
Exploring the Enablers and Barriers of Developing Remote Cross-cultural Collaboration Between a Rwandan Primary School and a Welsh University

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ABSTRACT: The study identifies key enablers and barriers to effective remote cross-cultural collaboration between Rwandan primary teachers and Welsh academics engaged in collaborative learning. Qualitative analysis of focus group data identified the role of shared interests, consistent communication, and cultural sensitivity in enabling successful collaborations and the potential of technology and logistics to create barriers. The study extends an established framework of first- and second-order barriers to include enabling influences, highlighting the important role of internal factors

such as cultural perceptions and personal attitudes in remote cross-cultural collaborations, and providing new insights for educators and policymakers.

KEYWORDS: Cross-cultural collaboration, collaborative learning, remote communication, barriers, enablers

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Rwanda and Wales are currently implementing significant programs of primary school reform (OECD, 2017; Nsengimana, 2021). Such reforms are seen as crucial steps towards fostering a knowledge-based society, creating a workforce equipped to succeed in an environment of growing regional and global competition, and empowering their citizens to shape a more equitable and sustainable future (Rwanda Education Board, 2015; Welsh Government, 2019).

In both countries, emphasis has been placed on the importance of collaboration in all aspects of teaching and learning: between teachers, between schools and significant stakeholders, and especially between students through curricula that supports them in developing skills for collaborative learning (CL) (OECD, 2017; Rwanda Education Board, 2018). Recognizing the similar educational challenges facing two very different educational contexts, this qualitative study investigated the impact of remote cross-cultural collaboration between education professionals in the two countries on promoting CL in the classroom. It was led by a team of academics at a Welsh university working with a group of teachers at a Rwandan primary school. After reviewing relevant literature, we focused on addressing the following research questions (RQ):

RQ 1. What are the enablers when conducting remote cross-cultural collaborative research?

RQ 2. What are the barriers when conducting remote cross-cultural collaborative research?

Literature Review

While the literature includes numerous definitions of CL, it is essentially an approach to teaching that involves:

groups of learners working together to solve a problem, complete a task, or create a product... [Learners can] converse with peers, present and defend ideas,

exchange diverse beliefs, question other conceptual frameworks, and are actively engaged. [It] represents a significant shift away from the typical teacher-centred or lecture-centred milieu. (Laal & Laal, 2012, p. 491)

CL re-casts teachers in the role of “facilitators of learning” (Sinnema et al., 2020, p. 182). Evidence from several developed countries indicates that this approach to teaching calls for new professional behaviors and acknowledges that some teachers may find them more confronting than liberating. Such behaviors include increased autonomy and flexibility, deeper engagement in curriculum design, and a stronger emphasis on collaboration with fellow teachers and school leadership (Sinnema et al., 2020). As well as placing new demands on teachers, effective CL may also require a re-think of classroom layout and furnishings. As Gitterman (2008) notes, “Classroom spatial design is the first step in creating a climate conducive to collaborative learning” (p. 62).

Cross-cultural collaboration has become increasingly significant in education and is referenced in contemporary curriculum reform literature internationally (Gyasi et al., 2021; Shadiey et al., 2024). For example, Vân (2020) reports on the Vietnamese government’s aims to develop a cross-cultural curriculum by collaborating with overseas schools and enhancing foreign language learning through partnerships with international publishers to produce new textbooks. In Wales, the new curriculum recommends educators bring “the world into range” (Waters, 2013, p. 51) and stresses the importance of children and young people “seeing the relevance in their learning to the world beyond the school gates and that opportunities are taken to forge links to that world” (Donaldson, 2015, p. 67).

As well as cross-cultural collaborations between students, studies have investigated similar collaborations between educators (Huang et al., 2021) and academic researchers (Wang et al., 2023). Research indicates that the integration of international perspectives into educational studies can foster innovation, improve research quality, and enhance the global applicability of findings (Wang et al., 2023). Studies also suggest that cross-cultural educational collaborations offer the potential to enrich learning experiences by exposing individuals to diverse perspectives, increasing their cultural awareness, and improving communication skills (Helm et al., 2025; Huang et al., 2021).

As O’Dowd states, the COVID 19 pandemic led to an increase in research of online or remote collaboration in education. In summarizing recent research, he notes that participants generally enjoy such learning activities and frequently gain a range of skills and knowledge that go beyond the focus of the engagement, including cultural awareness, language skills, and increased appreciation of working with people from other countries (O’Dowd, 2021).

Barriers and Enablers to Successful Remote Cross-cultural Collaboration

Wang (2011) finds that there is limited guidance for educators on how to design and conduct international CL successfully. In seeking to more clearly identify the factors that promote or inhibit success in remote cross-cultural collaboration, our study draws on the literature on school reform. In this context, Cuban states that both the institution and

the individual play important roles, concluding that it “is a belief system, not an economic or empirical warrant, that determines failure or success” (cited in Holloway, 1998, p. 1110). This perspective leads him to classify the barriers to educational change as first-order (external) and second-order (internal) (Cuban, 1993; Brickner, 1995).

Using the example of integrating technology into the classroom, Ertmer (1999) categorises first-order barriers as “technical” and “logistical” and includes such factors as the level of access to equipment, training, and support provided by the institution to the teacher. He describes second-order barriers as “personal” and lists several factors that might limit or prevent a teacher’s use of technology, such as their relevant ability or knowledge, or their belief regarding whether technology can have a positive impact within the classroom (Cuban, 1993). Numerous studies build on Ertmer’s conceptualization, identifying additional first-order barriers to technology adoption such as funding or school ethos (Durff & Carter, 2019), and such second-order barriers as time use or quality of planning (Lowther et al., 2008; Palak & Walls, 2009; Park & Ertmer, 2008; Sheninger, 2014; Yang & Huang, 2008). Recent research has continued to focus on Ertmer’s categorization of barriers in the field of technology, in particular online learning (Tawfik et al., 2021), information literacy (Johnson & Tawfik, 2022), and technology integration more broadly (Bell & Barr, 2024). Given that barriers are regarded as limiting factors, enablers, in this context, are viewed as any conditions, processes, or structures that “could positively affect and facilitate” (Sánchez-Ruiz et al., 2019, p. 53) capabilities and capacities within a project, system, or organisation (Rittershaus et al., 2025).

It was previously thought that once first-order barriers were resolved or alleviated, the second-order barriers would soon follow (Fisher et al., 1996). However, scholars suggest that the relationship between the two is more complex, with barriers having the potential to ebb and flow depending on the situation (Becker, 1994; Ertmer, 1999). Second-order barriers may even be more difficult to tackle (Dede, 1998; Francom, 2020). Internal factors tend to be more intangible and personal. This suggests they are, possibly, deeper-rooted and such factors can be harder to measure, identify, and combat (Wiburg, 1994). Therefore, despite claims that most barriers can be eliminated by the individual (Tosuntaş et al., 2019), the evidence supports a more nuanced approach.

This present study seeks to apply this first- and second-order framework to remote cross-cultural collaboration in education. As well as identifying barriers, we are concerned to identify enablers. These will also be categorized as first-order and second-order, a contribution not yet made in existing scholarship. Drawing on categories developed by both Hew and Brush (2007) and Kopcha (2012), the impact of the structural and physical properties of the collaboration (first-order) will be considered alongside that of the attributes and beliefs held by the individuals involved (second-order). In reviewing the literature, we have grouped the various barriers and enablers to international CL into the three categories discussed below.

The Importance of a Mutually Engaged and Carefully Constructed Collaboration

A critical enabler of successful collaboration is the establishment of shared interest and planning. This includes anticipating practical challenges such as time differences and technological problems (Fominykh et al., 2016). As O'Dowd (2021) notes, care should be taken to ensure that the activity is equally beneficial for both groups and that all participants receive appropriate academic or professional recognition for their participation. Previous research corroborates that alignment in pedagogical perspectives enhances collaboration (Huang et al., 2021). However, a lack of shared context between participants may create barriers, particularly when differing educational practices or classroom structures exist. Furthermore, bias and power dynamics can shape interactions in unintended ways (Wang, 2011). As Helm et al. (2025) note, cross-cultural collaborations take place under conditions that automatically privilege Western values. These conditions may include a reliance on Western technology, the use of English as a medium, and the predominance of Western educational models. These common practices highlight the need for equitable frameworks in cross-cultural partnerships (Wang, 2011)

The Importance of Consistent and Accessible Communication

Effective communication plays a pivotal role in remote collaborations. It is clear across a range of studies that technology plays a crucial role in facilitating successful remote cross-cultural collaborations (Fominykh et al., 2016; Gyasi et al., 2021; Shadiev et al., 2024). However, technology is susceptible to glitches and failures which can become significant barriers (Fominykh et al., 2016). Language barriers further compound these difficulties. O'Dowd stresses the importance of offering asynchronous engagement methods such as text chat if video or audio communication is inhibiting for some participants or hindered by technological limitations (2021). Ensuring accessibility through diverse communication platforms enhances participation and reduces miscommunication (Wang et al., 2023).

The Importance of Building Relationships and Rapport

Building strong interpersonal connections is fundamental to overcoming the complexities of negotiating diverse cultural norms (Hew & Brush, 2007; Mittelmeier et al., 2018; Wang, 2011). Informal conversations and rapport-building activities foster trust and openness. Previous studies emphasized the role of relational dynamics in international educational partnerships (Kopcha, 2012). Resilience and openness are also key factors that sustain engagement despite logistical challenges, reinforcing the importance of interpersonal connections in successful collaborations. Studies suggest that allowing time for participants to interact socially and build relationships over time can

be extremely beneficial (O'Dowd, 2021; Wang et al., 2023). There is evidence that creating opportunities for participants to reflect on their collaborative experience can result in improved outcomes (Helm et al., 2012; Wang et al., 2023).

Methods

In the following sections, we provide an overview of the study context, the research design, our methods of data collection, and our analysis.

Study Context

The study was part of a long-term relationship of exchange and partnership-building between a Welsh university and a Rwandan primary school. Located in a remote area of Rwanda, the primary school's resources and facilities have improved in recent years but remain basic; the school relies on ongoing donations from local and international supporters. Its leadership team acknowledges that it has struggled to meet the country's new curriculum standards for CL. Like most Rwandan schools, it is rooted in a tradition of didactic, teacher-centred instruction, which does not actively promote student participation, partly due to the dominant mode of classroom furniture and layout: heavy Victorian-style school desks and benches arranged in fixed, front-facing rows.

Recently, the Welsh university's education students raised funds for the school to purchase new furniture for several classrooms: rectangular, two-student worktables and separate chairs. This furniture is light and easy to reposition in small clusters or semi-circles. Such flexibility not only makes CL more practicable, it also helps reframe expectations around students' involvement in teaching and learning (Gitterman, 2008). The acquisition of this furniture, and the recognition on both sides that it was unlikely to be fully utilized without appropriate support in developing accompanying pedagogies, formed the impetus for this study.

This study paired five teachers from the Rwandan school (1 female and 4 male) with five researchers/lecturers with primary teaching experience (all male) from the Welsh university. Participants were tasked with co-creating teaching resources and classroom layouts designed to promote CL. Each pair met online twice using Microsoft Teams video conferencing software. In the first session, they spent time building rapport and discussing the challenges and opportunities they had experienced in using CL. Working together, they identified lessons in which CL activities could be embedded, decided on an appropriate teaching strategy or exercise, and co-created lesson plans. After they delivered their lessons, the second online session offered an opportunity for shared critique and further discussion. This paper focuses on the participants' reflections on their experience of taking part in this study. Figure 1, below, presents a diagram of the research process.

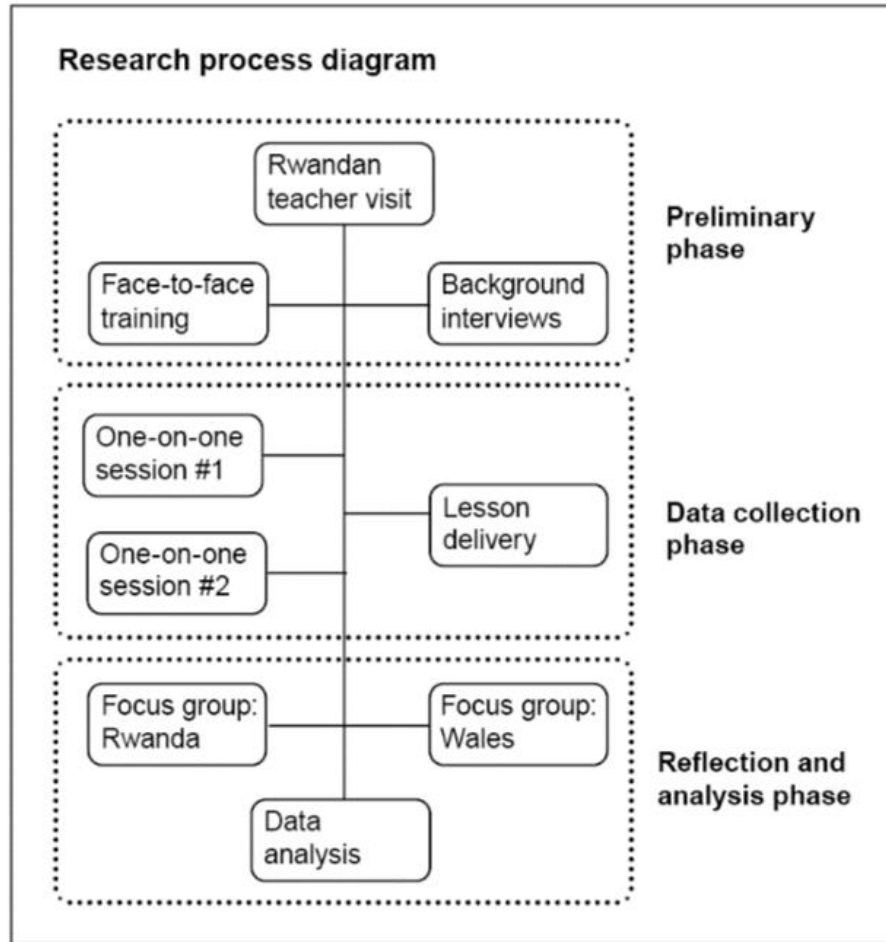


Figure 1
Research Process Diagram

Research Design

In the preliminary phase, two teachers from the Rwandan school were able to visit the Welsh university for some initial planning discussions, and an experienced educational volunteer provided some face-to-face preparatory training in CL with the Rwandan cohort. In addition, a member of the Welsh team remotely conducted one-on-one semi-structured background interviews with several of the Rwandan teachers and other stakeholders. Funding for this research project enabled the school to upgrade its broadband connection, which was necessary to handle the demands of online video conferencing. This had the bonus effect of improving the Internet for classroom use.

After the completion of the data collection phase, participants were invited to take part in reflective focus groups. Two 60-minute focus groups were held, one with the Welsh university team and one with the Rwandan teachers following a semi-structured interview

plan. A Welsh research team member who had not participated in the previous phase acted as facilitator for both groups.

Procedure

Both focus groups were conducted online using Teams video conferencing. Questions were tailored to each group to reflect their different roles in the research project, but centered on asking participants to reflect on their experience of working together, such as: What were the elements that facilitated the project and what were the elements that acted as barriers to the project; what did they learn; what did they expect the impact of the international CL to be; and whether they wanted to take the project forward through continued research engagement.

With the Welsh participants, the facilitator used the Miro visual workspace software (www.miro.com) to set up a multi-user online space. Applications like Miro enable group members to be co-creators, building on others' responses and creating a visual record of their collaboration (Khair Allah, 2023). Prior to the focus group, the facilitator created a shared digital whiteboard with a set of prompt questions set out in written form. During the session, participants were given time to write their responses on the board using virtual "sticky notes" before sharing them verbally when prompted by the facilitator.

The same method was planned for the Rwandan teachers' group. However, prior experience of technical issues made it evident that the school's wireless Internet would not support the use of Teams and Miro at the same time, even with the improved broadband connection. While Miro is relatively intuitive, it can be challenging to new users, especially those with limited experience with digital platforms (Khair Allah, 2023). Instead, the focus group was held via Teams alone, with the use of screen sharing to display a Word document showing the questions in written form. This was designed to enhance communication clarity and give participants more time to reflect on questions before answering. In practice, the Rwandan participants ended up sharing one laptop, passing it around the group in an attempt to give each speaker screen time. This situation presented the researcher with technological challenges similar to those that had been faced throughout the project. Prior to data collection, ethical approval was granted by the University's Ethics Committee.

Data Analysis

Data was analyzed using reflexive thematic analysis (Braun & Clarke, 2019; Castleberry & Nolan, 2018; Kiger & Varpio, 2020). This approach builds on the earlier iterations of Braun's and Clarke's (2006) six-step process for thematic analysis, adding a deeper reflexive element, which has often been disregarded in earlier iterations of thematic analysis (Braun & Clarke, 2019; Byrne, 2022). One member of the research team took the lead on reviewing and coding the data and organizing themes before other

members of the research team acted as “critical friends” to challenge and reaffirm interpretations (Braun & Clarke, 2019).

Results

From the data analysis, 13 themes became apparent: shared interest; planning; shared context; bias; power; consistent communication; multimodal approach; language; technology; informal conversations; building rapport; resilience; and openness. In the following discussion, these themes will be analyzed using the framework of first-order and second-order enablers and barriers and grouped into the three categories we set out in the literature review: (i) The importance of a mutually engaged and carefully constructed collaboration; (ii) the importance of consistent and accessible communication; and (iii) the importance of building relationships and rapport. In accordance with research best practice, all identifying information has been removed from the data, with participants only identified by their focus group (FGn) and an individual number (Pn).

While thematic analysis is not a quantitative method, it can be helpful for the reader to be able to visualize the relative incidence of each theme and compare them across the two focus groups. Figures 2 and 3 (below) present this information using packed bubble charts.

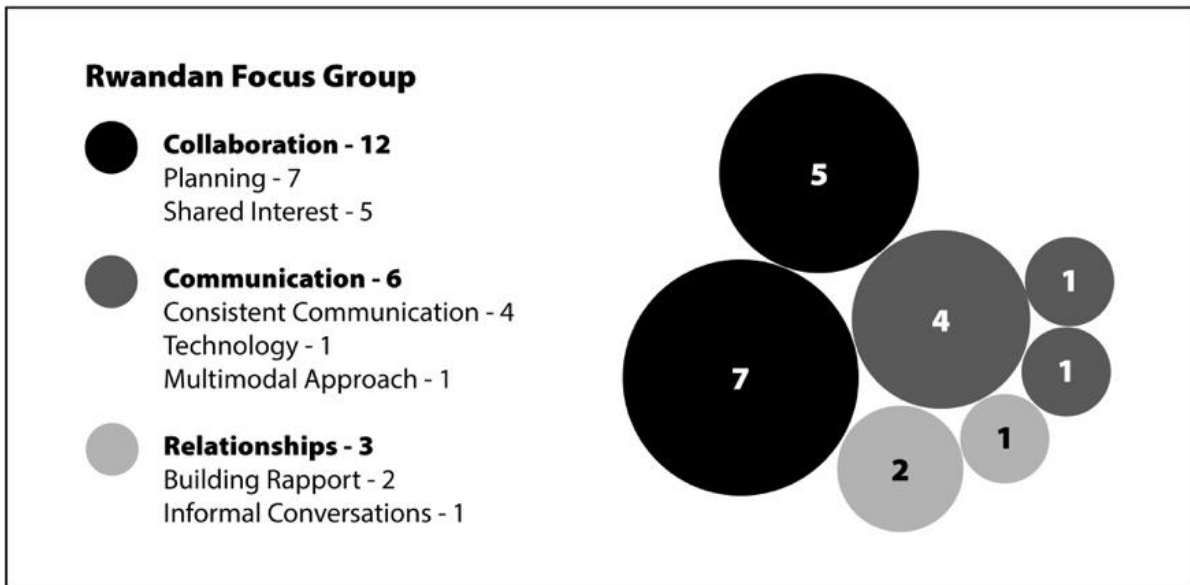


Figure 2
Incidence of Themes and Categories in Data from the Rwandan Focus Group (FG1)

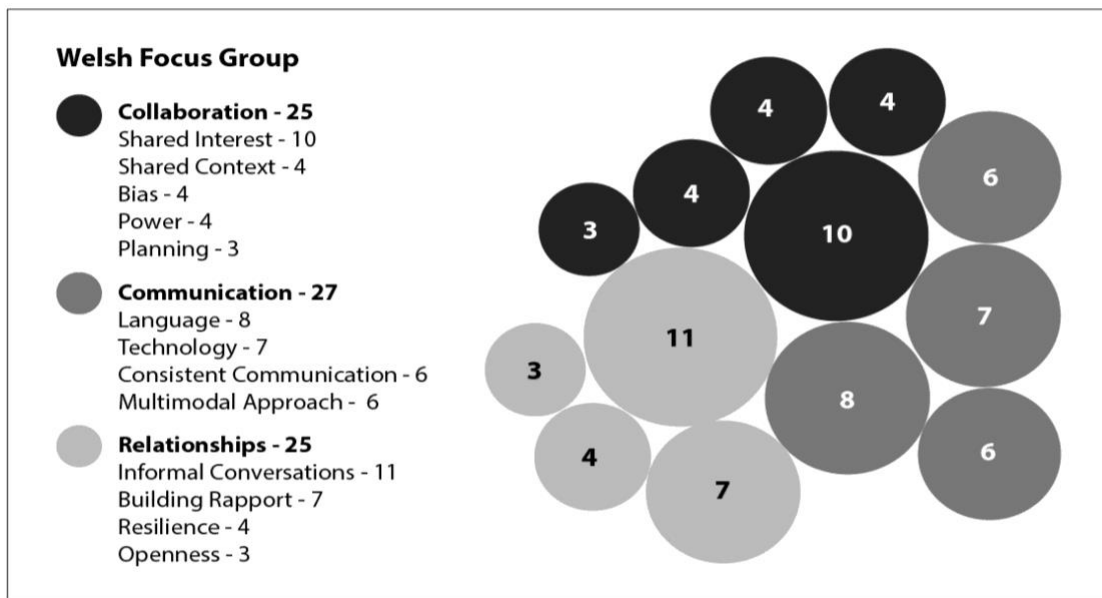


Figure 3

Incidence of Themes and Categories in Data from the Welsh Focus Group (FG2)

As these figures highlight, some themes, particularly those discussed under the categories of collaboration and communication, only emerged in the Welsh focus group. This can be traced to the role this group played in the design of the research. As will be noted in the following discussion, the Welsh group was sensitized to the importance of issues related to collaboration and communication through its role as planner and facilitator of the project and the research inquiry's *a priori* focus on collaboration.

The Importance of a Mutually Engaged and Carefully Constructed Collaboration

The following section includes findings which highlighted that successful international collaborative learning (CL) requires intentional engagement from all participants, built upon shared values, effective planning, and an awareness of structural dynamics.

Theme 1: Shared Interest

Both focus groups commented on the importance of shared interest when conducting a cross-cultural collaboration. In this context, this was understood as having “a similar background” (P11, FG2). As P12, FG2 stated, “As educators, we all have some kind of experience or knowledge of it [CL] in some way. The Rwandan group characterized the collaboration as based on “sharing and exchanging different ideas” (P1, FG1).

Ultimately, the international CL was perceived as a mutually beneficial process, an outcome that may have been limited without such a shared interest. As P4, FG1 stated, "We really... gained, we really benefited from this session that we had." This participant went on to describe how collaborators listened and supported each other, saying, "Again, he also told me a topic which seems to be hard for him... then I advised him how he could teach it." Another Rwandan participant P2, FG1, recognised the value of the collaboration stating, "*this project made easier my job, my teaching...*".

Theme 2: Planning

Another common theme was the importance of planning. Both groups recognized that taking the time to plan before collaborating enabled a more efficient process. P12, FG2 stated, "Just the fact that, you know, each of us on the [same] side met and discussed it and had a plan going in just because I feel like if we wouldn't have done that, they probably wouldn't have happened." P12, FG2 elaborated further, suggesting that planning had had a positive impact on other aspects of the collaboration:

I suppose having that kind of pre-amble on our side helped inform the sessions and strengthen the sessions... having that time to talk about it beforehand and have a plan going in made you resilient from the start, I suppose.

The Rwandan teachers outlined how planning provided an important structure to the collaboration. It was suggested that, without sufficient planning, the collaborative process may not have been as successful. As P4, FG1 said, "So, it was much better. It was productive for both sides."

Theme 3: Shared Context

As previously discussed, sharing a common interest was important to enabling an effective and mutually beneficial collaboration. However, it was also apparent that a lack of shared context limited the collaboration as a whole: P16 FG2 stated, "I think it was just down to the context and the fact that we just teach completely separate ends of the age spectrum." P16 went on to explain that a lack of comparable experiences to discuss meant that some interactions became one-sided:

Saying it didn't work was a bit harsh, but it was the probably the area I think maybe didn't work as well as it could have done, but I don't think that's down to either of the two people in the meeting.

The perceived barrier of a lack of shared context did not emerge within the Rwandan group. This suggests that it may have been planning and structural considerations that caused this to become an issue. As P16, FG2 explained,

I don't think we came away from that thinking we had a shared understanding of collaborative learning as a pair of practitioners, but also I think I recognize the fact

that there's inevitably going to be a different understanding of collaborative learning in terms of the context in which we teach in. And actually, that's not a bad thing.

Ultimately, it seemed to be accepted that a shared context and understanding of the topic at hand is not always possible, as well as not always necessary.

Theme 4: Bias

A significant second-order barrier identified was bias. This was viewed as the bias of the lead collaborator in how the collaboration was structured and facilitated. As P16, FG2 stated, "I guess we all recognize our own bias in setting up the project." This perceived bias was felt through numerous elements of the collaborative design. One example of this is the use of Microsoft Teams to collect data and facilitate collaborative sessions. P16, FG2 stated, "So ...we thought [Teams] was the best way to collect data because that's what we know." They continued, Teams was chosen because of "what we [the lead collaborator] know." The Rwandan teachers were less experienced using Teams. However, collaborators regarded the experience as "a good learning curve" (P16, FG2), with the potential to interrogate this in future collaborations:

That actually for a future collaborations and future projects, we can really think about how we collect data and methods of data collection and whether or not they're suitable for an international collaboration because we are so used to collecting data on Teams, you know, especially with COVID and things like that, it has changed the way we collect data. (P16, FG2)

The use of a technological platform with which both parties are familiar, and which requires less Internet bandwidth (e.g. WhatsApp) may be a beneficial option for future collaborations.

Theme 5: Power

Another second-order theme that emerged was the potential impact of power. There was an expectation that one side of the collaboration would help the others with their teaching and learning. As P12, FG2 stated,

I felt very much as well that I think there wasn't an expectation, but I think the Rwandan teachers kind of just felt like, 'Oh, you're helping me with the session,' which is fine, and I can see why they thought that.

As another participant outlined, this developed into what could be labelled as a "one-sided" collaboration: "It was all quite a one-sided conversation in that sense that I think [redacted] really wanted me to try to help him overcome some issues that we eventually got to, rather than the other way around" (P14, FG2). It is possible that the collaboration was one-sided from the beginning, with one collaborator taking the lead in the collaborative design.

However, one participant felt a shift in power when they revealed themselves as less knowledgeable on a topic being discussed:

So, I don't know why mine with the power dynamic was different and maybe it was just because his English was so proficient, and I think he did raise his eyebrows when he said the present perfect tense and I slightly panicked, and he could see that. (P11, FG2)

Making this international CL a "shared venture from the start" (P12, FG2) could have alleviated the negative impact of power. However, it is important to note that power could be shifted depending on other factors that emerged during collaboration.

The Importance of Consistent and Accessible Communication

Establishing and maintaining effective communication was a recurring theme across both focus groups and played a critical role in shaping the collaborative experience. The following section explores the significance of consistent and accessible communication within the project. It highlights the ways in which both Welsh and Rwandan participants relied on ongoing contact, adapted to multimodal methods, and navigated linguistic and technological barriers to ensure meaningful engagement and knowledge exchange.

Theme 6: Consistent Communication

One of the enablers that both groups identified was the importance of consistent communication. This was generally expressed as "continued communication," as P13, FG2 explained.

It's just continued communication and an email yesterday from [redacted] just to say that... one of the ideas that we sort of came up with in the session was him using computers more and he was just saying how much his pupils were enjoying using the computers.

When several lines of communication are provided, then consistency is "clearer and easier" as well as "accessible" (P11, FG2). The Rwandan teachers agreed that consistent communication was an effective way to "keep in touch" and "keep on learning" (P4, FG1) during the project. They further supported this with a willingness to continue communication once the study had officially concluded: As P4, FG1 stated, "So, we would like really, we really would like to [continue collaborating]... even after the purpose of this project is over."

Theme 7: Multimodal Approach

This theme related to the choice of Teams as a communication platform, which, as discussed above, was driven by the Welsh team. It prompted the following reflection. P 16 FG2 noted, “We can really think about how we collect data and methods of data collection and whether or not they’re suitable for an international collaboration because we are so used to collecting data on Teams.” However, providing opportunities to communicate via email and offering “easy” and “accessible” (P11, FG2) lines of communication were regarded as important enablers. One lecturer within the Wales focus group articulated the use of multimodal formats to communicate and collaborate, saying, “[They] responded via email later that day to the questions that I’d asked, and it was actually a much better articulation of how the session went, the reflection on it” (P16, FG2). Another participant outlined how the use of multiple formats enabled a more detailed and holistic collaboration from both sides, stating, “I got much clearer insight into how that session went from writing it down on, you know, via email, as opposed to speaking it and trying to discuss things through Teams” (P14, FG2). The value of multimodal communication was also highlighted by a Rwandan participant, who remarked, “he [referring to P13, FG2] sent me some videos to use in the class” (P8, FG1). These reflections were summarized as the need to provide a space for collaborators to openly communicate “whatever the platform” (P11, FG2).

Theme 8: Language

Another theme closely linked to communication is the language barrier. As highlighted by P10, FG2, it can be hard to understand clearly when using one’s second, third, or fourth language: “I think if things are written down, it’s a lot easier for the Rwandans as, obviously, English is a second, third, or even fourth language, to be able to understand what’s being asked.” Ways to overcome this issue were discussed, with P14, FG2 noting, “Sometimes actually the language barrier times can sometimes be broken down a bit by actually just writing stuff down and you know, sending it via email.” This solution reinforces the enabler of a multimodal approach, where “burdensome” (P16, FG2) methods of communication are avoided. As P11, FG2 stated, “If you just make it easy and accessible to have a conversation, whatever the platform, then just lines of communication are clearer and easier.”

Theme 9: Technology

One of the most significant first-order barriers that was identified during the collaboration was the fragility of communications technology. Efforts were made within the collaboration to provide infrastructure; however, this was still limiting. As P13, FG2 stated, “Just the technology, just the how fragile it was, you know, although we did invest in it, it still couldn’t really sustain more than one Teams call.” During one stage of the

collaborative process, several Teams calls were scheduled to take place simultaneously. However, the Rwandan school's Internet connection could only accommodate one device at a time. This concern demonstrated the central role of technology in our international collaboration. As P13, FG2 explained, "It did highlight... just the challenges that the teachers face if they are using the Internet for more than maybe five or six devices, then the Internet runs really slow." This technology limitation led to alternative methods of communication being used, as P14, FG2 explained, "Internet connection didn't allow us to actually conduct the meeting, so instead we were going back and forth on email." P14, FG2 noted that Rwandan collaborators,

responded via email later that day to the questions that I'd asked, and it was actually a much better articulation of how the session went... I got much clearer insight into how that session went from writing it down... as opposed to speaking it and trying to discuss things through Teams.

Whilst this workaround prevented the planned collaborative exchange from taking place, it opened up alternative opportunities that seemed to be successful. Another significant barrier was the lack of access to digital resources available within the Rwandan school, as P9, FG1 noted, "We don't have enough computers...." Which meant that some of the Rwandan teachers had to wait in line to use the handful of working laptops.

The Importance of Building Relationships and Rapport

The following section includes findings which highlighted the significance of clear, consistent, and flexible communication practices in supporting effective international collaboration. Participants reflected on the benefits of maintaining regular contact, adopting a multimodal approach to communication, and addressing barriers related to language and technology. These enablers and challenges are explored across four key themes

Theme 10: Informal Conversations

Despite being a formal collaborative process, P16, FG2 noted that informal conversations were equally important, saying, "Tell each other about our experiences, you know, our family, our kind of backgrounds and I think that worked really well, spending 10, 15 minutes at the start, not really talking about collaborative learning or anything like that." Rwandan teachers felt that being a "good listener" and "good collaborators" (P4, FG1) was important when having these conversations. One Welsh lecturer described their informal interaction as a "completely normal conversation... that you would have with someone else who taught if you were stood in the pub" (P11, FG2). Ultimately, the relaxed nature of these conversations enabled a more effective collaborative process, as P16, FG2 described, "Just kind of stripping it back and understanding our teaching experiences and our family backgrounds and little nuggets of information about each other" were helpful experiences.

Theme 11: Building Rapport

It was widely accepted that the informal nature of many of the conversations that took place throughout the collaboration enabled rapport to be built. This was described as “taking the time to get to know each other” (P16, FG2) and building the “foundations” (P12, FG2) for the collaboration, overall. The Welsh team viewed the opportunity to see each other and communicate via technology as an effective way “to build rapport” (P14, FG2). The Rwandan teachers held similar views, stating that, over the course of the collaboration, they had become more than just collaborators with the Welsh team. As P2, FG1 stated, “Honestly, we became friends, and you are good mentors.” These good experiences were summarized by a Rwandan teacher, P4, FG1, who stated that, “It [the collaboration] happened friendly.”

Theme 12: Resilience

One of the second-order themes that enabled the collaboration to be effective was resilience. This was experienced as a commitment to collaborate despite experiencing barriers, as P13, FG2 stated, “We all persisted and actually all stuck with it. And, actually, on that day, we did [successfully meet].” The fact that all participants “stayed on” and “showed resilience” (P13, FG2) when technology became disruptive suggested that the building of rapport led to a heightened willingness to persevere. This was summarized by one Welsh lecturer who said, “Rwandan teachers stayed way over, you know, they finished school way hours [late], you know, and stayed on. So, although we were resilient, they were really resilient as well” (P13, FG2).

Theme 13: Openness

Another positive impact of building rapport across the collaboration was an openness on both sides. As P13, FG2 shared, “So that openness for both sides, I think, to collaborate was really important.” This general sense of openness and transparency to the collaboration was also viewed as a “willingness” to actively collaborate throughout the entire process, as P12, FG2 stated, “Just the willingness on both sides and also the opportunity on both sides to keep collaborating.”

Discussion

The collaboration between Welsh academics and Rwandan primary teachers underscores the complexities and rewards of remote cross-cultural educational initiatives. This study highlights 13 themes that enabled or created barriers to collaboration that can

be classified within the applied first-order and second-order categorization (see Table 1 and Table 2, below). The number of instances of each theme is included in brackets.

First-order Enablers	Second-order Enablers
Multimodal Approach (7) Consistent Communication (10) Planning (10) Informal Conversations (12)	Shared Interest (15) Rapport (9) Resilience (4) Openness (3)

Table 1

First-Order and Second-Order Enablers to Developing Remote Cultural Collaboration

First-order Barriers	Second-order Barriers
Technology (8) Language (8) Shared Context (4)	Bias (4) Power (4)

Table 2

First-Order and Second-Order Barriers to Developing Remote Cultural Collaboration

Enablers of Collaboration

One of the main enablers identified was the establishment of a shared interest. Both Welsh and Rwandan educators found common ground in their commitment to enhancing educational practices through CL. This shared purpose fostered a sense of unity and mutual respect, crucial for effective collaboration. Additionally, planning emerged as a significant enabler. Detailed preparatory work, including meetings and discussions, helped align goals and expectations, ensuring a structured approach to the collaborative activities. This preparation not only facilitated smoother interactions but also built resilience among participants, enabling them to navigate challenges more effectively.

The importance of building rapport cannot be overstated. Initial sessions focused on getting to know each other, which laid a foundation of trust and openness. This trust was essential for candid discussions and for addressing sensitive issues like power dynamics and technological inequalities. Moreover, consistent communication was pivotal. Regular interactions between the collaborators helped maintain momentum and allowed for continuous feedback and adjustment of strategies. This aligns with the findings of Wang et al. (2023) who stressed the importance of developing relationships within cross-cultural collaborations.

The resilience shown by participants was another notable enabler. Despite technological and logistical setbacks, both Welsh and Rwandan educators demonstrated a strong commitment to the project. This perseverance was partly fuelled by the rapport built early on, which cultivated a willingness to overcome challenges together. Additionally,

an openness to learning and adapting was crucial for all participants. Both sides were willing to share their experiences and learn from each other, which enriched the collaborative process and outcomes. This resilience is important when first-order and second-order enablers and barriers ebb and flow throughout the collaborative process (Becker, 1994).

Barriers to Collaboration

Despite these enablers, the collaboration faced several barriers. Technological challenges were prominent, including issues with connectivity and the usability of digital tools. These technological barriers sometimes hindered the fluidity of communication and the execution of planned activities. Language differences also posed significant challenges. Even with proficient English speakers, nuances and cultural contexts could lead to misunderstandings, requiring extra effort to ensure clarity and mutual understanding. These challenges echo findings from wider literature, such as technological failures, connectivity issues, and time zone differences (Fominykh et al., 2016). Other literature also notes the complexity of addressing diverse cultural norms, language barriers, and social tensions (Wang, 2011; Mittelmeier et al., 2018).

Power dynamics and biases were subtle yet significant barriers to effective collaboration. There were instances where the collaboration felt one-sided, with the Welsh academics perceived as the primary benefactors. This imbalance sometimes led to feelings of dependency rather than mutual contribution. Addressing this issue required a conscious effort to recognize and adjust these dynamics, promoting a more equitable partnership.

Conclusion and Recommendations

This remote cross-cultural collaboration between Welsh university researchers and Rwandan primary school teachers reveals the key enablers (RQ 1) and barriers (RQ 2) inherent in such research projects. The success of the collaboration was underpinned by shared interests, meticulous planning, rapport, and consistent communication. However, technological issues, language barriers, and power dynamics posed significant challenges.

This study builds on and extends the work of Ertmer (1999) and others to present a theoretical framework of first-order and second-order barriers and enablers. It was designed to help address the “deeper-rooted” contributors to success within a cross-cultural collaboration (Wiburg, 1994), whilst identifying the importance of both technical and tangible supporting factors. Our findings also highlight the use of group self-reflection to contradict the suggestion that most barriers can be eliminated by the individual alone (Tosuntaş et al., 2019).

Despite this study's contributions, its reliance on a small sample size and the specific context of a single Rwandan school and a Welsh university may limit the generalizability of its findings. While it focused on the enablers and barriers to cross-cultural collaboration, the study did not extensively explore the long-term impacts of such collaborations on participants' teaching practices and student outcomes. Future studies could build on the insights this investigation has generated by adopting a longitudinal approach to examine these impacts over time.

The following five recommendations, taken from insights gained through this study, are offered to researchers of remote cross-cultural collaborations and to educational policymakers:

Enhanced Technological Support: Invest in robust and user-friendly technological solutions (including a strong Internet connection and adequate laptop devices) in both locations to minimize disruptions and facilitate smooth communication.

Language and Cultural Training: Provide comprehensive training on language nuances and cultural contexts to enhance mutual understanding and reduce the risk of miscommunication.

Equitable Collaboration Frameworks: Develop frameworks that promote equity, ensuring all parties feel valued and able to actively contribute to the partnership. Ensure that all collaborators are involved at every stage, including the planning phase, to ensure a mutually engaged and carefully constructed collaboration.

Sustained Communication: Maintain regular and structured communication channels (allowing multimodality to capture responses) to keep all participants engaged and aligned with the collaboration goals.

Time to Develop Relationships and Foster Resilience and Openness: Plan for time to get to know one another and establish shared interests. Foster a culture of resilience and openness, encouraging participants to persevere through challenges and remain open to learning from each other.

By addressing these areas, future remote cross-cultural educational collaborations can be more effective, fostering mutual growth and achieving shared educational objectives.

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