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Exploring Teachers' Perspectives on Slow Learners in the Science Classroom

Bisna Acharya,[1] Surya Sigdel,[1] Omkar Poudel[2]

[1]Mahendra Ratna Campus, Kathmandu, Nepal, [2]Department of Economics, Birendra Multiple Campus, Tribhuvan University, Bharatpur, Chitwan, Nepal.

ABSTRACT

Background: Educators encounter a significant challenge when it comes to instructing students with slower learning abilities in the field of science classroom. Students with limited cognitive abilities are typically identified as slow learners. The objective of this study was to examine the attitudes of teachers towards students with slower learning abilities in science classrooms and analyze their perceptions of these students.

Methods: The study has been conducted by selecting a sample of 51 science teachers who teach at basic and secondary school levels. A representative sample of 51 teachers, who teach at basic and secondary level, were selected from 6 public schools in Chandragiri Municipality, Kathmandu district and 10 public schools in Ratnanagar Municipality, Chitwan district. The required data were gathered using a survey that employed three-point Likert-type questionnaires. The data were analyzed using frequency and percentage analysis.

Results: The findings indicate that the science teachers exhibited a positive attitude towards students who have a slower learning pace.

Conclusions: It is recommended to prioritize the enhancement of their science learning experience.

Keywords: slow learners; attitudes of educators; intelligence; science learning; science classroom.

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INTRODUCTION

Teachers' views toward scientific students who study slowly may affect their learning experience and academic performance. The school recognizes that certain kids need more time to understand ideas and provides extra help and reinforcement. Teachers who provide a loving and supportive learning atmosphere boost the self-confidence of students with slower learning capacities, making them more open to scientific concepts. Khan highlighted that slow learning is a term used to describe students who demonstrate learning challenges despite appearing to be typical students.[1] Rajkumar and Hema noted that hindering the academic progress of slow learners can occur when the classroom environment fails to adequately address their unique educational needs.[2] Farooq and Aslam identified a range of challenges encountered by primary school pupils who demonstrate a decelerated rate of advancement in the domain of mathematics.[3] The attitudes of their instructors affected the academic performance of students with disabilities by Chimhenga.[4] Patkin and Timor undertook an investigation to assess the knowledge and acquaintance of educators regarding subjects including physical inclusion, inclusive curriculum and adaptations, and learning disabilities.[5] Sebastian believed that education's value is student well-being. Falling students must be addressed by teachers.[6] Teacher's opinions on video conferencing platforms in learning.[7] Offor and Akinlosotu examined Edo Central Senatorial District public secondary school teachers' views on special needs students.[8] Marlina et al. suggested that teachers praised learning disabled students' cognitive, affective, and conative achievements.[9] Głagolska found that teachers' inclusive education attitudes impact students with disabilities' social adjustment.10 Daud et al. quantified secondary school supervisors' teaching and learning supervision.[11] This study may help teachers and supervisors improve classroom and school teaching. Hackman et al. pointed that professional and administrative support, peer collaboration, training, and teaching time improve science teachers' education attitudes.[12] Mazana et al. examined students' maths attitudes and predictors.[13] Garrad et al.,

Correspondence: Mr. Omkar Poudel, Department of Economics, Birendra Multiple Campus, Tribhuvan University, Bharatpur, Chitwan, Nepal. Email: omkar60475@gmail.com, Phone: +977-9845043702.

examined the sample population's sociological and philosophical outlook after inclusive education proactive efforts.[14] These changes may have caused the findings to differ from previous research. Based on the reviewed of previous studies, this study aims to investigate the teachers' attitudes towards slow learners while teaching science in the classroom.

METHODS

The researchers conducted a study to examine the attitudes of teachers towards students who experience challenges in learning at a slower pace within science classrooms. A representative sample of 51 teachers, who teach at basic and secondary level, were selected from 6 public schools in Chandragiri Municipality, situated in the Kathmandu district and 10 public schools in Ratnanagar Municipality of Chitwan district. The study sample consists of educators who were recently employed in public schools at secondary level in Kathmandu and Chitwan district. The selection of the sample schools were conducted using a random selection process from the public schools located within Chandragiri Municipality of the Kathmandu district and Ratnanagar Municipality of Chitwan District. The survey consisted of 10 Likert-scale questions, with three response options: 'agree', 'no opinion', and 'disagree'. The researchers conducted on-site visits to the science teachers at the selected schools and administered questionnaires to gather their perspectives. The collected primary data were analyzed using frequency and percentage analysis. More is the frequency or percentage for agree response indicate higher proportion of science teachers exhibited a positive attitude towards students who have a slower learning pace.

RESULTS

The researchers conducted a comprehensive review of relevant literature and consulted various questionnaires. Subsequently, they sought input from proficient faculty members at their institution who possessed expertise in the art of constructing questionnaires. Afterwards, the researchers developed the questionnaire, considering the objectives of the study. The collected primary data were analyzed using frequency and percentage analysis. More is the frequency or percentage for agree response indicate higher proportion of science teachers exhibited a positive

Table 1. Response of respondents on each.

Items	Agree (%)	No opinion (%)	Disagree (%)
There is no difference between the slow learners and the other learners in learning science	5(9.8%)	16(31.37%)	30(58.82%)
The slow learners can learn science in the same environment like others.	9(17.65%)	5(9.8%)	37(72.55%)
The slow learners cannot perceive the science knowledge in the common environment with other learners.	36(70.59%)	8(15.69%)	7(13.73%)
The slow learners should be kept isolate while teaching science concept.	39(76.47%)	0(0%)	12(23.53%)
A special environment should be provided to the slow learners to learn the concepts of science.	51(100%)	0(0%)	0(0%)
The slow learners never can learn the concepts of science.	0(0%)	11(21.57%)	40(78.43%)
No teacher can teach the science concepts to the slow learners by involving them in a common group.	30(58.82%)	5(9.8%)	16(31.37%)
The slow learners are mentally retarded and they should be treated in the same way.	0(0%)	0(0%)	51(100%)
The lovely and kindly behavior of teachers while teaching plays a vital role in effective science learning of slow learners.	51(100%)	0(0%)	0(0%)
The well trained and up-to-date teachers are required to teach science to the slow learners.	41(80.39%)	10(19.61%)	0(0%)

attitude towards students who have a slower learning pace. The science teachers were requested to provide their opinions on 10 items using a questionnaire form. The options available for their response were 'agree,' 'no opinion,' and 'disagree.' This was done to assess their attitudes. The majority of science teachers expressed disagreement regarding the notion that there is no distinction between slow learners and other learners in their ability to comprehend science. Specifically, out of the surveyed teachers, 30 disagreed with item no. 1 and also 37 rejected item no. 2. These teachers believe that slow learners cannot effectively learn mathematics alongside their peers in the same educational setting. Similarly, 36 out of 51 science teachers also held the belief that students with slower learning abilities struggle to comprehend mathematical concepts in a typical classroom setting alongside their peers. This is reflected in their agreement with item number 3. The majority of teachers concur with the notion that it is beneficial to provide individualized instruction to slow learners when teaching science concepts, as indicated by item number 4. All individuals shared the belief that it is essential to create a specialized learning environment for students with slower learning abilities, specifically in relation to comprehending mathematical concepts, as indicated by item number 5. However, it should be noted that 40 out of 51 teachers expressed disagreement with the statement that slow learners are unable to grasp scientific concepts (item no. 6). Those teachers firmly believed that slow learners are indeed capable of learning science concepts. In addition, the majority of teachers, specifically 30 out of 51, expressed the belief that it is not possible for any teacher to effectively teach science concepts to slow learners by incorporating them into a collective group, as indicated by item number 7. Additionally, it was observed that all educators unanimously disagreed with the notion that slow learners are mentally disabled and should be subjected to the same treatment. They firmly believed that slow learners should be treated with utmost respect and without any form of mental harassment. Additionally, all the teachers expressed their support for the notion that the pleasant and compassionate demeanor of educators during instruction plays a crucial role in facilitating effective science learning for students with slower learning abilities. In a similar vein, the majority of teachers, specifically 41 out of 51, expressed the belief that well-trained and current teachers are necessary for instructing mathematics to students with slower learning abilities. This indicates that most teachers are in favour of item number 10. Based on the aforementioned analysis, it can be concluded that the majority of teachers expressed a positive attitude towards slow learners. However, they emphasized the importance of creating a conducive learning environment tailored to the interests of these students. Additionally, well-trained teachers who possess the ability to effectively identify the needs of slow learners were deemed crucial. The findings derived from the investigation regarding the science teachers' responses.

DISCUSSION

The majority of educators believed that it would be beneficial to separate slow learners when teaching science concepts. They also believed that children with slower learning abilities should not be classified as mentally disabled. These teachers' attitudes toward slow learners appear to be positive, contradicting the expectations. The researchers were compared the findings of this study with other researchers how far this study relevant in Nepal school's teachers attitudes toward slow learners in subjects. Davadas and Lay found significant differences in secondary Maths attitudes between rural and urban students.[15] Regarding this matter, Vaz et al. illuminated the many factors that promote positive attitudes towards inclusive schools.[16] Fitzgerald et al. described and guide special education educators with the ethic of care.[17] Usman et al. examined how van Hiele's phase-based teaching strategy and gender affect pre-service mathematics teachers' geometry attitudes in Niger state, Nigeria.[18] Ginevra et al. examined the affect teachers' attitudes towards disabled students.[19] Similarly, Miller and Gibbs study's results supported using empirically validated theories to predict slower learners.[20] Atabek and Burak developed a reliable

scale to assess pre-service teachers' music education technology attitudes.[21] Student and teacher attitudes affect secondary school chemistry students' academic performance.[22] Kaur highlighted that slower learners struggle to keep up with peers and meet academic requirements in standard classrooms.[23] This research suggests using flexible teaching methods to accommodate students who need more time and help. Even pupils who require more study time benefit from teachers who change their methods and speed. A proactive inclusive classroom welcomes all students, including those who need extra help. Peer assistance and cooperation make the group inclusive of persons who need more time to understand challenges. Professionals may engage slow-learning science students in new ways. Examples, engaging activities, and visuals aid understanding. These approaches may make slower learners feel welcome in the classroom. Teacher influence all students' education. Caring scientific classroom behavior may help slower pupils. This study finds that individual wants to pursue science but is cognitively limited. Slow learners have various distinct qualities. These include poor IQ, problems adapting to school, low test scores, delayed task completion, physical restrictions, and slow skill acquisition. Slow learners are youngsters that develop intellectually slower than their peers. Slow learners have poorer I.Q.s and less academic development, studies showed. They require individualized attention, curriculum changes, and slower instruction to learn science. Slow learners should not be called intellectually disabled, inept, or inferior by instructors. For diverse learners, teachers must create a complete learning environment.

CONCLUSIONS

Based on the analysis and interpretation of the collected data, it has been concluded that teachers who provided instruction to students with slower learning abilities in the field of science demonstrated a significantly positive attitude towards them. However, it was widely recognized that individuals with slower learning abilities would derive significant advantages from a specialized educational environment and highly proficient educators who possess extensive expertise in addressing the distinct requirements of these learners. The educators exhibited a conscientious attitude when addressing students who encountered academic difficulties, highlighting the significance of establishing a caring and encouraging atmosphere that caters to their unique requirements and preferences.

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