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TRANSLANGUAGING IN ENGLISH AS A MEDIUM OF INSTRUCTION (EMI) CONTENT CLASSROOMS: UNFOLDING THE TEACHERS' NARRATIVES

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Abstract
Translanguaging has been practiced in multilingual educational settings by teachers for several purposes. In the field of teaching and learning, it has gained significant attention not only by teachers but also by researchers for its potential to address diversity, create equality, and promote social justice. It has been used by content teachers such as science and mathematics purposefully in the EMI setting. However, their experiences of using translanguaging and its pedagogical benefits have been underexplored, particularly in the context of Nepalese EMI science and mathematics classrooms. The study aims to unfold the narratives/experiences of secondary-level science and mathematics teachers teaching in multilingual EMI public schools in Sunsari, Nepal, along with the reasons for using the pedagogical approach. Using in-depth interviews and field notes as research tools, I explored and analyzed the content teachers' experiences of using translanguaging, who were purposively selected as a sample. The collected information was recorded, transcribed, coded, categorized, and thematically analyzed. The study found that translanguaging is useful to enhance comprehension, enable co-learning, increase learner engagement, and foster inclusivity by challenging conventional monolingual ideologies. The study implies that EMI content teachers like science and mathematics would better use students' linguistic and cultural knowledge as a resource in their teaching for better engagement, deeper understanding, and empowerment.

Keywords: medium of instruction, multilingualism, translanguaging

Introduction
English as a Medium of Instruction (henceforth EMI) is a context where the content subjects are taught through English. Researchers, for example Dearden (2014), Macaro (2018), and Sah (2020), state that EMI is the teaching of non-English academic subjects through English, where most of the population does not speak English as a mother language or speak a language other than English. Some other researchers, such as Pecorari and Malmstrom (2018), Sah (2022), and Rauteda (2024a), characterize EMI as a context where English is not the subject

being taught, but is used as a medium of instruction to deliver the content of non-English academic subjects.

In recent years, EMI has been increasingly adopted in non-English countries to develop English proficiency and deliver content knowledge (Dearden, 2014). However, it presents several challenges in its implementation regarding the infrastructure, multilingual context, teachers' proficiency in English, learners' ability to understand, and the nature of teaching itself. Even though the present time is characterized by 'super-diversity' and the people are in the 'post-multilingualism' era, the EMI policy is still ineffective and creates boundaries between languages and language varieties, and disregards multilingual features of the community (Li, 2018). So is the case of Nepal, where people speak 124 different languages (NSO, 2021), but the medium of instruction has been legitimatized that either English or Nepali, or both languages, would be the medium of instruction in teaching and learning (Education Act, 2028, section 7). Moreover, the local bodies are prioritizing EMI and shifting community schools from Nepali medium to English medium in federal Nepal, although they have the right to choose the medium of instruction based on the number of people who speak one language (Sah & Karki, 2023). Hence, EMI seems to prioritize, in the name of quality education, competing with private schools, academic or professional success, and internationalizing education (Paudel & Choi, 2024; Phyak, 2013; Rauteda, 2024a). This policy is not only raising challenges to handle but also creating inequalities, injustice, and hierarchies in education in Nepal. In this situation, translanguaging could be the practice that can assure social justice, equality, and language rights via dismantling the linguistic hierarchies (Garcia & Leiva, 2014; Phyak et al., 2022; Rauteda & Luitel, 2025).

Translanguaging is a dynamic, purposeful, natural, and spontaneous use of multiple linguistic resources to leverage learning and facilitate communication (Garcia, 2009; Garcia & Wei, 2014). It allows students to draw on their full linguistic repertoire and leverages an inclusive and effective learning environment (Canagarajah, 2011). Researchers argue that translanguaging is supportive in both language development and content comprehension (Cenoz & Gorter, 2017; Creese & Blackledge, 2010; Garcia & Lin, 2017). In the context of Nepal, it can help to make an inclusive learning environment using multilingualism as a resource (Phyak, 2018; Rauteda, 2024b; Rauteda, 2026b). Moreover, in a country like Nepal, where the linguistic landscape is rich and varied, translanguaging helps students to utilize their mother tongue assets in the learning of English and other subjects rather than viewing them as hindrances (Phyak, 2016). On the one hand, translanguaging helps use the prior knowledge that the students have; on the other hand, it works as a transformative pedagogical approach that empowers multilingual learners and establishes social justice in diversity (Hurst & Mona, 2017). Thus, translanguaging has been increasingly recognized in Nepalese EMI classrooms for its potential support and is useful for teaching in multilingual contexts, incorporating students' prior knowledge with the content.

Over the years, an enormous number of research studies have been conducted in the area of EMI to explore its practices, challenges, and impacts. Researchers argue that EMI policy in Nepalese community schools is unchecked, unplanned, against multilingual reality, and creates inequality in education (Paudel & Choi, 2024; Phyak, 2013; Rauteda, 2024a; Sah, 2020; Sah & Guofang,

2018; Saud, 2020; Sah & Karki, 2023). Moreover, they state that EMI is dividing society as a social divider and creating classes within the same educational institution. In that context, translanguaging has appeared as a remedial strategy in the EMI settings where teacher agencies are applying multiple languages in the instruction of Nepalese EMI schools for learner empowerment, equality, and social justice (Phyak et al. 2022). However, how Nepalese non-English content subject teachers practice translanguaging, how they perceive it, and how beneficial it is in EMI classrooms have been slightly explored.

The use of translanguaging depends upon the beliefs, experience, and professional development of the teachers (Palmer et al., 2014). For this reason, teachers' perspectives on the use of translanguaging in EMI content classrooms are pivotal to be examined not only to make professionals aware, but also to contribute to the academic discourse. Teachers are the major arbiters in the implementation of any policy and pedagogical practice, and their pertinent ideologies have a significant impact on either endorsement or resistance (Menken & Garcia, 2010). Moreover, the narratives and the experiences of the teachers become helpful in finding the potential benefits, challenges, and complexities of application. Therefore, teachers' perspectives are crucial to be explored to get insights on how to cope with diversity and work efficiently. Thus, the study aims to explore secondary-level EMI content teachers' experiences of the use of translanguaging in multilingual EMI settings. By examining their stories, this paper attempts to contribute to the broader discourse in multilingual education and offer practical implications in the field. Hence, the study attempts to answer the following research questions:

a) How do content teachers experience translanguaging in EMI content classrooms?
b) To what extent is translanguaging useful in EMI content classrooms?

Literature Review

Various literature has been reviewed to get theoretical, empirical, and methodological insights. Moreover, the books, book chapters, research papers, and dissertations have been critically reviewed. Hence, the review has been presented in the themes given below.

Linguistic facade of Nepal: An overview

Nepal is a multicultural, multilingual, and multiethnic country where the people speak 124 different languages as their mother tongue (NSO, 2021). Despite having such a vast linguistic diversity, only Nepali and English have got recognition to be the languages of education in Nepal. However, there is a provision for recognized national languages that they can also be developed as the official language and the language of instruction based on the number of speakers. The Constitution of Nepal has recognized the right to education in the mother tongue and advocated for the Mother Tongue Based Multilingual Education (MTB-MLE), but the practical implementation of this provision is full of complexities due to the historical, socio-economic, and political factors. Over the years, the promotion of linguistic diversity in Nepal has been influenced by democratic practices where all the languages and their speakers are equally respected (Gautam & Poudel, 2022). Nevertheless, the implementational aspects

of the policies are undermined by the processes of glocalization and the prioritization of dominant languages, primarily Nepali and English. In a similar vein, Giri (2022) critiques the three-language formula proposed in educational policies in Nepal. The researcher argued that it [the three-language formula] may exacerbate divisions within the fragmented linguistic landscape of the country.

Despite the constitutional provisions for MTB-MLE, the reality in Nepal's schools often diverges from these ideals. The shift towards EMI in Nepalese public schools has emerged as a significant trend, which is driven by parents' perceptions of English as a valuable asset in the global economy (Rauteda 2024a; Saud, 2020). This practice raised concerns about the impact on local languages and the effectiveness of MTB-MLE policies (Paudel, 2023). In addition, according to Rana (2018), the problem is compounded by tensions around EMI. To confirm this issue, his study discovered that teachers perceive EMI as a strategy to improve the quality of education because they believe that it enables students to acquire international competitiveness, despite its negative impact on their linguistic identity. Indeed, the national language policy prioritizing Nepali as the only official language has caused the erosion of minority languages (Poudel, 2019). The central government's imposition of the language use policy without considering the demands of local communities resulted in the marginalization of many indigenous languages (Phyak et al., 2022).

The growing need for English medium education only adds another layer of complexity to the already existing language dilemma, as English is perceived as the gateway to securing better jobs and social capital (Rauteda, 2024a). The federal constitution of 2072 has created room for local governance to take part in language planning (Kandel, 2021). However, Giri (2020) argues that the very existence of local language politics and the dominance of English around the globe have created a situation where the use of other languages is being undermined. The issue of language has resulted in the education system being full of disparities (Phyak & Ojha, 2019). The linguistic landscape of Nepal is characterized by multiple languages, including those that are neither indigenous nor local. It is only through a careful consideration of the underlying factors that contribute to the prevalence of the current state of language education that viable solutions can be proposed. The language education scenario in Nepal has been characterized by contradictions, with languages such as English and Nepali dominating over others both in education and wider society, even in the presence of federalism. It is a common occurrence for people to find themselves questioning the status of the country's local languages, with the majority of schools promoting the learning of dominant languages only.

Translanguaging as a pedagogical strategy

In recent years, translanguaging has been practiced as a pedagogical resource in multilingual settings. It deploys the linguistic repertoire of the students as a valuable source in learning (Garcia, 2009). It is believed that translanguaging enhances learner engagement, comprehension, and fosters learners' identity, which leads to successful and meaningful learning. In this regard, researchers, for example (Rauteda, 2022; Rauteda, 2024b; Rauteda, 2025a; Sharma, 2022), argue that translanguaging is used by teachers for different purposes, such as content simplification, comprehension, and the assurance of learner identity through

inclusive and equitable learning. Additionally, the researchers argued that translanguaging also helps to create a classroom environment where the learners feel respected and take ownership. Moreover, translanguaging is important for ensuring social justice and empowering learners in multilingual settings (Rauteda, 2026b). Supporting the argument, Qi et al. (2020) talk about the pedagogical importance of translanguaging and say that translanguaging is helpful not only in language classes, but also equally helpful in content classes such as mathematics and science, where collaborative translanguaging can be employed among students for better learning outcomes.

The connection between the learners' home language and the language of instruction is crucial for faster and quality learning. In that context, translingual practices can bridge the gap between the classroom, content, and the community (Rauteda, 2025a). Additionally, Phyak et al. (2022) emphasize translanguaging spaces where teachers can allow students to use their home languages in the classroom so that they can learn better. Consequently, by giving space to the multiple languages in the classrooms, teachers can address diverse learning needs and foster a more inclusive environment. Therefore, translanguaging is relevant in Nepal, where students often face challenges in understanding EMI due to varying levels of English proficiency.

Benefits of using translanguaging in EMI content classrooms

Translanguaging, as a pedagogical approach in EMI content classrooms, has gained significant attention in recent years due to its potential to enhance learning outcomes, comprehend the content, simplify complex content, reduce anxiety, and create an inclusive learning environment, while balancing or addressing diversity via promoting social justice in a multilingual context. Researchers, for example, Zhou and Mann (2021) highlight that translanguaging strategies not only facilitate communication but also serve as reflective practices for educators, emphasizing the importance of blending multilingual resources to optimize student learning experiences. Moreover, Wei (2014) highlighted translanguaging as a transformative pedagogical approach where educators start looking at the language from the bilingual learners' point of view, and not simply at the named languages with their prescribed features that help to bring about change. Thus, translanguaging can be employed in EMI content classrooms like science and mathematics to increase learners' outcomes, engagement, and foster inclusivity in diversity.

In the context of EMI content classrooms, such as science and Mathematics, translanguaging practices have been shown to create an inclusive environment, increase learner engagement, foster a sense of belonging, and enhance students' understanding by acknowledging students' linguistic and cultural backgrounds. In this regard, Karlsson et al. (2018) argue that translanguaging enhances students' engagement in scientific discussion, allowing them to generate and articulate scientific explanations in their own voices. Such sorts of pedagogical practices are crucial for fostering a sense of belonging and ownership in the learning process, as it 'enables students to draw upon their full linguistic repertoire' (Garcia, 2009). Similarly, Pierson et al. (2021) emphasize the importance of multilingual and multimodal resources in science learning, suggesting that translanguaging can

enhance students' understanding and engagement with complex scientific concepts.

Likewise, in mathematics classrooms, translanguaging has been recognized as a valuable strategy for negotiating meanings and enhancing comprehension (Rauteda, 2025a). Moreover, Sharma (2023) advocates for a dialogic translanguaging approach that embraces diverse linguistic practices, promoting a richer understanding of mathematical concepts. This aligns with findings from Tai and Wei (2023), who highlight how translanguaging in mathematics classrooms allows students to utilize their linguistic resources to make sense of mathematical ideas. Translanguaging further helps in the improvement of performance during assessments, which helps learners to express their ideas and construct meaning and concepts in their examinations. Supporting the argument, Mbirimi-Hungwe and Hungwe (2019) demonstrate that allowing students to engage in translanguaging during assessments can lead to improved performance, as it enables them to express their understanding holistically. Consequently, translanguaging is a strategy that can be used in multilingual settings to increase interaction and engagement, and to construct meaning by using learners' full linguistic resources. It not only supports learning but also fosters learner engagement in complex concepts and assists learners in improving their learning outcomes.

The implementation of translanguaging in EMI classrooms also requires careful consideration of pedagogical practices. Daniel et al. (2017) discuss the necessity of translanguaging for scaffolding, which can help establish a shared understanding among students and teachers. Moreover, Tai (2021) argues that effective translanguaging practices involve mobilizing various linguistic and semiotic resources to make discipline-specific knowledge accessible to all students. The study highlights the importance of teachers recognizing and valuing students' linguistic backgrounds as a means of transcending cultural boundaries within the classroom. Additionally, translanguaging has been linked to fostering collaborative learning environments. Tai and Wei (2020) illustrate how translanguaging creates a safe space for co-learning, emphasizing equity in knowledge construction and challenging traditional hierarchical relationships between teachers and students. This collaborative aspect is further supported by findings from Ndhlovana and Charamba (2023), who note that translanguaging enhances academic performance by promoting active participation and engagement among students in multilingual contexts. Thus, the literature indicates that translanguaging serves as a powerful pedagogical tool in EMI Science and Mathematics classrooms. By leveraging students' linguistic resources, educators can create inclusive and engaging learning environments that enhance comprehension and foster a sense of belonging. Furthermore, it helps learners to engage with complex scientific and mathematical concepts. Consequently, it reshapes the conventional role of teachers and students, makes them collaborative learners, challenges hierarchies and inequality, and empowers linguistic minorities.

Method

Narrative inquiry was used as a research design for the accomplishment of this study, which tries to document the stories told by the individuals

(Polkinghorne, 1995). Moreover, for Clandinin and Connelly (2000), narrative inquiry is a way of understanding and inquiring into experience through "collaboration between researcher and participants, over time, in a place or series of places, and social interaction with milieus" (p.20). As narrative research is known as the study of people's stories, narratives, and experiences (Clandinin & Connelly, 2000; Rauteda, 2026a), I unfolded the narratives of the teachers teaching science and mathematics in Nepal's multilingual public EMI schools in the use of multilingual pedagogies in general and the use of translanguaging pedagogy in EMI content classrooms in particular.

Two teachers, participant 1 (teacher 1) and participant 2 (teacher 2), were selected as participants in the study. Hence, the former was teaching science at School A, and the latter was teaching mathematics at School B. Both schools were shifted to English medium in 2065 B.S. and 2067 B.S., respectively. The schools were located in the Itahari sub-metropolitan city of Sunsari, and the majority of the students studying in the schools were from linguistic minority communities such as Tharu, Rai, Limbu, Danuwar, Satar, and Maithili. However, the students were also from the communities that speak Nepali, Tamang, and Bhojpuri languages. The selected teachers were working from the beginning of the shifts. The science teacher completed his M.Ed. in science education, and the mathematics teacher was an M.Phil. Scholar in mathematics education. Hence, the teachers' experience with the use of translanguaging in EMI content (science and mathematics) classrooms in single or multiple episodes, and in the private situations of professional life (Denzin, 1989), has been analyzed with a special contextual focus (Ollerenshaw & Cresswell, 2002).

I used both primary and secondary sources of information. The findings of the previous empirical literature, books, book chapters, and journal articles were used as secondary sources, and the selected secondary-level science and mathematics teachers teaching in the EMI context were used as primary sources of information. The information was collected through in-depth interviews, which were conducted individually in the form of *chai-guff* (Tea talks). The collected information was recorded on a cell phone with the consent of the participants.

Moreover, field notes were also used to note down the crucial information that came out from the participants. The data were later transcribed into text, coded, categorized, and thematically analyzed using Braun and Clark's (2006) model of thematic analysis. The study maintained participant privacy and confidentiality while ensuring informed consent and voluntary participation. To protect participant identities, all names were anonymized, and identifiable details were replaced with pseudonyms to ensure confidentiality.

Findings and Discussions

After the analysis and interpretation of the information, results, findings, and discussions have been presented in the themes as given below.

Connecting content with students' homes through translanguaging for enhanced comprehension

Translanguaging functions as a crucial pedagogical approach that helps to connect classroom content with students' home languages, cultures, and ethnic knowledge. In this regard, Garcia (2009) talks about pedagogical translanguaging,

which enables students to explore their full potential in learning. By integrating translanguaging into teaching practices, teachers can create meaningful learning experiences that enhance comprehension and engagement. Hence, science and mathematics teachers use several languages together and the cultural, linguistic, or indigenous resources from these languages and cultures purposefully in their teaching and learning activities. In one of the interviews, a participant, Participant 2, shared;

> *Although I teach at an English-medium school, my students often speak other languages in the classroom. I use both English and Nepali simultaneously to explain mathematical concepts. As most of the students understand Nepali language better, I use primarily Nepali along with English in my teaching. I also encourage students to use their home languages with English and Nepali if they feel comfortable. I encourage them to bring local and indigenous materials into the class, which effectively aids in teaching geometry…*

Hence, the verbatim reveals the role that language plays in the students' comprehension of the content. By using both English and Nepali, the teacher acknowledges that linguistic familiarity enhances understanding, particularly for students who struggle with the English language. It further emphasizes that students are more likely to grasp complex mathematical concepts when they are presented in a language they are comfortable with (Tai & Wei, 2023). Moreover, the information highlights the diversity within the classroom despite it being an English-medium class. It points to the necessity for teachers to be mindful of the linguistic and cultural backgrounds of all their students. This consideration reflects the funds of knowledge framework proposed by Moll (1992), which advocates for recognizing and incorporating the diverse cultural and linguistic resources students bring to the classroom.

Additionally, it shows that the dynamic use of both English and Nepali in the content classroom helps learners understand the content better and memorize it for a long time (Rauteda, 2022). Moreover, the information discloses that translanguaging helps to connect the classroom with the home of the learners, enhancing the comprehension of the learners, leveraging their full linguistic repertoire, and connecting the new and difficult content with their prior knowledge (Garcia & Wei, 2014). As the participant used the indigenous materials in the teaching of geometry and found them effective for deeper understanding, it can be said that the use of several linguistic, non-linguistic, or semiotic resources is significant in the comprehension of the difficult mathematical concept, which is regarded as translanguaging (Tai, 2021).

Similar to Participant 2, another participant, Participant 1, a science teacher, shared his experience;

> *In the context of my class, I have been teaching in a multilingual setting for a long time. The majority of my students speak the 'Tharu' language. The English language proficiency of the students is weak. Therefore, while teaching science, I often mix Nepali with English into the instruction. I also use materials from the students' homes, which are named in their home languages, to teach certain concepts; for example, while teaching about*

> *simple machines, metals, magnets, and measurements, I incorporate the name and utility of simple machines used in the students' homes. In that way, my students understand better….*

Hence, the transcript reveals that the teacher blends Nepali and English in science classrooms where the majority of the students speak the Tharu language as their home language. Such a blending is technically called translanguaging. Moreover, the information shows that the teacher brings the materials from the students' homes as teaching material in the class, which is known as the concept of 'outside in' (Tai & Wei, 2020) that helps students' better comprehension of the content. Here, the teacher's translanguaging approach, as described in the interview, aligns closely with Tai and Wei's (2020) findings, which highlight translanguaging as a powerful tool for making content more accessible to students with limited proficiency in the language of instruction. Moreover, Tai and Wei (2020) argue that translanguaging helps to bridge linguistic gaps by allowing teachers and students to draw on multiple languages as resources, creating a more inclusive and supportive learning environment. In this case, the teacher uses both Nepali and the student's home language [Tharu] to scaffold the understanding of scientific concepts, which is a direct application of translanguaging practices to overcome language barriers in content comprehension.

Enabling co-learning and increasing learner engagement through translanguaging

Translanguaging enables collaboration and co-learning and enhances learner engagement in the classroom. Co-learning becomes more feasible when translanguaging is employed. Hence, Garcia and Kano (2014) emphasize that translanguaging enables peer-to-peer support, as students can explain concepts in the language they are most comfortable with, ensuring mutual understanding. In this way, translanguaging fosters a shared responsibility for learning. Moreover, students can leverage their unique linguistic skills to help each other grasp complex concepts, particularly in subject-specific vocabulary. In the context of science and mathematics classrooms, translanguaging helps to co-construct knowledge by navigating terms in both their first language and the target language, improving content retention (Creese & Blackledge, 2010). In this study, one of the participants, Participant 1, shared;

> *Using multiple languages purposefully in the classroom is crucial. In my class, this approach has helped my students engage in discussions with their peers. Last year, I assigned them to work on the electronic configuration of a cell. While they were supposed to do it on paper, I also encouraged them to use materials available in their village. The students completed the task by creatively using grains like mustard seeds and corn, along with stones and pebbles, to build the models. This activity taught them how to work in groups and pairs. When I asked them to present their work in class, they could not deliver their presentations in English. When I allowed them to deliver in the language they wanted, they did well mixing English, Nepali, and even Tharu. It went very well…*

Hence, the above verbatim shows a practical example of how translanguaging can facilitate co-learning and increase learner engagement in classroom activities in an EMI context, particularly in science classrooms. The teacher's integration of students' home languages and familiar materials to explore the electronic configuration of a cell is a compelling example of translanguaging as a bridge for collaborative learning, especially in science and mathematics, where concepts can be abstract and challenging. Moreover, the information uncovers that the teachers' activity promoted co-learning, which can be seen from the learners' engagement in group work and peer work. In that sense, translanguaging has become a social tool that allows students to communicate effectively, negotiate meanings, and construct knowledge. In this regard, Tai and Wei (2020) argue that translanguaging in EMI classrooms enables co-learning by fostering peer support and shared responsibility for learning outcomes. By working with culturally and linguistically familiar materials, such as mustard seeds and pebbles, the students bridge their everyday knowledge with scientific content. Thus, translanguaging enhances interaction, engagement, and collaboration. Similar to Participant 1, another respondent, Participant 2, shared;

> *Many students find mathematics difficult, especially those who switch to the English medium after studying the Nepali medium until grade eight. They often stay silent and avoid activities in class when it is delivered in English only. When I explained in Nepali, they paid attention to me. I have students learn about interests by discussing with their parents in Nepali and Tharu, and they share the things they learnt in both Nepali and Tharu, and I incorporate English along with…*

The information reveals that the teacher employs translanguaging for the enhancement of learner engagement in mathematics classrooms. Moreover, the activities undertaken, such as engaging students with their parents to learn interest in their own language and sharing the same thing in the class, highlight that teacher co-learning has been enabled through the translingual approach. Teachers experienced that students become active only when they get a chance to be exposed to their linguistic and cultural repertoire. Moreover, the teacher's strategy of incorporating real-life examples, such as household interest systems, provides students with a contextualized learning experience. This method not only enhances understanding but also makes mathematics relevant to students' lives (Tai & Wei, 2020). In this regard, Creese and Blackledge (2010) state that contextual learning, especially through culturally familiar examples, fosters deeper comprehension by connecting academic content with everyday experiences. By engaging students with tasks that reflect their own community's practices, the teacher enables them to develop mathematical concepts more meaningfully and intuitively. This approach supports the notion of 'co-learning' (Li Wei, 2014) and the 'funds of knowledge' (Moll et al., 1992). Therefore, translanguaging can enhance engagement of the learners through co- or collaborative learning, which is possible through translanguaging in mathematics and science classrooms.

Challenging linguistic hierarchy and creating an inclusive learning environment through translanguaging

Translanguaging is viewed as a plurilingual pedagogy that resists monolingual language practices and linguistic hierarchies by creating space for the learners' linguistic repertoire and maintaining an inclusive learning environment. Linguistic hierarchies exist in the world in the name of vernacular and named languages. In the context of Nepal, Nepali has become a dominant language despite having multiple languages spoken in the country. At the same time, the English language has been commodified in the educational market of Nepal (Saud, 2020). In that scenario, translanguaging can be used as a pedagogical approach that dismantles entrenched linguistic hierarchies and fosters inclusivity in multilingual classrooms. Linguistic hierarchies traditionally position certain languages, often the dominant or colonial languages like English, as superior in educational contexts, which marginalizes speakers of minority languages and dialects. Translanguaging, however, offers an alternative that validates and leverages students' full linguistic repertoires, enabling a more egalitarian and inclusive learning environment (Garcia & Wei, 2014; Otheguy et al., 2015; Rauteda, 2025b). In the EMI content classrooms like mathematics and science, teachers use translanguaging to make an equitable and inclusive learning environment. In one of the interviews, the participant, Participant 2, shared;

> *Even though it's now an English medium, it doesn't feel like we only need to know things in English. If students understand something in any language, then they understand it. Some students may not understand the 'area of a triangle' in English, but they understand it perfectly when I say 'triangle ko kshetraphal nikala' in their language. That's why I present examples in the Nepali language and ask them to make a concept in Tharu. In that way, they feel so close and proud. This truly makes the learning environment inclusive in a new and meaningful way…*

The verbatim emphasizes the importance of linguistic and cultural inclusivity in education by challenging the conventional monolingual ideologies in mathematics classrooms. It further shows that effective learning happens when concepts are presented in ways that resonate with students' linguistic backgrounds. Moreover, the snippet reveals that students' comprehension is not limited to one language; rather, it flourishes when they can connect the learning material to their linguistic context. This aligns with the theory of translanguaging, which supports using students' entire linguistic repertoires to facilitate understanding (Garcia & Wei, 2014). Similar to Participant 2, another respondent, Participant 1, shared;

> *English medium is just in the name; in the classroom, everything from discussions onward is done in Nepali and English. I use more Nepali as students ask for it. The English medium is only due to pressure from parents and administration. It feels like even existing knowledge is being lost. Students are unable to do things properly in either Nepali or English, ending up caught in between. That's why, as much as possible, we should use local resources and culture. So, using students' linguistic and cultural*

> *backgrounds in the classroom makes me treat all students equally, and even those who are struggling can feel empowered…*

Hence, the information shows that teachers use students' linguistic and cultural backgrounds in the science classroom to make an inclusive and equitable learning environment so that minority students feel empowered. The participant seems dissatisfied with the EMI policy and blamed it symbolically, which shows the gap between the policy and reality. Moreover, the use of the Nepali language and other possible local resources is common in science classrooms. Surprisingly, the teacher shared that the EMI made students weak in both English and Nepali, and they cannot solve scientific problems properly in either English or Nepali. Further, the participant emphasized the importance of using local resources and culture to support science learning, which is known as culturally responsive teaching. In the context of EMI classrooms, incorporating local knowledge and cultural references helps create a bridge between students' everyday lives and the academic content they are learning (Tai, 2021). Translanguaging, in this case, can serve as a tool to include cultural references in science and mathematics lessons. For instance, the teacher shared that he introduces a scientific concept in English but then uses local examples to explain it. This allows students to connect new academic content to their lived experiences, making the learning more meaningful and inclusive. Consequently, the participant concludes by stating that using students' linguistic and cultural backgrounds helps treat all students equally and empowers those who may be struggling. This directly connects to the concept of linguistic empowerment, which refers to allowing students to use their home languages as tools for learning, rather than seeing these languages as obstacles to academic success, technically known as translanguaging.

Conclusion

The study has critically analyzed teachers' lived experiences in the use of translanguaging in EMI science and mathematics classrooms. Using narrative inquiry, it has explored the roles of translanguaging pedagogy in Nepalese English medium schools, specifically in science and mathematics learning in multilingual settings. The study found that translanguaging is a crucial pedagogy for teachers who are teaching science and mathematics in the Indigenous community. Moreover, the study has revealed that translanguaging is important to enhance interaction, engagement, inclusivity, and comprehension. Further, the study shows that translanguaging is significant to enable co-learning and foster learner empowerment.

Additionally, it is concluded that translanguaging not only enhances classroom learning, but also connects the classrooms to the community and students' real life, and functions as a culturally responsive and transformative pedagogy by challenging the traditional linguistic hierarchies. Consequently, in the context of science and mathematics learning, where the content may often be abstract and complex, allowing students to work in both Nepali and English can empower them by enabling them to better understand and express their ideas. The study is significant to teachers, teacher educators, policymakers, and academic researchers. Hence, the findings of the study imply that the use of learners' linguistic and cultural knowledge is pivotal in the deeper understanding of the

content, active participation, inclusive environment, sense of belonging, and empowerment in science and mathematics teaching in a multilingual setting. Future researchers can explore the translingual strategies used by teachers in EMI science and mathematics classrooms.

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