

Problem of Migrate Children in the Mathematics Classroom

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Abstract: The main purpose of this paper was to explore the key problems faced by migrant children in learning mathematics in the new classroom setting. For exploring this issue, I used a qualitative research method in which I conducted in-depth interviews with a few migrant children from the marginalized community. I analyzed the information to construct themes by connecting students generated text with their experience. The finding of the study included three themes: adjustment difficulties, language barriers, and cultural devaluation. These findings may be useful to school students, teachers, and mathematics educators to foster multiple opportunities to develop respect for various cultural learning environments for students' success in school and the classroom.

Key Keywords: *Multicultural Mathematics, Migrant Children, Mathematics Classroom, and Cultural Value*

Introduction

The new trend of skilled individuals and labour migrants is one of the implications of globalization in that people are more mobile than ever before (Koser, 2007). Even though highly skilled migrants represent a small proportion of the total migrants (Eurostat, 2011), the social and economic impact of their migration is very consistent. Currently, the mathematics teaching and learning of migrant students is of utmost importance. According to Jang et al. (2023), teaching mathematics in classrooms with indigenous and migrant children is a challenge for mathematics teachers in many parts of the world. They also argued that teachers are the key persons in the classroom, if a research is to be useful it has to address and help them understand such challenges.

Likewise, Nepal is multilingual, multicultural, and multi-ethnic diverse country, despite its relatively small geographical size, with nearly sixty ethnic groups and over ninety language

families (Regmi, 2017). To get quality education, most of the people in rural areas migrated to urban places and created a social complex. In this process, schools are functioning with the growth in enrollment of migrant children in the multicultural perspective. In such diverse cultures, the enrolment of students in the minority group is less. In this situation, the school administrators and mathematics teachers have a significant role to understand their cultural product, values, beliefs, expectations, and emotional aspects to make an effective mathematics classroom. Wilson and Pardon (1994) acknowledge that mathematics is the cultural product; so, it should take advantage of the cultural diversity among the students as a source of richness for mathematics learning. But, it is very difficult to make relationships with teachers and friends by the migrant students from minority cultures because of their different cultural values and norms.

In the modern 21st century, mathematics also represents the grammar and language of a specific culture that first appeared in the Mediterranean parts of the world when people began to work with numbers, measurements, and shapes (Orey & Rosa, 2004). Therefore, every community culture uses different traditional mathematical facts in its own language, and math class also represents a mini-society. The teacher is also important to think critically and understand and engage with diverse learning materials/voices in the class as a multicultural as well as multilingual language in the broad sense (Lucas, 2019; Wu, 2023). So, how have mathematics teachers provided an inclusive mathematics learning environment to the students in the new classroom setting is a challenging task in the Nepalese context.

After reading the aforementioned academic works, reflecting on my own experiences, pursuing a Ph.D. in mathematics education at Tribhuvan University and an M.Phil. in at Kahmandu University while working as an educator, researcher, trainer, and mathematics teacher since 2003, I have a lot of unanswered questions regarding the issue of equity and justice. On the other hand, how the mathematics teacher explores the values, beliefs, and expectations of the culture of the diverse class? These are the pertinent issues in teaching and learning mathematics. What barriers and problems have been faced by migrant students in the mathematics classroom? Therefore, the purpose of this paper is to highlight the main findings of key problems faced by migrant children while learning mathematics in new environment and in the new classroom setting.

Hence, it seems sensible to ask some basic questions: how have mathematics teachers provided inclusive mathematics pedagogies to the students in the classroom? On the other hand, how have the mathematics teachers explored the values, beliefs, and expectations of the diverse

class? What barriers and problems have been faced by migrant students in the mathematics classroom? These are the pertinent issues in teaching and learning mathematics. With this in mind, I studied this area with the purpose to contribute to the understanding of problems faced by migrant students in the new mathematics classroom setting in the transitional phase.

Research question

What are the major factors to create a problem faced by migrant children in the mathematics classroom in the transitional phase?

Research Method

The research method is an approach to examine a research purpose or research question (Anderson, 1998) and strategies of inquiry about how people make meaning of the sense of the world and how they feel about their experiences (Creswell, 2007). For this inquiry, I adopted a qualitative research which helped me to collect data and bring with me rich information about the problems faced by migrant students/children in the mathematics classroom in terms of cultural, ethical, and religious perspectives.

Before the collection of data, I maintained ethical issues by taking informed consent of the participants. At first, I took permission from their parents and their children for an interview. I informed them about the purpose of the study. I selected two migrant students purposively from the Rai community. They were enrolled in grade eight mathematics course at Aadarsh Higher Secondary Boarding School in Lalitpur District. I collected data from participants through in-depth interviews. I strongly agree with the view that to understand children's life experience and their original views it is essential to talk to children themselves (Tuukkanen, & Pekkarinen, 2023; Woodman et al., 2023). So, I interviewed them two times in-depth about the problems and challenges faced by my participants' while studying mathematics while they migrated from remote villages to city areas, from one culture to another. I also recorded their voices, and words on my Android voice recording device. I noted their understanding, experiences, activities and feelings, and keywords in my diary during the interview.

Before the data analysis phase of this research, the first of fall, I transcribed the recorded interview and translated the interview transcript into English. I also listened to the recorded data very carefully several times and selected participants' direct quotations. I coded the data to construct categories and integrated the categories into meaningful themes. The coding of the transcribed data was focused on the final grouping of the codes and categories by merging

similar categories into a broader overarching theme, by following the ideas and steps of Johnson et al. (2020) and Braun and Clarke (2014).

As a qualitative researcher, I also reflected on my personal experiences, thinking, honestly, and informative manner as a trainer, researcher, and math educator for a better understanding of the issues about the study topic. Therefore, I collected and organized, verified, sorted, cleaned, and organized the themes, interpreted them and drew conclusions, developed a rich analysis of the data, and constructed final themes.

Problems Faced by Migrate Children in the Multicultural Mathematics Classroom

Researching children, in particular migrant children involves a whole set of problems while they are in the new environment of a mathematics classroom. Teaching mathematics itself is a challenging task. I, as a mathematics teacher, have felt challenges in teaching mathematics during the transition period while addressing inclusiveness with diverse learners in the classroom. I have often faced different needs and capabilities of diverse learners from multilingual and multi-ethnic family background. I have felt so difficult to understand their norms, values, cultures, feelings, languages, and levels of mathematics knowledge in a diverse classroom, and to select appropriate languages and methodologies for effective and meaningful instruction. In this perspective, Acharya (2012) highlighted that “inappropriate language, teacher-centre pedagogies, poor communication, inappropriate environment, and multilingual and multi-ethnic learners are the main challenges of the inclusive mathematics classroom” (p. 291). There are so many problems faced by migrant children in the multicultural classroom. But, after transcribing interviews as the text of my research participants, I found the following major themes.

- Problem of Adjustment
- Problem of Language
- Devaluing Student's Culture

Problem Adjustment

In a broad sense, the learning environment is the provision of learning and understanding the culture of mathematics education students (Aldridge & Fraser, 2000; Ward & Kennedy, 1994). A minority of the students come from the migrant students in schools. A school is a mini society. The cultural situation in the school community particularly in urban areas is heterogeneous. Many urban areas and mathematics education cultures demand the inclusion of lingual, ethnic, and religious groups in all steps of governing the state, especially after the restoration of democracy.

International and National studies have also shown that new students with language difficulties find it difficult to make friends and difficult to adjust with classmates and board mates in school (Ganal & Guiab, 2014; United Nations Children's Fund [UNICEF], 2010; Waxin, 2004). Making new friends in the classroom was linked to academic achievement and improved early peer negative influence. Therefore, children adjusting to new situations can be especially difficult. So, the teachers should help schools for children's adjustments with problems in school adjustment, problems in adjusting to classmates and boardmates (Coplan & Arbeau, 2008) .

The migrated students have to learn the rule and regulate their interpersonal relations, and have to decide correctly, what is tolerated. The student who is far from this place has to orient toward the new space and needs to find their place and find the margin of action (Romano & Strollo, 2013). In sum up, the above discussion shows that disadvantaged groups such as Dalit, women, and ethnic groups participation in education is very poor. Therefore, the education system of Nepal has a great responsibility to reflect these different forms of diversity through education. Multicultural education has now emerged as an umbrella concept to address diversity in the educational world.

In this context, one participant Ramita said:

I did not know about the rules and regulations in my new school and mathematics classroom. No one cares about me. My friends are not willing to make friends to share ideas. Mostly, I was sitting alone. Did not know teachers and did not understand teaching math. Sir, did not give attention to me for learning. All learning activities were different in the past. That's why I thought of myself as different than others. No one wanted to know about me and my family background. Because of this, I did not want to go to school.

From Ramita's responses, I got the impression from her that, a lack of awareness of and rules and regulations of the class, lack of affection, care, inquiry, collaboration, and discussion with the teacher and among other students have a negative impression of the school environment and she does not want to go school.

Problem of Language

Language is one of the important tools for cultural conflict. It communicates that effect in teaching and learning mathematics in the controversial cultural variables with challenges of both teachers and students to negotiate for satisfactory practices. Nepal is a multilingual country and monolingual instructional practice in education. The sensitive issue is the language

during the instruction in classrooms when the students are from diverse language backgrounds. This problem mostly occurs in the classroom with migrated students. Languages also play a vital role in ensuring national cohesion and integration, and the strongly symbolic significance of languages as a marker of identity and membership in a community (Mahapatra & Anderson, 2023). In this context, Riccomini et al. (2015) have claimed participants' voices in this way: knowledge of the common language in general, right pronunciation, vocabulary, and mathematical languages, in particular, are the key factors for understanding in many subject areas, including mathematics. For the advancement of other subject areas and mathematical skills, it is essential to understand language how people speak and the language of mathematics. Language development and, ultimately, mathematical proficiency depend greatly on students' vocabulary and engagement in meaningful learning practices. Furthermore, the National Council of Teachers of Mathematics (2006) emphasized the development of language through adaptive reasoning which was defined by the National Research Council (2001) as the "capacity for logical thought, reflection, explanation, and justification" (Riccomini et al., 2015, p. 236).

Fear of the teacher and peer groups and a misunderstanding of the language as the medium of instruction combined to create an unhappy and unfortunate situation in learning mathematics. Because of the problem of language, many obstacles can be placed in the path of children which have little to do with mathematics (Ganal & Guiab, 2014; Mahapatra & Mishra, 2019). For the problem of language (as a second language and mathematics language), another participant Pantu said:

My mathematics teachers and friends largely spoke English in the mathematics classroom, but I was on my own my Rai language background. So, I could not understand it properly. When I tried to speak with them they laughed at me. Hearing the language, I spoke, the style of my speech, and my pronunciation, they used to laugh at me. After then, I stopped speaking in the class, and ask questions about mathematics for the problem solving. I could not read or even solve simple mathematics problems.

Pantu's response indicated that the diversity of the learners and various background of students in minority groups is difficult to understand both the English language and mathematics language in the classroom. These are the major challenging tasks for the students. In fact, it should be learning of the diverse cultures from each other with the help of language, and understanding problems. When a student comes to a new situation, he/she will have a big language problem, and the teacher needs to understand this. But, this matter depends on the efforts of the teachers, which were not seen in this matter in school. If students do not

understand the language of instruction, they cannot raise more questions to the teacher. I believe that this kind of problem helps to create a negative impression of mathematics and there is less chance to select it for further study by the students. So, student centred teaching and language of instruction are the major challenging task to ensure the inclusiveness of the mathematics classroom. In this regard, teaching mathematics with individual differences is a big challenge.

Devaluating Culture

Social justice should maintain helping students to develop positive social and cultural identities by validating their language, norms, language ability, feelings, and culture and helping them uncover and understand their history. Social justice pedagogy broadens the concept of equity work in mathematics classrooms and helps to promote a justice in society. Regarding the issues of devaluating culture, Ramita and Pantu said that:

My teachers did not try to include my cultural value to feel enjoy and did not try to motivate me to learn mathematics according to my learning capacity.

I understood that teachers have to think about their individual learning capacities. Teachers should pose questions to students to help them address and understand. I incorporated equity into the goal of opportunity for all. In this context, Coate et al. (2023) and Gálvez-López (2023) have suggested that the problem of devaluating culture is one of the key factors attending unsuccess in learning. They further suggested that teachers and students need to respect each other for other cultures, work collaboratively, and the concept of equality and respect.

Discussion

I found that teachers, students' culture, and school environment, are key factors for student learning activities. If students get effective motivation and support from the teacher, students may enhance their knowledge of mathematics. To be an effective multicultural teacher he/ she should have positive attitudes toward diversity of cultural backgrounds in the classroom. I found that the teacher is the key element of whole teaching-learning activities. Students' roles and responsibilities cannot be neglected although as an experienced person, the teacher has a more important role in managing teaching and learning activities within the classroom. Teachers must be culturally responsive in the multicultural classroom.

An 'inclusive' quality relationship between teachers and students has a great significance where students and teachers have a harmonious relationship, free of discrimination, and tensions (Paulsrud & Nilholm, 2023; Pérez-Castejón, 2023; Yunus et al., 2011). I found that from the

students' views, mathematics classrooms were not culturally responsive. I feel that migrant children have difficulty studying in the new cultural environment because of isolated different cultures and language barriers. It is said that school is a mini society and an important setting for diversity education that teaches students to respect each other and themselves, as well as how to experience hospitality, solidarity, and cooperation. Students are encouraged to overcome these difficulties by creating paths and respecting the needs of each student (Sani, 2015; Yunus et al., 2011).

Theoretically, teachers emphasized that addressing individual differences in classroom instruction, collaboration, and peer learning strategies helps learners to motivate and to participate actively in the learning process. Child-centered pedagogy highly supports those learners who need extra support from teachers. Teaching in an inclusive classroom is not an easy task. To be a successful teacher, a teacher should know multiple teaching strategies and child psychology too. Culturally responsive pedagogy can fulfil the needs of multicultural classrooms. Multicultural classroom needs culturally mediated and student-centered instruction and the role of the teacher as a facilitator for better student learning and output (Awasthi, 2004; Sortkær, 2019).

It is concluded that teachers have sufficient theoretical knowledge about instructional methods, different kinds of pedagogies, instructional strategies, and techniques for addressing individual differences. After observing classroom activities, I found that most of the teachers are teaching in traditional ways and some teachers are trying to teach according to the learners' needs and demands. There was a gap between teachers' theoretical knowledge about inclusive classroom practices and the actual implementation in the classroom, and social justice (Cuenca-Soto et al., 2023; Tovar-Gálvez, 2023).

Furthermore, I found that diverse learners with individual differences are the major challenges of implementing inclusion, social justice, and equity pedagogy within the classroom without discrimination. Selecting appropriate classroom management, language of instruction, social justice, and appropriate pedagogy are the major challenges of inclusive classroom practices for migrant students. Traditional thought about instruction, teacher-centered pedagogies, weak rules and regulations about inclusive education, and inappropriate learning environments are other major challenges of mathematics classroom practices.

The literature mentioned that teaching through the transfer of knowledge is essential to rethink in promoting students' awareness and encouraging them to dialogue and interact with them in such a learning environment can foster each responsible person (Frigerio, 1996). However, I found that without removing the challenges of mathematics classroom practices, inclusive

education for migrant students is not possible. For this, the teacher needs to ensure learners' active participation in teaching-learning activities. Developing learners' self-esteem and self confidence, child-centered pedagogies can be used in mathematics classrooms for migrant students. But, I could not find this in the student's points of views during the adjustment, language for understanding, and devaluating culture for migrant students.

Conclusion

In this paper, the problem of migrant children in the mathematics classroom and the ways to address such types of problems have been examined in brief. Through inclusive education, students will have the chance to socialize and have equal justice. Based on the interview, I came up with the conclusion that existing classroom activities implemented in the Nepalese school classrooms for migrant students by the mathematics teachers do not match their pedagogy with the practice of inclusive, adjustment, cultural value, collaborative practices, and understanding of the language for mathematics learning. Students are aware of learning mathematics, but the problem is created through the language barrier.

There is a vast gap between their practice and the theory of inclusive perspective, just procedures and techniques or discourse of being in a mathematics classroom setting to enhance learning and teaching at the school (Roos, 2023). Despite the teachers being theoretically clear about their approaches using student centered, participatory, child-friendly, and democratic classroom methods, they lack practice in applying their pedagogy in the actual mathematics classroom to address the realities of the inclusive, social justice, language for understanding mathematical concepts, meaningful learning of culture and classroom practice for the migrant students. Applying appropriate instructional methods and providing sufficient learning opportunities can minimize the problems within the classroom in teaching-learning mathematics to migrant students. However, social and environmental factors are also the key factors for mathematical success (Chaman et al., 2014) who also struggle to gain access to mathematics in the classroom (Skilling et al., 2021).

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