcher Communication

The pilot study also offered a valuable opportunity to rehearse how to explain the study to my participants in a respectful and culturally appropriate manner. This step was especially important given that, in qualitative research, rapport-building and informed participation are essential to ethical practice. Having said that, it is crucial for qualitative researchers to reflect carefully on their role in both data collection and interpretation since this shapes what participants choose to reveal, how

informed their consent truly is and how well their privacy and well-being are safeguarded (Merriam and Tisdell, 2016).

Pilot Study Procedure: Recruitment of Participants

The recruitment process for the pilot study followed a combination of convenience and purposive sampling. In my study, convenience sampling means selecting participants who were easily accessible to me (Dornyei, 2007), while purposive sampling involved choosing participants based on specific criteria relevant to my study (Creswell and Poth, 2018). I selected teachers who had practical experience integrating mobile devices such as smartphones or tablets into their lessons and they used MALL for varied purposes, including teaching activities, collaborative tasks or assessment. For the pilot, I contacted two teachers whom I had previously met through professional development courses and training sessions that I conducted as part of my role as a district English language trainer. This existing professional relationship ensured smoother communication and scheduling, particularly because the pilot was conducted remotely.

Research Design and Methods

My study adopts a qualitative research design which is grounded in an interpretivist paradigm to understand teachers' cognition and practices towards MALL within their natural teaching environments. It employs a multiple case study approach involving six in-service Malaysian primary school English teachers, each representing an individual case situated in a distinct school context. The pilot tested the feasibility and relevance of the data collection methods within individual bounded cases, specifically individual teachers situated in distinct school settings (Yin, 2018). Three qualitative research methods were tested during the pilot study.

Semi-structured interview

The semi-structured interview was used to explore teachers' beliefs and knowledge about MALL. It also examined the factors that shape their understanding such as schooling experiences, pre-service and in-service training and prior experiences (Borg, 2019). This method allowed participants to reflect on their views in an open and flexible format.

Video-stimulated recall interview

The video-stimulated recall interview focused on teachers' actual classroom practices. Participants watched recordings of their lessons and were asked to comment on their teaching decisions and use of mobile devices. This method helped to reveal the links between their cognition and their observed classroom practices.

Focus group

The focus group explored contextual factors that influence teachers' cognition and use of MALL. Group discussion encouraged participants to reflect on shared challenges and opportunities related to technology use including school policies, leadership support, infrastructure and peer collaboration. The interactive nature of the group helps uncover insights not always accessible in individual interviews (Breen, 2006).

Pilot Study Procedure

Most research methods literature recommends conducting a pilot study as an essential step prior to full data collection (Cohen et al., 2007; Merriam and Tisdell, 2016). It serves to test the instruments, refine procedures and ensure that the study design

is workable in the actual research context (van Teijlingen and Hundley, 2002; Given, 2016). First, I contacted two in-service Malaysian English language primary school teachers via email. After receiving their agreement to participate, I conducted an online briefing session to explain the objectives of the pilot, the procedures involved, and what would be expected of them. We then scheduled the sessions based on their availability.

The pilot study tested all research methods planned for the main study. For the semi-structured interviews, I conducted two separate sessions with each participant, using the draft interview guide. I noted the flow of the conversation, how well the prompts elicited detailed responses and any moments where clarification was needed. For the focus group, I held one joint online session where both participants responded to the same set of prompts. I observed the group dynamics, the level of interaction and whether the questions encouraged independent contributions. For the video-stimulated recall interviews, each teacher recorded one lesson featuring MALL, selected short clips and then discussed these with me. I assessed whether the prompts connected effectively to the video content and whether participants could explain their decision-making clearly.

I evaluated the pilot through three sources. First, I analysed the recordings and transcripts to assess the clarity and relevance of each question, the level of detail in responses and the suitability of the sequence of activities. Second, I gathered direct feedback from participants on the clarity of instructions, the relevance of the prompts and their overall experience of each method. Third, I kept a research diary to record decisions, observations and reflections after each session. The diary helped me track methodological issues; participant reactions and it supported my reflexivity by making me aware of how my background and assumptions could influence the process.

Ethical Consideration

I obtained formal approval (Approval Number: 1828) from the University of Leeds Research Ethics Committee before engaging with participants to ensure full ethical compliance. All participants received a Participant Information Sheet and an Informed Consent Form which outlined the purpose of the study, their rights and the voluntary nature of their involvement. All interviews were recorded with consent, stored securely on password-protected devices and anonymised using pseudonyms such as "T-1" and "T-2". For the video-stimulated recall interviews, teachers recorded their own lessons and ensured that no identifiable images of pupils were captured. Throughout the pilot, I remained mindful of my positionality as a former ESL teacher and district trainer. This was to adopt a neutral stance to avoid influencing responses or creating unintended pressure to participate.

Reflection: Improving Questioning and Interaction

The pilot study helped me refine my research tools and reflect on my role as a researcher. At first, I assumed that using interview questions based on the teacher cognition framework and the TPACK framework would be enough to generate meaningful responses. I realised that how I asked the questions, the words I used, and the way I interacted with participants affected the quality of the data. In some interviews, I noticed that I unintentionally led participants by phrasing questions in a way that suggested preferred answers. For example, I sometimes prompted with "How did your teachers during your schooling time impact

your MALL practice" which may have made them feel they had to agree. To build a more open and equal relationship, I will avoid evaluative responses and use more neutral prompts such as "Can you tell me more?" as well as emphasise at the start that I value honest and varied perspectives.

Strengthening Video-Stimulated Recall Interviews

The video-stimulated recall interviews (SRI) also revealed challenges. Although I expected the video clips to support reflection, my participants struggled to recall or explain their teaching decisions. The requirement to conduct the interviews within 48 hours of the lesson recordings added pressure, and the method was unfamiliar to them. I had not provided enough guidance or examples of how to engage with the videos. In the main study, I will prepare participants by explaining the purpose of SRI, demonstrating how to respond to video prompts and providing written guidance before the session. I will also adjust the 48-hour requirement if necessary to allow for more flexibility without losing recall accuracy.

Addressing Focus Group Dynamics

The focus group highlighted the impact of group dynamics. With only two participants, one teacher often agreed with the other and did not share alternative views. I will address this by including more participants in the main study focus groups to encourage a wider range of perspectives. I will also use direct follow-up questions, such as "Do you see this differently?" to prompt independent contributions. Although I told participants they could speak in their mother tongue, some still chose English. In the main study, I will reinforce this option at the start and repeat it throughout the session to encourage comfort and authenticity.

Refining Instruments Based on Feedback

Participant feedback also informed specific refinements to the instruments. Some participants asked for clarification or expressed confusion about the wording of questions. In other cases, their answers did not align with my intended focus which suggests the prompts were unclear or misinterpreted. For example, I revised "How do you mix your knowledge of teaching content and technology to create effective lessons?" to "Can you share how you use technology in your teaching while ensuring your pupils understand the lesson content effectively?" to make the purpose clearer. Appendix 1 links each issue identified in the pilot to the specific refinement made, making the connection between reflection and method refinement explicit.

Conclusion

This pilot study played an essential role in preparing for the main phase of my EdD research. It allowed me to test and refine the research instruments and procedures before beginning fieldwork. The feedback and observations gathered highlighted specific areas for improvement, including the wording of interview questions, the sequencing of interview sessions and the level of support needed by participants. These refinements go beyond minor adjustments and directly improve the clarity and depth of the data I will collect. As a result, the main study will be better equipped to answer the research questions in full and produce findings that make a stronger contribution to the understanding of teachers' cognition and practices of MALL in the Malaysian primary school context.

The pilot also deepened my awareness of the relational and

ethical dimensions of this research. It reminded me of the importance of creating safe and respectful spaces for participants to share their experiences openly and honestly. It showed me how my background and role as a former trainer can influence participants' responses. This prompted me to adopt more neutral questioning techniques, clearer communication of language options and stronger facilitation strategies to ensure balanced contributions in focus groups. These changes will not only enhance data quality but also strengthen the trustworthiness and credibility of the study.

For fellow postgraduate researchers (PGRs), I emphasise that piloting is not merely a rehearsal but a critical stage in shaping the overall success of a study. Its value lies in more than refining tools as it improves the validity, richness and interpretive power of your data. Take time to listen carefully to participants, question your assumptions and remain open to changing your approach when necessary. Use the pilot to examine both the practical and relational aspects of your research process. A well-planned pilot can transform the main study and ensures that the research instruments, procedures, and researcher mindset are all ready to generate meaningful and impactful findings.

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Appendix 1: Examples of revised interview prompts

Original Prompt　Revised Prompt

Semi-structured Interview

Original Prompt: How do you mix your knowledge of teaching content and technology to creative effective lessons?

Revised Prompt: Can you share how you use technology in your teaching while ensuring you're your pupils understand the lesson content effectively?

Original Prompt: Could you describe how was you past learning experiences when you were a student?

Revised Prompt: Can you describe your past learning experiences as a student?

Stimulated-recall Interview

Original Prompt: Looking back at this part of the lesson, was there anything that didn't go as expected?

Revised Prompt: Did you face any challenge with MALL in your lesson?

Focus Groups

Original Prompt: What helps the use of MALL in your teaching and learning?

Revised Prompt: What factors support or encourage you to use MALL in your teaching and learning?

Original Prompt: What makes it harder to use MALL in your teaching?

Revised Prompt: What challenges or difficulties do you face when using MALL in your teaching?