

Indigenous Teachers' Lived Experiences of Using Moodle for In-Service Training in Hinterland Guyana: A Qualitative Study

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Abstract: This qualitative study explores Indigenous in-service teachers' experiences with Moodle as a Learning Management System for professional development in Guyana's hinterland regions. These communities face ongoing challenges, including geographic isolation, limited technological infrastructure, and restricted access to traditional face-to-face training. Using semi-structured interviews and focus groups, the study investigates teachers' perceptions of Moodle's accessibility, usability, and cultural relevance. Results suggest that Moodle offers valuable opportunities for flexible, self-paced learning and professional collaboration, improving access to training in remote areas. Nonetheless, its effectiveness is restricted by issues such as low digital literacy, unreliable internet connectivity, and limited alignment with Indigenous cultural contexts. The study emphasises the importance of culturally responsive design, targeted teacher support, and improved infrastructure to fully realise the benefits of digital learning platforms. Overall, the research underscores Moodle's potential to promote equitable and inclusive teacher education in remote and underserved communities.

Keywords: *Indigenous Education; Moodle; Learning Management System; Qualitative Study; Teacher Training; Hinterland Education; Digital Inclusion; Teacher Professional Development; Guyana; Culturally Responsive Pedagogy.*

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I. INTRODUCTION

Guyana, situated on the northern coast of South America, is known for its rich cultural diversity, which includes several Indigenous groups such as the Arawak, Carib, Wapishana, Akawaio, and Patamona. These communities mainly live in the hinterland regions, which make up about 80% of the country's landmass but are sparsely populated and geographically remote. Despite ongoing national efforts to enhance education through policy reform and digital initiatives, considerable disparities remain in access to quality education for Indigenous communities (Ministry of Education Guyana, 2022; UNESCO, 2021).

Indigenous education in Guyana is influenced by intricate socio-economic, linguistic, and cultural factors. Many hinterland communities face limited access to technological infrastructure, insufficient school resources, and difficulties related to distance and terrain. Moreover, the medium of instruction is mainly English, which is often not the first language of Indigenous learners, creating obstacles to understanding and participation (UNICEF, 2020). These conditions place distinctive demands on teachers, who must manage culturally diverse classrooms while aligning instruction with national curriculum standards.

Teacher professional development is widely recognised as a vital factor in enhancing educational outcomes, especially in underserved regions (Darling-Hammond et al., 2017). In Guyana's hinterland, however, access to ongoing in-service training is limited by logistical challenges, including long travel distances, high costs, and a shortage of training personnel. Traditional face-to-face training models are therefore often impractical and unsustainable, resulting in gaps in teacher preparedness and instructional quality.

In response to these challenges, the integration of digital technologies has become a promising alternative. Learning Management Systems (LMS), such as Moodle, offer flexible, scalable, and cost-effective platforms for delivering teacher training remotely. Moodle, as an open-source LMS, supports a variety of features including asynchronous learning, collaborative forums, assessments, and resource sharing, making it a widely adopted tool in global education contexts (Dougiamas & Taylor, 2003; Martin et al., 2020). Its potential to overcome geographical barriers makes it particularly suitable for hinterland teacher training in Guyana.

However, adopting Moodle in Indigenous contexts faces several challenges. Ongoing issues such as unreliable internet access, limited availability of digital devices, and low levels of digital literacy can greatly impede effective use

(World Bank, 2020). Additionally, concerns about cultural relevance and pedagogical suitability remain crucial. Indigenous knowledge systems are often holistic, community-focused, and rooted in local traditions, which may not fit with standardised, technology-based training models (Battiste, 2013). The absence of culturally responsive content and limited incorporation of Indigenous languages further hinder the effectiveness of LMS-based training.

Given these complexities, it is essential to explore how Indigenous in-service teachers experience and perceive the use of Moodle within their specific educational contexts. Although existing literature outlines the advantages of online learning platforms, there remains a notable gap in research centred on Indigenous educators in remote areas, especially within the Caribbean setting.

This study addresses this gap by exploring Indigenous teachers' lived experiences with using Moodle for in-service training in Guyana's hinterland regions. By focusing on issues of accessibility, usability, and cultural relevance, the research aims to provide vital insights into how digital learning platforms can be adapted to support inclusive, equitable, and contextually meaningful teacher development. Ultimately, the study adds to broader discussions on digital inclusion and the transformation of education systems in marginalised and remote communities.

The Cyril Potter College of Education (CPCE) plays a central role in preparing and upgrading teachers across Guyana, including those serving in hinterland regions. Through its Hinterland Teacher Training Programme (HTTP), the college seeks to address longstanding disparities in access to qualified teacher education by targeting untrained and in-service teachers in remote Indigenous communities. In recent years, CPCE has increasingly integrated digital learning strategies into its delivery model, aligning with national efforts to expand access to education through technology (Ministry of Education Guyana, 2022). The adoption of online platforms reflects a broader shift toward flexible and inclusive teacher education systems that can reach geographically isolated populations.

A key component of this transformation is the use of Moodle as a Learning Management System to support blended and distance learning within the hinterland programme. Moodle provides a structured digital environment where teachers can access course materials, submit assignments, engage in discussion forums, and participate in assessments asynchronously. This approach is particularly beneficial in the hinterland context, where teachers often face significant travel constraints and cannot consistently attend face-to-face sessions. Research indicates that LMS platforms like Moodle enhance accessibility, promote self-paced learning, and support collaborative knowledge construction among educators (Martin et al., 2020; UNESCO, 2021). For CPCE, Moodle enables the scaling of its training programmes while maintaining continuity in teacher professional development.

Despite these advantages, the implementation of Moodle within the hinterland programme presents notable

challenges. Limited internet connectivity, inconsistent access to digital devices, and varying levels of digital literacy among teachers can affect participation and learning outcomes (World Bank, 2020). Additionally, concerns have been raised regarding the cultural relevance of online content, as standardized materials may not fully reflect Indigenous knowledge systems, languages, and pedagogical practices (Battiste, 2013). To maximize the effectiveness of Moodle in this context, CPCE must continue to invest in infrastructure, provide targeted digital skills training, and adapt course content to better align with the cultural and educational realities of hinterland communities. Such efforts are essential for ensuring that technology-enhanced teacher training remains both accessible and meaningful.

➤ *Research Question:*

What meanings do Indigenous teachers assign to their lived experiences of using Moodle for in-service training?

II. LITERATURE REVIEW

➤ *Introduction*

The integration of digital technologies in teacher education has transformed professional development globally, offering flexible and scalable learning opportunities. In geographically remote and underserved regions, such as Guyana's hinterland, Learning Management Systems (LMS) have the potential to address long-standing barriers to teacher training. This literature review examines existing research on Indigenous education, online learning platforms, and teacher professional development, while highlighting gaps relevant to the use of Moodle within the Cyril Potter College of Education Hinterland Teacher Training Programme.

➤ *Indigenous Education in Remote Contexts*

Indigenous education is deeply rooted in cultural identity, language, and community-based knowledge systems. Scholars argue that effective education for Indigenous learners must be culturally responsive and reflective of local traditions and epistemologies (Battiste, 2013). In many contexts, including Guyana, Indigenous communities face systemic inequalities in education due to socio-economic marginalization, geographic isolation, and linguistic diversity (UNESCO, 2021).

Research highlights that conventional education systems often fail to accommodate Indigenous ways of knowing, resulting in disengagement and lower academic outcomes (McGregor, 2018). In Guyana, the dominance of English as the medium of instruction presents additional challenges, particularly for students and teachers whose first language is Indigenous. Consequently, teachers in hinterland regions must adopt adaptive pedagogies that integrate local knowledge with national curriculum standards.

➤ *Teacher Professional Development in Remote Areas*

Continuous professional development (CPD) is essential for improving teaching quality and student outcomes. According to Darling-Hammond et al. (2017), effective CPD is sustained, collaborative, and context-

specific. However, in remote regions, access to such opportunities is often limited by logistical and financial constraints.

Traditional face-to-face training models are difficult to implement in hinterland areas due to travel distances and costs. Studies in similar contexts suggest that teachers in remote communities often experience professional isolation and limited access to updated pedagogical practices (Avalos, 2011). As a result, alternative approaches—particularly technology-mediated learning—have gained attention as viable solutions for expanding access to teacher training.

➤ *Learning Management Systems and Moodle in Education*

Learning Management Systems (LMS) have become central to the delivery of online and blended learning. Moodle, in particular, is widely used due to its open-source nature, flexibility, and adaptability to different educational contexts (Dougiamas & Taylor, 2003). It supports a range of features, including asynchronous learning, collaborative forums, assessments, and resource sharing.

Research indicates that LMS platforms can enhance accessibility, learner autonomy, and engagement (Martin et al., 2020). In teacher education, Moodle has been shown to facilitate reflective practice, peer collaboration, and continuous learning. However, its effectiveness depends on several factors, including user digital literacy, infrastructure, and instructional design (Al-Fraihat et al., 2020).

In developing contexts, the implementation of LMS platforms is often constrained by technological challenges such as unreliable internet connectivity and limited access to devices (World Bank, 2020). These issues are particularly relevant in Guyana's hinterland regions, where infrastructure gaps persist.

➤ *Digital Inclusion and Equity in Education*

Digital inclusion is a critical consideration in the integration of technology in education. It extends beyond access to technology to include the skills, support, and cultural relevance necessary for meaningful participation (UNESCO, 2021). The “digital divide” remains a significant barrier in many developing countries, disproportionately affecting rural and Indigenous communities.

Research emphasises that technology integration must be context-sensitive and inclusive, taking into account local realities and cultural perspectives (Selwyn, 2016). In Indigenous contexts, this includes ensuring that digital content reflects local languages, values, and knowledge systems. Without such considerations, technology may reinforce existing inequalities rather than address them.

➤ *Gaps in the Literature*

While there is extensive research on LMS use and teacher professional development, limited studies focus specifically on Indigenous teachers in remote regions, particularly within the Caribbean context. Few studies examine how Indigenous educators perceive and experience

digital platforms like Moodle in relation to their cultural and professional needs.

This study addresses this gap by exploring the lived experiences of Indigenous in-service teachers in Guyana's hinterland, providing context-specific insights into the opportunities and challenges of LMS-based training.

➤ *Theoretical Framework*

This study is guided by a combination of Digital Inclusion Theory and the Technological Pedagogical Content Knowledge (TPACK) framework, which together provide a comprehensive lens for understanding the use of Moodle in teacher training.

➤ *Digital Inclusion Theory*

Digital Inclusion Theory emphasizes equitable access to technology, as well as the skills and support required to use it effectively (Warschauer, 2004). In the context of this study, digital inclusion is not limited to providing access to Moodle but also involves ensuring that teachers have the necessary digital literacy skills, reliable infrastructure, and culturally relevant content.

This framework is particularly relevant in Guyana's hinterland, where disparities in access to technology and connectivity can significantly impact the effectiveness of online learning. It helps to explain how structural inequalities influence teachers' experiences with Moodle.

➤ *Technological Pedagogical Content Knowledge (TPACK) Framework*

The TPACK framework (Mishra & Koehler, 2006) provides a model for understanding how teachers integrate technology into their teaching. It highlights the intersection of three key forms of knowledge:

- Technological Knowledge (TK): Understanding how to use tools like Moodle
- Pedagogical Knowledge (PK): Knowledge of teaching methods and strategies
- Content Knowledge (CK): Subject matter expertise

Effective use of Moodle requires teachers to integrate all three components. In the hinterland context, teachers must not only learn how to use the platform but also adapt it to culturally relevant teaching practices.

➤ *Conceptual Application to the Study*

Together, Digital Inclusion Theory and TPACK provide a framework for analyzing:

- Access and equity issues (Digital Inclusion)
- Teacher competence and integration of technology (TPACK)
- Cultural and contextual relevance of Moodle-based training

This combined framework enables a holistic understanding of how Indigenous teachers experience

Moodle, considering both structural constraints and pedagogical practices.

➤ *Conceptual Model (Descriptive)*

The study conceptualises Moodle use as influenced by three interacting factors:

- Access and Infrastructure (connectivity, devices)
- Teacher Capacity (digital literacy, TPACK skills)
- Cultural Relevance (alignment with Indigenous knowledge systems)

These factors collectively shape teachers' experiences and the effectiveness of Moodle in supporting professional development.

➤ *Conclusion of Section*

The literature highlights the potential of LMS platforms like Moodle to transform teacher education in remote contexts while also emphasising the importance of addressing issues of access, training, and cultural relevance. By grounding this study in Digital Inclusion Theory and TPACK, the research provides a robust framework for examining Indigenous teachers' experiences in Guyana's hinterland.

III. METHODOLOGY

The study employed a qualitative methodology, using a questionnaire survey, to explore Indigenous teachers' lived experiences with Moodle for in-service training across the hinterland regions of Guyana, specifically Regions 1, 7, 8, and 9. A purposive sampling technique was utilised to deliberately select participants who are Indigenous teachers actively engaged in or previously exposed to Moodle-based training. This approach is appropriate in qualitative research where the aim is to obtain rich, context-specific insights from individuals with direct experience of the phenomenon under investigation (Creswell & Poth, 2018; Patton, 2015). By targeting teachers within these geographically remote and culturally diverse regions, the study ensures that the data reflects authentic perspectives shaped by the unique educational, technological, and socio-cultural realities of hinterland Guyana.

Purposive sampling allows the researcher to identify information-rich cases that provide depth rather than breadth, which is key to qualitative research (Etikan, Musa, & Alkassim, 2016). In this study, participants were selected based on criteria such as their Indigenous identity, recent or current participation in in-service training programmes, and familiarity with Moodle as a learning platform. This focused selection improves the credibility and relevance of the findings, especially in Regions 1, 7, 8, and 9, where access to digital infrastructure and professional development varies widely. Additionally, the use of a questionnaire survey, adapted for qualitative data collection through open-ended questions, enables systematic gathering of participants' narratives while addressing logistical challenges posed by remote locations (Creswell & Poth, 2018; Patton, 2015).

Ensuring trustworthiness in a qualitative questionnaire involves establishing credibility, dependability, confirmability, and transferability of the data. In this study, credibility was enhanced through the use of open-ended questionnaire items that enabled Indigenous teachers to provide rich, detailed accounts of their lived experiences using Moodle. The instrument was reviewed by experts in qualitative research and Indigenous education to ensure cultural appropriateness and contextual relevance, while a pilot study with a small group of teachers in Guyana helped refine clarity and reduce ambiguity. Dependability was addressed by maintaining a clear audit trail documenting the research process, including sampling decisions and data collection procedures, thereby allowing for transparency and replication (Lincoln & Guba, 1985; Creswell & Poth, 2018). Confirmability was supported by ensuring that findings were grounded in participants' actual responses through the use of verbatim quotations, minimising researcher bias (Shenton, 2004).

Reliability and validity were established through consistency, alignment, and methodological rigour. Reliability was enhanced by administering a standardised questionnaire with identical open-ended prompts to all participants across Regions 1, 7, 8, and 9, ensuring uniformity in data collection (Patton, 2015). Validity, particularly content validity, was achieved by aligning the questionnaire items with the research objectives and theoretical framework, as well as incorporating feedback from experts in the field (Creswell & Poth, 2018). Ethical considerations, especially confidentiality, were strictly maintained throughout the study. Participants provided informed consent and were reassured that their identities would remain anonymous through the use of coded identifiers. All data were securely stored and accessible only to the researcher, ensuring the protection of sensitive information and fostering participant trust (Orb, Eisenhauer, & Wynaden, 2001; Cohen, Manion, & Morrison, 2018).

IV. RESULTS AND DISCUSSION

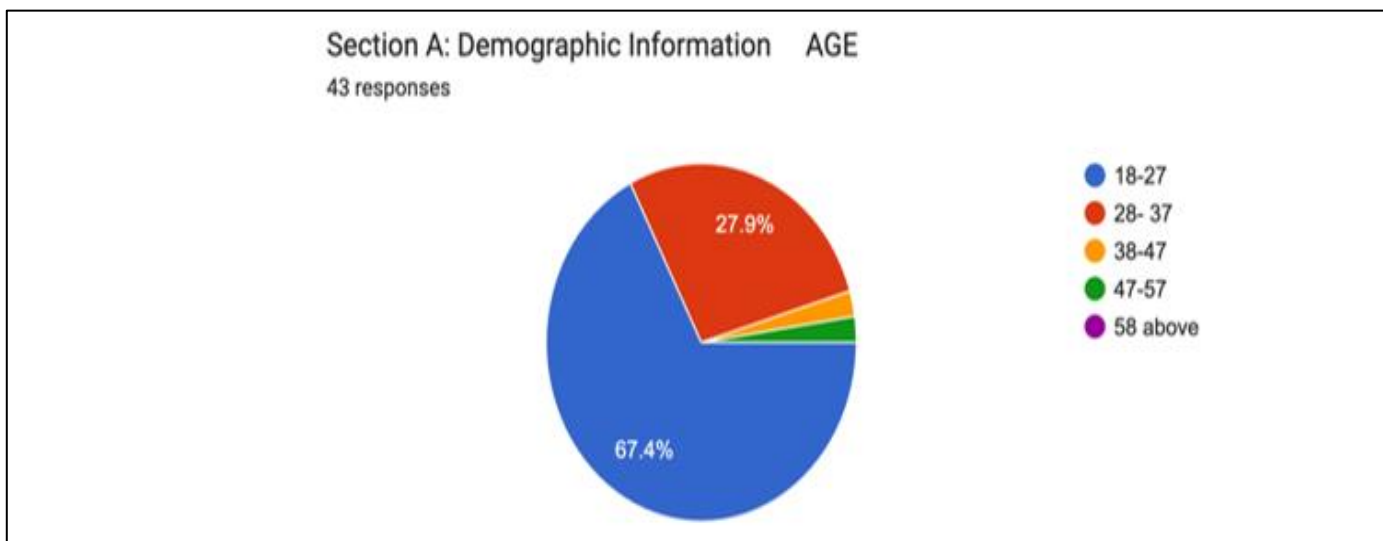


Fig 1 Pie Chart Showing the Age Range of Respondents

The demographic data show that most participants are aged 18–27, making up 67.4% (29 out of 43 respondents), followed by 27.9% (12 respondents) in the 28–37 age group. Only a very small number of participants are in the 38–47 and 47–57 ranges, and no respondents are recorded in the 58 and above category. This distribution indicates a strong skew towards younger teachers, possibly reflecting greater

engagement of early-career educators in in-service training or a higher level of familiarity and comfort with digital platforms like Moodle. As a result, the study’s findings are likely influenced by the views of younger participants, potentially emphasising issues related to digital adaptability, access, and changing teaching practices, while the experiences of older educators may be underrepresented.

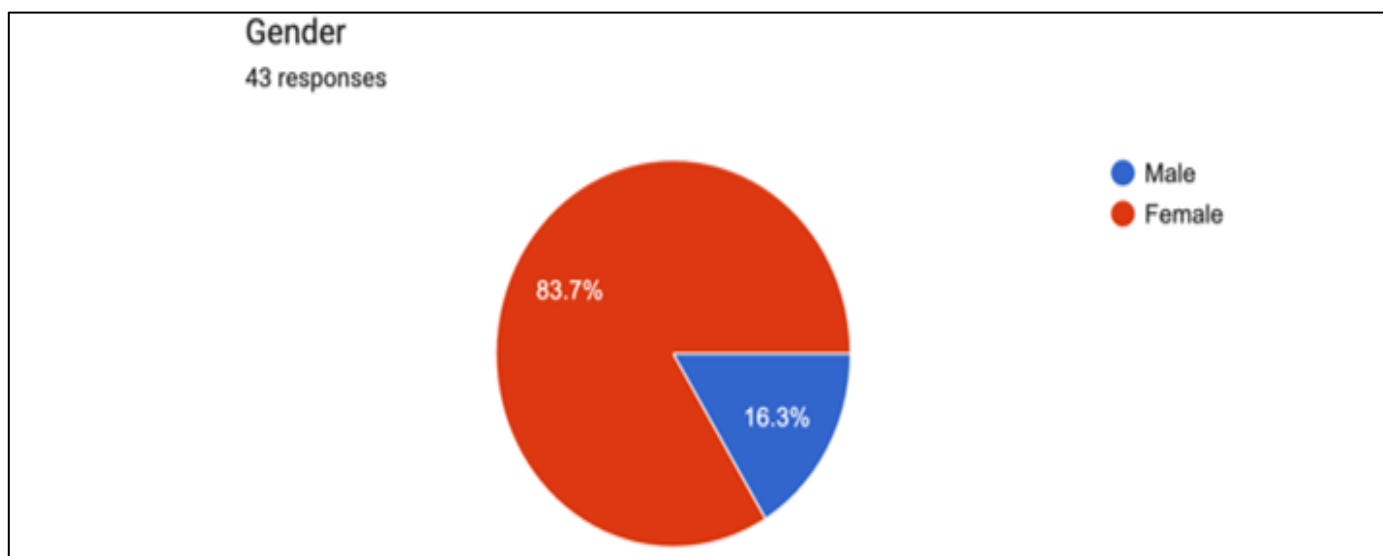


Fig 2 Pie Chart Showing the Gender

The gender distribution of the 43 respondents shows a strong female majority, with 83.7% (36 participants) identifying as female and only 16.3% (7 participants) as male. This suggests that the sample is predominantly female teachers, which may reflect the wider gender makeup of the teaching profession in Guyana, especially in hinterland regions where women often make up a large part of the education workforce.

This imbalance indicates that the study's findings are mainly influenced by female perspectives and experiences in using Moodle for in-service training. Although the data offers valuable insights, the relatively low number of male participants may mean that gender-specific differences in experience are not fully reflected, which should be taken into account when interpreting and generalising the results.

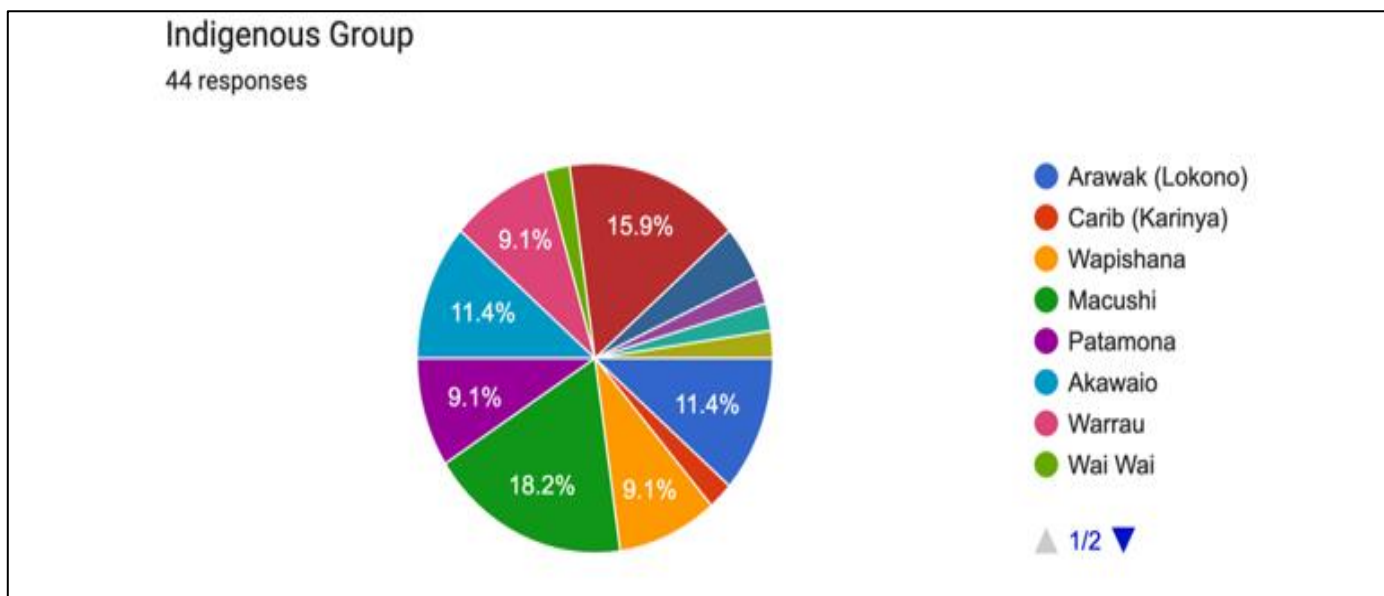


Fig 3 Pie Chart Showing the Indigenous Groups

The data on ethnic/Indigenous identification show a diverse range of participants, with one group accounting for the largest proportion at approximately 15.9%, followed by another notable group at 9.1%, while the remaining categories are distributed across smaller percentages. This pattern indicates that the sample captures a variety of Indigenous identities, with no single group dominating the dataset. Such a distribution is significant in a study conducted in Guyana, where multiple Indigenous communities, such as the

Wapishana and Carib, are spread across hinterland regions. The variation in representation suggests that the findings will reflect a wide range of cultural perspectives on Moodle's use for in-service training. However, the relatively small proportions within some groups suggest that their specific experiences may be less prominently represented, which should be taken into account when interpreting the study's overall conclusions.

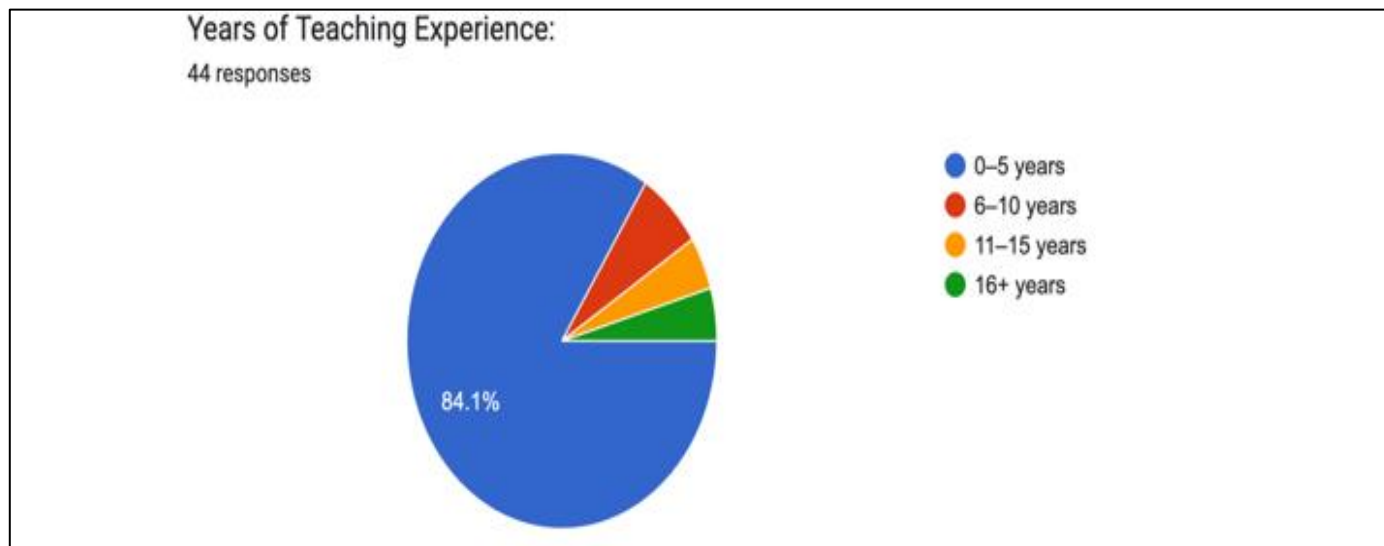


Fig 4 Pie Chart Showing the Years of Teaching Experiences of Respondents.

The distribution of years of teaching experience among the 44 respondents reveals a strong concentration of early-career educators, with 84.1% reporting between 0-5 years of experience. In contrast, only small proportions fall within the 6-10 years, 11-15 years, and 16+ years categories. This suggests that the sample is heavily weighted towards novice teachers, which may reflect recent recruitment trends or heightened participation of younger educators in professional development initiatives in Guyana.

This pattern indicates that the study's findings are likely influenced mainly by the views of less experienced teachers, who may be more adaptable to digital learning tools like Moodle but might also encounter challenges due to limited classroom experience. Therefore, while the data offers valuable insights into early-career teachers' experiences, the relatively low presence of more experienced educators suggests that long-term pedagogical views and well-established teaching practices may be less prominently reflected in the study's results.

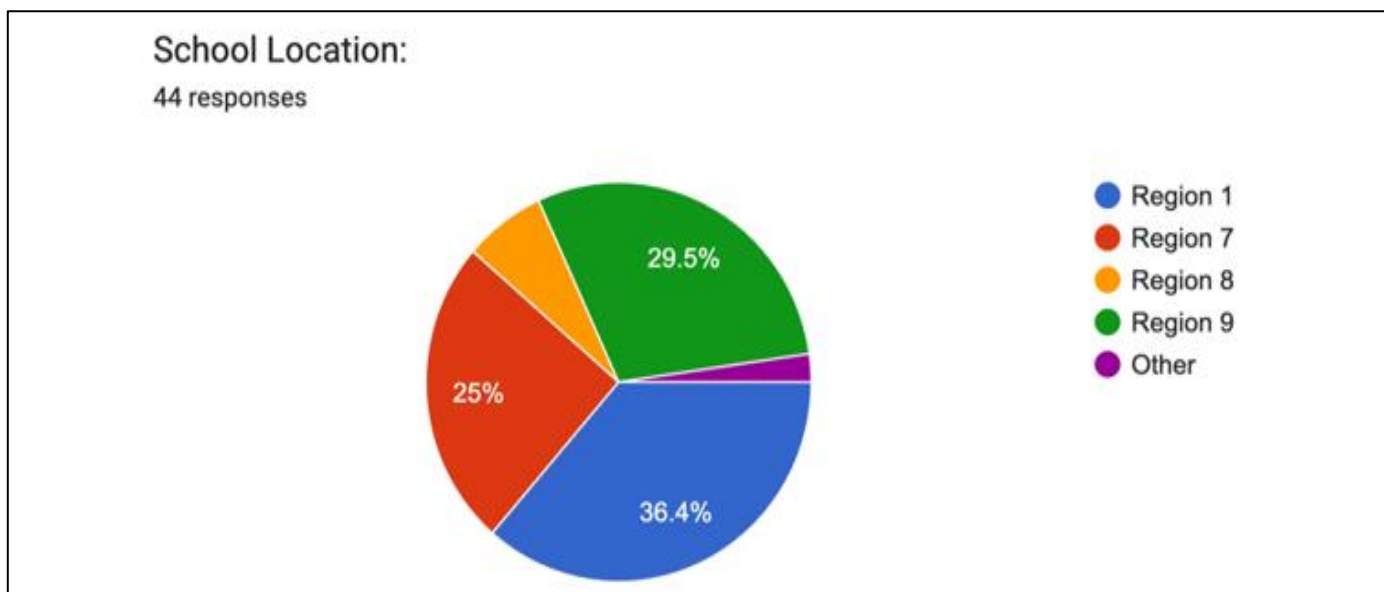


Fig 5 Pie Chart Showing the Location of the School by Hinterland Regions in Guyana.

Based on the pie chart, Region 1 has the largest proportion of school locations, representing 36.4% (about 16 schools) out of 44 responses. This is followed by Region 9 at 29.5% and Region 7 at 25%. Collectively, these three regions account for over 90% of the surveyed school locations. The remaining smaller share is divided between Region 8 and a category labelled "Other," indicating that most participating schools are concentrated within just three specific geographical areas.

Based on the feedback from 45 participants regarding their use of Moodle for in-service training on the following Open end questions were asked :

➤ *Describe Your Overall Experience Using Moodle for In-Service Training.*

Based on the 45 responses overall experience using Moodle for in-service training, a thematic analysis was conducted, followed by a summary table:

The most prominent theme among the responses is the flexibility and convenience provided by the digital platform. Many educators highlighted how Moodle allowed them to balance their professional duties with ongoing training, as it removed the need for travel and allowed for asynchronous

learning "at their own pace." Users frequently noted that having all course materials, assignments, and grades centralized in one location made the educational process more organized. For many, Moodle served as more than just a training tool; it acted as a catalyst for professional growth, helping them improve their general IT literacy and providing a structured environment to enhance their teaching skills.

However, these benefits were frequently tempered by technical barriers and a steep learning curve. A significant number of respondents described their initial experience as "challenging" or "scary," noting that navigating the platform was difficult without prior training. Recurring technical issues—such as the site crashing during exams, links to virtual classes failing to work, and difficulties uploading assignments—were cited as major sources of "stress and anxiety." Furthermore, while the platform offers flexibility, some users found it difficult to stay engaged due to a lack of user-friendly design or the sheer exhaustion of managing digital coursework alongside a full-time Monday-to-Friday work schedule.

- *Summary of Moodle User Experience*

Table 1 A Summary of the Key Advantages and Challenges Identified by the Participants:

Category	Pros (Advantages)	Cons (Challenges)
Accessibility	Remote Learning: Eliminates travel; allows users to stay with family while training.	Connectivity: Internet issues frequently prevent access to materials or classes.
Flexibility	Self-Paced: Ability to manage time and complete tasks around a 5-day work week.	Work-Life Balance: Finding time to read and study after a full work day is difficult.
Organization	Centralized Hub: All resources, assignments, and grades are in one place.	Technical Glitches: Links not working, pages crashing during exams, and upload failures.
Skill Growth	Digital Literacy: Forces users to improve computer skills for classroom use.	Steep Learning Curve: Difficult to navigate initially; "scary" or "intimidating" for some.
Impact	Professional Success: Seen as a vital tool for becoming a trained teacher.	Stress & Anxiety: Technical difficulties during high-stakes tasks (like quizzes) cause high stress.

➤ *What Challenges have You Faced While Using Moodle in Your Community?*

Based on the 45 responses concerning challenges with Moodle, a thematic analysis was conducted, followed by a summary table:

The main challenge reported by most users is inconsistent infrastructure, especially poor internet connectivity. In many communities, unreliable Wi-Fi at schools or homes—often worsened by environmental factors like heavy rainfall—interferes directly with attending virtual classes or submitting assignments on time. This technical instability often causes the platform to "crash" or "bounce" users out during critical moments like midterms or final exams. These infrastructure gaps generate a sense of "hassle" and "frustration," as technical failures frequently lead to

missed opportunities or repeated attempts to complete basic tasks.

Beyond connectivity, users encounter significant usability and support challenges that impede their learning experience. Many respondents highlighted a lack of digital literacy and technical support, describing the interface as not "user-friendly" and difficult to navigate without specific training. Administrative issues also arose, such as lecturers changing quiz dates without updating the master outline and struggles in viewing grades or accessing particular course portals. Furthermore, for those balancing their studies with teaching 58 learners or caring for children, the absence of mobile-friendly optimisation and the need for constant, high-speed internet access make it hard to manage professional and personal responsibilities simultaneously.

Table 2 Summary of Moodle Challenges

Category	Specific Challenges Identified	Impact on Users
Connectivity	Poor local internet, lack of school Wi-Fi, weather-related outages.	Missing exams, inability to log in, and "crashing" during tasks.
Platform Stability	System "glitches," being "bounced out" of exams, and slow loading times.	High stress, anxiety, and the need for multiple retakes.
User Interface	Difficult navigation, disorganized course grouping, and poor mobile access.	Confusion and "frustration" for those with lower digital literacy.
Support & Admin	Lack of technical help, inconsistent schedule updates, and hidden grades.	Disappointment and difficulty staying on track with deadlines.
Resources	Lack of personal devices (laptops/tablets) and dedicated study spaces.	Limited participation and slower progress in the training.

➤ *In What Ways has Moodle Influenced Your Teaching Practice or Professional Growth?*

Based on the 45 responses regarding Moodle’s impact on professional life, a thematic analysis was conducted, followed by a summary table:

The most notable impact of Moodle is the modernisation of digital skills and organisational habits. Many educators reported a clear increase in "technological confidence," noting that the platform encouraged them to adopt ICT (Information and Communication Technology) in new ways. By managing coursework online, meeting digital deadlines, and navigating virtual communication, teachers improved their organisational skills, which translated into their professional lives. The "anytime access" to resources allowed for ongoing self-study and review, enabling teachers

to grasp concepts at their own pace and arrive at their classrooms feeling more prepared and well-informed.

Furthermore, Moodle has acted as a catalyst for pedagogical innovation in the classroom. Educators emphasised how the platform exposed them to new teaching strategies, such as "Blended Learning" and "Differentiated Instruction" (DI), which they could immediately apply with their own students. By accessing diverse assessment methods and digital resources, teachers reported that their lesson planning became more "student-centred" and "data-driven." Beyond individual study, the platform fostered a sense of collaborative growth, as teachers learned from the shared experiences and methods of their colleagues, ultimately leading to more engaging and adaptable teaching practices.

Table 3 Influence on Teaching & Growth

Category	Key Influences & Benefits	Professional Outcome
Digital Literacy	Mastery of ICT tools, online communication, and virtual navigation.	Increased technological confidence in and out of the classroom.
Pedagogy	Exposure to "Differentiated Instruction" and new assessment methods.	More student-centered and varied lesson delivery.
Organization	Better time management, meeting deadlines, and structured planning.	Improved professional efficiency and work habits.
Resource Access	24/7 access to lecture notes, tutorials, and research materials.	Ability to self-correct and review difficult concepts independently.
Collaboration	Sharing teaching methods and experiences with peers/colleagues.	Enhanced professional perspective and collaborative spirit.

➤ *What Improvements Would You Suggest to Make Moodle More Meaningful for Indigenous Teachers?*

Based on the 45 responses concerning improvements for Indigenous teachers, a thematic analysis was conducted, followed by a summary table:

The most pressing concern pertains to local infrastructure and structural inclusivity. Numerous educators emphasized that for Moodle to attain genuine effectiveness, it must accommodate the physical realities of remote Indigenous communities. This entails the development of "offline functionality" and "low-data modes" to address the chronic deficiency of reliable internet, particularly during high-stakes examinations. In addition to connectivity issues, there is a significant demand for enhanced organizational structure—specifically, ensuring that course content remains current for existing cohorts to prevent confusion caused by

outdated assignments, and augmenting system monitoring to avert platform congestion and failures during examinations.

The second major theme centers on cultural resonance and pedagogical support. Respondents suggested that the platform should transcend a generic interface to incorporate "Indigenous knowledge systems," local languages, and storytelling. By including "culturally relevant examples" that reflect the specific traditions and teaching realities of their communities, the training would become more relatable and impactful. Furthermore, teachers emphasized the need for "community-based training" and "on-the-ground supervisors" to bridge the digital literacy gap. This support is deemed essential for educators who are simultaneously balancing their roles as teachers, students, and members of their communities.

Table 4 Suggested Improvements for Indigenous Teachers

Category	Specific Recommendations	Desired Outcome
Cultural Content	Include local languages, oral traditions, and Indigenous storytelling.	Increased relevance and inclusivity for diverse cultural contexts.
Technical Access	Develop offline access and low-bandwidth options for remote areas.	Reliable participation regardless of internet connectivity.
Platform Maintenance	Update course blocks to remove old data; fix crashing during quizzes.	A user-friendly and professional environment for new cohorts.
Instructional Support	Provide step-by-step guidance and community-based technical training.	Higher confidence and lower "suffering" for first-time users.
Work-Study Balance	Sync assignment timing with community realities; provide video recordings.	Better time management for teachers with high classroom loads.

➤ *Is There Anything Else You Would Like to Share About Your Experience with Moodle?*

This final set of 45 responses provides a summative view of the Moodle experience, emphasising the emotional and professional stakes for teacher trainees.

• *Thematic Analysis*

The most important theme arising from the final feedback is the urgent need for transparency and reliability in academic record-keeping. Trainees expressed significant anxiety over "missing grades" and the lack of visibility into their final performance. For teachers in remote regions, where data is often misplaced at regional centres, Moodle is regarded as a crucial digital backup; however, when the platform fails to display overall grades before a new semester starts, it leaves students "guessing their performances." The consensus is that Moodle should act as a definitive source of

truth, ensuring no student is unfairly required to resit a course simply because a lecturer or the system failed to record a grade.

Despite these administrative frustrations, the secondary theme is one of resilient optimism and the desire for formalised support. Educators from Indigenous and remote communities see Moodle as a "powerful tool for goal achievement" that enables them to stay with their families while becoming qualified professionals. However, they contend that the platform's success currently relies too heavily on individual trial and error. There is a strong collective call for formal "introductory sessions" and "continuous technical support" to bridge the navigation gap for first-year trainees. The feedback indicates that if Moodle is adapted to local contexts by improving stability and offering proactive training, it could shift from causing "bad days and good days" to being a consistently transformative professional resource.

Table 5 Summary of Moodle Experience

Category	Key Findings & Sentiments	Recommendations for Action
Grade Transparency	High frustration over hidden or misplaced grades; fear of "wrongful resits."	Mandate grade entry on Moodle before the new semester starts.
System Reliability	Moodle is often "slow" or "crashes" independent of local internet quality.	Optimize platform performance and server capacity during peak exam times.
Social Impact	Highly valued for "supporting families" by removing the need for travel.	Expand remote-friendly features to further support home-based study.
Onboarding	First-year trainees "suffer" due to a lack of navigation knowledge.	Implement mandatory orientation sessions for all new Moodle users.

Overall Value	Rated as "very useful" (approx. 7/10) with high potential for growth.	Adapt to local realities with offline tools and culturally relevant content.
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• *Summary: The Moodle Experience*

The overall sentiment indicates a platform with high potential but inconsistent reliability. While Moodle is praised as a transformative tool for professional equity, allowing teachers to remain within their communities, its effectiveness is currently compromised by infrastructure shortcomings and a lack of localised support.

✓ *Core Strengths & Professional Growth*

▪ *Educational Equity:*

Moodle’s greatest achievement is enabling "home-based" professional growth, removing the financial and emotional burden of traveling away from family.

▪ *Pedagogical Innovation:*

Exposure to the platform has directly improved teachers' digital literacy and introduced them to modern strategies like Differentiated Instruction and Blended Learning.

▪ *Centralized Resources:*

When functional, the platform acts as a vital "anytime access" library, allowing educators to review complex concepts at their own pace.

✓ *Critical Challenges & Barriers*

▪ *Infrastructure Gaps:*

Chronic internet instability and a lack of school-wide Wi-Fi turn high-stakes tasks like exams into high-stress events, often leading to platform "crashes" or "lockouts."

▪ *The "Navigation Gap":*

A significant number of first-year trainees "suffer" due to a lack of formal onboarding, relying on stressful trial-and-error to complete assignments.

▪ *Administrative Friction:*

Significant anxiety exists around grade transparency. Teachers feel vulnerable when grades are not updated on Moodle, forcing them to "guess their performance" before a new semester begins.

✓ *Strategic Recommendations for Improvement*

▪ *Technical Resilience:*

Develop offline functionality and low-bandwidth "lite" versions of the app to accommodate remote community realities.

▪ *Cultural & Local Integration:*

Incorporate Indigenous languages, oral traditions, and localised teaching examples to transform the platform from a generic tool into a culturally resonant experience.

▪ *Institutional Support:*

Require mandatory orientation sessions for new users and enforce a policy ensuring all grades are visible on Moodle before the start of the next semester.

Table 6 Consolidated Thematic Overview

Theme	Current Reality	Future Goal
Accessibility	Limited by connectivity and travel costs.	Total Offline Access for remote areas.
Usability	High learning curve; "scary" for some.	Mandatory Onboarding and local support.
Content	Generic, sometimes outdated data.	Culturally Relevant & current content.
Accountability	Missing grades; administrative "guessing."	Real-time Grade Transparency for all.

V. CONCLUSION

This study highlights that while Moodle acts as a transformative gateway for Indigenous in-service teachers in hinterland Guyana, its current implementation remains a state of "unrealised potential." The shift from traditional face-to-face training to a digital Learning Management System (LMS) has effectively broken-down geographical barriers, enabling educators to stay within their communities and preserve vital family connections while pursuing professional qualifications. This "anytime, anywhere" access has ushered in a new era of digital literacy and pedagogical innovation, with many teachers successfully integrating modern ICT strategies into their own classrooms.

However, the "lived experience" of these educators uncovers a persistent digital divide that goes beyond simple hardware access. The recurring themes of infrastructural

instability—marked by unreliable internet and platform crashes during high-stakes assessments—create considerable psychological and professional stress. Moreover, the lack of grade transparency and the "navigation gap" faced by first-year trainees indicate that the current administrative and technical support systems are not yet fully adapted to the specific realities of the hinterland. For many Indigenous teachers, the platform remains a generic tool that does not include the cultural relevance, local language support, and oral traditions needed to make digital learning truly meaningful.

To fully harness Moodle’s potential as a tool for equitable and inclusive education, it must evolve beyond being a passive content repository. The findings highlight the need for a strategic shift towards culturally responsive digital pedagogy and resilient infrastructure. This involves developing offline functionalities, low-bandwidth

optimisations, and localised training frameworks that respect Indigenous knowledge systems. By addressing these systemic gaps, educational stakeholders can ensure that Moodle is not just a replacement for traditional training but a comprehensive, supportive, and respectful platform for empowering teachers in Guyana's hinterland.

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