

Adversities Encountered in Inclusive Mathematics

Classroom Practices in Nepal

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Abstract

In this article, I have articulated challenges of inclusive classroom practices of mathematics in Nepalese schools. The main purpose of this paper is to explore the adversities faced by the teachers to promote inclusive mathematics classroom practices. I have adopted interpretative approach to enquire to describe the realities about inclusive classroom practices of mathematics teaching and learning. The classroom teaching - learning situation in the schools is observed on the basis of the classroom episodes. Some participants were interviewed. I have observed classroom episodes / practices of two schools of Arghakhanchi district to find the answer of the research questions. I have discussed the different data texts from my participants. Then it has been found that diversity of learners and their various background are the major adversities to ensure inclusiveness within the classroom. It has also been found that most of the teachers basically use textbooks alone as curriculum and deliver instruction as a routine task. In most of the cases the instructional approaches used in the classroom are not interactive, participatory and meaningful to the learners. Using appropriate instructional method and providing sufficient learning opportunities adversities can be minimized within the classroom in teaching mathematics.

Keywords

Adversities, Challenges, Classroom activities, Inclusive Education, Dilemmas of Inclusion.

The context

Nepal is a mosaic of diverse people from multicultural and multilingual backgrounds. Thus the children from those diverse backgrounds have obviously the diverse educational needs and aspirations to be addressed in the classrooms. Realizing this fact, Nepal has adopted the notion of inclusive education from the very beginning of commitment made on Education for All (EFA) goals since 2000. With a view to meet this international commitment, the government of Nepal collaborating with International/Non-Governmental Organizations (I/NGOs) has been making efforts through School Sector Reform Plan (SSRP) to promote the inclusive education in Nepal. However, many children are still out of schools. In this situation, why these children are out of schools? Is it not due to the lack of child friendly classroom practices?

Theoretically, inclusive education and inclusive classroom practice encourage schools to have child-friendly and pleasant environment as well as child-centered pedagogy with active child participation. According to United Nations Educational Scientific and Cultural Organization [UNESCO] (2003), inclusive education is a process of addressing and responding to diversity of

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needs of all learners on the classroom, in school, and on the society. Inclusive education creates suitable environment for all learners addressing multicultural differences. Several activities are planned to address inclusive education and inclusive classroom practices from government and non-government sectors. However, these mere assumptions and plans are not sufficient in answering and addressing the questions and challenges about inclusive classroom practices.

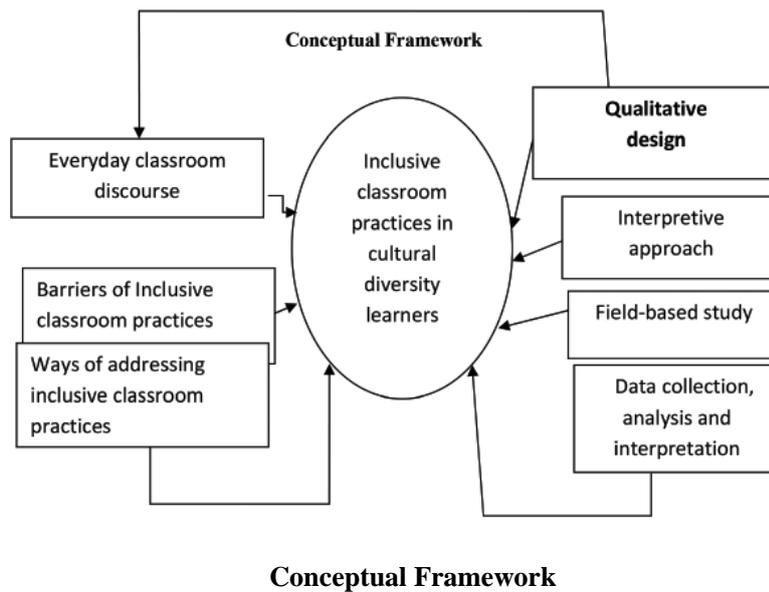
Hence, it seems sensible to ask some basic questions: how are the current mathematics classroom practices being carried out from the perspective of inclusive education? How do teachers feel, and what are their experience and perceptions regarding the inclusive classroom practices? How do diverse learners involve in classroom practices and how do the teachers address and accommodate them? What kind of instructional strategies are being used to address inclusiveness, child-friendly environment and fear-free environment? In addition, one fundamental question that encouraged me to conduct this study is: what classroom practices are being used to promote inclusiveness within the classroom in schools across the country? With this in mind, I have tried to study into this area with a purpose of being able to contribute in understanding inclusive mathematics classroom practices.

Research Questions

1. How are the adversities faced by the teachers to promoting inclusive mathematics classroom practices?
2. How have they been coping with such adversities in their teaching and learning context?

Conceptual Framework

The conceptual framework devised through the literature studies facilitated to attain research objectives, get the answer of the research questions and carry out the research work as a whole smoothly. Analyzing various literatures in relation to inclusive classroom practices, and relevant theory to be based for my argument, I have developed a conceptual framework for the study shown in below:



Conceptual Framework

Methodology

Methodology is conducting a research; researchers must be sure about what they want to do and how they achieve their objectives and answer the research questions. A scientific way by which a researcher gets the systematic knowledge of a particular subject with cause and effect is known as methodology. In the words of Anderson (1998), research method is an approach to examine a research question. The research methodology adopted in this inquiry has been shortly presented below. Under this part, different things have to be decided before conducting the inquiry. It is decided before hand as to what population and sample are to be taken, how data are to be obtained, analyzed and interpreted. In this inquiry, the research methodology has the following subtitles, such as research design, approach, sampling, tools and their description, data collection procedure and its analysis.

Research design is the plan or proposal to conduct research; it involves the intersection of philosophy, design, strategies of inquiry and specific methods (Creswell, 2007). For this inquiry, the qualitative research design was adopted. This study was based on interpretive approach. The qualitative design was descriptive and exploratory. Qualitative paradigm believes that every research is interpretive as it is guided by researcher's feeling and belief. It gives full freedom to the researcher so that researcher can involve in his/her study without any rigid framework. Inclusive education concerns not only with schools but also affect societies and eventually the whole nation. I believe that inclusive classroom practice is mainly guided by existing rule and regulation, curriculum, teachers' attitude, nature of learner, school environment, culture and traditions. Inclusive education is the concern of all academic persons this is why both the teachers who are teaching mathematics in school and students who were learning in the school make the study area for this inquiry.

Arghakhanchi is also rich in terms of cultural, ethnic and religious perspectives. Diverse learners with special needs are studying there. Therefore, I selected Arghakhanchi district as my study site.

Without active and appropriate participants, my inquiry would not have reached a meaningful conclusion. Thus, it was really crucial for me to select participants who could provide rich information and relevant data to answer my research questions. Keeping this in mind, I selected my participants purposefully according to the nature of inquiry and my research objectives.

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I selected four teachers purposefully who could address my investigation purpose. In the selection of the participants, I have tried to include two primary school teachers.

According to the nature of my inquiry, I collected data through interviews, observations and informal conversations with participants. As mentioned above, I collected the data from the primary sources. Classroom observation and interview guidelines were the main tools to obtain the relevant information.

Through in-depth interview, I tried to gather my participants' understanding and experience about inclusive classroom practices. Cohen et.al (2008) emphasize that interview is the process of interchanging view with one another. It is a flexible tool for data collection, enabling multi sensory channel to be used; verbal, non-verbal, spoken and heard. Using interview guideline, I

conducted interview keeping in mind the participants' interests and backgrounds. Furthermore, I encouraged my participants to answer my question in natural way as far as possible. My participants were primary level mathematics teachers.

Data Analysis and Interpretation

Analysis and interpretation of qualitative data is directly linked to the field and theory. Therefore, I analyzed and interpreted the information collected from essential tool from each of the subjects in accordance with the themes of which is directly related to research questions.

Dilemmas of Inclusive Mathematics Classroom

Teaching itself is a challenging task. Moreover, to teach in a classroom with diverse learners is tougher. I as a teacher have felt many challenges while addressing inclusiveness within the classroom. Challenges depend upon the context. One of the major challenges that I have often faced is that of diverse learners, who have different needs and capabilities. Multilingual and multiethnic learners with different aptitude come to schools. They have their own language, family background, interests and beliefs. It is difficult to select appropriate language and methodologies for effective and meaningful instruction.

Inappropriate language and teacher centered pedagogies, negative attitude and intellectual barriers, weak rules and regulations, poor communication and inappropriate environment, parental negligence and rejection, multilingual and multi ethnic learners are some challenges of inclusive classroom practices. In this context, Amrita said;

“I feel that the diversity of the learners and their various backgrounds are the major challenges in the classroom. It is very difficult to accommodate a large number of students with different backgrounds. Each allocated period is only 45 minutes while there are more than 40 students in one class. Thus to give time to each individual student and include them in the same process becomes incredibly challenging.”

This indicates that diversity of learners and their various backgrounds are the major challenging tasks to ensure inclusiveness within the classroom. If anyone gets special support to develop his/her knowledge and skill, he/she can develop according to our expectation. Another major challenge is to accommodate diverse learners in a classroom. According to the nature of our society, multi-lingual, multi-ethnic and multi backgrounds learners come to schools. Their way of living, their way of understanding and their way of learning is different from each other. In this regard, to manage all learners from instructional perspective within the classroom is a big challenge.

One of the common challenges is to develop concept among novice learners about particular subject matter. In the same context, my other participant Anil highlighted;

“Mainly our teachers enter the classroom without any preparation and instructional materials. They only use text book and chalk board as instructional materials. Few numbers of teachers and high numbers of class is the challenge of inclusive classroom. Generally our teachers teach more than six periods a day. They have very limited time for preparing lesson plan and selecting

instructional materials. Some of our students also come to school without any study materials. I mean they come without bringing essential materials such as pencil, books, exercise books, tiffin etc. Students are unable to come to school regularly because of their low economic status. They have to work in their home so that their parents can go out of home for earning money. Students' irregularity is the other major challenge of effective classroom activities."

Anil's experience made me more eager about challenges of inclusive classroom practices because he has not only marked the students' weakness but also highlighted teachers' negligence about classroom instruction. Most of the teachers basically use textbooks alone as curriculum and deliver instruction as a routine task. In most of the cases the instructional approaches used in the classroom are not interactive, participatory and meaningful to the learners (NCF, 2005). ZPD is a notion that takes into account individual differences and is focused on the communicative nature of learning in which the students come to an understanding of the task they are performing (Balkrishnan, 2009)

Students' irregularity is another major challenge of classroom activities. Several external and internal factors make learners irregular. One of the major factors is students' low economic status. Undoubtedly, if learners are unable to come to school regularly, teacher cannot teach which is to be taught within the fixed time.

Addressing the Adversities

Nepal is a country of diversity in various such as culture, language, ethnically. School is accepted as a mini society and true representative agent of whole society. It is really challenging issue to address diverse learners within the same classroom.

That's why adequate knowledge of instructional pedagogy and understanding diversities is essential for teachers to effectively address the challenges and barriers of inclusive classroom practices. UNICEF (2010) states that without clear understanding of the various socio-economic and cultural characteristics of diverse learners, it is difficult to evolve strategies and develop plans at classroom, school and system level to teach children from diverse backgrounds . In this context, Amrita added her argument like;

"In fact, I try to make subject matter more interesting and make students more active. To ensure all learners' involvement in teaching learning activities, I construct group addressing all types of learners. I try to provide equal opportunities for ensuring their self-esteem and self confidence. But a large number of students sometimes make it difficult to manage instructional activities in allocated time. Another major challenge is to recognize and address the learners' own linguistic, ethnic, cultural and personal diversities. Identifying learners' various backgrounds and needs, I try to solve the problems which occur in classroom instruction."

Teacher's each and every activities influence learners' learning. If students get support from the teacher, students may enhance their knowledge.

Undoubtedly, it can be assumed that to address individual differences within the inclusive classroom, teacher should have sufficient knowledge about instructional pedagogy and instructional strategies . Amar said;

“Inclusiveness is really an important and debatable issue in educational sector so it is not easy to address all the issues properly. As a teacher, I try to cope with those challenges maintaining and managing classroom properly. I mean, creating a suitable learning environment and using sufficient instructional materials in classroom, I want to develop educational environment. To create suitable educational environment, group discussion, interaction between teacher and students, class work for students, project work etc. can be organized within the classroom. Only the teacher cannot solve the whole problems related to inclusive classroom. For this, behavioral policy and effective implementation is needed. Parental awareness as well as stakeholders support can help to minimize the challenges of inclusive classroom. As a conscious teacher, I also try to be more careful about the students who need extra support for learning.”

From Amar’s responses, it seemed that lack of behavioural policies about inclusive classroom and their effective implementation, only a teacher can not address inclusiveness properly.

“When I observed his classroom, I found that he was teaching his students as a normal teacher. No special strategies and activities were being used. On the one hand he was encouraging his students to read seriously within the classroom; on the other hand he was using only text-book as instructional material in classroom.”

Amar also expressed the similar ideas about removing challenges of inclusive classroom practices. I know well that proper classroom management for all learners is crucial task although proper classroom management for all learners is one of the important ways of removing challenges of classroom practices. Speaking of creating suitable learning environment and using sufficient instructional materials, teachers need to select these materials and instructional strategies which can address the learners’ demand. Regarding this issues, Anamol said;

“It depends upon the nature of problem. If there is general problem, it can be removed with the help of learners or by using appropriate methods and techniques. Participatory method may be very useful for all learners because it encourages learners to involve actively and it also provides sufficient opportunities for all types of learners. Audio-visual and other instructional materials can be used according to the context and content. If the problem is complex, it can be removed with the help of teacher staffs and head teacher. Sometime linguistic differences, poor backgrounds and special need of children make a great challenge for effective and meaningful learning. For this, government support and community involvement is needed to address such kinds of chaos.”

From Anamol's argument, I understood that he has developed knowledge based on different kinds of method and technique about meaningful instruction and inclusive classroom but when it comes into practice, theoretical knowledge does not work.

Making appropriate policy about inclusive classroom practices and implementing them properly, challenges and barriers can be coped with in inclusive classroom. In the same context, Anil highlighted his arguments;

“I know well the importance of instructional materials so I emphasize on instructional materials while teaching in the classroom. Generally in lower classes, instructional materials can be used to make a clear concept about particular subject. I try to cope with these challenge according

to the situation and learners' need. To make clear concept and make learning long-lasting, instructional materials play an important role. Pictures, models, printed materials, audio, visual, audio-visual, chart, graph etc. may be very useful to make classroom more productive."

Instructional materials play important role in teaching learning activities. If a teacher uses appropriate instructional materials according to the demand of subject, he/she can teach effectively. But every student should get equal opportunities according to his/her nature. Talking about removing the challenges of inclusive classroom practices, Anil highlighted about instructional materials. He emphasized the use of appropriate instructional materials not only develop concept about particular subject to make mathematics classroom more productive. Undoubtedly, use of appropriate instructional materials helps to remove several challenges of classroom but the teacher needs to use instructional materials properly.

Results and Findings

I found that teacher is the key element of whole teaching learning activities. Students' roles and responsibilities cannot be neglected although as an experienced person, teacher has more important role for managing teaching learning activities within the classroom. It was also found that appropriate instructional materials and effective instructional methods are the two important pillars of classroom activities in inclusive classroom.

Theoretically teachers emphasized that addressing individual differences in classroom instruction, collaboration and peer learning strategies help learner to motivate and to participate actively in learning process. Child-centered pedagogy highly supports those learners who need extra support from teacher or peer. Teaching in inclusive classroom is not an easy task. To be a successful teacher, a teacher should have knowledge about multiple teaching strategies and child psychology too.

It is concluded that teachers have sufficient theoretical knowledge about instructional methods, different kinds of pedagogies, instructional strategies and techniques of 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' need and demand. There was vast gap between teachers' theoretical knowledge about inclusive classroom practices and real implementation in classroom.

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Furthermore, I found that diverse learners with individual differences are the major challenges of implementing inclusion within the classroom. Theoretically Inclusive classroom welcomes all learners without any discrimination and a teacher who is teaching in inclusive classroom always respects learners' interests and demands. But practically, teachers face numerous challenges while implementing it in classroom instruction. Every student has his/her their unique quality and character. Every learner can learn but not in the same time and in the same way because of their individual differences. It means different kinds of instructional pedagogies are needed to address different kinds of learners. Selecting appropriate language for instruction and appropriate pedagogy is the major challenge of inclusive classroom practices. Traditional thought about instruction, teacher-centered pedagogies, weak rule and regulation about inclusive education, inappropriate learning environment, parental negligence, teachers' negligence, students' irregularity, multi-lingual and multi-ethnic learners are other major challenges of

mathematics classroom practices.

I found that without removing challenges of mathematics classroom practices, inclusive education does not take place and students can not be benefited from education. For this, 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 classroom. Using appropriate instructional method and providing sufficient learning opportunities can minimize within the classroom in teaching mathematics.

Conclusion

In this paper, adversities of inclusive mathematics classroom practice and the ways to address such type of adversities have been examined briefly. Through inclusive education students will have the chance to socialize and maintain peace and harmony in the country. On the basis of the classroom observation, and interview, I came up with the conclusion that existing classroom activities implemented in the Nepalese school classrooms by the mathematics teachers do not match with the practice that is suitable from inclusive perspective. There is a vast gap between their practice and the theory of inclusive perspective in teaching at the school. Despite the teachers being theoretically clear about their approaches using students' centered, participatory, child-friendly and democratic classroom methods, they lack in practice in applying their pedagogy in actual mathematics classroom to address the realities of the inclusive classroom practice. Applying appropriate instructional methods and providing sufficient learning opportunities can minimize the adversities within the classroom in teaching-learning mathematics.

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