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A Participatory Lens to Enhance Collaborative Learning Among University Students in Rural South Africa

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Abstract: Collaborative learning has been recognised as a highly effective approach to enhancing critical thinking, problem-solving, and overall academic performance. However, rural university students face unique challenges that may hinder their participation and engagement in collaborative learning activities. This gap may subsequently affect their learning effectiveness, leading to poor academic performance. Therefore, this study explores the challenges faced by rurally located university students in collaborative learning and strategies to enhance their participation. The study is underpinned by social learning theory and framed within a transformative paradigm using a qualitative research approach. Participatory Research was employed as a research design to provide inclusive opportunities for participants to be actively involved in the process of finding solutions to their problems. Focus group discussions were conducted to elicit information from 10 randomly selected rural university students enrolled in a particular module at a selected university in the Eastern Cape province. Thematic analysis was utilised to analyse the data. The results indicate that the main challenges faced by rural university students in collaborative learning include limited access to resources and technology, conflicting time schedules, and the unavailability of students. In contrast, providing adequate access to resources and technology, along with social and institutional support, is essential for enhancing collaborative learning among students in rural universities. In conclusion, promoting collaborative learning among rural university students requires universities to invest in adequate resources, implement flexible learning schedules, and create supportive learning environments.

Keywords: Participatory lens, collaborative learning, rural university students, social learning theory.

1. Introduction

Collaborative learning has become an increasingly popular approach in higher education due to its numerous benefits. Research indicates that students who engage in collaborative work can improve their understanding of course material, enhance their critical thinking and problem-solving abilities, and ultimately advance their academic performance (Kilgo et al., 2015; Toven-Lindsey et al., 2015; Abosalem, 2016; Al-Rahmi et al., 2017; Häkkinen et al., 2017). Moreover, students develop meaningful relationships with their peers while gaining unique insights from the variety of perspectives and experiences present within the group. Additionally, evidence suggests that collaborative learning fosters critical thinking skills and promotes academic success by providing engaging educational experiences (Godat, 2012; Gorvine & Smith, 2015). Through this approach, students are encouraged to work together to reach shared goals by utilising one another's strengths and perspectives. It has been shown that collaborative learning can not only educate but also promote social skills and bolster levels of motivation within the student body (Alhinty, 2014; Hortigüela

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Alcalá et al., 2019). Thus, for these very reasons, it is clear why many educational institutions are increasingly adopting a more collaborative approach to teaching.

Despite the benefits of collaborative learning, students from rural areas may face unique challenges that hinder their participation and engagement in these activities. Rural students may have limited access to technology, which is essential for online collaboration, or they may have fewer opportunities to meet with other students outside of class. Dzansi and Amedzo (2014) and Aruleba and Jere (2022) point out that the digital divide between rural and urban areas limits rural students' potential for effective collaboration. Additionally, due to their isolated location, rural students may not have the same opportunities to meet with peers outside of class that their urban counterparts may enjoy. As a result, students from rural areas are likely to face unique challenges when engaging in collaborative activities that their peers from more urban environments do not encounter. It is essential to recognise these disparities so that appropriate resources and instructional strategies can be allocated to help rural learners take advantage of collaborative learning opportunities. Furthermore, they may experience cultural barriers or feel isolated due to their rural background (James et al., 1999), which can take an emotional toll on any student. All of these challenges may substantially decrease motivation and focus during college life, subsequently affecting their learning effectiveness and leading to poorer academic performance than they might have achieved in a more accommodating environment.

However, studies have shown that students face various challenges during collaborative learning in different countries. In the United States, research has found that students struggle with group dynamics and communication, leading to conflicts that hinder their learning effectiveness (Bell, 2010). Similarly, studies conducted in Turkey have revealed that students encounter cultural barriers, such as language differences and conflicting values and beliefs (Kirkgöz, 2014), which can impede their ability to work collaboratively. Moreover, students from disadvantaged backgrounds in Nigeria lack access to necessary resources, such as computers and reliable internet connectivity (Jimola & Ofodu, 2021; Jinadu et al., 2021), which can limit their ability to participate in collaborative learning activities. In South Africa, studies have highlighted the impact of unequal access to technology (Dube, 2020; Naidoo & Raju, 2012; Walton et al., 2015). Students from disadvantaged backgrounds often have limited access to online collaboration tools and resources (Omodan & Ige, 2021), which may hinder their ability to fully engage in collaborative learning activities.

The problem of the study stems from the researcher's experience as a lecturer at the selected university. During my time in this position, we administered group assignments in classrooms with the mandate for students to collaborate on the tasks. However, the opposite occurred, as the majority of the students failed to participate actively in the group assignments due to various challenges. Instead, the students preferred to be given individual assignments. To address this gap, this study utilises a participatory lens to explore the challenges faced by rural university students in collaborative learning and subsequently provide possible strategies to ameliorate these challenges. Therefore, this study contributes to the growing body of knowledge on collaborative learning and its implications for rural university students, informing the development of effective strategies to enhance collaborative learning for these students. Ultimately, this study has the potential to improve the academic performance and overall well-being of rural university students by providing them with the tools and support they need to succeed in collaborative learning environments.

1.1 Theoretical framework

Social Learning Theory (SLT) underpins this study. SLT is a psychological framework that emphasises the role of social interaction and observation in shaping human behaviour (McGregor, 2009; Edinyang, 2016). The theory traces back to Albert Bandura in the 1960s and has since been applied to various fields, including education (Woodward, 1982; Allan, 2017). SLT posits that people learn through observation and imitation of the behaviours of others, and that this learning can occur

both directly and indirectly. One of the key assumptions of Social Learning Theory is that individuals are active agents in their own learning and development. This means that individuals are not passive recipients of information but instead play an active role in constructing their own knowledge and understanding. Another key assumption of SLT is that social interaction plays a crucial role in learning (Brieger et al., 2020). That is, individuals learn from observing others and from interacting with them, whether through direct communication or through media.

Adopted by several areas, such as education and social sciences, but particularly pervasive in education (Skinner & Fream, 1997; Howorth et al., 2012; Deaton, 2015), SLT has been fundamental to many educational programmes. It not only provides a model for learning within an educational environment but also presents an understanding that goes beyond the traditional view focused solely on knowledge acquisition. Its main goal is to offer students an opportunity to apply their newly acquired knowledge in a meaningful context so that real mastery of the material can be obtained.

SLT is particularly relevant to the topic of enhancing collaborative learning among rural university students. This relevance arises because it suggests that individuals learn best when they are engaged in social interactions and have opportunities to observe and learn from others. Therefore, collaborative learning can be enhanced among rural university students by adopting a participatory lens that emphasises active engagement and social interaction (Klette et al., 2018). Additionally, SLT suggests that individuals learn through modelling, meaning that they imitate the behaviours of others. By providing rural students with opportunities to observe and learn from their peers, collaborative learning activities can enhance critical thinking, problem-solving, and overall academic performance. By creating such an environment, rural university students can be empowered to take an active role in their own learning and development.

1.2 Research questions

The following research questions were raised to pilot the study:

- What challenges do rural university students face in implementing collaborative learning?
- What participatory strategies are available to enhance effective collaborative learning among university students?

2. Methodology

2.1 Research paradigm

This study adopts the transformative paradigm as a worldview because it emphasises the need to address power imbalances and promote social justice through transformative change (Jackson et al., 2018). The transformative paradigm posits that the research process should not only transmit knowledge but also promote social change (Barlas, 2000). In this sense, it transcends traditional educational approaches that focus on individual learning and achievement, addressing broader social issues such as poverty, inequality, and injustice (Mertens, 2010; Swartz & Scott, 2012). This paradigm is highly relevant to this study as it highlights the need to address the unique challenges rural university students face in collaborative learning activities. It recognises that power imbalances exist in educational settings and that students from marginalised backgrounds may encounter additional barriers to participation and engagement in such activities. By adopting a transformative approach to enhance collaborative learning, this study seeks to promote critical reflection, dialogue, and social change among rural university students by creating a learning environment that encourages them to question their assumptions, reflect on their experiences, and challenge power imbalances. Through this process, rural university students can develop the skills and knowledge necessary to become active agents of social change in their communities.

2.2 Research approach

The study adopts a qualitative research approach, which seeks to explore and understand social phenomena from the participants' perspective (Kemparaj & Chavan, 2013). This approach is particularly suitable for examining complex social issues, such as the challenges faced by rural university students in collaborative learning activities. In qualitative research, Barrett and Twycross (2018) argue that methods such as interviews, focus group discussions, and observation allow researchers to collect rich, detailed data on participants' experiences, perspectives, and attitudes. This data can be analysed using various qualitative data analysis techniques, such as the thematic analysis adopted for this study (Castleberry & Nolen, 2018), as discussed below. By employing a qualitative research approach, this study aims to provide a rich, nuanced understanding of the challenges faced by rural university students in collaborative learning and the strategies that can be used to enhance their participation and engagement.

2.3 Research design

Participatory Research (PR) was adopted as the research design for the study. PR emphasises collaboration and partnership between researchers and participants (Arnold et al., 2022). It seeks to empower participants and involve them in all stages of the research process, from problem identification to data collection, analysis, and dissemination (Doyle & Timonen, 2010; Bergold & Thomas, 2012). This supports the argument that PR recognises the value of local knowledge and expertise, aiming to integrate this knowledge into the research process (Cornwall & Jewkes, 1995). The adoption of PR as a research design for this study is highly relevant, as it emphasises collaboration and partnership, particularly when addressing complex social issues such as the challenges faced by rural university students in collaborative learning activities. By involving rural university students as active partners in the research process, the study aims to empower them and provide them with a voice. This approach, therefore, has the potential to yield more meaningful and relevant findings that are grounded in the experiences and perspectives of the participants.

Moreover, by adopting PR as a research design, the study acknowledges the importance of engaging with the community and promoting social change (Doyle & Timonen, 2010). This goes beyond traditional research methodologies, which often view participants as passive subjects and fail to recognise their agency and capacity to effect change. By embracing a participatory approach, the study seeks to promote social justice, empowerment, and social transformation among rural university students.

2.4 Participants and selection of participants

The study participants comprise ten students who enrolled in a specific module at a selected university in the Eastern Cape of South Africa. In this module, group assignments are a prerequisite for students' progression. However, despite this requirement, these students have not participated in the group assignment and have provided various excuses for their lack of involvement. To investigate the reasons behind this lack of participation, the researchers randomly selected ten students from a pool of 81 students who registered for the module. The use of a simple random sampling technique was deemed appropriate, as it provided all students with an equal probability of being selected (Rahi, 2017), given that they all faced the same challenges in their group assignments. The fact that the study participants come from a rural university is significant, as it highlights any unique challenges or barriers students encounter in this context.

2.5 Method of data collection

The study utilises focus group discussions (FGDs) to elicit data from participants. Using FGDs for data collection is rewarding, as it enables collaborative and participatory discussion methods (Wilkinson, 2015). This approach involves the individuals facing the problems addressed in this study, deepening our understanding of their challenges through direct engagement. It also encourages mobility within participatory research design, ensuring that voices are heard.

Additionally, reflective conversations that lead to actionable insights emphasise reciprocity in the exchange of knowledge between researchers and communities as stakeholders.

2.6 Data analysis

The data generated through FGD were analysed using thematic analysis. Thematic analysis is a qualitative research technique used to identify, analyse, and interpret patterns and themes within data (Castleberry & Nolen, 2018). According to Kiger and Varpio (2020), this method allows researchers to gain deeper insights into the subject matter. Therefore, thematic analysis is an appropriate method for analysing the data gathered through FGD, as it enables researchers to draw conclusions while keeping their specific research objectives in mind. This approach ensures that the data is investigated within its precise context, providing a more accurate picture of the study area and allowing for the identification of relevant patterns and trends. Moreover, since all the research objectives were already articulated in distinct themes, the researchers could easily identify questions and sub-themes, sorting, exploring, and interpreting the information to develop meaningful insights. Overall, thematic analysis proved to be a reliable way of organising and understanding all the information from the FGD.

2.7 Ethical considerations

The study was conducted with the utmost respect for all participants' ethical rights, as confirmed by institutional approval. The researchers adhered to prescribed practices regarding consent and disengagement, ensuring that everyone involved could participate confidently at their own comfort levels. Efforts were also made to preserve the anonymity of all research subjects. Careful measures, such as assigning participants pseudo-names, ensured that their individual responses would not be attributed to them personally in any published reports resulting from the study. The participants'; names were represented as S1, S2, S3, S4, to S10.

2. Presentation of Results

In this section, the data analysis adheres to the principles of thematic analysis described previously. The data were arranged based on the research questions, and Table 1 showcases the two themes associated with each question, as extracted from the participants' statements.

Table 1: *Thematic representation of data*

Research Questions	Themes
What challenges do rural university students in implementing collaborative learning?	1. Limited access to resources and technology
	2. Conflicting time schedules and unavailability
What participatory strategies are available enhance effective collaborative learning an university students?	1. Need for adequate access to resources and technology
	2. Social and institutional supports

Question 1, theme 1: *Limited access to resources and technology*

The issue of limited or inadequate resources and access to technology was raised by many participants in their FGD session as one of the challenges that hindered their participation in group work. This indicates that the issue has, in one way or another, affected their collaborative learning skills, as group work is intended to strengthen these skills. This is evidenced by the participants' statements below:

S1: "As a rural university student, one of the biggest challenges I face in implementing collaborative learning is the limited access to technology. Not all of us have laptops or computers, and we rely on our mobile phones to participate in group discussions and online meetings."
S3: "Limited access to the internet is also a significant challenge. The internet connection in rural areas is often slow and unreliable, making it difficult to participate in online discussions and collaborative activities."
S5: "Some of us also struggle with limited access to research materials, such as academic journals and textbooks, which can make it challenging to contribute to group discussions and complete assignments."
S10: "Access to software and online tools can also be limited, which can make it difficult to collaborate effectively with group members who may be using different tools and software."
S9: "The cost of technology and internet access can be a significant barrier for some students. Many of us come from low-income backgrounds and may not have the resources to invest in the necessary technology and internet access."

These statements provide data on the challenges faced by rural university students in implementing collaborative learning. Specifically, each participant highlights a different aspect of the challenges they encounter in their learning process. S1 notes that limited access to technology is a significant challenge, as not all students have laptops or computers. They rely on their mobile phones to participate in group discussions and online meetings. This lack of access to necessary technology can affect their ability to engage effectively in collaborative learning. Similarly, S3 highlights the issue of limited internet access in rural areas. The internet connection is often slow and unreliable, making participation in online discussions and collaborative activities difficult. This can hinder their ability to communicate effectively with group members and engage in online collaborative learning. Supporting the points made by S1 and S3, S5 raises concerns about limited access to research materials, such as academic journals and textbooks. This can make it challenging for students to contribute to group discussions and complete assignments, thereby limiting their ability to learn and engage with course materials effectively.

The statement from S9 provides additional data on the financial barriers some rural university students face in accessing necessary technology and internet services. Specifically, the cost of technology and internet access can be a significant obstacle for students from low-income backgrounds who may not have the resources to invest in such technology. This highlights an additional challenge for these students beyond the access issue, which may significantly impact their ability to engage effectively in collaborative learning. To support S9';s argument, S10 identifies limited access to software and online tools, making it challenging to collaborate effectively with group members who may be using different tools and software.

Question 1, theme 2: *Conflicting time schedules and unavailability*

Based on the data collected from the participants, another challenge faced by the students is conflicting time schedules and student unavailability during the collaborative group assignments. The following statements from the participants confirm this:

S2: "As a rural university student, one of the biggest challenges I face in implementing collaborative learning is conflicting schedules. We all have different commitments outside of our academic work, such as jobs and family responsibilities, which can make it difficult to coordinate schedules and meet regularly."
S4: "In some cases, group members may be studying different courses, which can create scheduling conflicts and make it challenging to coordinate group activities."
S6: Some of us may be in different classes, which can make it difficult to coordinate schedules and participate in group activities at the same time."

S7: "Distance is another significant challenge. Some of us live far away from the university and have to travel long distances to attend classes and participate in group activities, making it difficult to coordinate schedules and meet regularly."
S8: "Some group members may also have health or personal issues that make it difficult to participate in collaborative learning activities. It can be challenging to accommodate these needs while still maintaining group cohesion and productivity."

The statements provided by participants offer insights into the challenges faced by rural university students when implementing collaborative learning due to scheduling conflicts, geographical distances, and personal issues that render them unavailable during group work. In the statement from S2, conflicting schedules emerge as a significant challenge. This may be attributed to the fact that rural university students often have multiple commitments outside their academic work, such as jobs and family responsibilities, which complicate the coordination of schedules and regular attendance for collaborative learning. S4 also points out that studying different courses can create scheduling conflicts, making it challenging to coordinate group activities effectively. This underscores the importance of group members understanding each other's course schedules to prevent such conflicts. S6 supports this notion, noting that being in different classes complicates schedule coordination and participation in group activities simultaneously. Additionally, S7 highlights that distance is another significant challenge, particularly for those who reside far from the university. The necessity to travel long distances to attend classes and engage in group activities further complicates schedule coordination and regular meetings for collaborative learning. Participant 8 identifies that accommodating personal issues can be challenging, emphasising the importance of flexibility, understanding, and communication among group members to address these challenges and ensure effective collaborative learning outcomes.

Question 2, theme 1: *Need for adequate access to resources and technology*

From the participants' statements deduced from the FGD, the participants jointly provide solutions to their problems as recommended by the principles of participatory research. One of the solutions, according to them, is the need to provide adequate access to resources and technology for the students. The statements below are the evidence.

S1: "One strategy to enhance collaborative learning is to ensure that all group members have access to the necessary resources and technology. This may include providing laptops or computers, internet access, and access to online tools and software."
S3: "Using cloud-based tools and online collaboration platforms, such as Google Drive and Zoom, can also help to enhance collaborative learning by allowing group members to work together in real-time."
S5: "Providing access to online research materials and academic journals can also be beneficial in enhancing collaborative learning, as it allows group members to contribute to discussions and assignments with relevant and up-to-date information."
S9 "Ensuring that group members are trained and familiar with the software and tools being used is also crucial in enhancing collaborative learning. This can help to reduce frustration and confusion and allow for a smoother collaboration process."
S10"Finally, providing financial support to students who may struggle with the cost of technology and internet access can help to ensure that all group members are on an equal footing and can participate fully in collaborative learning activities."

Several participants, in different ways, address the need for adequate access to resources and technology. S1 emphasises the importance of providing access to laptops, computers, and the internet, stating that this will enable all group members to participate fully in collaborative learning. Similarly, S5 stresses the significance of access to online research materials and academic journals, which can help group members contribute to discussions and assignments with relevant and up-to-

date information. S3 suggests that cloud-based tools and online collaboration platforms, such as Google Drive and Zoom, can enhance collaborative learning by allowing group members to work together in real time. This approach can be particularly useful for rural students facing limited internet access and technology challenges. S9 states that training group members on the software and tools being used is necessary to empower the students. This training can reduce frustration and confusion, allowing for a smoother collaboration process. This aspect of collaborative learning can be easily overlooked, but it is crucial to ensure that all group members are comfortable with the technology being used. Lastly, S10 aligns with others by emphasising the need for financial support for students who may struggle with the cost of technology and internet access. This is an essential consideration, as many students may come from low-income backgrounds and may not have the resources to invest in the necessary technology and internet access. Providing financial support can help ensure that all group members are on an equal footing and can participate fully in collaborative learning activities.

Question 2, theme 2: *Social and institutional supports*

Another solution provided by the participants is the need for social and institutional support for the students to be able to live up to their expectations regarding the implementation of collaborative learning. These suffixes in the participants' statements below:

> *S2: "Institutional support is crucial in enhancing collaborative learning. This could include providing group study spaces, organising group activities and events, and providing funding for collaborative projects."*
> *S4: "Establishing clear communication channels and scheduling regular meetings can also help to enhance collaborative learning by ensuring that all group members are on the same page and have the opportunity to contribute to group discussions."*
> *S6: "Providing training and support for group facilitators and leaders can also be beneficial in enhancing collaborative learning. This can help to ensure that group activities are organised and facilitated effectively."*
> *S7: "Incentivising collaborative learning through grading and assessment can also be an effective strategy. This encourages group members to take collaborative learning seriously and prioritise their contributions to the group."*
> *S8: "Providing mental health and emotional support to some of us, the group members, can help to enhance collaborative learning by reducing stress and improving group cohesion. This could include offering counselling services, organising social events, and providing a supportive environment for group members to share their challenges and successes."*

The data provided above highlights the importance of social and institutional support for rural students, particularly in enhancing collaborative learning. Each participant offers a unique perspective on the various forms of support that could enhance collaborative learning. S2 emphasises the role of institutional support, suggesting that group study spaces, group activities, and funding for collaborative projects could be offered to foster collaboration. S4 also stresses the importance of clear communication channels and regular meetings to ensure that all group members are on the same page and have equal opportunities to contribute to discussions. S6 advocates for training and support for group facilitators and leaders to ensure that group activities are organised and facilitated effectively. S7 suggests that incentivising collaborative learning through grading and assessment could encourage group members to prioritise their contributions. Specifically, the lecturer should take note of those who participated while awarding marks. Lastly, S8 emphasises the importance of mental health and emotional support for group members to reduce stress, improve group cohesion, and create a supportive environment for sharing challenges and successes. Overall, the argument suggests that providing social and institutional support—such as physical spaces, communication channels, training, incentives, and emotional support—is essential in promoting collaborative learning among rural students.

3. Discussion of Findings

Limited access to resources and technology has been identified as one of the challenges hindering the implementation of effective collaborative learning. The findings of the study suggest that this limited access is a significant barrier for rural students. Recent literature supports this, highlighting the impact of restricted access to technology and resources on learning in rural areas. A study by Lembani et al. (2020) argues that rural students encounter difficulties in accessing digital resources, which may affect their ability to engage in collaborative learning activities. The study emphasizes the need for equitable access to technology and resources to support learning in rural schools. Similarly, research by Thota (2015) highlighted how the digital divide impedes the effectiveness of collaborative learning among rural students. It suggested that addressing this divide and ensuring fair access to technology could enhance the quality of collaborative learning experiences for these students. Another study by Al-Samarraie and Saeed (2018) underscored the importance of teacher support in overcoming the challenges posed by limited access to technology and resources for collaborative learning in rural areas. The study indicated that teacher support could assist students in developing the essential digital literacy skills required for effective engagement in collaborative activities.

Additionally, conflicting time schedules and the unavailability of students during group discussions and assignments are challenges to collaborative learning. This finding aligns with previous literature reporting similar barriers. A study by Omodan and Tsotetsi (2020) found that time constraints and scheduling conflicts ranked among the top obstacles to collaborative learning. The research indicated that students often struggled to find common meeting times due to busy schedules and other commitments, which hindered their ability to collaborate effectively. Similarly, a study by Omodan and Ige (2021) identified conflicting schedules as significant impediments to collaborative learning in online environments. It suggested that employing asynchronous communication tools and implementing flexible scheduling could help mitigate these challenges. In summary, conflicting time schedules and students' unavailability during group discussions and assignments pose significant barriers to their participation in collaborative learning.

In the process of addressing the above challenges, the participants highlighted the need for adequate access to resources and technology. Specifically, they identified this access as a crucial solution to the barriers hindering effective collaborative learning among students. This finding aligns with recent literature, which emphasises the importance of providing equitable access to resources and technology to support collaborative learning. A study by García-Morales et al. (2021) argues for the necessity of access to digital resources and technology to facilitate collaborative learning. It suggests that equitable access to technology and resources can help students develop essential digital literacy skills and engage effectively in collaborative learning activities. Similarly, a study by Jeong and Hmelo-Silver (2016) highlights the role of technology in enhancing collaborative learning. This study found that technology can facilitate communication, information sharing, and collaboration among students, thereby improving their collaborative learning skills and academic performance. Moreover, a study by Zhu et al. (2016) underscored the importance of access to various resources, both physical and digital, to support collaborative learning. It indicated that equitable access to resources could equip students with the skills necessary to engage effectively in collaborative learning activities. In summary, providing equitable access to technology and resources can help students develop the skills needed to engage effectively in collaborative learning activities and enhance their academic performance.

The participants also advocated for social and institutional support as a solution. The findings suggest that participants identified social and institutional supports as key to overcoming the challenges hindering effective collaborative learning among rural students. This aligns with recent literature, which has emphasised the importance of social and institutional support in promoting

effective collaborative learning. One study by Lee et al. (2019) argues for the significance of social support in enhancing collaborative learning among students. The study found that students who received social support from peers and teachers were more likely to engage in collaborative learning activities and perform better academically. Similarly, a study by Jena (2015) highlighted the importance of institutional support in fostering collaborative learning among students. It suggested that institutional support, such as clear guidelines and expectations for collaborative learning, could help students develop the necessary skills to engage effectively in collaborative activities. Additionally, a study by Jeong and Hmelo-Silver (2016) underscored the significance of social and institutional support in promoting collaborative learning in online environments. This research indicated that social and institutional supports, such as the creation of online communities and the provision of technical assistance, could help students overcome the challenges associated with collaborative learning in online settings. Overall, these findings underscore that social and institutional supports are essential for promoting effective collaborative learning. Therefore, providing such support can help students develop the necessary skills to engage in collaborative learning activities and improve their academic performance.

4. Conclusion and Recommendations

The findings of this study have identified the primary challenges facing collaborative learning in rural universities. Limited access to resources and technology, conflicting time schedules, and the unavailability of students present a trio of obstacles to effective collaboration. However, our research has also shown that there is significant potential for improving the quality of learning within rural universities. Moreover, by providing adequate access to resources and technology, as well as social and institutional support, collaborative learning could be greatly enhanced in rural university settings. It thus becomes essential for educational institutions to recognise the discrepancies between rural and urban universities in terms of resource availability and to offer the necessary remedies that will facilitate collaboration for all involved parties.

Based on this, the following recommendations were made:

- Universities located in rural areas should invest in providing adequate resources and technology to rural students to promote collaborative learning. This could include access to high-speed internet, computers, and other necessary equipment to facilitate collaborative learning.
- Universities located in rural areas could consider implementing flexible learning schedules that cater to the needs of rural students. This could include evening classes, weekend classes, or online learning options, which would allow students to participate in collaborative learning activities without compromising their other commitments.
- Universities located in rural areas should consider creating supportive learning environments that foster student collaboration and teamwork. This could include creating group workspaces, encouraging team-based assignments, and providing mentorship programmes.

In clear terms, to promote collaborative learning among rural university students, it is recommended that universities invest in adequate resources and technology, implement flexible learning schedules, and create supportive learning environments. By taking these steps, universities can help bridge the gap between rural and urban students and provide equal opportunities for all students to succeed.

6. Declarations

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