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एन सी ई आर टी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
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About the Journal

The *Journal of Indian Education* is a reviewed periodical published in May, August, November and February by the National Council of Educational Research and Training, New Delhi.

The NCERT encourages original and critical thinking in education. The JIE provides a forum for teachers, teacher educators, educational administrators and researchers through presentation of novel ideas, critical appraisals of contemporary educational problems and views and experiences on improved educational practices. Its aims include thought-provoking articles, challenging discussions, analysis, challenges of educational issues, book reviews and other related features.

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CONTENTS

Editor's Note

The National Education Policy (NEP) 2020 envisions transforming India's education system in order to contribute in the making of an equitable and vibrant knowledge society, by providing high-quality education for all. In order to realise this vision, the policy recommends the appropriate reforms in curriculum and pedagogy in order to ensure that learners are actively and joyfully engaged in the learning process. It further recommends that in all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects. Children's abilities can be nurtured in an effective manner if the process of learning is made enjoyable. The present issue of the *Journal of Indian Education* includes papers based on some of the themes highlighted in the NEP 2020, such as, curricular and pedagogical innovations, school leadership, inclusive education, teacher education, psychological well-being of children, etc.

Exploring the conceptual knowledge of science while blending it with experiential learning is examined by Ruchi Verma, Mukta Satsangi and Meenakshi Joshi through their empirical study on 'Blending Science with Fun Activities, Toys, and Games for Conceptual Understanding: An Experimental Study'. It is based on blending of fun activities, games, and toys with different concepts of science for generating interest and conceptual clarity at the upper Primary Stage. The study concludes that integrating games, activities and toys in teaching science has brought significant change in conceptual understanding, nurturing interest and development of social skills as well as behavioural aspects among learners.

The innovative practices are embedded in the constructive paradigm of teaching and learning process. However, it requires to be realised effectively and efficiently in its application. Sumit Gangwar and Shireesh Pal Singh have conducted a study on 'Effectiveness of Constructivist Teaching Approach on Academic Achievement: Meta-analysis' that aims to learn the effectiveness of the constructivist teaching approach on the academic achievement of learners. The study concludes that there is indeed a significant and huge impact of the constructivist teaching approach on the academic achievement of the learners.

The study on 'Exploring the Relationship between Self-Concept and Intellectually Gifted Senior Secondary Students of Navodaya Schools' undertaken by Shaila Bi and Poonam Chauhan investigated the relationship of self-concept among intellectually gifted students of Class XI of Jawahar

Navodaya Vidyalayas (JNVs). The study concludes that no significant difference exists among self-concepts scores with regards to gender and caste. The process of gender socialisation is considered as crucial to the inclusive practices of teaching and learning; however, it does get influenced by the school culture and its underlying principles.

Krishna Kumari has attempted to unfold the hidden layers of gender socialisation by conducting a study on 'Gender and Culture: Understanding School Culture from Gender Perspective' in a Delhi government school. The study observes school as reflecting the cultural institutions of our society wherein, different social structures operates simultaneously to impact the gender socialisation in a school culture.

The core of the education lies in its inclusive nature that is responsive to the diverse needs of the learners. Sreevrinda Nair through an experimental study titled, 'Comparative Efficacy of Diverse Instructional Practices towards Enhancing the Academic Achievements of Students having Varied Learning Styles with Special Reference to Auditory Learners' examined the effect of three differentiated practices on auditory students. It establishes the differentiated instructional practices as useful in facilitating the students to keep track of their learning, stimulating intellectual curiosity, and being helpful in maintaining motivation in the learning task.

Along with enhancing the soft and subject-specific skills and knowledge among learners, their learning and performance also gets impacted by the school leadership. Dipak Karmakar, in the paper titled, 'Role of School Leadership for Ensuring Learning Outcomes: A Review', examined various school leadership models along with popular leadership styles. The paper identifies the well-known leadership models and discusses their successful aspects for boosting students' learning outcomes in a variety of circumstances. However, the paper remarks disconnection between various school leadership strategies and effective student learning results seeking to inspire fresh perspectives and ideas in the field of school leadership. The study on 'Panchayat Elementary Education Officer: Educational Administrative Decentralisation in Rajasthan' carried out by Ruchi Payal focused on the roles, duties, challenges, and enormous potential of the Panchayat Elementary Education officers in driving the educational decentralisation in three Panchayats of Jhunjhunu district of Rajasthan. It observes certain challenges faced by the new administrators in decentralising the education and proposes the way forward.

Skills can be developed through exploring the significance and knowledge of disciplines across the school curriculum. Tapan Kumar Basantia and Bidhan Gantait have elaborated in their paper titled, 'Facilitation of Skills in Geography across School Curriculum' on components, skills, pedagogical approaches and evaluation in the geography school curriculum. It recognises

geography as a skill-based subject that helps the learners to acquire knowledge and skills.

This study highlights that skill development in geography encourages attainment of the competencies relating to exploration, problem solving, decision making, etc., among the learners for their holistic development. The acquisition of skills and knowledge occurs within the ambit of social and political extents to learning. These dimensions have been observed by Charu Gupta and Md Jawaid Hussain in their paper titled, 'Foregrounding Socio-political Dimensions of Learning Mathematics: Some Field Observations from Delhi and Bihar' which attempts to explore the interplay of power and identity with respect to mathematical practices in diverse contexts. The paper attempts to foreground the notion of power in determining access to powerful ideas of mathematics as well as participation and achievement in mathematical learning.

Language is a medium of communication, however it enjoys the status of being the language of technology, clearly indicating its importance in every sphere of the world. Since NEP 2020 recognises Foundational Literacy as significant for enhancing the soft skills among learners through communication, the paper titled, 'Mentoring Teachers for English Language Acquisition through LSRW: Insights from Literature Review' by Pratima Gurung, Tejinder Kaur, Ravindra Kumar and Chandan Shrivastava explores the use of mentoring as a professional development strategy for future English teachers. The paper argues that during crises like the COVID-19 pandemic, the education system revived its status with the help of digital technologies, innovative pedagogical interventions and approaches to LSRW skills by emphasising the role and importance of teacher quality for effective English language acquisition.

Experiences are crucial and vital for learning; it may vary in their nature depending upon the context. These experiences may differ if the school remains affected by conflict and unrest in its surroundings. The study conducted by Mohammad Ilyas on 'Protection and Reconstruction of Schooling in Conflict Zones: Reflections from the Field' descriptively explore those factors that have influenced the experiences of various stakeholders and necessary actions performed by them to maintain the functions and improvements of the schools. The author concludes that ensuring access to education needs to be the priority and primary concern for the authorities as well as different stakeholders of education in conflict affected zones.

Shweta Singh and Seema Singh qualitatively investigated the perceived causes and consequences of bullying among secondary level students through their study on 'Perceptions of Secondary Level Students toward Causes and Consequences of Bullying'. It highlights factors such as financial conditions,

physical appearance, seeking enjoyment, displaying aggression, seeking revenge, exerting power, experiencing jealousy, and engaging in frequent use of social networking sites as some of the major causes of bullying. The study emphasises proper interventions against bullying in educational settings for creating a conducive learning environment.

Internship is considered as one of the vital processes in the field of teacher education. Sharad Sinha and Vritika Singh have examined internship in the context of teacher education in their paper titled, 'Bridging Gaps between Theory and Practice: Exploring the Value of Internship'. It seeks to propose measures and methods for enhancing the internship experiences by addressing the issues faced by student teachers during internships as well as the current institutional practices and ways to their improvisation.

Developing successful leadership among schools requires continuous professional development programme to improve the quality of school education. Subitha GV, through the paper titled, 'Teachers' Continuous Professional Development in South Asia: Challenges and Policy Initiatives', has reviewed global reports, policy documents and research articles, and analysed the current nature of the teacher professional development programme in countries such as India, Bangladesh, Sri Lanka, Nepal, and Pakistan. The paper emphasises on providing high-quality teacher professional development programme by suggesting subsequent improvements and interventions.

Priya Johry and Alka Bankra have done an extensive review of the book titled, 'Children's Ideas in Science' within the context of learning science in the modern age of innovation. It outlines the intention of the book to unveil the journey of understanding and the shifting frames of knowledge on various topics related to science by depicting how ideas changed and developed with teaching. It concludes that the book significantly widens the scope of reflective teaching practices for both teachers and teacher educators.

This issue of *JIE* provides articles and research papers on themes and topics under School Education and Teacher Education which are highlighted in the NEP 2020. We hope that our readers will be able to relate their personal experiences with the issues and concerns discussed by the authors of these articles or research papers. We also look forward to suggestions and comments on the articles published. We invite our readers to contribute to the journal by sharing their knowledge in the form of articles, research papers, case studies, and book reviews.

Vijayan K.

Academic Editor

Blending Science with Fun Activities, Toys, and Games for Conceptual Understanding

An Experimental Study

Ruchi Verma*, Mukta Satsangi** and Meenakshi Joshi***

Abstract

Quality of education is one of the most important concerns for a developing nation particularly with reference to science education. In this research study, fun activities, games, and toys were blended with different concept of science for generating interest and conceptual clarity in teaching-learning process of science at the Upper Primary Stage. The study was conducted with 116 learners organised during COVID 19 *pandemic. It was observed that teaching-learning in science with games, activities and toys was significant in bringing change in better conceptual understanding of the subject and nurtured interest towards it. Such friendly and inclusive teaching-learning environment also resulted into active participation of learners. The study also opened new horizons in teaching-learning process for teachers as well. Traditional games, which have faded away from children's life with time, were included in the study to bring them back in practice. Thus, such collaboration resulted in stimulating better conceptual understanding with development of social skills and behavioral aspects.*

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Introduction

Science has prime importance as a subject in school curriculum as it helps learners to develop problem solving and critical thinking skills by actively exploring the environment (Rubini et al., 2019; Syafii and Yasin, 2013). The Right of Children to Free and Compulsory Education (RTE) Act, 2009 (MHRD, Government of India) in one of its clauses throws light on a curriculum which should ensure all round development of the child and makes learning process child-friendly and child-centric (Department of Higher Education, Ministry of Education, Government of India).

Science is being considered as one of the most demanding subjects at the school level. Researches indicate that there is a declining interest in learners towards learning science (Akram et al., 2017; Barmby et al., 2008; Guvercin et al., 2010; Kirikkaya, 2011; Potvin and Hasni, 2014; Turner and Ireson, 2009). The traditional teaching-learning methods like chalk and talk, reading out the chapter in class, etc., emphasise more on memorisation and recitation, which ultimately leads to rote learning without any deep understanding of the concepts and restricting learning to the classroom only. This also lacks interaction among teachers and learners and makes teaching-learning process monotonous and dull. Apart from this, in the present education system, learners' knowledge and understanding are usually analysed through their academic achievement.

Therefore, it is welcome to implement innovative pedagogical practices for making the teaching-learning process interesting, interactive and child-centric. The new approach should be filled with fun, which will create interest of learners towards the subject, encourages interaction amongst learners, thus being child-friendly and child-centric. National Curriculum Framework 2005 (National Council of Educational Research and Training, 2005) recommends that the child should be engaged in learning the principles of science through hands-on experiences as it will merge theoretical concepts with practical knowledge. This increases conceptual understanding, enhance cognitive growth, and helps in retention of scientific concepts for a longer time. According to Levin, students learnt and memorised new things more easily through toys and activities (Levin, 1974). As mentioned in NCF 2005, "when I was a child, I had the freedom to make my own toys out of trifles and create my own games from imagination" (Rabindranath Tagore).

Review of Literature

Various studies have reported integration of activities and games with teaching-learning process to be more effective for learners in developing higher thinking skills, conceptual understanding of the subject, cognition (knowledge, understanding and application based), interest and collaborative skills but majority of them were done in an inclusive set

up (D'souza, 2017; Vlachopoulos and Makri , 2017; Zarzari, Z. S., 2014.; Al-Tarawneh, 2016; Khan et al., 2012; Shri Krishna Mishra et al., 2013; Trajkovik et al., 2018; Trevino et al., 2016; Varzani, 2013). Majority of the studies exclusively focused on electronic toys, but in one study, STEM teaching-learning process was integrated with non-electronic toys (Thananuwong, 2015) but it does not answer our research question. In the present era, integration of digital technology with education is more effective than traditional ways of teaching (Meenakshi, 2013; Sangra and Gonzalez-Sanmamed, 2016) as it enhances social skills and problem-solving skills (Kirikkaya et al., 2010), involves active participation of learners with greater interest and conceptual understanding (Papastergiou, 2009). However, a major drawback of such digital games is lack of face-to-face interaction of learners' with teachers and even amongst learners.

Keeping this in view, the Department of Education in Science and Mathematics (DESM), NCERT, New Delhi has published two handbooks, one for the Upper Primary Stage (National Council of Educational Research and Training, 2018) and other for the Secondary Stage (National Council of Educational Research and Training, 2020). The handbook for the Upper Primary Stage suggests fun activities, games (outdoor and indoor) and toys as an educational tool for the teaching-learning process of science. Games, activities and toys which are considered as means of entertainment, were used as educational tools in which the pedagogical content was weaved. Low cost or no cost materials were used to perform activities suggested in the handbook which otherwise is expensive in digital games. The unique feature of the handbook is to club scientific concepts with traditional games (*stappu*, *pithu*, etc.) and bring them back to the limelight, which is lost nowadays due to digital games. Teaching-learning through such process sharpens learners' cognitive capabilities, deepens understanding of the subject, creates alertness, enhances observation power, listening skills and critical thinking skills, develops team spirit amongst learners due to their active participation and interaction with other learners and thus augment overall development of the learner.

The India Toy Fair 2021 is an initiative taken by the Indian government from learning by doing to learning by playing for developing interest, better conceptual understanding, increasing experiential learning, developing self-regulation or self-control, mental flexibility and important for developing strong socio-emotional state (Ministry of Education, 2021). The Indian government has also launched an online toy hackathon called 'Toycathon-2021', which is based on development of innovative games or toys based on history, culture, etc.

The NEP 2020 recommends experiential learning, which includes hands-on learning, art

integrated and toy-based pedagogy, sports-integrated education, and story-telling-based pedagogy (National Education Policy 2020, Ministry of Human Resource Development Government of India).

Thus, our study aims and addresses blending of traditional games, toys, and fun activity with science topics to stimulate interest in science subject and foster better conceptual understanding at the Upper Primary Stage. It also comes out that the use of activities, toys and games help in the development of social skills and behavioral aspects.

Research Questions

A. How effective is the teaching-learning process in holistic development of a learner by blending content of science with the traditional games and toys?

B. Can scientific concepts be better understood with the help of games, toys, and fun activities?

Objectives of the Study

A. To study the efficacy of games, toys and fun activities for enhancing the conceptual understanding of science among learners of Upper primary stage.

B. To study the efficacy of games, toys and fun activities for developing learners' interest towards science.

C. To study the efficacy of games, toys and fun activities with reference to learning of Children with Special Needs (CwSN).

Research Methodology

Study Design

The study was framed for *Mohalla* classes where the teachers interacted with limited number of students of their locality, while wearing masks and maintaining social distance due to COVID–19 pandemic. During this period, all schools remained closed for more than eight months. Students in the rural areas were also unable to attend the online classes due to lack of availability of smart phones or computers in their houses. Therefore, the teachers decided to conduct *Mohalla* classes to educate their students. The study was conducted on the students of twenty-one *Mohalla* classes. An intervention module was developed from the handbook for elementary level and only 10 activities (2 fun activities, 6 games and 2 toys) were selected from the handbook for the study and were given to teachers through mail in the form of pdf and along with some videos of how to perform activities, developed by the DESM, NCERT. The steps of this study have been shown in Figure 1.

The independent variable used for the study were games, toys and fun activities given in the handbook for teaching-learning of science at

Fig. 1: Design of the study

Upper Primary Stage. The dependent variables included conceptual understanding and learners' interest in science.

Sample Size and Sampling Method

The orientation programme comprised of 21 teachers (one teacher each from 21 schools) of *Ichhawar* Block, Bhopal, Madhya Pradesh belonging to science background. The sample for the intervention programme comprised of total 116 students of Upper Primary Stage (Classes VI, VII and VIII) from the selected 21 schools. The sample also included two children with special needs (CwSN) from a school located in Delhi due to their non-availability in *Mohalla* classes of *Ichhawar* block. Since the intervention was online, only students with low vision were selected for the same and the number of games, toys and fun activities was restricted to only two for them. The research study comprised of quasi-experimental research design and single group pre-test-post-test method.

Tools for the Study

Questionnaires for teachers, learners and observers were developed by the various science experts from schools and colleges in the workshops held in NCERT. The tools developed for the study are as follows:

A. Pre-orientation questionnaire for teacher
   - To seek information with respect to general and academic information of the respondent science teacher, teaching-learning method adopted, any initiative taken by the teacher to make teaching-learning enjoyable to learners, teacher's interaction with learners in classroom, etc.

B. Post-orientation questionnaire for teacher
   - To seek information with respect to teachers' understanding of games, toys and fun activities to be used during teaching-learning process, assistance to use handbook with CwSN, feasibility of the handbook in developing science concepts, suggestions regarding improvement of the orientation programme, etc.

C. Questionnaire for the feedback on handbook by teacher
   - To seek information with respect to presentation, language, illustrations given in the handbook, the time period stipulated for each activity is enough or not, best features of the handbook, etc.

D. Pre-intervention questionnaire for learners
   - To seek information with respect to learner's interest towards learning science, usually adopted teaching-learning process in science classes, etc.

E. Post-intervention questionnaire for learners

- To seek information with respect to learner's interest towards learning science, activities from handbook adopted in teaching-learning process in science class, etc.

F. Focus Group Discussion (FGD) with learners
   - To seek information with respect to learner's response on various activities, adopted from handbook during intervention stage, to measure the effect on student's interest towards science, etc.

G. Conceptual understanding-cum-achievement tests for selected activities, games and toys from the handbook
   - To seek information on learner's understanding of concepts through games, activities and toys.

H. Observation schedule for intervention phase
   - To seek information on view for the proper implementation of the activity, find out learner's interest towards science, etc.

Orientation Programme

A five days orientation programme for teachers was conducted online to orient them on implementation and strategy to be followed while using the handbook.

Intervention Stage

This study includes two phases, Phase I and Phase II. During Phase I, the handbook on Understanding Science through Activities, Games and Toys at Upper Primary Stage and the efficacy of these activities on conceptual understanding and interest towards science was investigated. This intervention stage was carried out for ten days for conducting ten different activities, to get learners' experiences regarding their classroom learning, their interest towards science and the role of games, toys and fun activities for learning concepts. During the intervention period, the activities were delivered by the teacher to the learners in the form of games, toys and fun activities for better understanding of science concepts and later their feedback was recorded on such teaching-learning method.

Data Collection

Due to technical limitations, the teachers facilitated the process of collecting data from learners using their own mobile phones. Data was collected with the help of eight tools (questionnaires) mentioned in Section 2.3 out of which six were in Google form format for online mode, which are mentioned below:

- Pre-orientation questionnaire for teacher
- Post-orientation questionnaire for teacher
- Questionnaire for the feedback on handbook by teacher
- Pre-intervention questionnaire for learners
- Post-intervention questionnaire for learners
- Conceptual understanding-cum -achievement tests for selected

activities, games, and toys from the handbook (details in Table 1).

Results and Discussions

The efficacy of games, toys and fun activities for enhancing the conceptual understanding of science among learners at Upper Primary Stage was measured at 0.05 level of the significance and of one tailed t-test. Firstly, the mean scores obtained by the learners in the achievement test (pre-test and post-test) of the selected fun activities, games and toys were calculated as given in Table 1. But for getting the significant effect, t-test was calculated (Fig. 2–11) and found that the difference in the mean values were significant at 0.05 level for eight activities out of the ten selected activities. Although there was difference in the mean scores in the achievement test for remaining two activities, but was not found significant at 0.05 level.

This shows the efficacy of games, toys and fun activities mentioned in the handbook in conceptual understanding of the science concept among learners of Upper primary stage.

Table 1

Mean Scores Obtained in the Achievement Test for Selected fun Activities, Games and Toys

Name of the Activity	Type (Game/Fun Activity/ Toy)	Science Concept on which it is based	Mean of Scores Obtained in Achievement test	
			Pre-test	***Post-test***
Intelligent Duck	Toy	Attraction and repulsion between magnets	1.14	1.57
Lifting a cup or a glass tumbler with a balloon	Fun activity	Force and pressure	1.15	1.21
Vibgyor Seven Stones	Game	Splitting of white light	1.13	1.17
Climbing Joker	Toy	Friction	0.81	0.88
Obedient Liquid	Fun activity	Neutralization reaction	0.81	1.39
East or West, Home is the Best	Game	Living organisms and their habitats	0.96	1.16
Dramatise the Motion	Game	Types of motion	1.27	1.41
Dumb Charade	Game	Cell: structure and function	0.69	1.16
Who is my Friend?	Game	Physical and chemical changes	0.87	1.18
Sort me out	Game	Physical and chemical properties of metals and non-metals	1.30	1.50

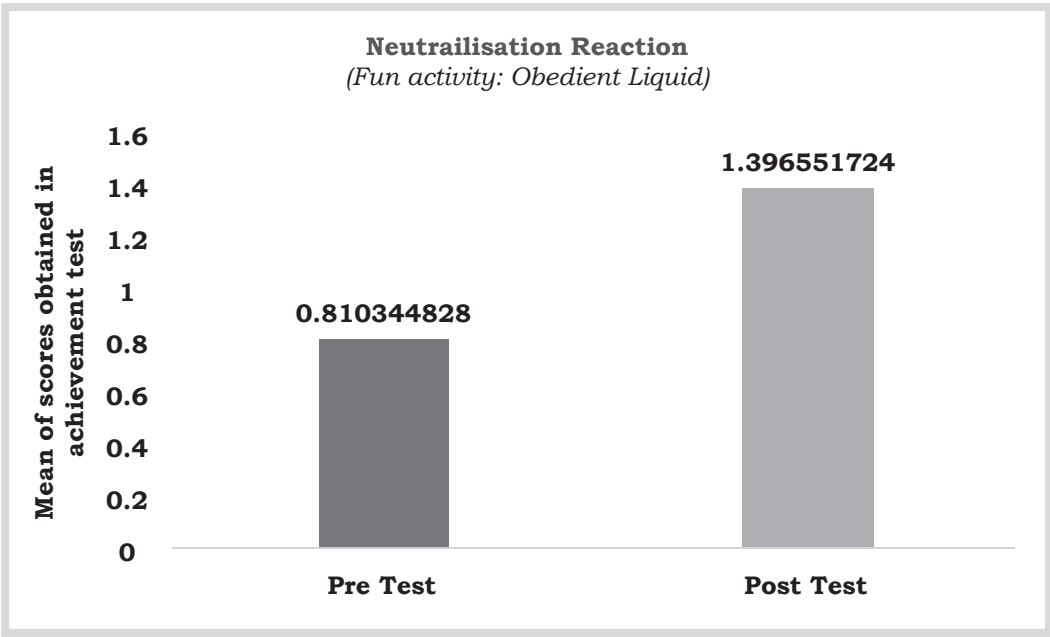

Fig. 2: Difference in the mean value of pre-test and post-test for science concept neutralisation reaction

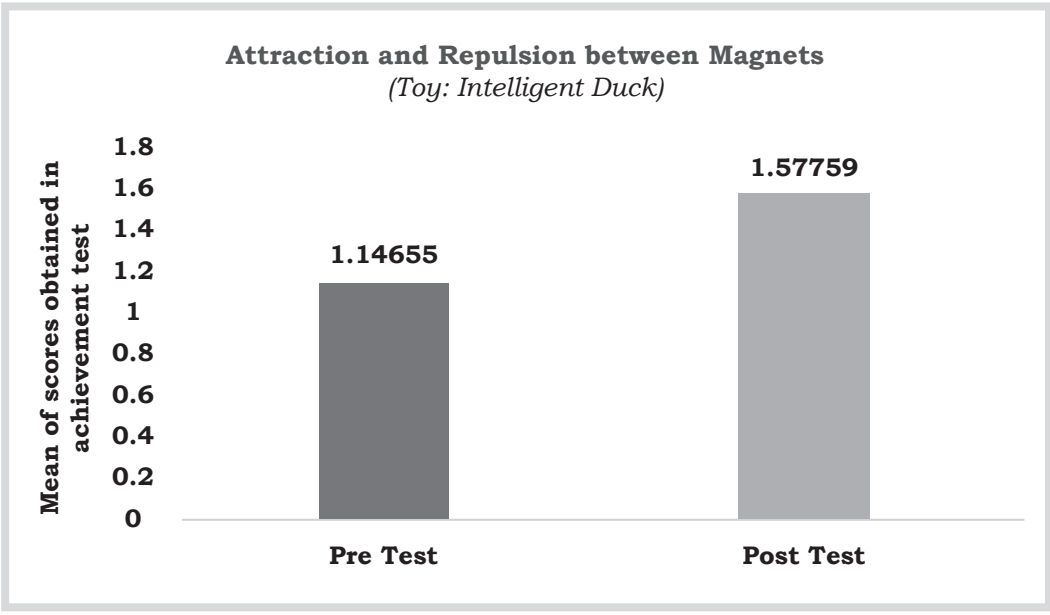

Fig. 3: Difference in the mean value of pre-test and post-test for science concept attraction and repulsion between magnets

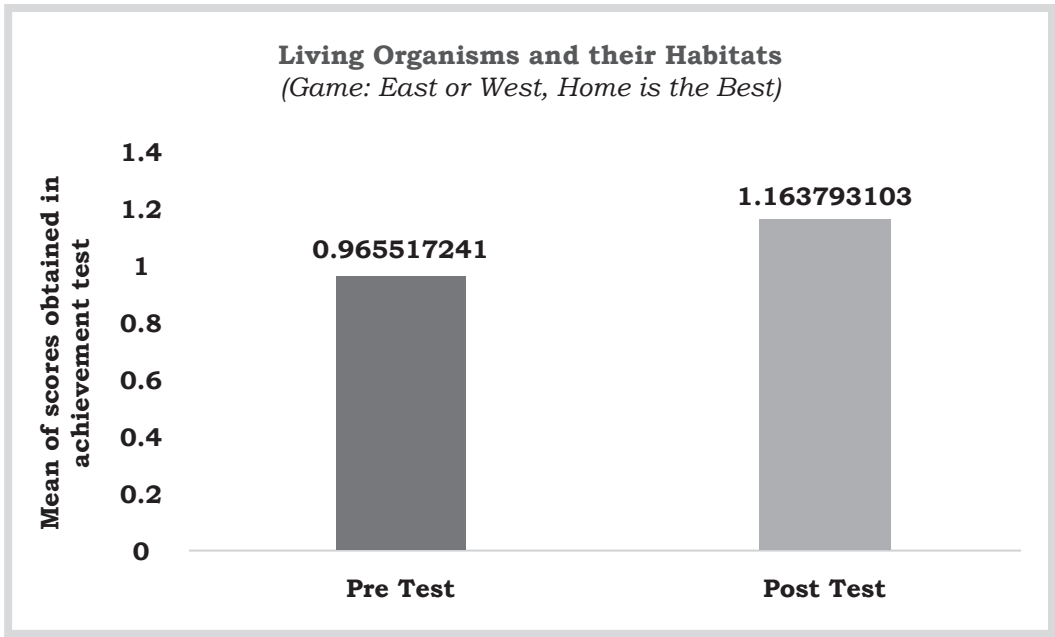

Fig. 4: Difference in the mean value of pre-test and post-test for science concept living organisms and their habitats

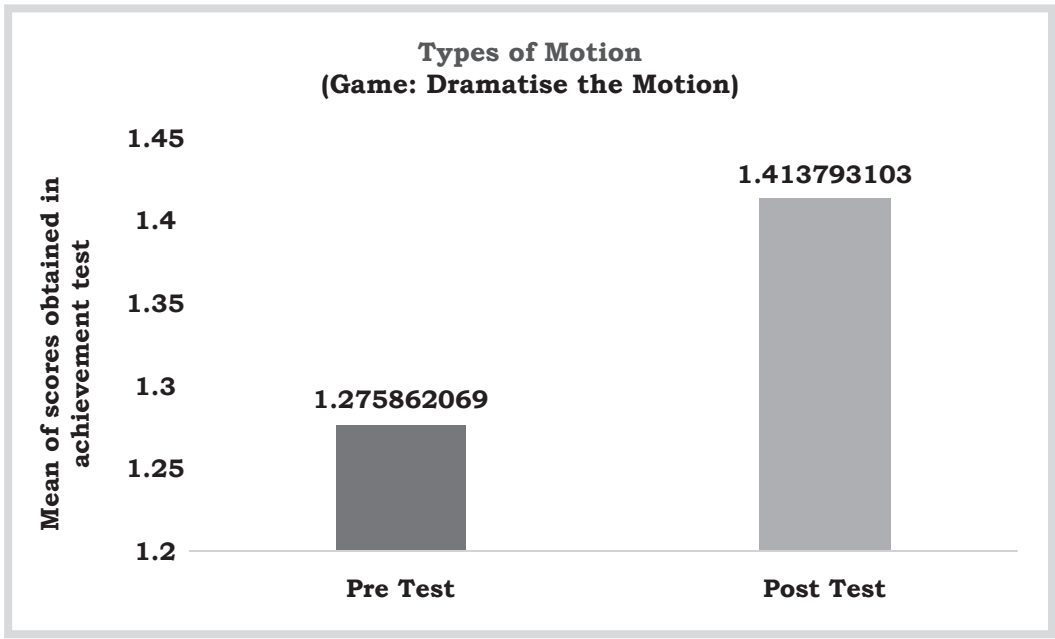

Fig. 5: Difference in the mean value of pre-test and post-test for science concept types of motion

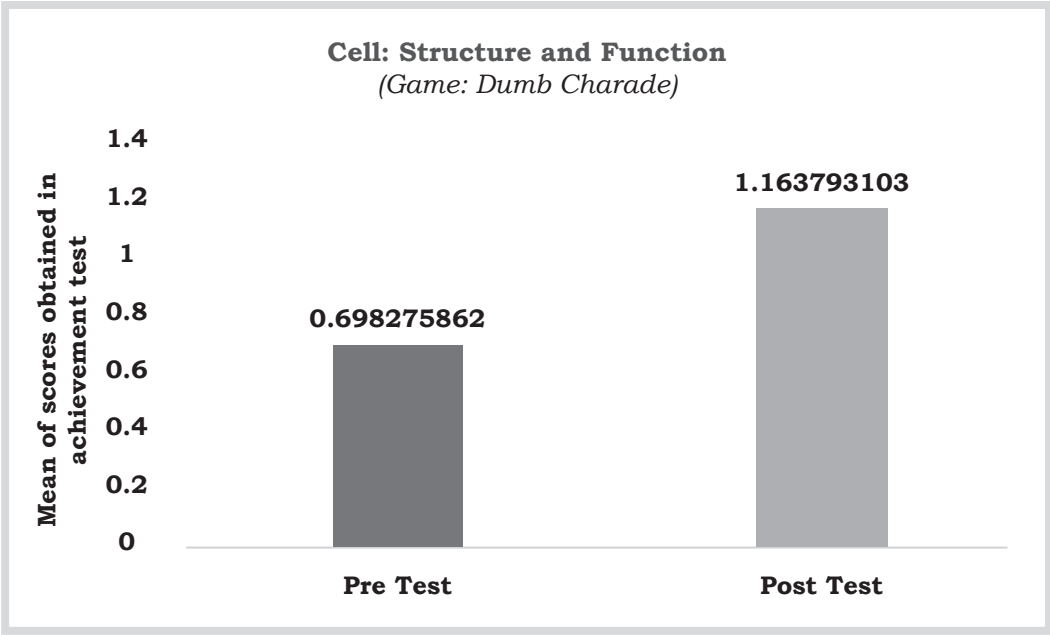

Fig. 6: Difference in the mean value of pre-test and post-test for science concept cell structure and function

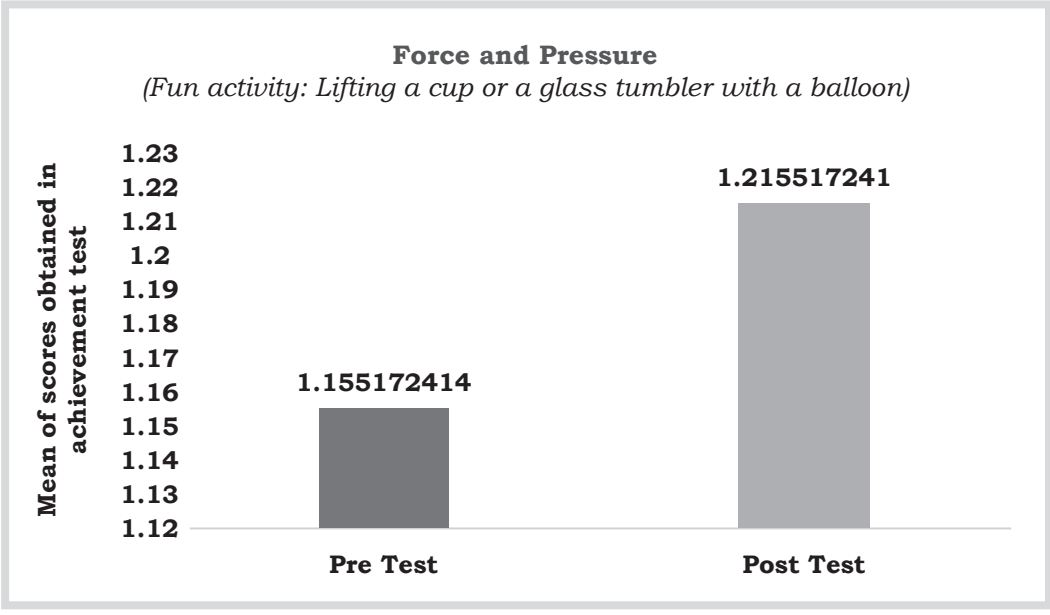

Fig. 7: Difference in the mean value of pre-test and post-test for science concept force and pressure

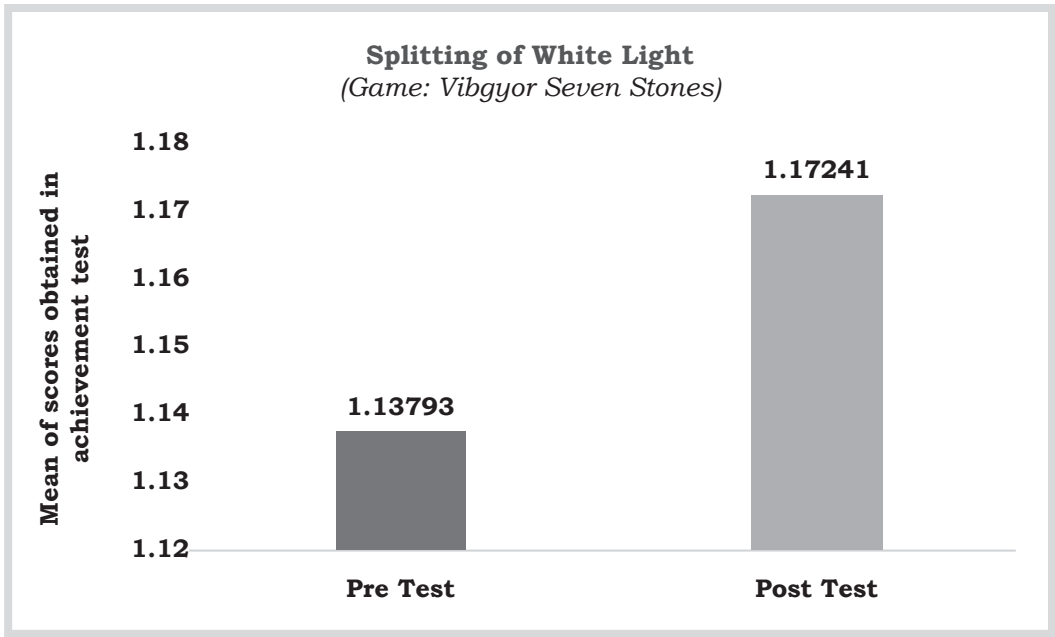

Fig. 8: Difference in the mean value of pre-test and post-test for science concept splitting of white light

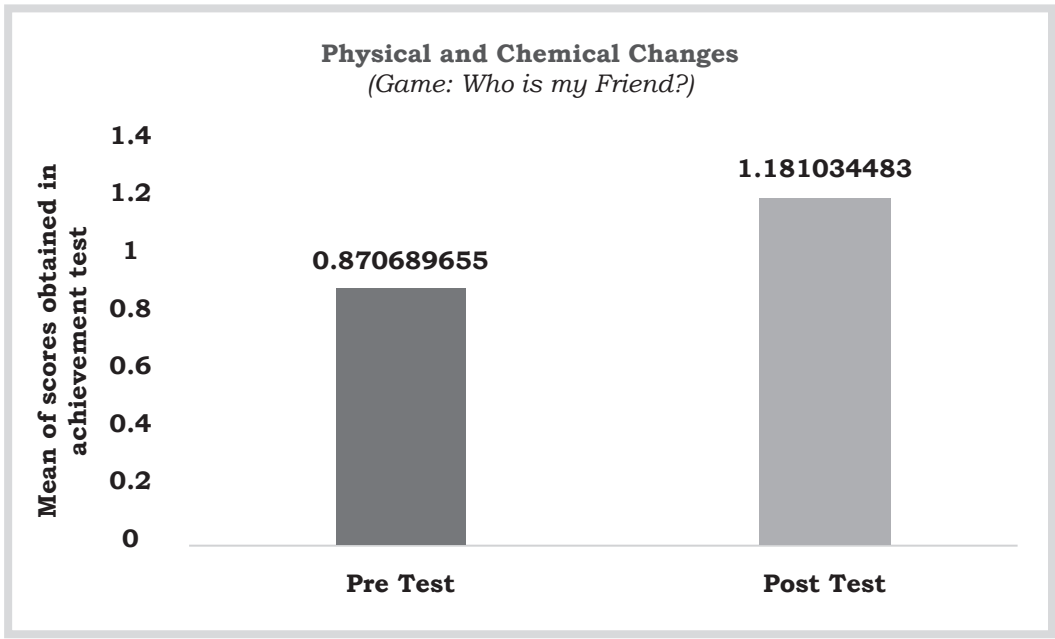

Fig. 9: Difference in the mean value of pre-test and post-test for science concept physical and chemical changes

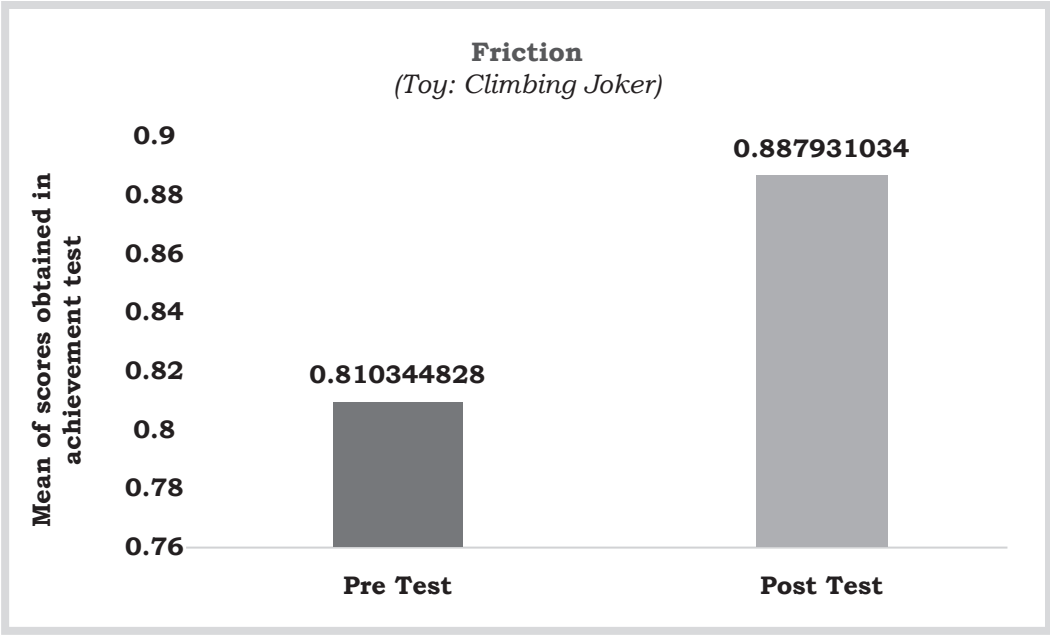

Fig. 10: Difference in the mean value of pre-test and post-test for science concept friction

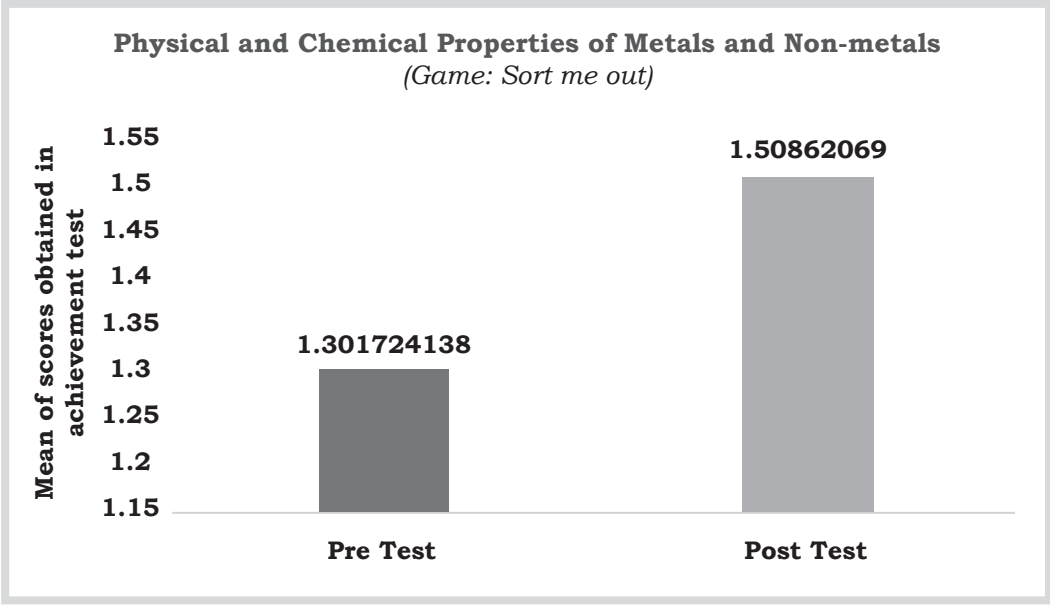

Fig. 11: Difference in the mean value of pre-test and post-test for science concept physical and chemical properties of metals and non-metals

From the filled questionnaires and online interaction with learners technically supported by teachers, it was found that traditional teaching-learning process was shifted towards art integration and their inclination towards science had increased up to 100 per cent. Even a marginal increase in the percentage of learners asking questions to teacher indicated overcoming their hesitation, thus, encouraging child-friendly environment. After intervention, the activities liked and enjoyed by most of the learners were Intelligent Duck, Lifting a glass with balloon, Climbing Joker, Vibgyor Seven Stones, etc. This finding was quite similar to the findings obtained above, where in these similar activities, learners performed very well and developed their conceptual understanding significantly. The enhancement of learners' interest towards science has been shown by the data, which increased from 75.9 per cent (pre-intervention) to 90.5 per cent (post intervention). From the data collected, a significant rise in discussion with peers about the concepts learnt in the class during the intervention period was also observed. Almost all the learners were encouraged by their teachers to interact during the teaching-learning process. The interaction was encouraged both individually and in the groups by the teachers. The learners were ready to perform new activities and liked to learn science through other games also which indicated a rise in their interest towards learning science. The learners found teaching-learning process clubbed with activities, games, and toys joyful and stated that this method helped them to learn better.

In case of CwSN, though there was enhancement in concept development but not significant. It would be rather difficult to conclude the impact of the intervention in case of CwSN in the teaching-learning of science as the number of participants and the number of activities taken were only two (Figure 12 and 13). From their responses it was analysed that earlier they were not discussing with their teachers the issues related to daily life like pollution, dengue, malaria, water contamination etc. but that changed in post intervention.

This innovative pedagogy also made teaching-learning process interesting for them. For learners, it was more interesting, burden free and facilitated long-term retention with clear conceptual understanding and relating the learning with their daily life experiences. We can see that the present study confirmed the findings with a similar study (Shah and Rahat, 2014) which was based on the use of activities in science topics for better conceptual development. This result also supports the findings of another study (Varzani, 2013) where they inculcate the games with the science concept and generate interest towards science. Eltem and Berber, 2021 in his study observed that educational games to teach 'Structure and Properties of Matter' made the teaching-learning process easy, more

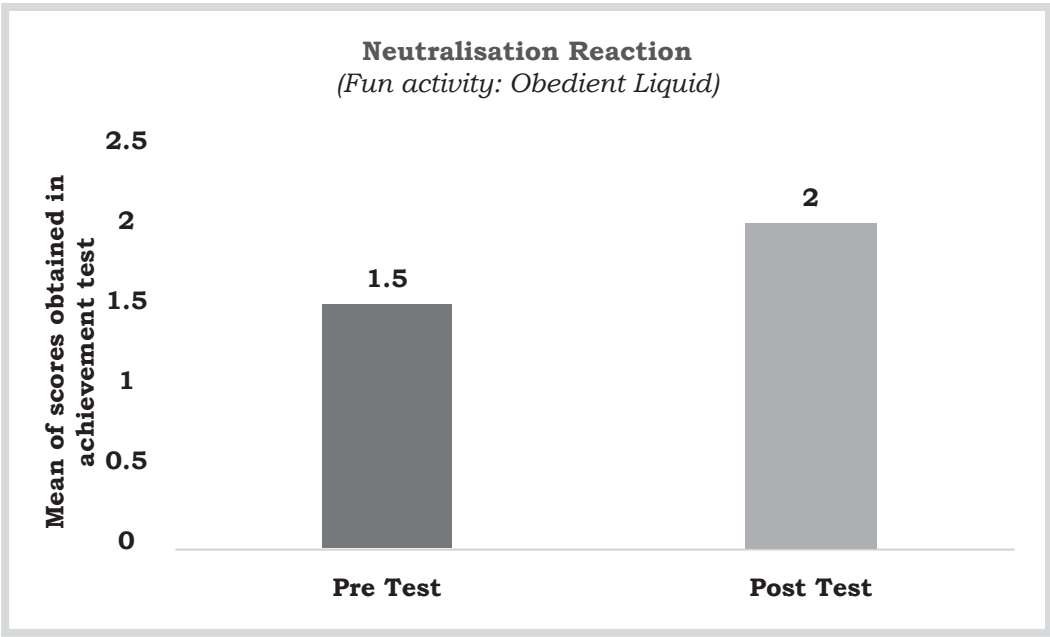

Fig. 12: Difference in the mean value of pre-test and post-test for science concept neutralization reaction (for CwSN)

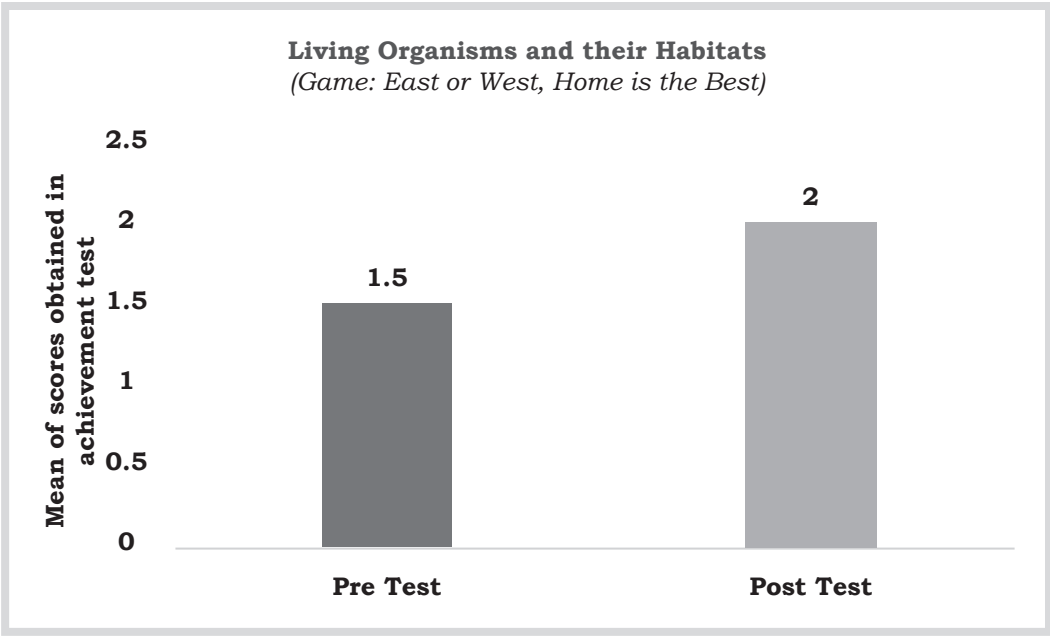

Fig. 13: Difference in the mean value of pre-test and post-test for science concept living organisms and their habitats (for CwSN)

focused, fast and efficient. Students developed permanent learning as well as interest in science through such games.

Conclusion

From the study, it can be concluded that games, toys and fun activities show positive impact on learners' conceptual development and enhances their interest towards learning science. The result of the study shows that despite limited access, eight activities had given the significant effect on conceptual development in science. Another promising finding was that the activities given in the handbook showed efficacy on developing interest of learners towards science and marginal efficacy in case of CwSN. The teachers also acknowledged that their thinking had changed towards the use of the game, toys and fun activities in science topics. Our results also found evidence that the blend of games, toys and fun activities with learning is the need of the hour. Thus, our study reduces learners' reading burden and makes education more enjoyable through games, toys and fun activities. The knowledge taught through such method leaves an indelible mark on the human mind and brain. This study will also serve as an eye-opener for teachers who believe that scientific principles can only be explained through laboratories, costly equipment and activity rooms. During the pandemic, despite many limitations, this study has been a successful effort.

However, this research cannot be generalised as it was done in *Mohalla* classes (made according to the situation) rather than in the normal classroom. Nevertheless, it will act as a guideline for other future studies which will use games, toys and fun activities for conceptual development and enhancing interest towards science.

Scope for Further Study

I. The results of the present study can be replicated by taking a larger sample size in a mainstream school to make it more reliable and generalisable.

II. The study can be done on all other activities included in the handbook.

III. This study can also be undertaken for comparing the efficacy of handbook on different zones or regions.

IV. This study can be undertaken for comparing the efficacy of the handbook on different parameters like gender, class-wise and between different categories of schools (i.e., Government, aided and private school).

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Effectiveness of Constructivist Teaching Approach on Academic Achievement
Meta-Analysis

Sumit Gangwar* and Shireesh Pal Singh**

Abstract

The purpose of the present research work was to conduct a meta-analytical study of the previously published research works related to the effectiveness of the constructivist teaching approach on the academic achievement of learners. For this work, keeping in mind the time series, the researcher selected 16 research papers to be published in the period from 2010 to the year 2021. The researcher(s) studied the effectiveness of the constructivist teaching approach on the academic achievement of the learners. After collecting quantitative data from selected research papers, they were converted into a standard scale, i.e., effect size, with the help of 'meta essential software'. After this, the average effect size was determined from these effect sizes. The average effect size of all studies yielded a value of 2.02 (very large effect size). Based on this, it can be concluded that there is a significant impact of the constructivist teaching approach on the academic achievement of the learners and the effect size is very large.

Introduction

Education is a social process that changes society, moving liabilities of instruction from guardians to educators and from family to school. Social orders change the viable utilisation of schooling in planning, creating, delivering, carrying out, and assessing educational programs. It helps to show the learning process in a study

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hall circumstance, increments both learning results also understudies' accomplishments, and lessens students' dropouts also, trouble, stress, nerves and disappointment (Chowdhury, 2016). So the present advancement of new showing methodologies is fundamental for all-around advancements of students. Crafted by Dewey, Montessori, Piaget, Brunner, and Vygotsky, among others; gives recorded points of reference to constructivist learning (Qarareh, 2016).

Constructivism addresses a change in outlook from instruction in light of behaviorism to constructivism. Behaviorist epistemology centers on insight, spaces of target, levels of information, and support. Formalisation of the idea of constructivism is, for the most part, credited to Jean Piaget, who explained components like that by which information is incorporated by the learners. He proposed that through the course of 'convenience' and 'absorption', people develop new information from their encounters (Khalid and Azeem, 2012).

Knowledge is not attained but constructed (von Glasersfeld, 1989). This statement came from a new challenge to the concept of traditional knowledge (Kim, 2005). In India, the National Curriculum Framework (NCF 2005) developed by the National Council of Educational Research and Training for school instruction has emphasised the constructivist approach to instructing and learning. The NCF 2005 suggests associating learning with real-life situations (Ranjan and Padmanabhan, 2018).

Constructivist teaching approach also has the main quality of activity and practicality (Kim, 2005). In this approach, both the student and the teacher create new knowledge collaboratively while being active. Constructivist teaching approaches make teaching effective and interesting, which increases the teacher's effectiveness and helps him achieve the learning objectives. At present, various innovative teaching methods are being used in education to enhance learning and enhance the quality of education. Constructivist teaching approaches and methods are based on heterogeneity rather than homogeneity in the classroom. Constructivist teaching approach is individual and specific to each learner and is tailored to the abilities, aptitudes, motivations and experiences of the learners. According to this diversity, curriculum adaptation strategies, such as reward-based learning, project method, multi-sensory approach, organising teaching-learning by providing work space as needed, working in groups, collaborative learning, learning by peer groups, team teaching, inter-scholastic grouping, multiple teaching should be done through age grouping, self-learning, various constructivist learning paradigms, etc. In constructivist teaching, an Individualised Education Programme is also developed based on the present level of performance of that concept in the classroom before

teaching any subject to the learners with specific needs. Thus, alternative and augmentative communication help learners who have articulation difficulties to communicate with or without external assistance (Science Pedagogy, 2018). Constructivist teaching methods are also related to new technology because, in these methods, the teacher uses new approaches and activities of technology during teaching-learning. Apart from this, constructivist teaching methods also use information and communication technology, its basic functional units like software packages, PPT, educational videos, and learning management resources (Innovative Teaching Methods, Training Module 2011-12).

Operational Definitions

Constructivist Teaching Approach

Constructivist teaching approach refers to the teaching approach in which the student is at the center of the teaching-learning process as opposed to the traditional method of teaching. In this process, the learner creates new and unique knowledge for himself as a result of the interaction of his previous knowledge and new situations. The teacher acts as a facilitator, creating a learning ecosystem in a constructivist teaching approach. In the present research work, the constructivist teaching approach refers to the different constructivist teaching methods/models included in the selected research papers.

Effectiveness

Effectiveness is the ability to produce the desired return or the ability to produce the desired output. Something is effective when it leads to an intended or expected result. In the present study, the meaning of effectiveness refers to the ability of the innovative teaching methods included in the selected research papers to produce desired results in the learners' academic achievement.

Academic Achievement

Academic achievement or academic performance is the degree to which a student, educator, or institution has achieved their short or long haul instructive objectives. In the present study, the meaning of academic achievement is refers to the marks obtained on the achievement test of students in the selected research papers.

Meta-Analysis

Refers to those statistical methods used for quantitative integration of the results obtained from quantitative research works (Gupta and Gupta, 2018). In the present research work, meta-analysis refers to the quantitative integration of the quantitative data obtained from selected research papers by converting them on a common scale (effect size).

Research Objective

The objective of the present research work was to conduct a meta-analytical study of the research work related to

the effectiveness of the constructivist teaching approach on the academic achievement of the learners. The quantitative analysis of research results is called meta-analysis (Gupta and Gupta, 2018).

Need and Importance of the Study

Meta-analysis is performed to evaluate the quality and quantity of the available evidence regarding an effect of treatment. Finding out whether an effect exists, figuring out whether it's positive or negative, and, ideally, getting a single, concise estimate of the effect are all goals. In the present research work, in the process of problem selection, various para-analytical research works done in the past were critically studied. In which it was seen that different researchers have done meta-analytical research works in different fields of knowledge and discipline. After studying the meta-analytical related research works done in the past, the researcher tried to know what is the combined effect of the experimental research works based on the constructivist approach in the time period from 2010 to 2021. Based on this rationale, the research work was completed by selecting this research problem by the researcher.

Method and Criteria for Selection of Previous Research Studies

Research studies from the period of 2010–2021 in the national and international areas on the effects of constructivist learning on the success rate were selected in this study. For this, both in Hindi and English, keywords such as 'constructivist learning', 'constructivist teaching-learning and academic achievement', 'constructivist teaching-learning environment', 'constructivist learning ecology', 'constructivism and academic achievement" were searched from different research journals and other research publication platforms such as www.ncert.ac.in, Research gate, Jstor, and Springer, etc., during this process, 93 related studies (according to the circumference of the researcher's knowledge) were found. Due to the lack of statistical measurements, 77 studies were not included in the present study. Only 16 research studies were included (all the research papers selected in this research work are shown in table number 2) in the present study on the basis of the following five major criteria—

1. Studies that used a constructivist approach and pre-test-post-test control procedures.
2. Studies that investigated the effect of a constructivist approach on learners' academic achievement.
3. Studies that reported sample size (N), mean (X), adjusted mean, standard deviation (SD) and t-value or F-value of experiment and control groups.
4. Studies conducted in national or international geographical areas.
5. Studies conducted between the years 2010–2021.
6. A very brief description of the selected research papers for the present research work is presented in Table 1.

Table 1
Very Brief Description of Selected Research Papers

S. No.	Journal Name	Volume	Issue	Year	Researcher(s)
1.	*Educational Research and Reviews*	5	7	2010	Oludipe Bimbola and Oludipe I. Daniel
2.	*International Journal of Humanities and Social Science*	2	5	2012	Abida Khalid and Muhammad Azeem
3.	*Global Journal of Environmental Science and Technology*	1	2	2014	Peter Ogbu Agogo and David AondofaNaakaa
4.	*International Journal of Research in Social Science and Humanities*	5	1	2015	Pranab Barman and Dibyendu Bhattacharyaa
5.	*IOSR Journal of Humanities and Social Science*	21	2	2016	Sushanta Roy Chowdhury
6.	*International Education Studies*	9	7	2016	Ahmed O. Qarareh
7.	*Paripex-Indian Journal of Research*	5	3	2016	Uzma Siddiqui
8.	*Journal of Education and Practice*	8	13	2017	Laxmi Pandey and Devendra Ameta
9.	*Journal of Education, Society and Behavioural Science*	24	3	2018	N. B. Naade, J. I. Alamina and P. C. Okwelle
10.	*Educational Quest: An International Journal of Education and Applied Social Science*	9	3	2018	Shashi Ranjan and Jubilee Padmanabhan
11.	*International Journal of Culture Research*	10	4	2018	Vanita Anand and Vipasha Rana
12.	*International Journal of Scientific and Research Publications*	9	6	2019	Julius Drambi Lakama
13.	*International Journal of Education, Modern Management, Applied Science and Social Science*	2	1	2020	Sheena Thomas
14.	*Pakistan Social Science Review*	4	3	2020	Ghazala Noureen, Tahseen Arshad and Muqadas Bashir
15.	*Bhartiya Adhunik Shiksha*	40	3	2020	Ranjay Kumar Patel and Shireesh Pal Singh
16.	*Review of International Geographical Education*	11	10	2021	Suhad Abdul Ameer Abbood

Data Collection

In the context of the present study, for reviewing the related literature, the researcher has studied the various research works done from 2010–2021 related to the constructivist teaching-learning process (according to the circumference of the researcher's knowledge) by purposive selection. These research papers were selected from different research journals and other research publication platforms such as Research Gate, Jstor, and Springer, etc. In the present study, the researcher collected quantitative data from all the selected 16 research papers. The details of quantitative data are presented in Table 2.

Table 2

Details of Quantitative Data of Selected Research Papers

S. No.	Researcher(s)	Group	N	Mean/ Adjusted Mean	Standard Deviation	t/F
1.	Oludipe and Oludipe	Experimental	60	31.90	2.40	40.52
		Control	60	15.18	2.11	
2.	Khalid and Azeem	Experimental	31	522.22	32.06	5.63
		Control	32	441.18	63.42	
3.	Agogo and Naakaa	Experimental	80	2.827	0.569	0.12
		Control	67	2.842	0.566	
4.	Barman and Bhattacharyaa	Experimental	25	45.63	5.23	7.53
		Control	25	34.78	4.97	
5.	Chowdhury	Experimental	30	59.50	5.12	5.87
		Control	30	51.50	5.42	
6.	Qarareh	Experimental	68	25.79	3.00	4.38
		Control	68	23.06	4.17	
7.	Siddiqui	Experimental	30	18.59	0.27	30.57
		Control	30	16.44	0.27	
8.	Pandey and Ameta	Experimental	40	42.50	5.60	3.20
		Control	40	31.50	3.50	
9.	Naade, Alamina and Okwelle	Experimental	28	68.93	13.42	3.923
		Control	30	57.00	9.52	
10.	Ranjan and Padmanabhan	Experimental	35	18.05	2.94	5.90
		Control	35	12.68	4.62	
11.	Anand and Rana	Experimental	31	39.74	2.7	14.96
		Control	31	28.70	3.4	
12.	Lakama	Experimental	33	13.82	2.11	6.31
		Control	25	9.92	2.59	

13.	Thomas	Experimental	97	45.73	7.01	7.26
		Control	92	35.48	11.89	
14.	Noureen, Tahseen and ashir	Experimental	30	17.63	2.49	6.01
		Control	30	13.10	3.28	
15.	Patel and Singh	Experimental	43	26.47	-	=56.704
		Control	42	21.49	-	
16.	Abbood	Experimental	30	35.28	6.34	3.84
		Control	29	29.04	6.12	

The above table presents the quantitative data collected from the content analysis of selected 16 research papers. In content analysis, sample size, mean or adjusted mean, standard deviation, t-value, or F-value have been taken while collecting maximum data from selected research papers.

Data Analysis and Interpretation

The quantitative data collected in the present research study was meta-analysed. Meta-analysis aims to do statistical integration of the results obtained from the same type of studies. In the meta-analysis, the average effect size is obtained by converting the numerical results from different studies into a common scale, i.e., effect size (Gupta and Gupta, 2018). In the present research study, 'meta essentials software' was used to perform the meta-analysis of the collected quantitative data. The software is available free of cost on the website of the Erasmus Research Institute of Management (ERIM), University of Rotterdam, Netherlands. The central feature of this software is that it converts the effect size and then into the average effect size with the help of minimal quantitative data obtained from various studies.

The results of quantitative data analysed with the help of 'meta essentials software' are presented in Table 3.

Table 3

Study-wise Individual Effect Size and Average Effect Size

S. No.	Researcher(s)	Effect Size	Comment
1.	Oludipe and Oludipe (2010)	7.35	Very Large Effect Size
2.	Khalid and Azeem (2012)	1.40	Very Large Effect Size
3.	Agogo and Naakaa (2014)	0.02	Ignored
4.	Barman and Bhattacharyaa (2015)	2.10	Very Large Effect Size
5.	Chowdhury (2016)	1.50	Very Large Effect Size
6.	Qarareh (2016)	0.75	Moderate

7.	Siddiqui (2016)	7.79	Very Large Effect Size
8.	Pandey and Ameta (2017)	0.71	Moderate
9.	Naade, Alamina and Okwelle (2018)	1.02	Large Effect Size
10.	Ranjan and Padmanabhan (2018)	1.39	Very Large Effect Size
11.	Anand and Rana (2018)	3.75	Very Large Effect Size
12.	Lakama (2019)	1.65	Very Large Effect Size
13.	Thomas (2020)	1.05	Large Effect Size
14.	Noureen, Arshad and Bashir (2020)	1.53	Very Large Effect Size
15.	Patel and Singh (2020)	1.62	Very Large Effect Size
16.	Abbood (2021)	0.99	Large Effect Size
Average Effect Size		**2.02**	**Very Large Effect Size**

From the observation of the above Table 3, it is clear that, except for the study of Agogo and Naakaa (2014), all other studies show moderate to substantial effect sizes (Cohen, 1988). The last row of the table shows the average effect size of all studies with a value of 2.02. The value shown in the guide table for effect size propounded by Cohen is greater than 1.2 (Cohen, 1988). That is, there is considerable effect size. As a result, it can be said that the constructivist teaching approaches have a considerable effect size on the academic achievement of the learners.

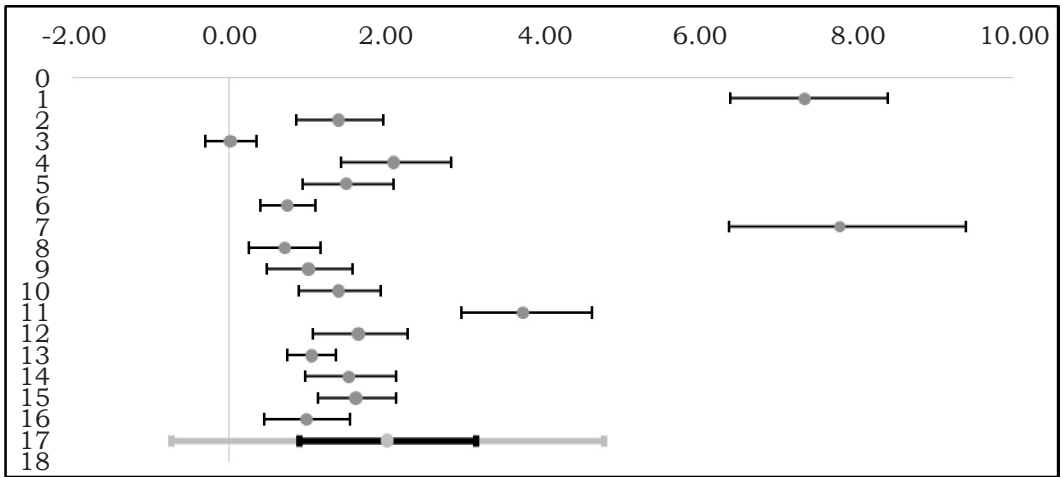
Observing the forest plot of the effect size, it is clear that the x-axis at the top of the plot is the scale of the effect size marked. The midpoint of each row except the bottom row (row number 17) of the forest plot represents the effect size of an individual study with a 95 per cent confidence interval. The bottom row (or 'summary row') of the forest plot represents the result of the meta-analysis. This meta-analytical result of meta-essentials (line 17 in graph 1) consists of two intervals, both around the same bullet. This bullet represents the *weighted average effect*, to which we will refer as the 'combined' effect size. The smaller, black interval is a *confidence interval*. The larger, green interval is the *prediction interval*. The value of 2.02 is also called the combined effect size or the weighted average effect size.

Table 4

Z and Significance Values

Z-value	**3.83**
One-tailed p-value	0.000
Two-tailed p-value	0.000

It is clear from the observation of Table 4 that the average effect size has a z-value of 3.83 with a two-tailed significance value of 0.000, respectively, at the 0.05 significance level. Therefore, this value is less than 0.05 and is significant at the



Graph 1: Forest plot of the effect size

0.05 level of significance. In this perspective, the null hypothesis that the constructivist teaching approach does not significantly affect the learners' academic achievement can be rejected. As a result, it can be said that there is a significant effect of the constructivist teaching approach on the academic achievement of the learners.

Research Conclusion and Discussion

The purpose of the present research work was to conduct a meta-analytical study of the research work related to the effectiveness of the constructivist teaching approach on the academic achievement of the learners. After the analysis of quantitative data collected in the study, it was found in the form of research finding that the constructivist teaching approach has a significant and very large effect on the academic achievement of the students. The result of this research is also correlated with the research works of Semerci and Batdi (2015); Anil and Batdi (2015); Ayaz and Şekerci (2015); Balta, Arslan, and Duru (2015); Balta and Sarac (2016); Mayasari, Handhika, Huriawati, Sasono, Kurniadi, Purwandari and Yusro (2018); and Arik and Yilmaz (2020). These researchers also found in their respective meta-analytical research studies that there is a positive and significant effect of constructivist and learner-centered teaching methods and approaches on the academic achievement of different levels of students and the effect size of these teaching methods and approaches is also large. The main reason for the magnitude of the present research can also be the systematic and effective presentations of the selected subject matter for teaching by the constructivist teaching approach, the age, interest,

aptitude, ability, and individual differences of the learners in the selection of the subject matter. Care is taken, and each learner is given opportunities and sufficient freedom to learn at their own pace. Because constructivist teaching-learning theory also believes that children should be provided with such a learning situation where they can get enough opportunities to construct knowledge keeping in mind their age, interest, aptitude, ability, and individual differences and freedom to learn (Science Pedagogy, 2018).

Children are active by nature, and while learning through constructivist methods, the child uses more of his senses in the learning process while remaining active, which makes learning easy, and engaging (Jha, 2009). One reason for the research presented from this perspective is that there may also be active participation of children.

In addition, the epistemology of constructivist teaching methods, making the learning ecology of the classroom learner-centered, considers the role of the student as the principal and the role of the teacher as the facilitator, and the learning ecology in which the learner is in the dominant role, of course, he learns effectively there. This may also be a major reason for the presented research results.

Educational Implications

The educational implications of this research work can be as follows:

For Policy Makers

This study indicates (study shows very high effect size, i.e., increase academic achievement) that students increase their academic achievement by acquiring knowledge based on interest, self-acceptance, competence, and individual differences in the learning environment created with the help of constructivist teaching methods in their classroom. (Jha, 2009). Therefore, in the light of these results, this study will provide a basis for the development of the curriculum of the subjects and the makers of educational policies, which will help them to develop the curriculum based on constructivist and constructivist teaching-learning principles while developing the curriculum of various subjects. With the help of this, the students' academic achievement can be increased.

For Teachers

The result of the present study will provide the basis for teachers to choose constructivist teaching methods in place of traditional teaching methods (teacher–centered teaching methods like lecture method) for teaching work. The nature of the subject matter is different for different subjects. For which the teacher chooses different teaching methods/models for teaching (which based on principles of learner centered education like 5E constructivist model, 7E constructivist model, 9E constructivist model, ICON model, VIOCES model, metacognitive

learning cycle model, constructivist learning design model, motivational model for constructivist-informed teaching, RIE model, etc.)

It is clear from the results of the present research work that constructivist teaching methods increase the academic achievement of the students, so based on this, the teacher can make a meaningful increase in the achievement of the students by choosing constructivist teaching methods and teaching paradigms for the teaching of their subject.

In the Selection of Appropriate Methods for Assessing the Learning of Students

At present, constructivist assessment methods are being used in place of traditional methods to check the learning progress of students. These assessment methods help the teacher to assess the learning progress of the students as well as assess their own learning. So that teachers can make necessary changes in the teaching-learning process of their classroom (Gangwar and Singh, 2020). The National Policy on Education, 2020 suggests that teachers should use student-centered and constructivist assessment methods such as rubrics, portfolios, projects, and group activities to assess the knowledge of students as well as the process of knowledge formation. The present research will acquaint teachers with constructivist teaching methods that enhance academic achievement. Accordingly, the teacher can check the learning progress of the students by incorporating appropriate constructivist assessment methods like concept-related activities, portfolios, and rubrics, etc., along with the teaching-learning process for formative assessment of various subjects of the students of the class. (Mohapatra, Mahapatra and Parida, 2019).

For Book Authors

This study indicates that constructivist teaching methods have a significant impact on students' academic achievement and the size of this effect is very large. In this context, this research work will also provide the basis for book writers of different subjects to organise and present the subject matter included in their book in interesting, student-centered, systematic, and simple words, as a result, it becomes easier for the students to learn new concepts, and their academic achievement can be increased.

For Other Researchers

The research process and result of this research work will also be helpful for those researchers who are interested in meta-analytical research work and want to do this type of research work.

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Exploring the Relationship between Self-Concept and Intellectually Gifted Senior Secondary Students of Navodaya Schools

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Abstract

The goal of this study is to investigate the relationship of self-concept among intellectually gifted students of the Class XI of Jawahar Navodaya Vidyalayas (JNVs). The data were analysed to test the significant differences between the self-concept scores of gifted males and females and the sample consisted of 383 students from the various district of JNVs of Uttar-Pradesh. Out of which, 90 were identified as gifted through the Raven's Advanced Progressive Matrices. The self-concept questionnaire by Saraswat has been administered to measure self-concept. Pearson correlation coefficient and independent sample t-test were used to test the variables investigated. Results indicated that a positive non-significant relationship exists between self-concept scores and intelligence scores of gifted students. There exists no significant difference in self-concepts scores with regard to sex. Additionally, no significant differences were found to exist between the self-concepts scores of gifted with regard to their caste.

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Introduction

The study of an individual self-concept is one of the most significant aspects of education and psychology. Self-concept has been seen as the core of personality and developed by individuals through interaction with their environment. Attention is being focused on developing a positive self-concept, which has been viewed as one of the reasons to improve the academic achievement (Purkey, 1970; Srivastava and Joshi, 2014). A key component of personality or the qualities that others reflect on one, observations about the self, or a collection of all other characteristics that differentiate an individual from others based on information obtained from the environment is self-concept.

The phenomenon of intelligence is regarded as the best criteria to identify and differentiate giftedness. There are various perceptions about giftedness definition. There is one common meaning about the concept of giftedness. There are 'Children who are gifted and talented, capable of high performance and demonstrate achievement or potential skills in a variety of areas, including intellectual, creative, leadership, artistic, and particular academic domains' (Marland Report, 1972).

The study of the self-concept on gifted populations is significant for understanding the emergence and maintenance of gifted behavior. Researchers who assert that gifted students are positively correlated with self-concept than their peers. Coleman and Cross (2000) suggest that many gifted students demonstrate a higher level of self-concept, social-skills, self-awareness, and moral duties than their classmates. To develop gifted behaviours, Tannenbaum claimed that intelligence and self-concept work in a partnership. A feedback loop is created: if a person believes that he or she is gifted, he or she will behave in accordance with that belief, and these high successes will further strengthen the self-concept (Tannenbaum, 1986).

Al-Srour and Al-Oweidi (2016) administered the Self-Description Questionnaire III (SDQIII) on 301 students (105 gifted and 196 non-gifted) to assess the level of self-concept among gifted and non-gifted children and the link between gender and self-concept. According to the findings, gifted children's average performance in all domains is higher than that of non-gifted children. There are no statistically significant differences linked to gender in any domain for gifted children, with the exception of appearance and emotions, appearance in favour of females, and the emotions domain favours males.

Hawkins (1993) evaluated the self-concept levels of 125 gifted students who had high and low achievement. According to the results, there were no statistically significant differences in self-concept among students yet some hypothesise that self-concept in gifted students might be more negative than in nongifted peers. It is believed that the high

expectations expressed through the labelling process, lead to feelings of failure since the individual never meets to the expected expectations (Buescher, 1991). Kaur et al. (2009) investigated home environment and academic achievement as predictors of self-concept using a sample of 300 adolescents. They demonstrated a positive but not a significant correlation between self-concept and academic achievement. Further, the study discovered a substantial negative correlation between the adolescents' self-concept with components of the home environment (rejection, social isolation, and deprivation of privileges).

Self-concept

To investigate self-concept, however, one must first define it. Generally, researchers believe that self-concept relates to a person's perception of himself or herself. Woolfolk (2001) defines self-concept as "the value an individual sets on his or her own characteristics, talents, abilities, and deeds."

It refers to our total perception of oneself, which encompasses both cognitive and emotive assessments. Self-concept is multi-dimensional, including our ideas of ourselves from various perspectives (e.g., physical, social, emotional, spiritual, religious). Psychologist Bruce A. Bracken has believed that self-concepts are like plants, it grows differently in different media and climates. He has given a theory of multi-dimensional self-concepts representing six domains of self-concept:

(i) **Academic:** individual feeling about himself or herself within an academic environment.

(ii) **Affect:** individual self-evaluative understanding and acceptance of emotional states.

(iii) **Competence:** individual ability to fulfil their basic necessities.

(iv) **Family:** how individuals feel about themselves as family members or how successfully they work together as a family member.

(v) **Physical:** how an individual feels about one's appearance, health, physical condition, and overall abilities

(vi) **Social:** individual ability to socialise and participate socially with others.

For growing a healthy self-concept, it is similar to preparation of the soil and carefully planting the seeds of positive self-concept.

Giftedness and Self-concept

There have been various attempts to assess gifted children's self-concepts. All studies were conducted with academically and intellectually gifted children who were identified by their performance on an IQ level or academic achievement test. These studies had contradictory findings. Some state that there are no differences in self-concepts between academically or intellectually gifted students (Hoge and McSheffrey, 1991; Tong and

Yewchuk, 1996; Kaur et al., 2009). Other studies have found that students who are gifted academically or intellectually report more positive self-concepts (Yates, 1975; and Colangelo and Pfleger, 1978; and Chan, 1988; and Gradiner, 1992; and Al-Srour and Al-Oweidi, 2016; and Ayğari and Gündoğdu, 2017), and a few discovered that gifted students have poor self-concepts (Coleman and Fults, 1982; Forsyth, 1987).

Gradiner (1992) administered four self-concept measures 'Who Am I' task, Importance Scale, Self-Description Questionnaire, and a Pie Chart) on 37 integrated gifted and 251 regular students of Grade V. He found that the gifted had significantly higher self-concepts than the regular ones. Chan (1988) found that in middle school, intellectually gifted students had a higher general self-concept than their non-gifted peers, especially in areas of cognitive and general self-worth. Colangelo and Pfleger (1978) concluded that a student's success in academic areas is positively linked with high self-concept. Ayğari and Gündoğdu (2017) also concluded that the self-perceptions of gifted students are higher than other students.

In contrast, Tong and Yewchuk (1996) found that the global self-concept of gifted is similar to their peers, and also male and female adolescents are not differing in their global self-concept. Bartel and Reynold (1986) examined depression and self-perception of 145 gifted and non-gifted Grades IV and V students, and they concluded that gifted students did not differ from their non-gifted students.

Maharmeh (2018) investigated the level of academic self-concept among 110 gifted students with low academic achievement. The findings revealed that gifted children with low academic achievement had a low level of academic self-concept. As a result, their academic achievement is adversely affected by their lack of academic self-concept.

Beaman (2009) investigated the effects of grouping and curriculum on gifted self-concept and found that neither had a significant impact on student's academic self-concept. In a longitudinal study of the psychological characteristics of 139 academically gifted students attending a residential academy, Cross, Adam, and Holland (2004) summarised that the gifted students attending residential academies were psychologically similar to their non-gifted peers measured by the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A) on the 10 clinical scales as well as a variety of supplemental scales.

Feldhusen et al. (1990), on the other hand, found a substantial difference in self-concept between participants and non-participants in gifted enrichment programmes.

Self-concept changes with developmental stages, so findings from one age group cannot be applied to other age groups. Thus, it is hard to generalise about the self-concepts of gifted students

because it is clear from these studies that multiple factors influence one's self-concept.

Purpose of the Study

The National Policy on Education, 1986 proposed to establish Jawahar Navodaya Vidyalayas (JNVs) for rural talented and gifted children. This school's main aim is to provide an opportunity for rural students to learn how to live and learn together and, thus, achieve their potential. These schools are residential, co-educational, fully financed by government of India. Free education provided to students includes free board and accommodation, stationary, uniform, medical care, and more. Students in Grades IX and XII pay a fee of Rs. 200 each month. But girls and children from low-income and SC/ST families don't pay fees. Thus, it is a system of central schools for rural talented students who lack access to accelerated learning due to social, financial, or geographical disadvantages.

Gifted students have unique abilities which make them different from other pupils, and in turn, require the use of specialised educational programs suited to their abilities. So, educators and scholars draw special attention to reconsidering the necessity of providing psychological and counselling services to these students.

The purpose of the present study investigates the degree of relationship between self-concept and intellectually gifted students observed on the population of Senior Secondary school students of (JNVs).

Objectives of the Study

1. To study the level of self-concept of intellectually gifted students of JNVs.
2. To study the significant relation between self-concept and intellectually gifted students of JNVs.
3. To study the significant difference between self-concept of intellectually gifted male and female students of JNVs.
4. To study the significant difference between self-concept of intellectually gifted students of JNVs with respect to caste.

Hypotheses of the Study

H_{01}: There will be no significant relationship between self-concept and intellectually gifted students of JNVs.

H_{02}: There will be no significant difference between self-concept of intellectually gifted male and female students of JNVs.

H_{03}: There will be no significant difference between self-concept of intellectually gifted students of JNVs with respect to caste.

Methodology

The investigation was carried out using a descriptive research approach.

Sample

The total sample collected for the study were 383 students from the Class XI, out of which 90 students were identified as intellectually gifted (44 male, 46 female). Selections were based on the randomisation sampling

technique from seven different JNVs in Uttar Pradesh.

Scale of the Study

The investigator adopted the Advanced Progressive Matrices by Raven, Court and Raven (1977, 1998, 2003 updated) for measuring intelligence. Criterion levels of intellectually giftedness were set at the level of equal to or greater than 125. For measuring the self-concept, the Self Concept Questionnaire (SCQ-s) by Raj Kumar Saraswat (2019) were adopted. These tools were administered on 14–8 years, measuring self-concept on six separate domains, namely, physical, social, temperamental, educational, moral, and intellectual.

Procedure

After collecting the data from the respondent of the selected schools, the data were analysed. The product-moment method of correlation coefficient was used to find out the relationship between the variables. Independent sample t-test was used to compare the mean difference of the variable with respect to demographic variables.

Findings and Discussion

The descriptive statistics on identified gifted students (90) are given in the below following tables. The table presents the total sample distribution of the variable on the various levels. Charts and tables also indicate the percentage distribution of the variables in accordance with demographic variable.

Table 1
Levels of Self-concept of Intellectually Gifted Students

Levels of Self-concept	Score Range	N	Percentage
Low level	Below 167	22	24.4
Moderate level	Between 167-194	46	51.1
High level	Above 194	22	24.4
Total		**90**	**100.0**

Table 1 shows the percentage level of self-concept of intellectually gifted students, in which most of the intellectually gifted students (51.1%) lie in a moderate level of self-concept.

Table 2
Levels of Self-concept of Intellectually Gifted Students by Gender

Levels of Self-concept	Male		Female	
	N	***%***	***N***	***%***
Low level	13	29.5	9	19.6
Moderate level	21	47.7	25	54.3
High level	10	22.7	12	26.1
Total	**44**	**100.0**	**46**	**100.0**

Table 2 shows the percentage level of self-concept of intellectually gifted male and female students. Gifted female students surpass in high and moderate levels of self-concepts than their male counterparts. Hence, the male had low level of self-concept than their female counterparts.

Table 3 shows the percentage level of self-concept of intellectually gifted SC/ST, OBC, and general category students. The SC/ST gifted students show low level of self-concept than the OBC and general category students. At a moderate level, gifted students of general category surpass those of SC/ST and OBC. Lastly, at a high level all the three castes had quite a similar level of self-concept.

Table 4 shows the Mean (M), Standard Deviation (SD), Skewness, and Kurtosis of intellectually gifted students and self-concept.

Table 3

Levels of Self-concept of Intellectually Gifted Students by Caste

Levels of Self-concept	SC/ST		OBC		General	
	N	***%***	***N***	***%***	***N***	***%***
Low level	6	35.3	12	22.6	4	20.0
Moderate level	7	41.2	28	52.8	11	55.0
High level	4	23.5	13	24.5	5	25.0
Total	**17**	**100.0**	**53**	**100.0**	**20**	**100.0**

Hypotheses Tested

H_{01}: There will be no significant relationship between self-concept and intellectually gifted students of JNVs.

Table 4

Descriptive Statistics

Variables	Mean	SD	Skewness	Kurtosis
Intellectually Gifted Students	26.17	2.86494	.251	.374
Self-Concept	181.22	15.82473	-.227	-1.009

The coefficient of correlation has been applied to identify the correlation between self-concept and intellectually gifted senior secondary school students from JNVs.

Table 5

Results of Pearson Product Moment Correlation Analysis

Variablez	N	R	P	Sig.
Self-concept	90	.006	>0.05	NS
Intellectually Gifted Students	90			

The information from Table 4 illustrates that there is no statistically significant link between self-concept and intellectually gifted senior secondary school students. Self-concept and intellectual giftedness have a positive but non-significant relationship (r=0.006). The null hypothesis is accepted based on the findings.

Table 6

Result of T-test

Gender	N	Mean	SD	t-value	p-value
Male	44	179.32	16.03	.686	.267 (NS)
Female	46	183.04	15.58		

H_{02}: There will be no significant difference between self-concept of intellectually gifted male and female students of JNVs.

The t-test analysis has been applied to identify the significant difference in the self-concept between male and female intellectually gifted senior secondary school students from JNVs.

The information from Table 6 illustrates that there is no statistically significant difference in self-concept between male and female intellectually gifted senior secondary school students. The self-concept of intellectually gifted male and female students differ positively but in a non-significant way (t=0.686). The null hypothesis is therefore not accepted.

H_{03}: There will be no significant difference between self-concept of intellectually gifted students of JNVs with respect to caste.

The analysis of variance has been applied to identify the significant difference between the self-concept of intellectually gifted senior secondary school students of JNVs with respect to caste.

Table 7

Result of ANOVA

Sources of variation	Sum of squares	df	Mean Sum of Squares	F value	p-value	Sig.
Between groups	248.022	2	124.011	.490	.615	NS
Within groups	22039.534	87	253.328			
Total	22287.556	**89**				

The information from Table 7 clearly illustrates that there is no statistically significant difference observed between the self-concept of intellectually gifted students with respect to SC/ST, OBC, and General caste (F=0.490) of JNVs at a 5 per cent level of significance. Therefore, the null hypothesis is accepted.

Discussion

The findings of this study are to be viewed in the context of other research findings. The findings reveal a positive but not statistically significant link between self-concept and intellectually gifted students. It indicates that the level of intelligence has almost no effect on the level of self-concept of students from Navodaya Vidyalayas school. This finding is in line with the results of Kaur et al., (2009) found that self-concept is positively but not significantly correlated to the academic achievement of adolescents. The results of Hamachek (1995) observed that achievement is influenced by only the academic part of self-concept, not by the general self-concept.

In contrast to the finding of this study, Guay et al. (2010) discovered that students who believed they were academically competent got better scores because their academic self-concept motivated them to strive more at school.

The study found no significant differences in self-concept between male and female intellectually gifted students of JNV schools. It showed that the opinions held about oneself by both intellectually gifted male and female students of JNV were similar. Yates (1975), Hassaneen (2008), Yusuf and Balarabe (2013), and Al-Srour and Al-Oweidi (2016) all found similar results. Yusuf and Balarabe (2013) revealed that both male and female students show similar levels of academic self-concept. Yates (1975) found that there exists no significance difference in gifted self-concept scores on sexes. The findings of Hassaneen (2008) and Al-Srour and Al-Oweidi (2016) reported that there were no statistically significant difference found in the self-concept of males and females.

The findings of the study revealed no significant differences in intellectually gifted students' self-concept attributed to the caste variable. The intellectually gifted students of each caste (SC/ST, OBC, and General) have quite a similar level of self-concept.

Conclusion

This article explored the link between intellectually giftedness and self-concept. Self-concept of students is not significantly related to their intelligence level of students. So, an increase or decrease in students' self-concept does not impact students' level of intelligence. However, the study also reveals that there is no significant difference found in the self-concept of male and female or

the SC/ST, OBC, and General caste of gifted senior secondary students of JNVs. Thus, the results suggest that gifted male and female or gifted students from different castes (SC/ ST, OBC, and General) should be provided with equal opportunities or support in JNV schools. This school provides equal provisions besides their gender or caste differences and make them competent enough to work hard to achieve their educational goal.

Implications

The study showed that there is no evidence that self-concept constitutes a problem for gifted students. Thus, this study suggests several points:

(i) For building up a positive self-concept in students, special care and personalised support programs have been developed.

(ii) Learning achievement, general behavioural patterns, and high participation in school activities are all dependent on positive self-concept.

(iii) A team approach may be useful in accomplishing the goal. Teachers, school counsellors, consultants, psychologists, and parents are the medium to help the child in growing a healthy perception of their selves in JNVs.

(iv) Teachers and educators should be fully upgraded and trained to assist the learner who is deprived of a positive perception of self.

(v) Conservative environments (like gender or caste biases) in any learning situation and institution should be avoided.

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Comparative Efficacy of Diverse Instructional Practices towards Enhancing the Academic Achievements of Students having Varied Learning Styles with Special Reference to Auditory Learners

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Abstract

Differentiated instruction and learning styles are closely related concepts in education. Differentiated instruction refers to the practice of tailoring instruction and learning experiences to meet the diverse needs and abilities of students in a classroom. It recognises the different modes of learning such as visual, auditory and kinesthetic based on their sensory modalities. Effective differentiation takes into account students' learning styles as one of the factors influencing their learning. Educators can design instructional strategies and activities that better align with how students process information and engage with the learning material. It may offer different options for students to demonstrate their understanding of a concept. A teacher can address different learning styles and provides multiple entry points for students to access and express their learning. This experimental study explains the efficacy of select three differentiated practices on auditory students.

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Introduction

Multisensory experiences refer to experiences that engage multiple senses simultaneously, providing a more immersive and engaging encounter. These experiences leverage various sensory modalities to create a more comprehensive and impactful perception. It helps to evoke deeper emotional responses by engaging multiple senses. Howard Gardner's landmark study of Multiple Intelligences has opened many avenues for improving the process of learning and challenges teachers to explore new instructional practices in schools. By ensuring an environment where students are nurtured and learn to look within themselves and motivate them to build self-confidence and faith in their talents. Students in today's classroom are more diverse than ever and this diversity poses the need for inculcating differentiating instruction in the classroom.

It is based on the learning styles of the students. It helps encourage, enrich their motivation, and challenge them to learn smarter. Making use of multisensory teaching is one of the key factors that ought to be considered for helping the learners retain the given information. It incorporates three main learning styles: visual, auditory and kinesthetic. This stylistic pattern of learning is based on the idea of individuation, which implies that all students have strengths and abilities and that each student may learn in a different way. The concept of learning styles advocate that teaching and learning methods should be adapted to suit how individual learners prefer to interact with the information being presented to them (Kolb, 1984). Dunn and Dunn (2002) points out that learning styles are the way in which each learner begins to concentrate on process, internalise, remember, and retain new and difficult academic information.

In the present study the investigator detailed learning style as the crucial component in constructing a favourable learning environment for the learners and the chief componential dimensions of sensory preferences refer to the perceptual learning channels with which the learner is most comfortable to receive and retain the information. Hence, based on this definition the learners are classified into three categories namely visual, auditory and kinesthetic. A series of research evidences support this view and a substantial number of studies have reported that learning styles can engage and provoke the learner in a productive manner to learn and make a tremendous difference in the behavior and learning of students. (Doss and Muthiah, 2002; Dry Dale et al, 2001; Tileston, 2004). Differentiated instructional practices facilitate students to keep the track of learning, stimulates intellectual curiosity, and helps to maintain motivation in the learning task. Instead of being distant observers of questions and answers, students become immediate practitioners

through the articulation of such practices in the classroom set up. It also helps the students who have different learning styles. The investigator witnessed this in classrooms several times. It motivates her to conduct this type of experimental study. In this study the investigator made use of three differentiated practices viz, practice on self questioning, graphic organisers and problem solving.

Review of Related literature

Verma and Sharma (1987) studied academic achievement in relation to learning styles of adolescents. They observed that the group of dependent learning style is significantly better than the group of independent learning style students so far achievement is concerned. Malohotra (1993) studied the learning outcomes among adult learners in the Union Territory of Chandigarh as related to goal orientation, persistence, and learning styles. They found that the goal of reading and writing had a positive effect on the learning outcomes of the learners. Lemire and David (1998) through their research describe the psychometric issues associated with three different learning styles models (visual, auditory, and kinesthetic) and the instruments designed to assess these models. They also present some backgrounds to the learning styles idea along with suggestions for utilising this information with developmental students. Kopsovich (2001) in his study investigated the correlation between learning styles of students and their mathematics scores in the Texas Assessment of Academic Skills Test. Malathi and Malini (2006) conducted a study which revealed that there is high correlation between learning style and achievement, which implies that higher the achievement scores, the better was the learning style among higher secondary students.

Gohel (2009) explored the effect of learners' learning style based instructional strategy on science achievement of Secondary School students. He found out the impact of varied instructional strategies in accordance with their learning styles namely: visual, auditory and kinesthetic. Martin (2010) conducted a descriptive phenomenological study explored qualitatively the lived experiences of freshman nursing students who were taught with teaching strategies that were different from the strategies to which they were accustomed. Further the study explored whether or not the teachers' teaching strategies complemented the learning styles of the learners. Joshua Cuevas (2015) conducted a study on comprehensive analysis of recent research on learning styles (*Theory and Research in Education*) They opined that there was a lack of empirical evidence supporting the concept of learning styles-based instruction and provided guidelines for the type of research design necessary to verify the learning styles hypothesis. This article examined the literature since 2009 to ascertain

whether the void has been filled by rigorous studies designed to test the matching hypothesis and identify interaction effects. Correlational and experimental research recently published on learning styles is reviewed, along with an examination of how the subject is portrayed in teacher education texts.

The investigator couldn't find any study which reveals the impact of differentiated practices among any specialised groups of students with regard to their learning styles. In Identifying the research gaps from this review of related studies the lies rationale for undertaking this type of research. The other notable thing is that no studies have been conducted in Malayalam language learning area. Herein lies the rationale of this study.

Operational Definitions

Diverse instructional practices

A framework or practice for effective teaching involves providing all students diverse classroom experiences and a range of different avenues for understanding concepts. In this study three types of differentiated classroom practices viz, self questioning, graphic organiser and problem solving were given.

Academic achievement

Academic achievement is the extent to which a student, teacher or institution has attained their short or long-term educational goals. In this study it means, the achievement produced by the selected students.

Statement of the problem

Comparative efficacy of diverse instructional practices towards enhancing the academic achievement of students having varied learning styles with special reference to auditory learners.

Objectives of the Study

1. To identify the learning styles based on the sensory modalities of students selected for the study.
2. To find out the efficacy of select classroom practice, graphic organiser towards enhancing the academic achievement of auditory students.
3. To find out the efficacy of select classroom practice, self questioning towards enhancing the academic achievement of auditory students.
4. To find out the efficacy of select classroom practice, problem dolving towards enhancing the academic achievement of auditory students.
5. To compare the efficacy of select classroom practices namely, graphic organiser, self questioning and problem dolving on the academic achievement of auditory students.

Hypotheses of the Study

1. There is no significant difference in the academic achievement of auditory students with regard to the implementation self questioning strategies

2. There is no significant difference in the academic achievement of auditory students with regard to the implementation of problem solving strategies
3. There is no significant difference in the academic achievement of auditory students with regard to the implementation of graphic organiser strategies
4. There is no comparative effectiveness of select classroom practices namely, graphic organiser, self questioning and problem solving on the academic achievement of auditory students.

Sample selected for the study: 90 Secondary School students (based on their learning style) from three schools of three districts of Kerala namely, Pathanamthitta, Alappuzha and Kottayam were selected for the study. Simple random sampling was used in this study.

Tools Employed for the Study

Learning Style Inventory

Lesson transcripts based on self questioning, graphic organiser and problem solving.

Methodology Adopted for the Study

In the present study, a mixed method of research design, incorporating both quantitative and qualitative data collection and analysis was used.

Theoretical Framework of the Study

Instead of yanking the learners to the classroom, it is better to provide them with a wide variety of learning experiences focusing on nurturing them from the inside by honoring their interest, learning styles, uniqueness so that they can learn the content in a meaningful way and help them to grow into lifelong learners. These inspiring possibilities in the classroom will allow their inner beauty to be established and foster their confidence in learning. The Australian Council of Educational Research (ACER) proposed, students' involvement with differentiated activities likely generates high quality learning (ACER, 2008). The National Task Force on learning styles and brain behavior has defined learning style as 'a consistent pattern of behavior and performance by which an individual approaches education experiences'. It is the composite of characteristic cognitive, affective, and physiological behaviours that serve as relative stable indicators of how a learner perceives, interacts with, and respond to the learning environment. Students enter in classrooms with a wide range of background knowledge, experiences, cognitive abilities and dispositions. These dispositions create varied orientation and learning experiences students

(Saxena, 2012). To maximise the development of individual potential, it is essential to provide the learner with suitable learning experiences which are challenging, enlightening, and captivating to meet the diverse learning needs of them.

It is important to remember that significant efforts are needed to accept diverse students and create learning style structure in classrooms to manage all types of learners. In order to attain a degree of self-sufficiency in learning and equip different learners to become much more competent in learning, there is a great need for indentifying the prominence of learning style possessed by the learners. It will help to design the multifaceted instructional process in a fruitful manner to accommodate the variety of learning styles and it enables the learner to integrate their preferred style in the process of learning which will automatically heighten confidence and lead to the independent learning. Coffield et al (2004) says that the knowledge of learning styles can be used to increase student's self awareness and meta cognition of their strengths and weaknesses as learners. A plethora of research was conducted in the area of learning styles which resulted in a myriad multidimensional models representing learning styles.

Framework for Categorising Learning Styles: VARK Model

Also known as VAK learning style it is a popular framework that categorises individuals' preferred learning styles into three modalities as visual, auditory and kinesthetic. Learners have different preferences for receiving and processing information. By understanding their dominant learning styles, they can enhance their learning experiences. Gardner's theory of multiple intelligences underpins the principles of accelerated learning developed by Alistair Smith. The accelerated learning methods centre on a range of visual, auditory and kinesthetic (VAK) strategies which are designed to support the three types of learners identified by Neuro-linguistic Programming (NLP) which is rooted in both psychology and neurology. It is based on the work of John Grinder, a linguistic professor and Richard Bandler, a mathematician at the University of California at Santa Cruz (UCSC) around 1975. NLP identifies six ways in which individuals perceive information which arrives via the senses. These form the basis of what we now know as 'VAK'. NLP also recognises the importance of non-verbal communication, particularly eye contact, posture, breathing and movement. Smith suggests the need for encouraging the development of a full range of intelligences towards

promoting lifelong learning. A supportive and productive classroom practice enables the learners to be receptive to new ideas and to set themselves with high personal targets.

Structural Design of Selected Instructional Practices

Graphic Organisers

Graphic organisers are visual tools that help organise information and ideas in a clear and concise manner. They are commonly used in education and can be helpful for brain storming, note taking and summarising information. They come in various forms and formats, and their specific designs depend on the purpose and content being organised. Venn diagram. mind maps, flow charts, concept maps KWL chart timeline are some of the examples of graphic organisers. The choice of a graphic organiser depends on the specific purpose and the information or ideas we want to organise visually. Research suggests that the implementation of graphic organiser results in increasing the retention and comprehension of students. It also incorporates active learning which have also been linked to higher learner motivation, increased confidence, and improved critical thinking (Cherney, 2008). An emerging body of research makes it clear that learners will learn best and make unprecedented outcome when they get opportunities to practice with graphic organisers.

Self questioning

It is a valuable method for self discovery and personal development. It can lead to increased self awaremess, clarity of purpose and the ability to make more informed decisions. Through this technique learners can deepen their understanding of themselves and cultivate a greater sense of well-being and fulfillment. It is also a reflective process in which individuals ask themselves probing questions to gain insight, understanding, and clarity about their thoughts, beliefs, behaviours, and goals. It is a method of self exploration and self inquiry that can b euesed for personal growth, decision making, problem solving and self improvement. It also involves open ended questions to oneself and taking the time to contemplate and explore possible answers. It is a rich resource to promote intellectual involvement of learners in the learning task to advance student thinking, learning, achievement, and provide valuable feedback. Effective use of questions serves as the first foundational skill for active processing of information and it helps students to deeply engage in orchestrated learning experience which are needed for absorbing and retaining a great deal of information. A good question reflects a genuine desire to find out, a deep feeling or waiting to know more than we already know and it helps us think.

Problem solving

It is the process of finding solutions to difficult or challenging situations. It involves identifying the problem, analysing it, and developing and implementing effective strategies to overcome it. Providing clear explanations in disseminating knowledge and solving problems equip the learners to become better performers in the learning task. The challenge of education is to design learning environments and processes which help to sharpen their abilities for solving problems, which is the most authentic forms of human activity (Jonassen 2004). Regular mental exercises enable the learners to solve the problems they encounter in their learning scenario and it acts as resurgence from oxymoron modes of learning.

Procedure adopted for the study

The investigator prepared a learning style inventory with special reference to the sensory modalities (VAK) of Secondary School students for assessing their preferences in learning. The finally selected statements were arranged from 1–60 numbers in such a way that the first 20 (1–20) statements were meant for 'visual' learning style group, the next 20(21–40) for the 'auditory' learning style group and the last 20 (41–60) for 'kinesthetic' learning style group.

Assorted instructional practices

This type of instruction is a teaching approach that tailors instruction to all students' learning needs. All the students have the same learning goal. But the instruction varies based on students' interests, preferences, strengths, and struggles. The objective of differentiation is to lift the performance of all students. Differentiation benefits students across the learning continuum, including students who are highly able and gifted. Understanding student learning's strengths and weaknesses and to know student interests are the core element in differentiated instructional practices. Here the investigator classified the students in accordance with their learning styles by using a learning style inventory.Students were classified as auditory, visual and kinesthetic.

The purpose of this study was to compare the effectiveness of select Instructional practices namely, graphic organiser, self questioning and problem solving on the academic achievement of auditory students.

A unit from the Malayalam terxtbook was selected for the study which includes three lessons. All of these lessons deal with the need for conglomeration of agriculture. The three lessons were taught by using the selected three differentiated practices. The select graphic organiser strategy consists of varied graphical representations of the content like charts, graphs, diagrams, maps, and the like. Video clippings of the content material, posters, and animations were also used for the demonstration

of the content. The investigator effectively used circle words, use of high lighters, OHP transparancies, and newspapers workbooks towards making the content more clear. For practicing the strategy, self questioning, the investigator made use of activities like group work, read to self aloud, oral reports and study groups, group discussions using audio tape, brain storming sessions, panel discussions, and question answer methods. Students were made to practice preparing different types of questions and demonstrate the purpose of them in the classroom settings. Field trips, hands-on test, role-playing, studying in short breaks, using flash cards to memorise the topic, problem-solving activities, developing editorials, etc. were given as part of the select practice, problem solving. Learning by doing experiences was given more importance with regard to this particular practice. After implementation of the three practices, investigator conducted a post-test for the students and compare the extent of effectiveness of selected differentiated practices on auditory students.

Comparison of the extent of effectiveness of the select practices namely, graphic organiser, self questioning and problem solving on auditory students

In order to analyse the extent of effectiveness of select classroom practices namely, graphic organiser, self questioning and problem solving among auditory students, the post test scores of the experimental group treated with the experimental intervention were compared pair-wise and it is detailed as follows.

Descriptive Statistics of Pre-test and Post-test Achievement Scores

This section describes the comparison of the extent of effectiveness of the select classroom practices namely, 97 graphic organiser, (G.O.) self questioning (S.Q.) and problem solving (P.S.) among the auditory students. The descriptive statistics of pre and post-test achievement scores of auditory students exposed to the select three classroom practices were found out and described in Table 1.

Table 1

Descriptive Statistics of Pre-test and Post-test Achievement Scores of Auditory Students Exposed to the Select Three Classroom Practices.

Variable	Group	N	AM	SD	SE	LCL	UCL
pre	G.O	33	4.27	1.97	0.34	3.57	4.97
	S.Q	28	4.96	1.79	0.34	4.27	5.66
	P.S	29	4.93	2.17	0.40	4.11	5.76
	Total	90	4.70	1.99	0.21	4.28	5.12

post	G.O	33	20.24	2.18	0.38	19.47	21.02
	S.Q	28	25.00	2.88	0.54	23.88	26.12
	P.S	29	19.41	1.62	0.30	18.80	20.03
	Total	90	21.46	3.30	0.35	20.76	22.15

From Table 1, it is understood that the pre-test achievement scores in G.O. group have AM 4.27 with SD 1.97. The SE value is 0.34 which is very small indicating that the sample AM is approximately equal to the population mean. The S.Q. group have AM 4.96 with SD 1.79. The SE value is 0.34, which is very small indicating that the sample AM is approximately equal to the population mean. The P.S. group has AM 4.93 with SD 2.17. The SE value is 0.40 which is very small indicating that the sample AM is approximately equal to the population mean. For the G.O. group 95% confidence interval varies from 3.57 to 4.97 and for the S.Q. group it is from 4.27 to 5.66 and for the P.S. group it is from 4.11 to 5.76.

The post-test achievement scores in G.O. group have AM 20.24 with SD 2.18. The SE value is 0.38 which is very small indicating that the sample AM is approximately equal to the population mean. The S.Q. group have AM 25.00 with SD 2.88. The SE value is 0. 54 which is very small indicating that the sample AM is approximately equal to the population mean.The P.S. group have AM 19.41 with SD 1.62. The SE value is 0.30, which is very small indicating that the sample AM is approximately equal to the population mean. For the G.O. group the 95% confidence interval varies from 19.47 to 21.02 and for the S.Q. group it is from 23.88 to 26.12 and for the P.S. group it is from 18.80 to 20.03.

ANOVA of Pre-test and Post-test Achievement Scores

ANOVA was carried out to find out whether there is any significant difference between the pre-test and post-test achievement scores of auditory students belonging to the select three experimental groups. The detailed description is given in Table 2.

Table 2

ANOVA of Pre-test and Post-test Achievement Scores of Auditory Students Belongs to the Three Experimental Groups.

Variable	SV	SS	df	MSS	F	P
pre	BV	9.53	2.00	4.76	1.21ns	0.30
	WV	343.37	87.00	3.95		
	T	352.90	89.00			

post	BV	521.23	2.00	260.61	50.49**	<0.01
	WV	449.10	87.00	5.16		
	T	970.32	89.00			
*ns: not significant (P>0.05), **:Significant at 1% level (P<0.01*						

ANOVA shows that the three experimental groups do not differ significantly in their pre-test achievement scores (F=1.21, p=0.30 >0.05). The three experimental groups exposed to the three experimental treatment differ significantly in their post-test achievement scores (F=50.49, P<0.01). This indicates that the three experimental groups who were exposed to the three classroom practices namely, graphic organiser, self questioning and problem solving showed varied levels of impact in improving the academic achievement in learning of Malayalam language.

Genuineness of the Difference in Performance of Auditory Students Belong to the Select Three Experimental Groups

The analysis of the post-test achievement scores of auditory students in three experimental groups revealed that the auditory students in the experimental group performed at varied levels with regard to the selected three classroom practices. Thus, the investigator concluded tentatively that the select classroom practices play a significant role in their academic achievement of Malayalam language. But it cannot conclusively say that the performance of experimental groups varied significantly by simply comparing the post-test scores of the three groups. Since it was highly inconvenient to sort out the students from different classes to form equated groups, the investigator selected intact class groups for experimentation. Hence, it was difficult to ascertain whether the varied levels of performances of experimental groups in their post-test scores resulted from the experimental factor or from other intervening variables. So it become necessary that the scores had to be analysed using the technique of analysis of co-variance (ANCOVA) for much more reliable results.

ANCOVA of Post-test Achievement Scores of Auditory Students in Three Experimental Groups

ANCOVA was employed to compare the extent of effectiveness of the select three metacognitive classroom practices namely, graphic organiser, self questioning and problem solving in improving the academic achievement of auditory students. The details are given in Table 3.

Table 3

ANCOVA of Post-test Achievement Scores of Auditory Students in three Experimental Groups by Eliminating the Effect of Pre-test Achievement Scores.

Variable	SV	SS	df	MSS	F	P
Adj.post	BV	520.65	2.00	260.33	49.89**	<0.01
	WV	448.72	86.00	5.22		
	T	969.37	88.00			

***: Significant at 1% level (P<0.01), R Squared=0.988 (Adjusted R Squared = 0.923)*

ANCOVA shows that the three experimental groups differ significantly in the post-test scores after eliminating the effect due to their initial pre test scores (F=49.89, P<0.01). Moreover using the ANCOVA model 78.7% variation in the post test scores can be explained (R Squared=R Squared=0.988, Adjusted R Squared=0.923). This indicates that the auditory students in the three experimental groups differ significantly in their post-test achievement scores in Malayalam language learning.

Adjusted Mean of Post-test Achievement Scores

The adjusted AM of post test achievement scores of auditory students in three experimental groups after eliminating the effect due to pre-test scores are given in Table 4.

The Adj. AM of post-test scores of the G.O. group is 20.23 with SE 0.40 and 95% confidence interval ranges from 19.43 to 21.03. For the S.Q. group Adj. AM of post test scores is 25.01 with SE 0. 43 and 95% confidence interval ranges from 24.15 to 25.87. For the P.S. group Adj.AM of post test scores is 19.42 with SE 0.43 2 and 95% confidence interval ranges from 18.58 to 20.27. This result indicates that the adjusted AM of post achievement scores of auditory students who were exposed to the three experimental treatment showed differences in their academic

Table 4

Descriptive Statistics of Post-test Achievement Scores of Auditory Students in the Three Experimental Groups by Eliminating the Effect of Pre-test Achievement Scores.

Group	Adj. AM	SE	LCL	UCL
G.O	20.23	0.40	19.43	21.03
S.Q	25.01	0.43	24.15	25.87
P.S	19.42	0.43	18.58	20.27

achievement in Malayalam language which again implies that the three select classroom practices have varied impact on the auditory students in Malayalam language learning.

The comparative bar diagram of Adj. post-test achievement scores of auditory students who were exposed to the select three meta cognitive classroom practices namely, graphic organiser, self questioning and problem solving is shown in Figure 1.

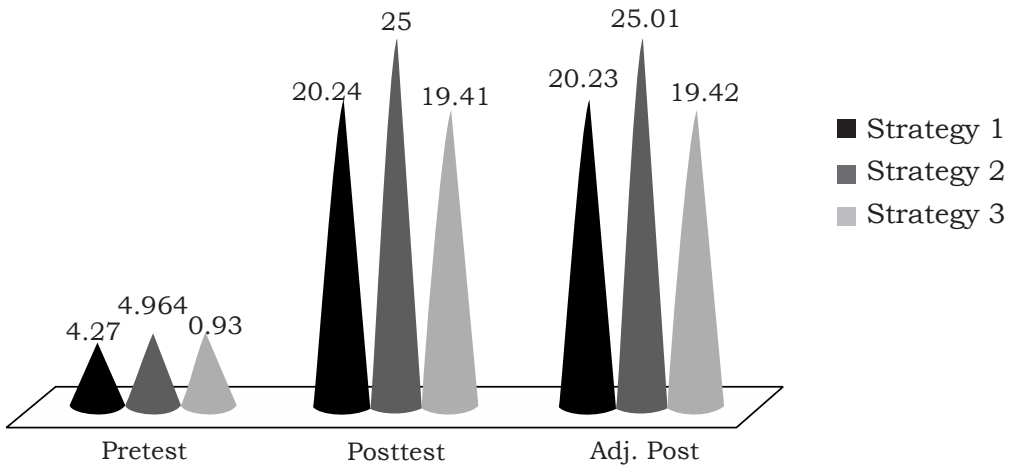

Figure 1: Comparative bar diagram of adj. post-test achievements scores of auditory students who were exposed to the select three meta cognitive classroom practices namely, graphic organiser, self questioning and problem solving.

The graphical representation shows the varied impact of select classroom practices among Auditory students.

Pair wise Comparison by using LSD.

In addition to the above analysis, LSD test was also conducted for comparing the extent of effectiveness of the select classroom practices namely, graphic organiser, self questioning and problem solving for enhancing the academic achievement in Malayalam language of auditory students at Secondary level. It enabled the investigator to test whether there is any significant difference between the Adjusted A.M. of the post-test achievement scores of select experimental groups. The details of the test are given in Table 5.

Table 5

Pair wise Comparison (LSD) among Auditory Students in Experimental Groups namely Graphic Organiser, Self Questioning and Problem Solving.

Group 1	Group 2	MD	LCL	UCL
G.O.	S.Q.	–4.78**	–5.96	–3.60
G.O.	P.S.	0.81ns	–0.36	1.97
S.Q.	P.S.	5.59**	4.38	6.79

*ns: not Significant (P>0.05), ** Significant at 1% level (p<0.01)*

Since ANCOVA shows significant difference, LSD test has been administered for testing significant pair wise difference between the effect of select classroom practices namely, graphic organiser, self questioning and problem solving in enhancing the performance of auditory students in their achievement in Malayalam. If the 95% confidence interval for difference in means contains zero, those pairs are not statistically significant. Thus, from the table it is clear that the classroom practices, graphic organiser and problem solving do not differ significantly (P >0.05). It can be concluded from the LSD test that, the select classroom practice, self questioning exercised marked influence on the achievement of auditory students compared to other two practices namely, graphic organiser and problem solving. This shows that the self questioning practice was more beneficial for auditory learners. This may be due to the impact of auditory representation of course material like group discussion, debriefing sessions, reading activities, brain storming sessions, verbal interaction, and tape recording of the content material throughout the instructional practice.

Discussion of the Findings

The tangible results of the study shows that designing differentiated instructional practices will be helpful for making them independent and autonomous to a greater extent. Although it is difficult to meet the needs of entire students of a class at a stretch, it is important to meet as many of them as possible. The unlocking of the potentialities of these practices integrated with students' learning styles is viewed as a vehicle for promoting greater success and achieving autonomy in language learning. The findings of the present study have implications for instructional practitioners towards implementing differentiated instructional strategies towards providing valuable space for deep success in the learning of Malayalam language.

The study reveals that even auditory students favor all of the select classroom practices. They show a special inclination towards the strategy, self questioning strategy. This particular strategy begins by an explicit explanation about the significance and remarkable benefits incorporated in the particular modes of learning experiences. It helps to cognitively reexamine and reorganise their understanding about the learned content. The guided practices inculcated in the classroom instruction offered a gradual release of responsibility from the part of the teacher, which is the corner stone of constructivist paradigm. The study points out that the successful completion of the journey of learning process requires the needs to bolster up the varied learning styles of the students and booster the corresponding

instructional strategies, which lead to the transformation of knowledge and empowerment of learners.

Learning strategies are procedures that facilitate a learning task in a lively and mindful manner, and are sensitive to the learning context which help the learner to become competent learners of the language. Integration of language learning strategies into classroom instruction that are closely tied to learning preferences of students enable to capacitate the learners to gain more confidence and independence in learning. The investigator made use of three classroom practices namely, graphic organiser, self questioning and problem solving towards enhancing academic achievement of students at Secondary level. Graphic organiser will capacitate the students to build an explanatory framework which led to the articulation and processing of information. It will help to spark enthusiasm, promote retention of the content material and thereby, help the learner to become higher achievers in learning. Use of questioning practices and self-generated questions advances student thinking and learning. 'Problem Solving' trained the students to formulate some problematic issues through the process of discussing certain events related to the social context. Timely scaffolding and meaning making of the contextualised scenario facilitated learners' understanding and accelerated the process of constructing and extending knowledge structures.

Preferred learning styles will be helpful for making them independent and autonomous to a greater extent. The conscious effort to practice these strategies stimulated learners' attention and expanded their horizons of language proficiency in an appreciable manner. Although it is difficult to meet the needs of entire students of a class at a stretch, it is important to meet as many of them as possible. The study shows that the academic performance of students in the learning of Malayalam language is highly related to the instructional practices based on differentiated instructional activities. In order to internalise the process of language learning, a reorientation is needed to explicate the underlying features of classroom practices. The new trends in innovative practices and instructional designs need to focus on the higher order forms of thinking which depict the process of learning rather than the product of learning. Differentiating instruction occurs when teachers produce several avenues to challenge the needs of students having varied learning styles and learning requirements. This instructional approach gives the students a sense of ownership over the learning process and focuses on individual needs. Differentiated practices will certainly plays a key role in the improvement of academic achievement of students.

Conclusion and Educational Implication of the Study

The qualitative endeavor of the present study substantiated the fact that the expositions of the classroom practices sharpened the power of learners and sparked their interest towards enhancing improvement and intellectual capacities with regard to the specific content. It also helped them to engage and focus on transformation of information in an innovative set up, become alert and efficacious in the process of learning, provide confidence to manage their own learning and empowering them to be inquisitive and fervent in their pursuits. The general impact of the study reveals that it is high time to orient towards differentiating instruction for creating an enriching environment. Differentiating instruction occurs when teachers produce several avenues to challenge the needs of students having varied learning styles and learning requirements. This instructional approach gives the students a sense of ownership over the learning process and focuses on individual needs.

In order to internalise the process of language learning, a reorientation is needed to explicate the underlying features of classroom practices. The new trends in innovative practices and instructional designs need to focus on the higher order forms of thinking which depict the process of learning rather than the product of learning. One advantage of this approach is that it helps to clarify the theoretical concepts of effective learning with practical clarity. Developing a self directive as well as a self reflective behavior acts as the key attributor of such type of learning. In addition to that, identification of learning preferences of students also floor ways of continual achievement. The 21st century demands lifelong learners who are keen in their learning process as well as their individual strengths and weaknesses.

The study also reveals the fact that learners have different styles of learning as well as different attitudes, experiences and motivation. Learning to learn can address their diversity and personalise their learning which enable them to take ownership of their own learning and make academic excellence. In order to spur the learners to their highest potential and incredible results in learning, it is needed to tailor the content material in accordance with their preferred learning styles. The results clearly show that the differentiated instructional practices are capable to support and strengthen multiple competencies of learners towards expanding their existing knowledge and allow them to become more enthusiastic and motivational in their learning process and thereby, ensure the optimal academic success.

The findings of the study have important implications for organising the instructional practices for students who show varied learning preferences towards the acquisition of information in a language classroom.

In the present context, the results indicate that the select classroom practices namely, graphic organiser, self questioning and problem solving showed significant differences with regard to their academic achievement. The study also reveals that the students having auditory earning style preferences show varied levels of inclination towards the differentiated classroom practices. The auditory students performed optimally in the classroom instruction, based on 'self questioning' integrated with discussions, debriefing sessions, verbalisation of the processes and teacher explanations. In the light of the findings, the investigator concluded that differentiated instructional classroom practices had a facilitative effect on the development of learner mastery, autonomy in learning and increased expertise in language learning. The responsive changes which occurred in the classroom enabled them to rethink the pedagogic practices and increase their proficiency level with regard to their academic achievement.

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Role of School Leadership for Ensuring Learning Outcomes
A Review

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Abstract

Effective leadership for the learning and transformation of school systems is a fast-evolving field of study in the domains of educational research. One of the most important aspects of this study is how leadership affects high-quality education. A growing number of academics are examining student learning outcomes in relation to school culture and environment using the influence of school leadership as a solid theoretical framework. This study examines various school leadership models in this regard. Additionally, it provides an overview of popular leadership styles for fostering learning, such as distributive, participatory, transformational, and instructional leadership. The article continues to discuss the qualities of good school leadership, and the evaluation follows with a discussion of how school leadership impacts student performance. It further organises and contrasts the well-known leadership models that are now grabbing the attention of the academic community in order to uncover the successful aspects of leadership models for boosting students' learning outcomes in a variety of circumstances. Despite the significant number of publications and their diversity, the current analysis discovers a disconnect between various school leadership strategies and effective student learning results. The purpose of identifying some research gaps within the more general topic of leadership for learning is to inspire fresh perspectives and ideas in the field of school leadership that may be useful in filling these gaps.

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Introduction

Murphy et al. (2007) asserts that improving organisational performance requires competent leadership. This assertion lays its basis, established on the profound vision, setting, and specified goals of the school (Hallinger and Murphy, 1986).

Effective school leadership is necessary to create a learning-friendly culture and environment in the classroom that transforms instruction into learning outcomes for all students. Through the literature, researchers have covered a range of leadership strategies, such as distributive, participative, transformational, and instructional leadership. These strategies have developed in a range of challenging situations for the overall growth of institutions. In instructional leadership, teaching-learning processes are given more focus, whereas transformational leadership places a more specific and wide-ranging emphasis on capacity-building for individual and institutional changes. These two approaches of leadership are combined in an action term 'leadership for learning' (Leithwood et al., 2006). Leadership for learning focuses entirely on students' learning and transforming classrooms and schools to support learning (Gurr and Day, 2014). Despite the fact that there is a plethora of data on school leadership and efficacy, managing an efficient school with a focus on outcomes involves a distinct set of responsibilities (Muijs et al., 2010). However, Krüger et al. (2007) emphasised the need to comprehend the mechanisms through which school leaders are strengthening the performance and improvement of schools. As a result, the broader aim of this study is to examine school leadership approaches to determine the extent to which leadership parameters influence quality education and learning outcomes.

The Study Design

This study employed a methodical evaluation of the literature that concentrated on studies highlighting leadership for learning. More than fifty papers published in international and national journals have been reviewed for this article under different major heads i.e., instructional leadership, leadership for learning, leading teaching-learning, leading school transformation, and transformational leadership.

Four Popular Typologies of School Leadership

Bush and Glover (2003) describe school leadership, as an effective process that drives individual and organisational goals and objectives while identifying and addressing the school's needs, aspirations, and challenges. Moreover, Day et al. (2016) claimed that a school's capacity to improve its overall progress and maintain its effectiveness over time is primarily determined by how school leaders

conceptualise the school's needs and diagnose how to fulfil those needs and how they use various combinations and accumulations of context and time-sensitive interventions to express, reinforce, and sustain clearly stated, organisationally shared educational values. Thus, the leadership of the school encourages a teaching and learning atmosphere that is beneficial to students' overall learning and development (Mythili, 2020). The importance of leadership in a school is viewed by both teachers and students as being second to that of education and learning in the classroom (Leithwood et al., 2004). Robinson et al. (2009) elaborated additionally their view, as it helps in setting goals and expectations, strategically allocating resources, organising, coordinating, assessing instructional processes, and providing a positive learning atmosphere. From the literature, the paper identified four popular models of school leadership which have a great contribution to the progress of schooling, such as, (i) Instructional, (ii) Transformational, (iii) Distributive, and (iv) Participative.

Instructional Leadership and its Effects

Learning-centered leadership with an emphasis on instruction in the classroom is the primary goal of instructional leadership, which is primarily concerned with students' academic development. The goals of instructional leadership include establishing clear learning objectives, developing a plan to implement the curriculum, and assessing the efficiency of the teachers. This leadership strategy emphasises the significance of raising the standard of classroom teaching and the school leader's initiatives to support better student learning outcomes (Day, et al., 2016). In a school setting, instructional leadership focuses on three things: (i) establishing goals; (ii) supervising curriculum delivery; and (iii) supporting a healthy teaching environment (Hallinger, 2003). Maintaining a supportive learning environment in the classroom requires careful management of the instructional program, curriculum coordination, oversight and assessment of teacher performance, and observation of student growth (Hallinger and Murphy, 1985). According to studies on the effectiveness of instructional leadership, it can influence students' academic achievements, particularly by working on teacher development, working conditions for teachers, and school culture and ethos (Shatzer et al., 2014). Given that instructional leadership mostly comprises the principal's responsibilities for planning and managing education in schools, the principal outlines and communicates the school's goals to other staff members. Therefore, it can be claimed that this approach is a top-down approach of managing schools (Nedelcu, 2013). Leithwood (1994), asserts that instructional

leadership images are stale because their focus is 'heavily classroom-oriented' and they don't consider 'second-order changes' in the growth of an organizations.

Transformational Leadership and its Effects

Transformational school leadership attempts to develop the school's cultural atmosphere and boost its capacity for creativity, rather than just improving curriculum and instruction. Supporting educational advancement both inside and outside of an organisation is the goal of transformational leadership (Hallinger and Heck, 1998). Schools are urged to establish a vision and culture towards improved classroom instructions, and teacher development to improve the whole educational system. Shatzer et al. (2014) emphasised four critical aspects of transformational leadership: inspiring motivation, individualising consideration, idealising influence, and stimulating the intellect to enhance the overall quality of schooling for a more robust school system. It's critical to increase employee performance, establish a vision and goals, comprehend and develop people, restructure the organisation, and oversee the classroom instructions (Leithwood, Harris, and Hopkins, 2008). According to Yang (2014), transformational leadership is constructive for the overall school's growth since it allows the school to address difficulties effectively and achieve various degrees of improvement at different stages. As a result, at each step of the school's development, the principal must focus on the requirements of the students. Although transformational leadership has been shown to improve student results (Leithwood, 1994), but it does have two key drawbacks. First, it could be used to manipulate or influence teachers who are expected to follow the leader's 'vision' and goals. Second, instead of setting up school-level vision and goals, transformational leadership strategies may be used to ensure adherence to centrally established policies.

Participative Leadership and its Effects

A successful model for leadership in a school setting is participative leadership because it promotes positive relationships among staff members and lessens the burden on school administrators (Sergiovanni, 1984). As per the participative leadership model, an organisation's decision-making processes are the organisation's central focus (Leithwood et al., 2004). In its normative paradigm, participation is based on the following: (i) participation will improve the effectiveness of schools; (ii) democratic principles support participation in a site-based administration context; and (iii) and any legitimate stakeholder may participate in leadership. In participative leadership context shared leadership roles and

responsibilities will lead to reduced leadership costs if leadership density is deemed a credible replacement for principal leadership (Sergiovanni, 1984). The participative leadership model is popular as it is based on the notions of democratic values. Still, there is a lack of literature on its successful implementation in the school context, specifically for the improvements in learning outcomes. Despite the current emphasis on individual leaders, according to Harris (2004), in the complicated and rapidly changing world that schools are a part of in the twenty-first century, democratic/participative leadership is essential.

Distributed Leadership and its Effects

Decoupling distributed leadership from lines of authority is a critical first step in understanding it because it provides a novel and significant theoretical framework through which school leadership can be reconstructed and rethought. Distributed leadership, as Harris (2004) emphasises, entails acquiring knowledge throughout the organisation as opposed to pursuing expertise just through official positions or functions. Successful school leaders understand the limitations of a centralised management model, and change to a decentralised management model that is "distributed through collaborative and joint working as it equate with maximising human capacity within the organisation and assist capacity building within schools, which contributes to school improvement" (Harris, 2004). A distributed leadership model in a school setting does not involve individuals managing other individuals but rather is an emerging property of groups or networks in which they emphasise expert opinions by engaging a large number of individuals in leadership activities (Bernett et al., 2003). According to Silins and Mulford (2002), when leadership resources are made available to the whole school community and teachers are given the authority to take decisions that are significant to them, then only student outcomes are more likely to improve. It was discovered that excellent academic achievement among children was connected with schools that encouraged instructors to share leadership roles (Louis and Marks, 1996). There is more evidence that diffused leadership throughout a school staff is more likely to result in positive student outcomes than a top-down leadership approach (Bell et al., 2002). Therefore, it can be said that distributed leadership can positively affect student engagement and school development capacity if it is well-designed and implemented (Day et al., 2009; Hallinger and Heck, 2010). Additionally, distributed leadership can be one of the most effective forces for long-term school improvement since it results from networks and groups of people

combining their expertise (Harris and Spillane, 2008).

From a Comparative Lens

The instructional and transformational school leadership models are the most widely studied and effective when it comes to enhancing schools. Studies have indicated that the instructional leadership paradigm has a greater influence on student outcomes than transformational leadership because it lays more attention on the calibre of the teachers and the instructional processes in the classroom. It emphasises on improving classroom instruction and learning and views the primary responsibility of leaders as supporting greater learning outcomes for students (Day et al., 2016). Robinson et al. (2009) found that the original goal of transformational leadership was to improve staff connections, and that this decreases the likelihood that it will produce excellent student outcomes. Instructional leadership is primarily concerned with enhancing these procedures because teaching and learning are the schools' primary functions. On the other hand, transformational leadership has traditionally placed an emphasis on inspiration and vision, focusing on creating institutions and attitudes which improve the standard of instruction, strategising goals, fostering employee growth, and redesigning organisations.

For instructional leadership, maintaining a constant focus on teaching-learning is essential. But it places more emphasis on direction than on influence. In contrast, the transformational leadership model focuses on facilitating greater motivation and commitment among stakeholders and establishes a path to achieve the organisation's goal. In case of participative leadership, it emphasises the necessity of a collaborative approach, but it lacks a specific leadership method (Bush, and Glover, 2003). Despite being extensively distributed, it has a higher impact on students, and overall school outcomes, proving that it is more likely to improve leadership capacity this way rather than relying solely on individual leadership (Leithwood et al., 2006). Thus, in contrast to popular leadership models, many researchers advocate integrating diverse theories to better understand leadership and its effects on students' achievements rather than adopting a linear approach. As Marks and Printy (2003) stated, while a single model of school leadership is not sufficient for overall school progress, an integrated leadership model can fulfil specific school goals. The effective traits of school principalship as leadership for learning can thus be associated with an integrated aspect of instructional, transformational, participative, and distributed leadership.

Table1

Comparing Four Popular Leadership Models

Instructional	Transformational	Participative	Distributed
The primary goal of schools is to improve efficient instructional strategies for quality classroom learning.	It is less likely to significantly impact student results because it initially focused on staff connections and capacity development.	It emphasises the significance of teamwork, and it does not represent a unique leadership style.	Assist schools in growing capacity, adding to school improvement and optimising the organisation's human capability.
Keep teaching-learning as a constant focus, but one that is more concerned with the direction of impact than the influence process.	Provides a foundation for articulating and working toward the institution's or organisation's vision.	A helpful approach to building a good relationship among the staff together and in easing the responsibility of school heads.	Sharing leadership resources throughout the school community and empowering teachers to make a difference in the classroom will likely improve student outcomes.
The alignment of school ethos and culture, as well as the shaping of school goals, to increase the quality of educational outcomes.	By fostering individual and organisational learning, it focuses on improving the teaching-learning environment and aids in creating a school culture and vision.	In the framework of site-based management, participation will boost school performance since democratic ideals justify it.	

School Leadership and its Impact on Students' Learning Outcomes

School leadership matters from the perspectives of when and where it is most needed for students' academic success. It indirectly impacts the learning of pupils and it is always disseminated throughout the organisation as leadership using influential power and appreciation (Hallinger and Heck, 1998). According to Leithwood et al. (2006), school leadership has a significant impact on students' learning outcomes since it is second only to classroom teaching and learning in importance. Additionally, Witziers et al. (2003) also argued

that this impact can be seen in changes to school organisation and its culture, teachers' performances, and instructional methods. The school principal, who acts as the institution's head, has a significant amount of influence to affect the ambience of an institution, including the mindsets of the faculty and staff, the academic progress of students, and other factors (Waters et al., 2003).

According to Robinson et al. (2008), schools that emphasise interpersonal relationships, work culture, and teaching-learning processes are more likely to influence students' overall learning outcomes. In promoting student achievement, instructional leadership rather than transformational is more beneficial. On students' academic success, school heads have a big influence. Principals may have a more powerful influence on student's academic achievements in their schools than the environment in which the school is located. Achieving greater student achievement results from the principal's actions to keep track of students' academic performance, safeguard instructional time, and offer rewards for learning and teaching (Shatzer et al., 2014).

According to Marks and Printy (2003), an integrated style of leadership that incorporates both transformational and instructional leadership strategies has a more positive impact on a school's success as measured by the effectiveness of its pedagogy and student accomplishment. To improve overall school performance, both in terms of classroom instruction and capacity-building, instructional and transformational leadership approaches should be implemented. Leaders also can influence the environment in which teaching-learning takes place to help improve student's learning outcomes, along with helping teachers and staff members build their capacity for professional growth and transformation.

To improve students' overall achievements, school principals must focus intensely on instruction and learning and work collaboratively to define school goals and vision (Cruickshank, 2017). Strong leadership approaches are discussed in the study "Successful school leadership: What it is and how it promotes pupil learning" by Leithwood et al. (2006). Taking these assertions into account, school leadership is ranked second in terms of influencing student learning. However, rather than dictating school leadership, basic practises that all leaders must follow are less important than how leaders use them.

Table 2

Contributational Relationship of Popular Models of School Leadership for Learning Outcomes

Leadership styles	Leadership indicators	Leadership for learning
Instructional leadership	• Instructional programme • Mission • School learning climate • Organisational conditions	• Instructional programme • Curricular programme • Assessment programme • Vision for learning • Learning communities, team-oriented environments, and a diverse set of leadership sources • Resources appropriation, distribution and use • School culture and environment context • Acclamation
Transformational leadership	• Visions and goals • Staffs' attitude in the pursuit of goals • Bottom-up approaches of shared leadership	
Distributed leadership	• The leadership approach focused on team and group work • Stress is given on organisational learning • Collaborative approach responsive to the context	
Participative leadership	• We are working together with a transparent chain of command. A leader empowers their followers and includes them in decision-making	

(The table is based on Daniels et al., 2019; Aas and Brandmo, 2016; Harris and De Flaminis, 2016; Thompson and Glasø, 2015; Sun and Leithwood, 2012; and Hallinger, 2011)

Leadership takes into account the environment in which they operate; in schools it indirectly enhances teaching and learning via resilience and perseverance. Five leadership practices that influence student learning are defined by Robinson et al. (2008) that are: teachers should set objectives and expectations; organise and plan their teaching-learning activities; encourage themselves and others to participate in professional development activities; and maintain a calm and encouraging environment.

Leadership, according to Hallinger (2005), is a process of reciprocal interaction in which instructional leaders establish the goals for the school and coordinate the culture and policies of the institution to have an impact on the standard of educational outcomes. In response, it urges instructional leadership to concentrate on raising the standard of in-class teaching and learning. Beyond student learning, school leadership has a positive influence on developing an environment that will enhance the overall school quality. School leadership indirectly affects student learning by setting the required conditions for teaching and learning. A school's leadership methods must be culturally appropriate and contextually flexible to benefit students, teachers, and the school (Mythili, 2020).

Factors influencing learning outcomes

Leadership for learning describes school leaders' actions to achieve the best learning outcomes, specifically in the context of students' achievements (Hallinger, 2011). It is an approach to leadership that integrates the elements of significant leadership models. Leithwood et al. (2004) highlight four influential factors contributing to leadership for learning outcomes: setting direction, leading others, restructuring the organisation, and improving the instructional program. As it is the process of active participation of an entire school community, further, Robinson et al. (2007) also contended five influencing factors to consider: setting objectives and

Table 3

Influence of Leadership Styles on Learning Outcomes

Leadership styles	Influences	Learning Outcomes
Instructional leadership	Curriculum planning and quality instruction	Increased retention of subject matter content, effective teaching-learning, promotes more teacher-student interactions.
Transformational leadership	Effective communication and maintaining sound internal and external relations	Promotes better leadership and communication skills with more critical thinking/problem-solving ability.
Distributed leadership	Defining the mission and vision	Stronger connection with others.
Participative leadership	Organisational culture, trust, and collaboration	Develops values among stakeholders.
Integrated leadership	Recognizing and awarding successes and accomplishments	More resilience. Better pro-environmental behaviours.

standards, judicious resource allocation, organising, supervising, and assessing the teaching-learning process, encouraging taking part in teachers' professional development, and maintaining a supportive and orderly environment. Moreover, it primarily focuses on learning for students and for teachers to achieve the highest learning outcomes by the schools; therefore, Shannon and Bergeson (2009) has extended nine influential factors which directly or indirectly contribute to the best learning outcomes: a focused goal that everyone shares, with great expectations for all learners, strong school leadership for elevated levels of cooperation and communication, state-aligned curriculum, instruction, and assessment, regular supervision of teaching-learning, focused capacity building for professional development, a supportive learning culture, and community engagement.

Findings

The result of the findings of the review suggests that different models of school leadership are essential factors that significantly impact students' learning outcomes. Still, it has considerable effects on students' academic achievement through the different leadership approaches of school principals (Kythreotis et al., 2010). First, this research emphasises the importance of the leadership style of school principals in influencing students' academic development. Second, one category of studies identified direct impacts while others found indirect effects, the disagreement between the different researchers is exacerbated by the direct impact of this aspect on student achievement. Third, the different leadership approaches of principals should be given more consideration. Because different leadership approaches influence students' learning outcomes in different ways; in this context, the one-to-one direct relationship between principals and students should be given more emphasis to achieve more successful learning outcomes (Kythreotis et al., 2010). Furthermore, the specific leadership practices in which they engage greatly impact students' learning outcomes. Additionally, most research was centered on the school principals' instructional leadership style because it directly affects the teaching-learning process. However, an integrated transformational and instructional leadership strategy is more effective for enhancing learning outcomes and advancing a school progress (Bush and Glover, 2003). It is easier to influence student outcomes and school performance when integrated leadership blends the transformational and instructional leadership strategies. It can help students perform better by affecting the settings in which teaching and learning take place and enhancing the capacity for professional growth and change (Shatzer et al., 2014).

Conclusion

According to a majority of studies, school leadership is just as important

to the overall performance of the school as well as classroom teaching and learning, despite having a smaller direct or indirect impact on students' learning outcomes. Even though no one leadership approach or strategy will be perfect for ensuring the advancement of all schools and the academic success of all students, school leaders should make sure they have a good understanding of the unique characteristics of their institution before choosing the approaches and strategies they will employ (Cruickshank, 2017). In this context, Robinson et al. (2008) extended their view, when leadership in school concentrates on teaching-learning, teacher development, and how they strive to influence the teaching practices that matter— these areas are more inclined to result in a beneficial effect on learners' academic performance, and well-being. Consequently, school leaders looking to boost their student's academic performance may find the integrated leadership style advantageous. An integral part of the transformational model is the vision for the school, which cannot exist independently of its context; an integrated leadership model begins with a contingent approach. The foundation for communicating and acting toward this vision is then provided by transformational leadership. As part of a transformative strategy, instructional leadership defines the significant priorities of a learning organisation in broad terms (Bush and Glover, 2003). As a result, leadership models that are more closely related to teaching and learning are more likely to benefit students' learning outcomes (Robinson, 2008). Thus, leadership style, school culture, and classroom culture all influence students' learning behaviour (Kythreotis et al., 2010).

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Panchayat Elementary Education Officer

Educational Administrative Decentralisation in Rajasthan

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Abstract

In the context of developments in the administration and management of the Education Department in Rajasthan, the addition of Panchayat Elementary Education Officers (PEEO) can be a game changer. This article explores the roles, duties, challenges, and enormous potential of the PEEOs, who are a product of the educational decentralisation drive. It was introduced to increase the efficiency of schools in rural areas, but these new administrators are facing many challenges that are not studied until now. The former part of the study includes the policy provisions regarding PEEO's, methodology with the semi-structured interview as tool of relevant officers in three Panchayats of Jhunjhunu district of Rajasthan, objectives of the study and questions. The latter part includes grassroot observations, ground realities, challenges and suggestions for further reforms by the policy planners. The lessons learned in this context will have broad implications for the theory and practice of decentralisation in education. .

Introduction

The administration of the educational department in Rajasthan is highly decentralised. There are administrators at the state, district, block, and panchayat levels, as shown in Figure 1 below. The Panchayat Elementary Education Officer (PEEO) is the last link in the hierarchy of the administrative chain.

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It is a state-specific post. PEEOs are the principals of *Adarsh* (Ideal) schools and are mostly concerned with monitoring, and supervision of the elementary schools within a gram panchayat.

It is from here the transition starts from the administrator to the easily accessible principal that works every day in the school, consults with the Panchayat members of the area, supervises all the schools under it, coordinates with the higher authorities, etc., They are responsible for the schools' efficiency, outputs, and annual results, manage school records and have the authority to inspect the schools that fall within the Panchayat, and exercise decisive autonomy in teachers' salary and leave-related matters. They report to the Block Elementary Education Officers (BEEOs).

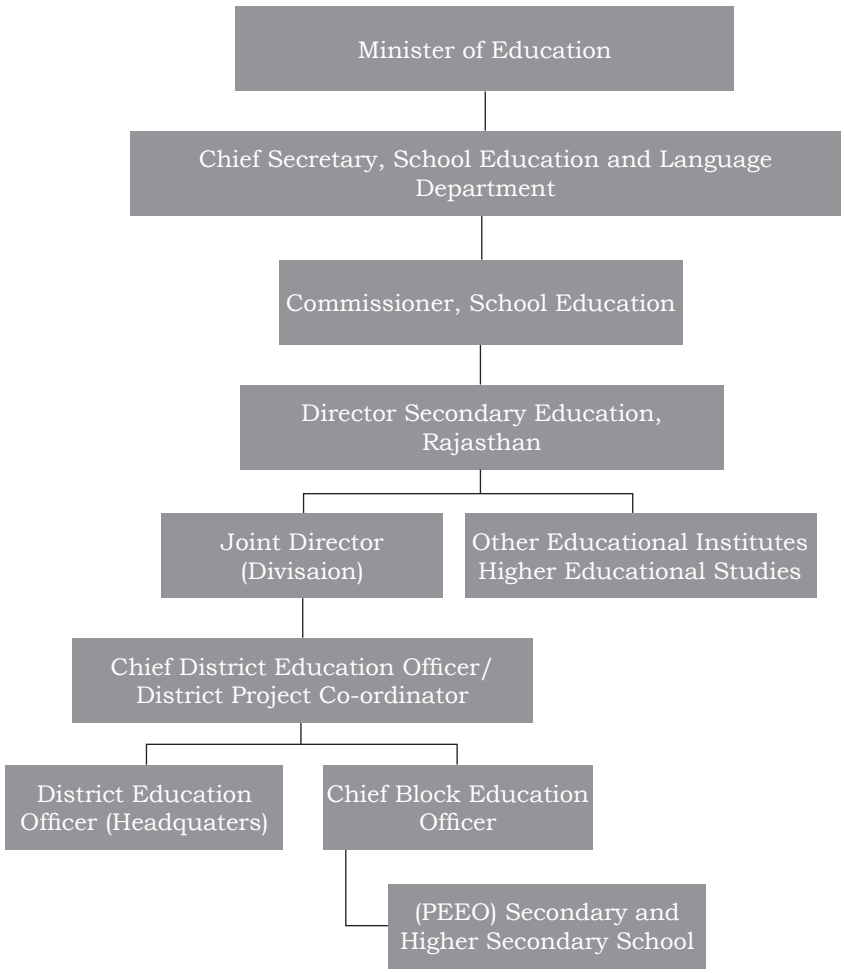

Fig.1: Administrative hierarchy of educational officers in Rajasthan

Purpose of the Study

This study will try to answer the initiatives taken by the Rajasthan government through decentralisation in the education department to provide quality education to the students in the rural areas of government schools. The most prominent and unique introduction of PEEOs remains unexplored, and the challenges that these newly appointed PEEOs face need to reach the policy makers through proper research. This paper tries to find the ground situation and provide a base for further research.

Research Questions

1. What are the factors that govern the effectiveness of the education department in the rural spaces of Rajasthan after administrative restructuring as a part of decentralisation?
2. What is the level of administrative freedom given to those at the lowest level of decentralisation, i.e., PEEO?

Objectives of the Study

The study was carried out keeping in view the following listed objectives:

1. To examine the roles and responsibilities performed by the sub-district level functionalities (PEEO) in the management of schools in Rajasthan.
2. To examine the processes carried out in the rural schools of Rajasthan related to quality improvement, performance indicators, and supervision in the schools through PEEOs.

Methodology

Interviews were conducted with the PEEOs and observations were made through a field survey of their respective schools. This personal interview was conducted with one PEEO at a time, following a purely conversational method. This helped to gather precise data about what different roles the officers, as the end part of the chain of education managers and providers, find themselves playing in the rural areas, how they are the change bearers, and what is the uniqueness of their place in the management. The interview was semi-structured; a basic questionnaire was prepared, and the rest depended on the answers and the school context.

The data gathered was in the form of notes, PDFs, images and documents, and observations. It was then analysed as per the themes that were categories to conduct the study, keeping in mind the objectives of the research.

Database

The study depended on both primary as well as secondary data.

Secondary Data: It is the data that has already been collected and is readily available from other resources. It is more quickly obtainable, and inexpensive.

Documents: The documents used in the study are The National

Education Policy 1986 (Ministry of Human Resource and Development), draft NEP 2019 (Ministry of Human Resource and Development), 73rd Constitutional Amendment Act (Constitution), IIEP reports on Rural Education (UNESCO), modules given to the PEEOs, etc. and existing literature related to the context.

Primary Data: The original first-hand data has been collected specifically for the study. It is more reliable, authentic, and objective. The targeted issues were addressed, with efficient spending for information.

A field survey was conducted in the three sample schools mentioned below; the main purpose of the field survey was to get an understating of the functioning of these schools in a rural setting.

The PEEOs were interviewed for the selected villages, as they were responsible for managing the schools and ensuring that the whole process of decentralisation is executed in the desired manner at the school level.

Sampling Procedure

The sampling procedure used for the study was purposive sampling. Purposive sampling was used in order to collect more information within the limited time and situations. The schools selected were under different Panchayats, Blocks, and officers. This helped in understanding the various working styles of management, the status of schools and their impacts on education, and other information.

Table 1
Details about the Sampling of the Research Conducted

S. No.	Area	Selection Criteria	Sample Size
1.	State	Less explored, low literacy, and highly rural.	1 State- Rajasthan
2.	District	This district made fast progress in terms of literacy rate, but still there are extremes of educationally underdeveloped and highly developed areas co-existing in the area. Studying this district helps in knowing how giving autonomy to the sub-block levels through decentralisation would help tackle the challenges that the education system is facing.	1 District-Jhunjhunu
3.	Block	To study the difference in the functioning of the different Panchayats under different blocks as different levels of political interference affect the autonomy of Panchayats and schools.	3 Blocks (under which the schools fall) 3. Buhana 4. Surajgarh 5. Chirawa

4.	Panchayats	Panchayat Elementary Education Officer is the primary administrator at the school level.	3 Panchayats, Budania, Buhana, and Surajgarh, in which the schools are present. 3 Panchayat Elementary Education Officers of the respective schools were selected.
5.	Schools	School is the central functional unit of the study. This is the place from where every change gets an actual shape. These were the schools where the PEEOs were in-charge in particular areas.	3 Schools were selected. • Shahid Devkaran Uchha Madhymik Vidyalaya, Budaniya, Jhunjhunu. • Rajkiya Uchha Madhyamik Vidyalaya, Lambi Sehad, Buhana Jhunjhunu. • Rajkiya Uccha Madhyamik Vidyalaya, Surajgarh, Jhunjhunu.

It helped recognise how the contestants' backgrounds shape their interpretation, how the officers of the same post, designation with the same functions are working differently, using different techniques and powers to achieve the same goals. This also helped in realising how they 'position themselves' in the school context to achieve what is expected of them and how their interpretation of themselves flows from their own personal, cultural, and historical experiences.

PEEO: An Evolutionary Concept

The post of PEEO is specific to Rajasthan and was created in three phases between 2015–16 and 2017–18, as a part of the state's efforts to improve the quality of education and decentralise the governance for better outcomes and ensure the penetration of quality education to the most disadvantaged and marginalised ones.

Under the *Adarsh Vidyalaya* Scheme of the state government, one State Higher Secondary, Secondary (usually in Classes I to XII/X (schools) is being developed as an *Adarsh Vidyalaya* in each Gram Panchayat. PEEOs are the principals of these Adarsh schools. Usually one school each in 9894 Gram Panchayats of the state was being developed as a model school in three phases in the year 2017–18.

These model schools will act as mentors and resource centers for other schools of the Gram Panchayat.

This reform is a different version of cluster resource schools that existed in the past. The New Education Policy 2020 discusses school complexes— a similar concept.

As per the *Utkrisht Vidyalaya* scheme of the state, under the guidance of the Adarsh school of each Gram Panchayat, an Elementary school of education (usually a school having Class I to VIII) is being developed as an *Utkrisht* school. This school will grow as the Center of Excellence for Elementary Education.

To enrich the quality and standards of Primary School Education in rural areas, strengthen the basic infrastructure in schools, and for the better monitoring and management of the schools located in Gram Panchayats, the state government under the powers conferred from Rajasthan Panchayati Raj Act, 1996, provided for all the 9894 Panchayats (usually the *Adarsh* schools of the Panchayats) Panchayat Resource Centres and the head was designated as PEEOs in 2017.

Under the framework of implementing mechanism issued by SSA, the PEEO was declared the CRCF, and their affiliated schools were declared the Cluster Reference Center. The detailed guidelines regarding the duties and responsibilities of the PEEO were issued by Order No. 15 (1) Entry/2017 on 11.04.2017 by the School Education Department, Government of Rajasthan. This declared that the PEEO is entrusted with the responsibility of supervision, management, execution of works, strengthening of infrastructure and other facilities, and supervision of all the Primary and upper primary schools in their Panchayat area.

Instructions have been issued for the initial activities of all PEEOs (Order-3) by order No. 15211 dated 2017 of Rajasthan Elementary Education Council, Jaipur, for upgrading the quality of elementary education. Under the framework of *Samagra Shiksha Abhiyan*, their school will be declared as CLC, and they will execute the work duty of CRCF.

Functions and Responsibilties of Panchayat Elementary Education Officer

There is a proper division of the roles and responsibilities of the officers involved at the various levels of the education department of the state. This decentralised assigning of duties has brought a lot of efficiency in the system's functioning compared to its output a few years back. The primary responsibility of the ex-officio PEEO of the Gram Panchayat are:

- To provide administrative and academic leadership and support to the primary/upper primary schools of elementary education located in the Gram Panchayat area. The school affiliated with them has to act as a resource center and mentor school for the primary/upgradation of Gram Panchayat.

- According to the guide of the *Utkrisht Vidyalaya* Scheme, the PEEO should visit the *Utkrisht Vidyalaya* at least once a month and other Primary and Upper-Primary Schools once in two months and During the visit based on the observation, academic support will be provided by checking the academic level and quality of the classroom.
- Under the chairmanship of the ex-officio PEEO, a meeting of the institution heads of all the state Primary/Upper Primary schools of the Gram Panchayat area will be organised on the last working day of every month in the school affiliated with them.
- In the monthly meeting, the PEEO will review the school-wise development plan, SIDE programme, and implementation of various schemes/programmes of the state government. Apart from this, the difficulties faced by the institution heads in the operation of the school will also be resolved.
- The ex-officio PEEOs will act as a reference center for all state Primary/Upper Primary affiliated schools of the Gram Panchayat for implementing the program SIQE that is operated for upgrading the quality of education in Class I to V. They will ensure its implementation as per the guidelines.
- Ensure the marking of the children of the age group of 6–14 years who are eligible to enter the school of Gram Panchayat area through Primary/Upper Primary schools of the Panchayat area and ensure their enrolment in the school.
- Assess the lack of infrastructure/ facilities in the Government Primary/Upper Primary schools located in the Gram Panchayat area and submit the proposal for their fulfillment to the *panchayat*.
- Will try to get support from *Bhamashahs*/Donors/People's Representatives for the development of government schools.
- Appear in monthly meetings of Gram Panchayat and apprise/ make them aware of the progress of the teaching system and other activities of all state primary/ Upper Primary schools run under Panchayati Raj located in *Gram* Panchayat and ask for their support.
- Efforts will be made to get the funds sanctioned from various schemes run by the Gram Panchayat, viz. State Finance Commission (SFC), the respective Finance Commission and MNREGA, etc., for developing government Primary and Upper Primary schools of the Gram panchayat area.
- Ensure regular meetings are held and maintain constant contact with the Chairman and members of the School Management Committee (SMC), and redressal of grievances and parent-teacher

Council of Government Primary/ Upper Primary schools located in Gram Panchayat area.

- Will ensure the disposal of complaints received from the members of the chairman of the School Management Committee (SMC) and parents by noting them in the register.
- Will act as the link between the parents, teachers, students, schools and the block level officer. They will ensure passing the required information on both sides.
- Will ensure compliance with the guidelines issued by the Commissioner, Rajasthan Early Education Council in relation to the work, as the in-charge of cluster reference centre.
- Will sanction the emergency and casual leaves of all the teachers of Primary schools and other academic personnel working on consolidated honorarium.
- The primary investigation of complaints of government, Primary/Upper Primary teachers, heads of institutions of Gram Panchayat area will be done by the concerned ex-officio PEEO.
- Separate orders are circulated regarding the right to disciplinary action by the officer under 17 CCA against teachers working in the Gram Panchayat area government Primary/Upper Primary schools.
- Ensure compliance with the guidelines issued from time to time by the State Government, Commissioner, Rajasthan Elementary Education Council, Director of Elementary Education, Deputy Director, District Education Officer, Elementary and District Project Coordinator, and Sarva Shiksha Abhiyan.
- The ex-officio PEEO will ensure that monthly reports will be uploaded on the *Shala Darshan* portal by the 10th of every month.
- Given the responsibility of inspection and administrative and academic supervision of all Primary/Upper Primary schools under Panchayati Raj in Gram Panchayat. And to coordinate with the concerned Block Elementary Education Officer and District Education Officer for effective supervision of elementary education activities in all Primary/Upper Primary schools under Panchayati Raj operated in the Gram Panchayat area.
- Preparation of an action plan for the development of all Primary/ Upper Primary schools under the Panchayati Raj located in the village panchayat, etc.

Findings

Observations

The main finding was that the PEEOs were not informed of their roles and responsibilities clearly. Some modules were shared with them during the training sessions, where

the BEEO informed them about the orders they are supposed to follow. However, the interpretation of the roles and responsibilities is totally up to their own selves, with no incentives or punishments on their performances.

During the interviews and school visits, it was found that as far as supervision is considered, the schools were visited regularly by the PEEOs, that fall under their panchayat areas, however there was no fixed number of visits scheduled. The *Utkrisht Vidyalayas* were at least inspected twice a month, and other Primary and Upper Primary schools were inspected once by the PEEOs.

During their inspection, the attendance registers of the teachers and the students, the diaries maintained by the teachers on students' performances under the SMILE 2 program, students' notebooks, attending random classes, comparing the developments of the schools' previous records and analysing their progress, etc., are considered. All the reports of these inspections are then passed on to the BEEO.

They are the propagators of the nudge theory. The PEEOs are mainly to bring the positive change, and assist in the functioning of schools, rather than punishing, creating a deterrence, or complaining about inefficiencies. They work on the grassroot level, and deal with the school staff, students, parents, Panchayat members, officials like BEEO, etc. They are the coordinators and try to make this coordination smooth among all the participants. They are positioned to inspect the loopholes and motivate all the participants to what better roles each one can play, informing them about the government's policies and programmes. In short, they are the guide and mentors in all the local rural areas in matters of education.

But they are not ministers without portfolios. If there is any act of disobedience, they can, through their discretion, punish under the powers vested in them through 16CC Notice and 17CC Notice.

Challenges

There are a lot of challenges that they face. Starting from the distribution of powers and duties, which remains a grey area as most of their duties are repetitive and overlap with the authorities above them. This negatively impacts the performance of the officers. They are over-burdened with these diversified duties, and not only these, but most of the PEEOs also complain that they are assigned even more duties during the elections, Polio drive, Census, and other occasions. They are left with no time for their personal life and for leading a healthy lifestyle. That negatively impacts their work and health.

The state has drawn a basic broad line for the activities they are supposed to perform, but there are no particulars given. So, they are told what to do, not how to do it. The method of execution of their duties is up to them. Although sounds liberating, it has equal chances of mishandling and irresponsiveness, as there is no pre-service training to guide them. for instance they are in charge of school supervision, but there are no specific detailed criteria for how the supervision will be done.

A major part of the performance of their responsibilities depends on their innerent character, thoughts and goodwill. There is no reward or punishment policy to motivate the motivators—no pre-service or in-service training for PEEOs. So, the only way for them to learn is through their own experiences or with the help of their peers.

Another challenge is that, rather than pure decision-making autonomy, it can be said that they instead have situational autonomy. They work within the broad frameworks, the governmental orders and in the direction of required outcomes. But the decisions at the micro level are left to their discretion. In fiscal matters, they are given the autonomy to prioritise the spending, raise funds from *Bhamashas* (local representatives who support on their own for the cause of education through monetary help or any other form), etc.

Suggestions

The execution of all the programmes related to school development, management and inspection at the ground level is done by the PEEOs. So, they are the potential change-makers in the rural schools of Rajasthan.

The lack of any provision for pre-service training is a huge loophole that needs to be addressed timely. They should be clear about their roles and responsibilities before entering the ground. So, there should be pre-service training for PEEOs to develop their personalities according to their job.

There should be timely personality and skill development training to update them with their job requirements, as they act as administrators, managers, heads of institutes, teachers, panchayat members, etc. Then only their existence in the administrative chain will be justified.

To keep the decentralisation drive effective, the over-burdening of PEEOs should be addressed. The clerical part of their job can be shared with other members of the staff, a separate team for supervision can be prepared, and they can be involved in the development of more innovative approaches and societal interaction to promote enrolment in schools and quality management of education.

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Facilitation of Skills in Geography across School Curriculum

Tapan Kumar Basantia* and Bidhan Gantait**

Abstract

Geography, as a fascinating subject, provides an understanding of people, space, physical environment, etc., and their relationships. Geography learning occupies a significant place at the school level in most of the countries including India. Geography is basically a skill-based subject. Geography learning not only helps the learners to acquire knowledge but also helps them to acquire skills. Skill development in geography encourages for attainment of the competencies relating to exploration, problem solving, decision making, etc., among the learners. In the present day, the attainment of skills in geography among the learners is marginalised at the school level because of many reasons. But, the facilitation of skills in geography should be prioritised at the school level in the context of achieving holistic development of the learners. Therefore, in this paper, attempt has been mainly made for facilitation of skills in geography among learners across school curriculum. More specifically, the paper elaborates the contents based on the themes like geography in school curriculum, geography as a skill-based subject, core skills associated with geography learning, benefits of attainment of skills in geography, skill components in geography curriculum across school stages, pedagogical approaches to skill development in geography, and skill evaluation in geography. The paper has implications for facilitating different types of skills especially in physical geography and human geography among the learners at school stage.

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Introduction

Geography, as a fascinating subject, provides an understanding of people, space, physical environment, etc., and their relationships. Geography learning occupies a significant place in our life.

It occupies a significant place in curriculum at the school level in most of the countries. It has specific significance for Indian school education system. Geography learning helps learners to understand the Earth's physical environment and human activities, and their interaction process. The nature and scope of geography learning differ from one stage of school education to another stage of school education as per the nature of the different stages of school education in India. Geography learning helps to explore all activities and changes that have been taking place in the world since the dawn of mankind. Learning geography helps learners to understand today's most challenging issues, such as, population explosion, climate change, scarcity of natural resources, etc. Geography learning develops skills required for understanding and using geographical concepts as effectively as possible. In practice, it is found that geography learning focuses more on accumulating knowledge than developing skills. But, geography learning should substantially focus on skill development as geography is a skill-based subject. So, beyond knowledge acquisition, we must help geography students to acquire skills and attitudes that will help them to cope with the 21st century (Chang and Kidman, 2019). At the school stage, geography learning should help the students to acquire skills in geography. Handoyo, et al. (2017) remarks that skill development in geography is one of the goals of geography education, besides understanding of concepts and attitude development. Skill in geography helps students to understand human and their communities, cultures and economies across the world as well as helps them to recognise the processes and patterns of the natural environment on the Earth's surface. Geography learning helps to develop skills among learners that are not only limited to be used in school but also helpful throughout their daily lives. Skill in geography helps learners to evaluate situations, objects, events and materials that they encounter in their life, and to take insightful decisions accordingly. Geography is a practical-based subject that can exclusively develop skills in geography related concepts and contexts. Skill development in geography is very important at the school level, but it is marginalised in practice. National Council Educational Research and Training (NCERT) (2005) observes that social sciences tend to be considered non-utility subjects and are given less importance than the natural sciences; it is necessary to emphasise that they provide the social, cultural and analytical skills

to adjust to an increasingly inter dependent world and to deal with political and economic realities. So, skill development in social sciences is often neglected at school level. Geography is a core aspect of social sciences at school level, and skill development in geography at the school stage has not been given due weightage in most of the school boards of India. Across the school stages, skill development in geography gets less attention because teaching-learning strategies used for geography teaching in schools are mostly traditional and less activity based. Most teaching methods in geography are teacher-centered, where learners passively receive information. Banerjee (2006) states that in the Indian context, students practice rote learning and memorise concepts of geography, which has very little or no affiliation for developing skills in geography. Geography learning should emphasise skill development through learner-centered activity-based learning methods rather than focusing only on memorising concepts, facts, and statistical data. The purpose of geography education is not to convey the content through activities but to allow students to develop skills in geography by organising different activities in the context of acquisitions (Artvinli, 2010). Students cannot develop skills in geography unless the theoretical knowledge of geography is substantiated by practical activities of geography. In reality, teachers convey the content of geography through traditional teaching methods, and they often neglect the skill development of geography. So, emphasis should be given to facilitate skills in geography across the school stages.

Geography in School Curriculum

Geography learning has occupied a prominent place in the school curriculum of India. The place of geography is not uniform across schools of India. At the Primary school level, geography learning is integrated into learning of environmental studies, where students learn geographical contents integrated with other subject contents. At the middle school level, geography is one of the instructional areas like history and social and political life under social sciences. At the Secondary school level, geography is one of the compulsory units like history, political science and economics under social sciences subject. At the higher Secondary school level, geography is an independent and elective subject. Alam (2016) remarks that in most of the school boards of India, geography is taught as a compulsory and independent subject in the Upper Primary and Secondary Stages, but it is taught as a part of social sciences. At the Higher Secondary Stage in all Indian school boards, geography is learned as an independent but optional subject. Banerjee (2006) stated that higher secondary level students might get a certain flavour of geography as a subject in detail and consider it valuable to pursue as a subject in higher studies.

In Indian context, the contents of geography learning differ across the school stages. At the Primary school stage, in most school boards in India, geographical contents are integrated into the contents of environmental studies where students learn about environments, surrounding places and natural objects that are located beyond the Earth's atmosphere (i.e., the Sun, the moon and stars), etc. Students learn geography as a content area of social sciences at Upper Primary and Secondary school levels. At the upper Primary school level, the main curricular areas of geography are—Earth in the solar system, inside the Earth, globe and maps, major relief features, conservation and management of resources, human and environment relationship, settlement, transport, communications, etc. At the Secondary school Stage, the geography curriculum comprises India's physical features, drainage, climate, natural vegetation and wildlife, population, agriculture, water resources, minerals and energy resources, resources and development, lifelines of the national economy, etc. In the Higher Secondary School stage, geography is introduced as an elective subject. Most of India's Higher secondary school boards identify broadly two areas of geography, i.e., physical geography and human geography. Within physical geography, the main curricular spheres are theories of origin of the Earth, major events over the geological time scale, interior of the earth, distribution of oceans and continents, minerals and rocks, geomorphic process, landforms and their evolution; climate, vegetation and soil; life on Earth; causes, consequences and management of hazards and disasters; fundamental of maps, etc. Within human geography, dominant curricular areas are people and economy; human activities; international trade, transport and communication; human settlement; resources and development; selected geographical issues and problems; processing of data and thematic mapping; spatial information technology, etc.

Hence, learning areas of geography vary from Primary school education to Higher Secondary school education. In addition, content areas of geography gradually expand in respect of breadth, width and scope from Primary to Higher Secondary level of education. At the Higher Secondary level, geography is treated as an independent and separate discipline under most of the school boards of India. In this stage, geography learning develops a broader and deeper understanding of the subject among the students. The simpler aspects of geography are learnt in the lower classes whereas the difficult aspects of geography are attained in higher classes. While in lower classes the learning of geography is based on common issues of geographical phenomena, in higher classes the learning of the same is based on

specific issues of geographical phenomena. While in lower classes geography is studied through unified or integrated approach, in higher classes geography is studied through specialised approach. In lower classes geography curriculum is more utilitarian in nature, but, in higher classes geography curriculum is more task-based and/or specific goal directed in nature. While in lower classes the learning of geography focuses more on geographical information or knowledge gathering, in higher classes it focuses more on conceptual understanding of geographical issues, problem solving relating to geography, analysis and synthesis of geographical data and so on.

Geography as a Skill-based Subject

Geography is a prominent school subject that helps students to develop a series of skills. Murphy (2007) explains that geography has employment advantages over other humanities and social sciences because there are specific and clear practical applications for developing basic skills such as map making, terrain and location analysis and environmental management in geography. Geography learning encourages skill development by systematically discovering and explaining geographical phenomena and geographical facts rather than encouraging memorisation of the names of places, rivers, mountains, or other geographical facts.

The map is the most important and essential tool of geography because maps enable students to develop map skill through its reading, analysis, interpretation, drawing, etc. Geography develops geographic skills through various lessons such as reading maps, aerial photographs, reading graphs, field observations and critical thinking in space (Yani and Maryani, 2017). In geography learning, learners find and use geographical information instead of only gathering information that helps to gather knowledge in geography. Geography learning helps to develop inquiry skills through determining the location of the settlements, factors affecting their development, and so on. Geography learning illustrates concepts, theories, and cause-effect relationships in a realistic setting that provides a wide scope to develop skills in geography. The geographic process on Earth causes continuous change, and this concept of change is essential to understand how and why physical and human system evolves. Spatial skill is the most important skill in geography, which helps to understand the constant changes over space. Goodchild (2006) remarks that spatial thinking as a fourth R' where three Rs are reading, writing and arithmetic. Geography learning can equip students with skills to identify patterns and trends of spatial changes and analyse the causes and impact of changes, which help students better respond to live in the changing society (Xiang,

2014). Students can describe and analyse the spatial patterns on the Earth by utilising spatial thinking skill. Spatial thinking skill may be regarded as a concept of space, tool of representation, and process of reasoning (National Research Council, 2006). Spatial thinking skill is effectively developed through the Web-based Geographic Information System (GIS) in the world geography course (Jo et al., 2016). In the present day, GIS and Remote Sensing (RS) are the exclusive computer mapping and analysis techniques in geography learning. These tools allow learners a series of activities such as collecting, storing and analysing aerial photographs and satellite imageries and updating and displaying a large set of geographical data.

Geography learning helps to study the landforms, their evolution and their related processes. Skills in geography are necessary to analyse and understand the landforms, their evolution and their related processes. It encompasses interactive activities, development of models, interpretation and analysis of geographical data, etc. that help learners to develop skills in geography. It helps learners to develop skills through the study of the world and its spatial and cultural elements. It develops skills by involving students in statistical and projection methods to understand the population distribution, population growth, population density, sex ratio, migration patterns, occupational structure, etc. So, theoretical contents of geography require integration of practical-based activities of geography with them that help to develop skills in geography. The development of skills in geography is important in the context of active learning of geography.

Core Skills Associated with Geography Learning

Learners need to acquire core skills of geography along with acquiring textual knowledge in geography. Core skills associated with geography learning may broadly be divided under two heads, i.e., core skills associated with physical geography and human geography. The core skills associated with geography learning are given below.

Table 1
Core Skills Associated with Geography Learning
(Physical Geography and Human Geography)

Skills in Physical Geography	Skills in Human Geography
Geomorphic inquiry	Geographic inquiry
Change and continuity perception skill	Map skill
Time perception skill	Data interpretation and visualisation skill
Skill of using evidence	Spatial thinking skill

The descriptions of the core skills associated with physical geography are given below.

Geomorphic Inquiry: Geomorphology is one of the major domains of physical geography that studies the origin and evolution of the Earth's topography. At the school level, the central concept of geomorphology is the formation of different types of landforms by geomorphic agents like river, wind, sea wave, etc. Geomorphic inquiry focuses on landforms evolution, theoretical investigation of geomorphologic processes and physical/chemical mechanism underlying these processes. Wilcock et al., (2013) states that emerging perspectives to geomorphic inquiry extend beyond the generalisation of landforms of landscape thinking by providing genuine insights into landscape relationships at a given place. Haschenburger and Souch (2004) suggest geomorphic principles that describe the key aspects of landscape structure and function that are embedded within present day geomorphic inquiry, i.e., (i) the basic building block of the landscape is a landform; (ii) landscapes are organised assemblages of interconnected landforms; (iii) landscapes reflect the interaction between driving forces and resistance forces; (iv) landscapes evolve under particular histories; (v) landscapes respond to exogenic and endogenic perturbations and adjust to internal functioning; (vi) landscapes exhibit aspects of equilibrium, disequilibrium, and non-equilibrium behaviours.

Change and Continuity Perception Skill: Change and continuity are closely related to geography learning. Both physical and human phenomena change over time because of their dynamic nature and/or effect of humans. Thus, geography learning should address the changes that occur in our surroundings. By acquiring this skill, learners understand and recognise the changes that are occurring around them. Geography learning is concerned with continuous changes in Earth's physical features, places, events, environment, etc. Change and continuity perception skill helps to understand how places are changing, and why places are changing or not changing, and helps to make a decision based on changes taking place. Change and continuity perception skill follows certain steps, i.e., (i) finding similarities and differences; (ii) perceiving change and continuity; (iii) distinguishing between historical phenomena and interpretations; (iv) defining problems and their causes in the past; and (v) finding alternatives to the solution of a historical problem (Tangülü et al., 2015). Geography involves studies of changes over time and space. Geography studies the temporal change of natural and human processes with the connection of past, present and future. So, basic concepts of geography are time, chronology, change and continuity. Change and continuity skill develops competencies for discovering similarities and differences over time

in the geographical process. Change and continuity skill is important for students to understand the change, continuity and to perceive that everything is in change (Pala, 2021).

Time Perception Skill: Time is one of the key concepts of geography learning. To perceive the international time, and standard time of a country or place, time perception skill is required. In geography learning, learners develop the perception of long periods to daily periods. The Ministry of National Education, Turkey (2005) states that time perception skill includes some sub-categories, i.e., geological process; annual, seasonal and daily processes; historical processes; and ecological cycles.

Skill of using Evidence: Shreds of evidence in geography learning are required to prove the geographic events, phenomena and facts which can be found from primary source and/or secondary source. Shreds of evidence in geography include rock, mineral, fossil, climate, weather condition, daily, seasonal, or annual event, etc., Unlu (2011) remarks that using proofs in geography contains fossils, stones, tectonics, climate, etc. related to geological processes as evidence of a natural feature, using human features as historical, social, financial, and political events and facts as evidence. When proofs are not considerably and directly used, visual elements such as, photos, models, and videos can be used as evidence.

The descriptions of core skills associated with human geography are given below.

Geographic Inquiry: Geographic inquiry is one of the key skills in geography learning at the school stage. Geographic inquiry enables learners to participate more actively in solving physical and human geography related problems ranging from local to global levels. Geographic inquiry involves learners in an individual or collaborative inquiry process that commences with geographical questions, and progresses through the data collection, evaluation, interpretation and analysis of the information to develop the conclusion and proposal for action. Özüdoğru and Demiralp (2021) states that geographical inquiry is the foundation of geography literacy which is about a learner asking geographic questions, interpreting the information by investigating the answers to the questions and revealing their conclusions. Solem (2001) found that human geography lessons support the inquiry process.

Map Skill: Map is the database of geography from which one visualises the information to predict the fact. Understanding and visualising the information from the map require map skill. Learners who possess map skills face no difficulty in assuming important roles for themselves and their environment. Map skills stand at the core of geography education (Péter et al., 2019). Map skills are acquired through these activities:

determining the position of a place/region, reading the symbols, determining the scale, measuring distance based on map scale, recognising the map types, drawing maps, collecting information from the map, comparing the two or more maps, using maps for elaborating different information, etc. Map skill includes tasks related to maps such as working with map key, finding a particular place on a map, map orientation, the work with two or more different maps of the same place, discovering spatial relations between places and answering geographical questions and task (Mrázková and Hofmann, 2012). Learners develop map skill by reading, interpreting, and drawing maps that contribute to everyday decision-making. Map skill is one of the basic geographic skills that students can easily employ to solve a wide variety of problems in their daily lives (Gokce, 2015).

Data Interpretation and Visualisation Skill: One of the important aspects of geography learning is understanding and using geographical data. Geographical data present the status and/or trend of the geographical fact. Learners should know how to present data through appropriate means for better learning of geography. So, interpretation and visualisation of data are very important for geography learners. Explaining, interpreting and visualising the table or data set in geography require data interpretation and visualisation skill. Data interpretation and visualisation skill in geography includes tabular data explanation in a written form, formulating a table from the written information, visualising a data set through appropriate graphs, formulating a table from the graphs, comparing the two different types of graphs/tables, etc. The Ministry of National Education, Turkey (2005) stated that data interpretation and visualisation skill helps the students to be actively engaged in selecting and classifying suitable data; forming tables, graphs and diagrams according to the data; using related photos and making connections; using tables, graphs, diagrams appropriately; interpreting tables, graphs, diagrams, and making synthesis by comparing them.

Spatial Thinking Skill: Spatial thinking skill enables learners to acquire geospatial knowledge. Spatial thinking is the ability to visualise spatial relations, imagine the transformation of space from one scale to another scale, remember images of spaces, create a new viewing angle or perspectives, etc. Spatial thinking underlies a significant amount of geography learning, such as maps, graphs, images, diagrams, models, and visualisations (Bednarz and Bednarz, 2008). Spatial thinking skill includes the geographical skill that helps to analyse and interpret spaces, primarily those in our surroundings (Unlu and Yildirim, 2017). Spatial thinking skill can be developed through Geographic

Information System (GIS), which enables learners to map and analyse changes and patterns of the spatial distribution on Earth.

The Ministry of National Education of Turkey (2005) identified eight core geographic skills derived from geography lessons. The eight core skills are— map skill, observation skill, fieldwork skill, geographic inquiry skill, the skill of preparing and explaining tables, graphics and diagrams, chronology skill, skill of using evidence, skill of perception of change and continuity. National Geography Standards substantially contributed to geography education in the United States of America (USA) and identified five skills that students should possess by completing Grades IV, VIII and XII. These five skills are asking geographic questions, acquiring geographic information, organising geographic information, analysing geographic information, and answering geographic information (Geography Standards Education Project, 1994). Artvinli (2012) remarks that eight skills identified by the Ministry of National Education of Turkey also prepare the students internationally for the five sets of geographical skills identified by the Geography Standard Education Project, 1994.

Benefits of Attainment of Skills in Geography

Skill in geography provides methods and techniques to think and act geographically. It helps individuals to take a wise decision regarding where to build houses and/or live, how to travel from one place to another, how to conserve energy and resources, etc. It helps to analyse the differences and similarities between two distinct places, explain how these differences and similarities affect human activities, gain information about the interdependency between the physical environment and human processes and so on. It helps learners to explore the physical process, spatial patterns, human process, etc., from local to global level. It helps, to explore spatial information at various scales. It enables learners to collect, compare, analyse and present geographical information. Collecting information, analysing it, drawing a meaningful conclusion, and making an informed decision about possible action are key components of geographic skills (Bednarz and Bednarz, 1995). Geographical skill helps to explain the diversity and interdependence of regions, places, and locations. Effectively and fluently communicating geographical ideas, principles, and theories through action/performance are required skills in geography. It helps learners to recognise patterns, associations, and spatial order of the objects and landscapes.

Geography learning provides a wider scope to develop skills that can be applied to determine and resolve various social and environmental issues. It increases understanding of the physical and cultural aspects of the place. Skill in geography allows students to generate ideas

to solve environmental and social problems. Learners can use several skills in geography to investigate social and environmental issues. Skill in geography provides solutions that cause the least damage to the environment and minimise undesirable side effects. Skill development through geography learning makes the learners highly employable and more relevant to the future workforce. Maps, statistics, geographical information, etc., are properly interpreted by skilled geography students in the problem solving and decision-making of any business or government organisation.

Geographic Information System (GIS) is an important and essential tool in geography learning in present day. Through geography learning, students develop mastery on GIS tools that help them to collect and interpret information of remotely sensed images/ satellite imageries, aerial photographs, etc. Knowledge and skills to use GIS help to develop spatial thinking skill. Spatial thinking skills allow students to recognise and understand relationships in multiple ways and to remember them in both static and dynamic representation (Collins, 2017). GIS helps to effectively present and analyse geographic information within less time and thus, it helps to develop geographic inquiry skill.

Skill Components in Geography Curriculum across School Stages

Geography curriculum has many practical aspects that provide ample opportunities to develop the subject/content specific skills. The skill components of geography curriculum vary from one stage of school to another. In the primary school stage, geographical contents allow learners to explore their surrounding environment and different plants around them. So, in this stage, learners start enquiring about their surroundings with the help of the teacher and this helps them to develop geographic inquiry skill. In this stage, learners develop geographic skills by understanding the spatial variation of plants, farming, crops, etc. The existence of Pines in Himalayan region, Mangroves in Sundarban delta, and Cactus in Thar desert is an example of spatial variation of plants in India. The presence of intensive subsistence farming of rice in West Bengal and Kerala and extensive agricultural farming practice in Punjab and Haryana is the example of spatial variation in a type of farming in India. The rice production in Odisha, West Bengal and Assam; wheat production in Haryana and Punjab; and sugarcane production in Uttar Pradesh and Maharashtra exemplify the spatial variation of crops in India. Primary school learners develop map skill through activities like distance estimation, map drawing, use of direction between two places, use of symbols and scale of maps, etc.

In the middle school stage, learners develop skills in geography through performing different activities based on the concepts or themes like full moon, new moon, orbital plane,

circle of illumination, elliptical orbit, calculation of leap year, summer solstice, winter solstice, equinox, identification of locational settings of India, uses of weather instrument to measure the temperature or atmospheric pressure, rainfall, direction of wind, etc. In this stage, learners develop geographic inquiry skill through using evidence based on the comprehensive information about the Earth (both inside and outside), facts about the Earth, features of the globe, effects of rotation and revolution of the Earth, etc. Learners in the middle school stage learn about distribution of natural vegetation of the world, world's major seaports, life in tropical/subtropical/ temperate grassland and desert regions, continent wise distribution of minerals and power resources, world distribution of arable land, continent wise population distribution, etc. that can develop map skill and spatial thinking skill in geography among the learners. Time perception skill, and change and continuity perception skill are developed in this stage through the geographical contents like land use changes over time, population growth over time, patterns of population changes, different rates of population growth, etc.

In the secondary school stage, geography is an integrated content of social science along with history, political science and economics. Geography contents in the secondary stage help learners to understand the geographical contents like size and location of India, physical features of India, drainage, climate, natural vegetation, wildlife, population, and resources of contemporary India, etc. Secondary stage learners can acquire map and spatial thinking skills through studying the size and location of India, distribution of different climatic factors in India, major types of forest across India, distribution of natural forest and wild life resources across India, types of farming observed across India, state wise production of minerals in India, distribution of energy resources in India, etc. Geographic inquiry can be developed at this stage through the contents/themes like land degradation and conservation measures, rapid decline of forest and wild life, conservation strategy of forest, water resource management, control of environment degradation, etc. Data interpretation and visualisation skill can be developed through the contents of growth of GDP in major sectors, food grains productions, state wise production of minerals, year wise steal productions, etc. Time perception skill, and change and continuity perception skill can be developed through the contents/ themes like climate changes, population growth and population changes from 1951 to 2011, land use patterns of country (India) over the time, rapid decline of forest and wild life, etc.

Most of India's Higher secondary school boards include two broad areas of geography, i.e., physical geography and human geography in the syllabus. At higher secondary stage, geomorphic

inquiry skill, change and continuity perception skill, time perception skill and skill of using evidence can be developed through studying and exploring physical geography contents/ themes like origin and evolution of the Earth, different geomorphic processes and resultant landforms, climate and global concerns, hydrosphere, biosphere, physiography, the spatial and temporal distribution of climate, vegetation and soil, natural hazard and disaster, etc. At this stage geographic inquiry skill, map skill, data interpretation and visualisation skill and spatial thinking skill can be developed through studying and exploring human geography contents/ themes like population distribution, density and growth of population, primary/secondary/tertiary/quaternary human activities, types of transport, communication and trade, types of human settlement, morphology of cities, resources and their creating factors, utilisation of world resources in terms of forest, fishing, land use pattern, water resources, mineral and power resources, selected industries and their distribution and changing patterns, ideas of sustainable development, etc.

Pedagogical Approaches to Skill Development in Geography

Pedagogy plays a significant role in transacting the subject knowledge and developing skills in any area of learning at school level. Geography contents across the school stages are in many ways practical oriented and provide great scope to develop geographic skills among the learners. So, it is necessary to adopt comprehensive and efficient pedagogical approaches to develop skills in geography among school learners. The pedagogues or teachers should adopt innovative and learner friendly teaching methods to develop

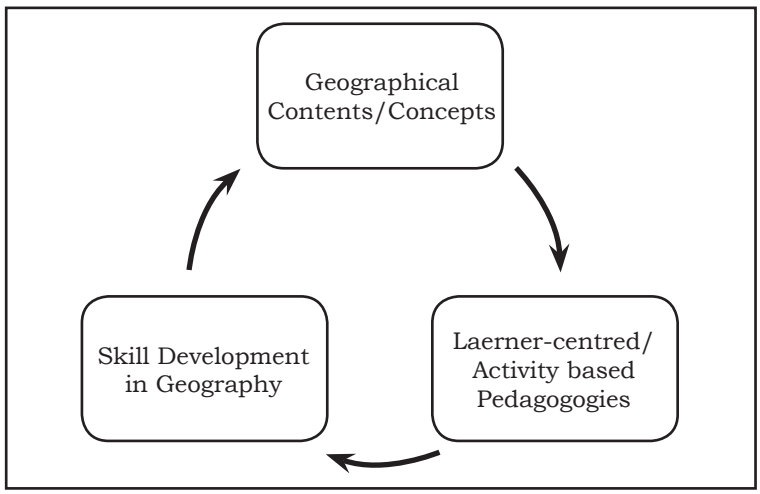


Fig. 1: Approaches to Skill Development in Geography

skills in geography among the learners. Activity-based teaching methods are more appropriate to develop skills in geography. Hands-on experiences based on geographical contents provide better scope to the learners to develop their skills in the geography subject. Therefore, for developing skills in geography, the teaching-learning process must focus on practical approaches to teaching-learning geography rather than rote memorisation of concepts of geography. Therefore, the learners should perform individual/ collaborative hands-on activities in geography teaching-learning process. In practice, it is observed in many cases that learners perceive geography as a tedious and rote learning-based course where they recall the facts and memorise the phenomena, names, etc., based on geographical concepts. In order to facilitate learner-centered learning in geography especially for developing geographical skills, Artvinli (2020) remarks that geographic inquiry involves an individual or collaborative process and research that begins with geographical questions, develops activities and proceeds through the collection, evaluation, interpretation and analysis of results.

Practical activities in teaching-learning of geography provide a wide range of scope to develop skills in geography. Laboratory-based activities in geography learning are practical in nature that allow learners to conceptualise abstract geographical concepts through active experiment and observation of phenomena. In laboratory-based learning situations, learners understand content by experimenting, collecting information from primary/secondary sources, processing and visualising that information, etc. Laboratory-based activities in geography provide scope to use maps, weather instruments, rocks, minerals, geography models, etc. to develop skills in geography. French and Russell (2002) state that students are benefited from inquiry based laboratory activities by acquiring effective scientific training. Laboratory-based activities in geography involve students in the interpretation of maps, air photos, other imageries; identification and interpretation of contours; identification and analysis of cross-section of physical and cultural features; interpretation of distributional patterns of various types of vegetation and soil, etc. which help to develop, specific skills of geography such as cartographic skill, topographic map interpretation skill, photographic interpretation skill, etc. Varieties of laboratory activities in geography such as collecting, processing and analysing environmental and spatial information from primary/secondary sources are used in remote sensing, Geographic Information System (GIS), mathematical and statistical modelling of geography and so on.

Geography learning takes place well through field based learning as it provides opportunities for observing of physical changes in environment, experiencing of geographical phenomena in the environment

and others. Fieldwork significantly helps to develop skills in geography through providing adequate scope for understanding geographical features and geography concepts. Learners in field work activities involve themselves in hand-on data collection from primary sources by using technical instruments, questionnaires, interview schedules, etc. Fieldwork provides practical experience in mapping, in Global Positioning System (GPS), etc. Fieldwork activities in geography involve observing and experiencing the geographical phenomena through direct observation; collecting and recording data/experience of people; analysing collected data; preparing the report/drawing the conclusion based on gathered data/information, etc.

Two pedagogical activities based on physical geography and two pedagogical activities based on human geography at senior secondary or higher secondary school level curriculum for skill attainment in geography are exemplified below.

I. Activities for Skill Attainment in Physical Geography

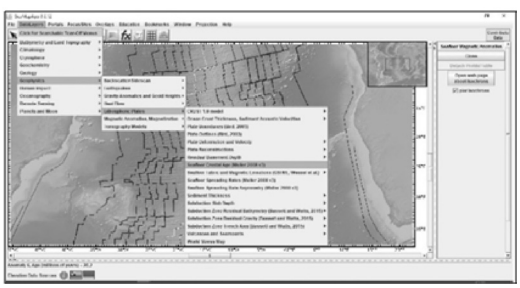
Activity 1

Area: Concept of sea-floor spreading
Topic: Sea-floor spreading rate profile
Broad objective: To attain time perception skill and skill of using evidence
Material required: Computer along with internet connection and GeoMapApp3.6.12, one white A4 sheet for each student, pen or pencil
Strategy: Problem solving
Mode: Group base

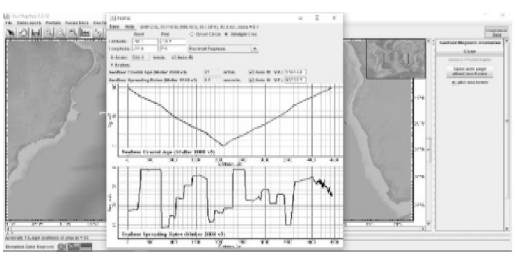
Activities to be followed

The students of the class would be divided into groups, where each group would include two students. The students will be provided hands-on-experience to create a sea floor spread using 'GeoMapApp3.6.12'. Each group of students would be asked to interpret and present the profile of seafloor spreading based on distance, age and rate of spreading. Students will open the 'GeoMapApp3.6.12', select the 'Mercator map projection', and click on 'agree'. After opening the 'GeoMapApp 3.6.12', they will proceed to the 'Seafloor Crustal Age (Muller 2008)' under the 'Data Layers' tab. Then with the help of 'GeoMapApp 3.6.12', 'seafloor crustal age profile' and 'seafloor spreading rate profile'

Screenshot 1: *GeoMapApp3.6.12*



Screenshot 2: *GeoMapApp3.6.12*



Source for Screenshot 1 and 2: *http://www.geomapapp.org (retrieved on 10 July 2021)*

will be created by them. They will interpret these profiles based on distance, age and rate, and present their findings accordingly.

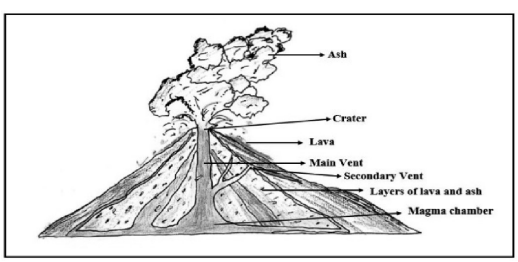
Activity 2

Area: Volcanoes
Topic: Causes of volcano and different parts of volcano
Broad objective: To attain geomorphic inquiry and change and continuity skill
Material required: One model of volcano, safety glasses for each student, baking soda, red colour and vinegar
Strategy: Experiment
Mode: Whole class

Activities to be followed

Students would set up the model of the volcano on the table. This would be an empty volcanic model. Students would wear the safety glass for this experiment. Students would put some baking soda (as minerals) and add some red colour (as rock materials) in the empty volcanic model. Students would put vinegar (as a rain or acid rain) in the volcanic model in such a way that the vinegar would spread on it. The rain or acid rain percolates into the volcano. When the rain or acid rain would touch the minerals and materials inside the volcano (baking soda inside the volcano), it would lead to a chemical reaction. Due to the chemical reaction, the vinegar and baking soda will erupt like volcanoes. In this process, students will experience that rain/acid rain is one of the causes of the volcano. After this experiment, the students will be asked to inquire about this volcano model to identify vent, crater, magma, secondary cone, etc.

Picture 1: *Volcano*



II. Activities for Skill Attainment in Human Geography

Activity 1

Area: Land use categories
Topic: Land use of the world
Broad objective: To attain data interpretation and visualisation skill and map skill
Material required: Continent wise land use data, map of world, light tracing instrument
Strategy: Data extracting and presentation
Mode: Individualised

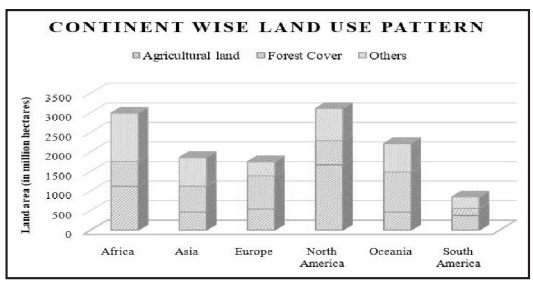
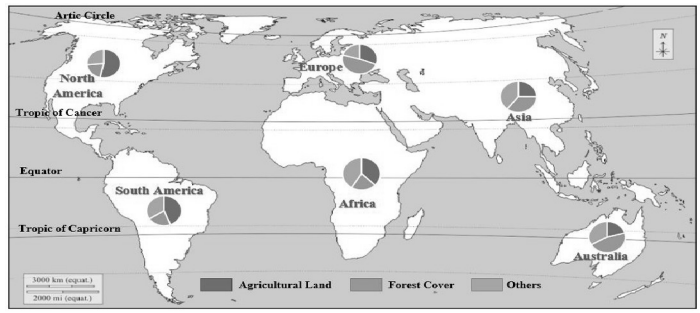


Fig. 2: continent wise land use pattern
Source: *https://www.fao.org/ (retrieved on 08th August 2021)*

Activities to be followed

Students will be provided basic knowledge about the process of data extraction from a graphical representation with the help of scale. The students will be asked to extract the continent wise percentage of land use pattern area from the compound bar graph and represent this continent wise percentage of land use pattern area on a world map. Students will extract the continent wise land use pattern area in a million hectares from the compound bar diagram with the help of the scale of the bar diagram. Then students will convert the area (million hectares) into a percentage. Students will light trace the outline of the world map. Students will draw the pie chart on the outline of world map and label it accordingly. In this way, they will be able to extract the data, convert the data into percentage, and present the data on a map using a diagram.

Map 1: *Continent-wise land use pattern*



Source: *https://d-maps.com/ (retrieved on 08 August 2021)*

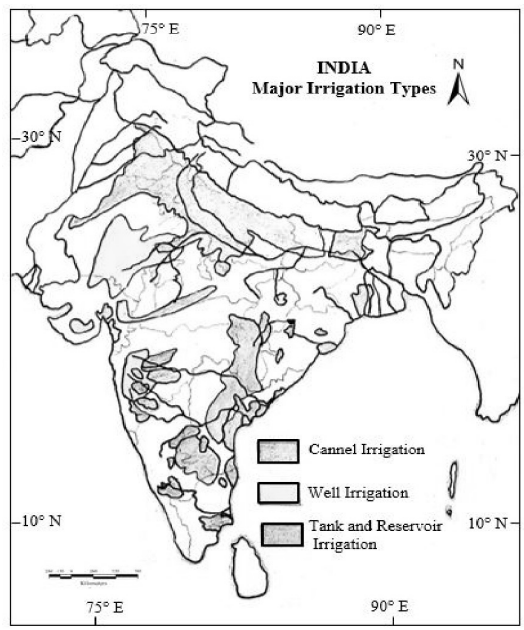
Activity 2

Area: Water resources of India
Topic: Irrigation system in India
Broad objective: To attain geographical inquiry and spatial thinking skill
Material required: Map and atlas
Strategy: Inquiry process and spatial association
Mode: Individualised

Activities to be followed

The students would be asked the question—why is tank and reservoir water irrigation more prevalent in south India in comparison to the northern plain? The students will find out the tank and reservoir based

Map 2*: Major irrigation types of India*



Source: *Oxford School Atlas (33rd edition), New Delhi: Oxford University Press*

irrigation system practiced in south India and canal irrigation and river water use prevalent in the northern plain to answer this question. Students will find out the number of the rivers that exist in south Indian states but those do not provide any canal irrigation. Students will try to find out the causes of this distribution. They will find out that the northern plain is a plain region, and it has perennial rivers whereas south India is a Deccan peninsular region, and the rivers in this region are seasonal. Students will find out that the northern plain is suitable for digging canals and here the perennial rivers supply water throughout the year. Digging canals in south India is expensive because of the peninsular nature. Students would also find out that the southern region is most favourable for tank and reservoir irrigation because here ground water does not percolate easily due to hard rock structure. In this way, students will inquire about the question with the help of atlas and map of India and accordingly find the answer to the question—why are tank and reservoir water irrigation more found in south India than in the northern plain?

Skill Evaluation in Geography

The present evaluation procedures in geography deal more with the knowledge of geography whereas skill evaluation in geography is given less weightage. Questions and the other evaluation means of geography learning across school stages focus more on assessing the learners' recall power rather than assessing the skills of geography. Mishra (2015) remarks that most test items are short answer types that require recalling factual information rather than allowing learners to demonstrate the application of skills in geography. A small percentage of test items assess higher cognitive skills. The skills evaluation is the major concern in the geography evaluation process. Performance-based assessments test students' skills well in many areas of education. Performance-based assessments need to be given proper weightage in assessment of geography learning. Teachers should know to administer the performance based assessment in geography. Rudner and Boston (1994) remarked that, "to implement performance assessment fully, administrators and teachers must have a clear picture of the skills they want students to master and a coherent plan for how students will master those skills". Chart 1 displays some of the common steps and procedures to implement performance-based assessment in geography (physical geography and human geography).

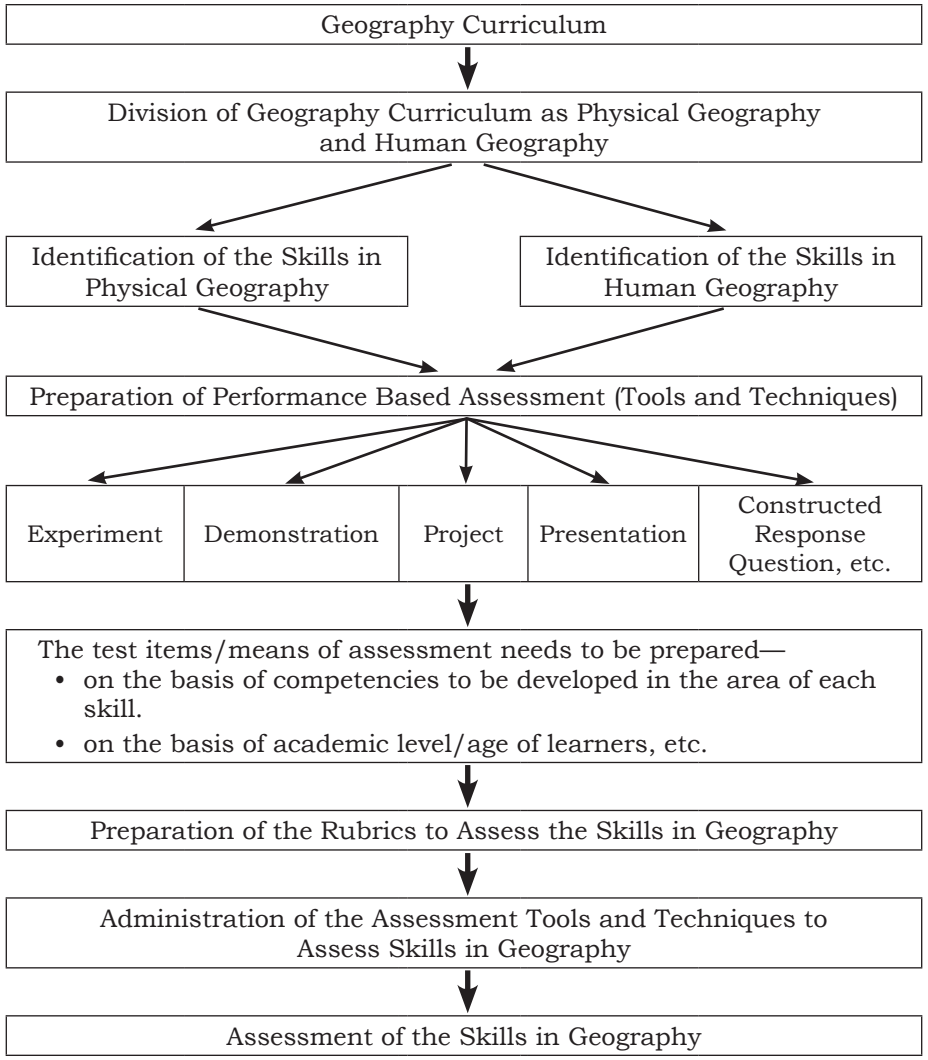


Chart 1: *Steps and procedure for performance based assessment for skill assessment in geography*

The examples of the objectives and/or use of some of the performance based assessment tools and techniques are given here. The experiments can be used to evaluate the skills in geography learning. In an experiment, learners

plan and carry out different practical activities by using geographical skills and concepts. In experiments in geography, learners use geographical materials, tools, models, instruments, etc. and handle them. The demonstration allows learners to show their skills in the subject area. Through the demonstration, the competencies in geography like using geographical facts as evidence, determining the position of a place on a map, measuring distance based on map scale, extracting information from the maps, etc. of the learners are assessed. The presentation allows students to present information and data of geography learning. Presentation in geography assesses how students select suitable data to portray the information; formulate tables, diagrams, and graphs; make a meaningful connection with the presentation and so on. Constructed response type questions require a student to present his/her own creativity and complex thinking rather than just describing what he/she knows or his/her factual information. Constructed response type questions in geography learning assess the spatial thinking ability; use of evidence to prove the geographical fact; interpretation of the data, information and diagrams; perception of the time, changes and continuity over the space, etc.

Effective administration and scoring of performance based assessment in respect of assessment of skill in geography require proper rubrics based on the area of assessment of skill in geography. A model rubric is presented in Table 2 that may guide to assess a skill (spatial thinking skill) in a content area of geography through a performance-based assessment technique.

Table 2
Rubrics for Assessment of a Skill (Spatial Thinking Skill) in Geography (through a Performance Based Assessment Tool/Technique)

Performances	Percentage of marks to be given to total marks	Grades against total marks
• Provides all relevant, detailed and accurate information along with all significant points. (e.g., visualises all relevant spatial information about two regions on map, points out all relevant, detail and accurate spatial information about two regions on map, etc.). • Uses all the appropriate tools, evidences, etc. along with all significant points. (e.g., finds out all the appropriate spatial relations between two regions identified on map using appropriate tools, evidences, etc.).	Above 75 marks–100 marks	A

• Provides maximum relevant, detailed and accurate information along with maximum appropriate points. (e.g., visualises maximum relevant spatial information about two regions on map, points out maximum relevant, detail and accurate spatial information about two regions on map, etc). • Uses maximum appropriate tools, evidences, etc. along with maximum appropriate points. (e.g., finds out maximum spatial relations between two regions identified on map using maximum appropriate tools, evidences, etc.).	Above 50 marks–75 marks	B
• Provides less relevant, less detailed and less accurate information along with less appropriate points. (e.g., visualises less relevant spatial information about two regions on map, points out less relevant, less detailed and less accurate spatial information about two regions on map, etc). • Uses less appropriate tools, evidences, etc. along with less appropriate points. (e.g., finds out less spatial relations between two regions identified on map using less appropriate tools, evidences, etc.).	Above 25 marks–50 marks	C
• Provides least relevant, least detailed and least accurate information, along with least appropriate points. (e.g., visualises least relevant spatial information about two regions on map, points out least relevant, least detailed and least accurate spatial information about two regions on map, etc). • Uses least appropriate tools, evidences, etc. along with appropriate points. (e.g., find out least spatial relations between two regions identified on map using least appropriate tools, evidences, etc.).	Upto 25 marks	D

Discussion and Conclusion

Geography is a subject in the school curriculum that helps learners to acquire skills besides knowledge. Some core skills associated with geography learning at school stages are geomorphic inquiry, change and continuity perception skill, time perception skill, skill of using evidence, geographic inquiry, map skill, data interpretation and visualisation skill, spatial thinking skill in addition to many other such skills. Acquisition of skills in geography by the learners helps them to understand well the humans and their environment, communities, cultures, and economies and so on. The attainment of skills in geography is important for the learners for better understanding of their natural and social environments starting from the local level to the global level. Attainment of skills in

geography by the learners helps them to take important decisions for their well-being and happy living. Attainment of skills in geography by the learners help them to resolve complex problems such as social and environmental issues, conflict between religious and ethnic groups, resource scarcity, environmental degradation and so on. But in our school setup, the skill development in geography is mariginalised because of several reasons. The scope of practical related activities or hands-on-activities that facilitate the skill development in geography are less remarkable in Indian school system. Therefore, planned efforts need to be made to include adequate skill component in geography curriculum, use suitable learner-centred and practical pedagogic styles and strategies for skill development in geography teaching learning and adopt appropriate performance based and/or practical oriented assessment strategies for assessment of skill attainment of the learners in geography in the school setup. Facilitation of skills in Geography through school curriculum must be treated as one of the frontline agenda in the present educational policies and practices at the school level. The following strategies may be helpful for facilitating skills in geography.

- Geography should be treated as a practical and skill-oriented subject like sciences across the school stages.
- Skill development in geography through the teaching-learning of the contents of geography/ environmental studies/social sciences should be emphasised at school stage.
- The curriculum at school stage should be redefined in order to infuse adequate geographical skills in the curriculum, and efforts need to be made to facilitate the same skills among the learners.
- The core/basic skills from the contents of geography learning in each level of education should be identified in order to develop the same skills among the target group learners.
- Hands-on-activity based pedagogies like laboratory-based learning, experiential learning, etc. should be used in teaching-learning process for skill development in geography.
- Skill assessment in geography should be an important component of assessment practices in geography.
- Skill development in geography should be emphasised in both pre-service and in-service teacher education systems at different levels of teacher education.
- Trainings/orientation programmes/ induction programmes/workshops should be organised relating to the area of 'skills development in geography'.

- Theoretical contents and practical contents of geography should get equal importance in teaching-learning of geography for developing skills in geography.
- One of the main aims of teaching-learning of practical contents of geography should be to develop the skills in geography.
- Schools and other educational institutions must have adequate resources in respect of skill development in geography and the institutions must utilise the same for developing adequate skills among the learners.

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Foregrounding Socio-political Dimensions of Learning Mathematics

Some Field Observations from Delhi and Bihar

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Abstract

This paper goes beyond the socio-cultural perspectives and adopts a socio-political framework for analysing mathematics learning in and out of school settings. Besides describing the 'funds of knowledge' as embedded in children's households, communities and work contexts, it also attempts to explore the interplay of power and identity with respect to mathematical practices in diverse contexts. To highlight these issues, we draw data from studies based on participation of children in everyday and work contexts in Delhi and rural Bihar. Through this paper, we attempt to foreground the notion of power while determining access to powerful ideas of mathematics as well as participation and achievement in mathematics.

Introduction

In recent years, the views related to the teaching of mathematics have undergone a "Kuhnian revolution" and challenged the allied notions associated with it such as its infallibility, in addition to acknowledging its socio-cultural character.

Redefining mathematics as a fallible social construction, continually expanding field of human creation and invention provides a rationale as well as a foundation for 'inclusive'

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approaches to mathematics; wherein "the social contexts of the uses and practices of mathematics can no longer be legitimately pushed aside" (Ernest, 1991). Mathematics needs to be "studied in living contexts, which are meaningful and relevant to its learners, including their languages, cultures and everyday lives, as well as their school-based experiences" (*ibid.*). Beginning from late 1960s and 1970s, Mathematics Education Research (MER), while drawing from sociology, anthropology, and cultural psychology, attempted to understand Mathematics as socio-cultural activity, and explored the links between culture and mathematical cognition. Some of the significant works undertaken during this phase were that of- Gay and Cole's (1965) study with Kpelle in Liberia, Zaslavsky's (1973) 'socio-mathematics of Africa' on development of numeracy and geometric knowledge in lives of people, Reed and Lave's (1979) study with tailors in West Africa. The latter half of the 1980s, as Lerman (2000) observed, witnessed a spurt in texts highlighting the social nature of mathematical thinking and reasoning. For instance, Lave (1988) in her book *Cognition in Practice* described the situation specific strategies of grocery shoppers and dieters, and in the process, challenged the power of transfer usually associated with school Mathematics learning. Carraher, et *al.* (1985, 1987) reported their work on street and school Mathematics, exploring mathematics learning in and out of school contexts, thereby challenging the assumption that school is the only site of mathematics learning. D'Ambrosio (1985) introduced 'Ethnomathematics' as a new direction in MER, which aimed at analysing mathematical practices of diverse socio-cultural groups and communities through historical and anthropological lens. Many of these studies also aimed at exploring the possibilities of integrating the 'funds of knowledge' embedded in community-based and cultural practices within the school mathematics curriculum.

This shift in focus of analysis has been documented in literature as "social turn" in MER. However, it has been argued that this social turn failed to take into account the notions of power and marginality, subordination and domination.

From Socio-cultural to Socio-political Lens of Analysis

To understand the interplay of power and identity in MER, explicit attention needs to be given to issues of caste, class and gender. A shift in the academic discourse towards addressing equity and social justice issues in mathematics Education necessitated a 'Socio-political turn' (Gutierrez, 2013) in MER. According to Gutierrez (2013), by adopting such a stance, they were not just trying to understand mathematics education, but also moving towards a transformative approach in order

to make it more socially inclusive and just. Drawing on critical theory, many researchers in the last few decades have worked in the area of Critical Mathematics Education (Frankenstein and Powell, 1994; Skovsmose, 1994), and Social Justice Mathematics (Gutstein, 2006). These studies conceptualise using mathematics as an analytical tool to investigate injustices in society by enacting problem posing pedagogies.

These studies raised fundamental questions about what counts as legitimate knowledge with respect to teaching and learning of mathematics, and whose knowledge and ways of knowing come to be valued in 'academic' mathematics.

The Indian Context

As a consequence of the current reforms in mathematics education, NCF 2005 also advocates a shift from achieving 'narrow' goals to 'higher' goals of 'mathematising'; a shift in focus from mathematical content to mathematical learning environments, offering multiplicity of approaches, procedures and solutions (NCERT, 2006). The shift from the conventional noun 'mathematics' to the verb 'mathematising' poses a challenge to the conventional epistemology of mathematics. Such a shift signifies what Millroy (1992) calls a move from mathematics as an abstract "accomplished fact" to experience and process of mathematics.

Taking into cognizance the new epistemology of mathematics, NCF 2005 acknowledges the 'cultural grounding of mathematics' when it notes that 'mathematical competence is situated and shaped by the social situations and the activities in which learning occurs. Hence, school mathematics has to be in close relation to the social worlds of children, where they are engaged in mathematical activities as a part of daily life' (NCERT, 2006). Such a conception of mathematics necessitates a fundamental reconstruction of school mathematics at all levels — curricular choices, pedagogy, assessment, and teacher education. To respond to the shift envisaged and to address diverse ways of knowing, learning and communicating in and out of school contexts in India, significant efforts have been made at curricular level and designing new textbooks. Emphasising an integrated approach to learning mathematics, chapters have been developed thematically and are based on real-life authentic contexts; offering connections not just within mathematics but across subject areas.

The concern over routinised school practices, work-knowledge dichotomy, and home-school disconnect, as reiterated in the National Curricular Framework 2005, can be traced back to 1920s and 1930s when educational philosophers like Dewey and Gandhi proposed a new vision of education centered round productive work

and community-based practices. Dewey (1929) noted that "the true center of correlation neither on the school subjects is not Science, nor Literature, nor History, nor Geography, but the child's own social activities". Gandhiji's proposal of *Nai Talim* was deliberated upon at the National Education Conference held at Wardha in 1937. The key feature of the proposal was to incorporate productive manual work as a pedagogic basis in school learning (NCERT, 2007), in order to break the dichotomy between world of work and that of words, and thus, providing a legitimate space to knowledge of those who have been historically marginalised. The curriculum for *Nai Talim* was designed under the chairmanship of Dr. Zakir Hussain, who explained that the objective of this innovative educational programme was not to generate artisans capable of performing a craft mechanically, but rather to utilise the resources implicit in craft work for educational purposes. "This requires that productive work not only form part of the school curriculum but should also inspire the method of teaching all other subjects." (Hindustani Talimi Sangh, 1938). Further, it emphasised that educating children through productive work is the best way to provide an all-around education since it relieves the child from the tyranny of purely academic and theoretical instruction, balances intellectual and practical elements of experience, and can educate the body and mind in coordination. It was also hoped that when children from all social backgrounds participate in some productive work, "the existing barriers of prejudice between manual and intellectual workers" will tend to break down, as "it will also cultivate in the only possible way a true sense of the dignity of labour and of human solidarity"; its educational worth was seen in the possibility that "greater concreteness and reality can be given to the knowledge acquired by children by making some significant craft the basis of education. Knowledge will thus become related to life, and its various aspects will be correlated with one another" (*ibid.*).

Children's participation in work, however, has been an issue of much debate, and needs to be understood in terms of different conceptions of childhood. For many children in rural and urban settlements, work is an integral part of their lived realities, and from their early age they are being socialised into the adult world of work. This participation in work creates many affordances for learning, which are, however, often set aside in formal learning contexts.

In Indian context, a socio-political stance in MER becomes critical to take into account multiplicity of 'isms' (sexism, casteism, capitalism, ableism, etc.) that work towards shaping the identities of most people, (Bullock, as quoted in Subramanian, 2017) and in turn, determine access to, participation and achievement in mathematics education.

Mathematics in Everyday and Work Contexts: Studies in India

Many studies have been undertaken in India uncovering and analysing the use of mathematical knowledge by people in varied work and everyday contexts. One such research was undertaken by Khan (2004) who explored the relationship between cultural contexts and mathematical practices of newspaper vendors and cigarette sellers in Delhi. Other researches include Naresh's (2012) study of Chennai bus conductors, and Sitabkhan's (2003) study of young vendors in Mumbai local trains. These studies highlighted flexible competence that is displayed by children and adults solving mathematical problems embedded in real life and work contexts, which is quite different from solving problems using school taught algorithms.

Besides arithmetic, people in their everyday lives also express an understanding of measurement and geometry concepts through estimation, spatial visualisation and optimisation. Mukhopadhyay's (2013) work with boat builders in West Bengal, and Saraswathi's (1989) work with adults (majorly, agricultural laborers) in rural Tamil Nadu focused on the embeddedness of measurement knowledge in different settings. Recently, Bose (2015) conducted an ethnographic study in a low-income settlement in Mumbai having vibrant household economies, and explored measurement knowledge in children as they engaged in diverse income-generating activities. The study also attempted at exploring possible connections between in and out of school mathematical experiences.

These studies unveil considerable mathematical competence and potential in people (with limited or no schooling) engaged in diverse out of school situations and activities. However, what needs to be systematically explored is to "turn this considerable potential for learning and understanding into conscious routes for teaching" (Nunes et al., 1993).

Funds of Knowledge Embedded in Work Contexts and Cultural Practice

The construct of "funds of knowledge" is based on the premise that children's households, neighborhoods and communities are repositories of resources that need to be strategically tapped in formal learning environments, thus refuting a deficit approach for education of marginalised sections of society. The focus of analysis within funds of knowledge perspective is "practice", that is, "what people do and what they say about what they do" (Gonzalez, 2005). The perspective also brings forth the "hybridity of cultural practices" (*ibid.*) — amalgamation of cultural and domain knowledge. This notion of hybridity seeks to blur the distinction between the domain and everyday knowledge, and has the potential to challenge the hegemonic

educational spaces (Nasir, Hand and Taylor, 2008).

The section attempts at uncovering the 'funds of knowledge' in marginalised communities, and foregrounding the 'voices' of the subaltern groups in relation to their practices. It tries exploring how participation in everyday work contexts creates affordances for learning mathematics, in particular. In order to highlight these aspects, we have drawn data from two separate studies conducted by the researchers in two different settings—Delhi and Bihar.

The Settings and the Participants

The research was carried out in Jamia Nagar, located in the south-east district of Delhi. Two sites—Batla House Market and a weekly market at Abul Fazal Enclave—were chosen wherein a large number of children were engaged in a variety of street vending activities such as selling fruits and vegetables, toys, mats and items of daily use. Most of these children had migrated from U.P., Bihar and West Bengal with their families or neighbours, who usually come to cities in search of jobs. Children are usually initiated into these activities from about the age of 8 or 9 years to support their families, struggling to make ends meet. While in some cases, families cannot afford to send children to school, in others, children have been pushed out of school or dropped out due to repeated failures.

Unlike Delhi, a metropolitan city, the other setting for the study constituted three villages —Chandanpatti, Pipraulia and Barhetta—from Darbhanga district of Bihar. The area was chosen for the study keeping in view the rich cultural traditions of the state as well as the fact that majority of its people (who live in rural areas) rely on less mechanised, traditional hands-on techniques for their daily survival, requiring them to make use of mathematics in a number of ways.

All three villages have a multi-caste, multi-religious population. The participants of the study constituted of individuals (adults and children) or groups involved in different kinds of local practices such as, *Sikki Craft* (basket-making); buying and selling goods in local *haats* and shops; *sujani, kashidakari* (embroidery), and appliqué work; *Mithila*-painting; making *beedi*s, etc.

The research process was based on elements of ethnographic techniques. During the field visits, the researchers tried to understand and learn from the people (adults and children) and their practices. They engaged in employing multiple methods—observation, informal and semi-structured interviews, and focus-group discussions. The observations and conversations aimed at developing a detailed and nuanced understanding of the everyday work contexts they were engaged in. Based on the observations and conversations each

day, the rhythm of the following day was planned.

Numeracy and Arithmetic Operations

Children in open markets of Delhi and rural Bihar, displayed flexibility and competence while carrying out market transactions. A wide variety of oral convenient strategies were used to solve tasks at hand. In the case of addition and subtraction, they mostly relied on decomposition, combined with counting on or counting off. Multiplication problems were handled using build-up, repeated grouping strategies. The specific chunks used to solve the problems depended on the quantities involved and their knowledge of number facts.

Situation 1

Reshma (age, 12 years) was selling peas at ₹16/kg, at a weekly market in Delhi.
Researcher: I would like to take 2 kg, how much do I need to pay?
Reshma: ₹32
(Researcher gave her a ₹100 note)
Researcher: How much will I get back?
Reshma first handed over ₹8 to the researcher and then counted using fingers: 40,....,50, 60, 70, 80, 90, 100. I'll give you 60 more.

Reshma transformed the subtraction problem 100 – 32 into a corresponding addition problemas 'how much shall I add to 32 to get 100? (i.e., 32 + ? = 100). For solving further she first added 8 to get 40 as the step made the subsequent additions at intervals of 10 easier.

Fingers or pebbles aided in keeping track of the subtotals, thus facilitating a constant monitoring by the subject of their progress towards the solution. The process has been discussed in the instance cited below.

Thus, there was a spontaneous reorganisation of problem solving strategy, depending upon the numbers involved. The problems were approached in multiple ways and there was no uniform strategy. The solution strategies reflected a good understanding of number relationships, and good estimation skills. Most of them, however, struggled with written, symbolic representations, and often got stuck with school taught algorithms.

Measurement and Fractions Knowledge

In the context of measuring practices in markets in both contexts, most children found it easier to relate to weights, like *paao/pauaa* (250 g), *aadha* (500 g), and *paunaa* (750 g). Mostly, the calculations were carried out by dividing into halves, and halving again to get quarters; and multiplying by continual doubling, as illustrated in examples below.

Situation 2

Sonu (age, 11 years) was working at a local shop in Darbhanga, and selling sugar at ₹50/kg.

Researcher: I want to buy 750g sugar, how much shall I pay?
Sonu: Half kg for 25, halving again gives 12 and 50 paise. Adding 20 and 10 gives 30, and also we have to add ₹7.50. So, you need to pay ₹38.

The final amount was calculated adding amounts for *aadha* and *paao*, and then rounded off, taking into account non-usage of 50 paise coin in commercial transactions these days.

Extensive use of binary fractions, as also noted by Bose (2017), could be observed in the use of measuring units–*aadh* (half), *paao/paua* (quarter, or one-fourth), *aadhpaua* (half-quarter, or one-eighth), *pauna* (a quarter less than one, or three-fourths, or three quarters), *dedh* (one and a half), and *arhaayi/dhaai* (two and a half). However, no reference to many of these words could be found in textbooks in order to leverage children's prior (though, partial and fragmented) knowledge of fractions embedded in their work contexts. Most of them were found to have difficulty using decimal fractions. There seemed to be a disconnect between the usage of fractions in everyday contexts and school mathematics.

Also, in the everyday contexts of measuring, estimation skills were extensively relied upon, unlike what happened in schools which tend to overemphasise precise, standardised, or scientific measurements.

Hybridised Mathematical Knowledge

In a few instances, strategies used by students to solve problems embedded in work contexts involved elements from both the practice and the school learnt algorithms. For instance, Hamid (age, 10 years) was enroled in Class IV in a low-cost private school. He also worked at a dairy in Darbhanga after school hours and during holidays. He was asked to calculate the amount required to be paid to him for a month when a litre of milk was bought every day at the rate of Rs. 35 per litre. He tried drawing from the tables learnt in schools, and the rule of adding a zero at the end when multiplying with ten. He described the strategy as "30 times 10, 300. 300, 300, 300 makes 900. 5 times 10, 50. 50, 50, 50 makes 150. So, the total becomes 1050 (*sadhe dus sau/pachaas kam egarah sau*). But if the month has 31 days, 35 more will be added." The description provided also took cognizance of the reality constraints, as in varying number of days in a month. Also, on many occasions, one could observe the use of an interesting vocabulary and terminologies, like number name for 1050 used here and binary fraction names cited above, arising from an everyday discourse, unlike formal textbook terminologies.

Fairness and Work Contexts

On many occasions, interactions were embedded in power laden relationships and evoked ideas related to justice and fairness. For instance, according to a *beedi* maker at Darbhanga, the total cost for 1000 *beedi*s is around 283 rupees. The ingredients needed for 1000 *beedi*s includes 300g beaten tobacco leaves that cost 30 rupees, 600 g *tendu* leaves that cost 48 rupees, coal and

thread worth 5 rupees, and daily wage (200 rupees) of a skilled male *beedi* worker. Around 5-7 *mutthi*s are prepared in an hour, wherein the process includes filling beaten tobacco, wrapping around tendu leaf and tying with a string and excludes the prior arrangements for making *beedi*s like that of cutting *tendu* leaves. In 10-12 hours, 20,000 *beedi*s are made. However, 1000 *beedi*s are sold for 170 rupees, much less than the cost price. So, instead of hiring skilled male workers, women are involved in the process and paid 30–40 rupees for making 1000 *beedi*s—around one-third to one-fourth of the wage of a male worker. According to a *beedi* worker who hires women for making *beedi*s:

> "There is no value in a woman's labour. No one is going to pay her more for it. While the cost of raw materials has shot up, the *beedi*s are still sold at the older rates. This is why we hire women for work; this helps us save some money spent on the making cost. It is because of women and children that our work is also surviving."

Many such instances were found where women and young girls were hired for *Sikki* and embroidery work, and preparing *Mithila* paintings. Though some women seemed to be dissatisfied with amounts of money they get after working for days, they rationalised this by saying:

> "We work so hard but do not get paid accordingly. The husband does not allow us to work outside, so something is better than nothing. Anyway, we do it in our free times. We get something for it. As two of my children study in private schools, I have to earn for them somehow."

However, for some young girls, the discussion on fairness of wages seemed difficult for them to grasp.

These interactions brought to fore the paradoxical relation between mathematics on one hand, and justice and fairness on the other (Bose and Kantha, 2014). While mathematics is being viewed as the discipline of power and tool for empowerment, acute disempowerment due to structural inequities prevents one from accessing or using the powerful mathematical ideas.

The next section tries to understand the continuities/ discontinuities in the mathematical experiences of two of these children in the school settings. The question that needs to be explored at this stage is—how are the boundaries between cultural and domain knowledge negotiated in the classroom contexts?

Power, Identity and Politics of Knowledge in Mathematics Classrooms

Mathematics classrooms can be conceived as sites of inclusion or exclusion, wherein one needs to look at how students in the process of learning continue to position themselves with respect to the mathematical activity, their understandings of themselves, their backgrounds and foregrounds,

their peers and others around them. Drawing from the mathematical lives of two children studying in two government schools of Delhi, we attempt at foregrounding the interplay of power and identity in mathematics classrooms.

About the Participants

The participants of the study constituted of two working class Muslim boys—Shahid and Abid (pseudonyms)—aged 10 years and 12 years, respectively. Both of them worked as street vendors at open markets of Jamia Nagar, after school hours.

Shahid arrived in the city about 3 years ago from Kishanganj in Bihar. The first year of his arrival lapsed without attending any school. The following year, he went to study in a local *madarasa*, before getting enrolled in the local Municipal Corporation School in Class IV. His father worked as a factory worker, and mother sold 'used' clothes in an open market in the area. Shahid assisted his mother in the work, taking independent charge at times when she had to go for some house-related work.

Abid's family came to the city about four years ago from Bulandshahr (Uttar Pradesh). At the time of research (in 2014), he was enroled in Class V at an MCD school in Jamia Nagar. Abid assisted his father after school hours in selling fruits and vegetables in a local market, and at times helped him by independently getting vegetables from the *'mandi'* (wholesale market).

Both schools were characterised by overcrowded classrooms (45-50 students in each class), congested spaces and a lot of noise in the classrooms. Since the school was close to the marketplace, this resulted in disruption in classroom activities and interactions. Majority of the children studying in these schools were Muslims and belonged to lower middle-class homes such as the small traders and businessmen, and lower class working people who earned a living by working in factories as daily-wage laborers, rickshaw pullers, and street vendors.

The data was primarily collected through classroom observations, and informal discussions and interviews (semi-structured) with teachers and learners in order to understand the learners' transitions between the two contexts (street vending and schools), and the struggles and intricacies involved therein.

Creation of Two Parallel Worlds

In the 'routine' activities of the mathematics classrooms we observed, the teachers presented a 'new' algorithm at the beginning of a lesson, followed by some examples based on these algorithmic procedures. Students were then asked to do 'pure computational' type exercises by copying problems from the chalkboard. Looking beyond this rush, however, Shahid was found sitting silent in the second last row, struggling through the exercises. When asked why he was unable to solve similar problems in school,

which he solved with ease while doing his everyday transactions in the streets, he commented:

> "In the marketplace you have to do it 'in your heads'. In school you have to do it as per the norm, same as madam makes you learn. Here, you have to do everything by writing. Madam says if you want to do it employing your ways, go and sell things in the marketplace."

According to his teacher, Shahid lacks knowledge of basic algorithms; his methods are labeled as not being the 'math way', and considered suitable to be used in streets only. Thus, school mathematics is completely divorced from the everyday contexts of children like Shahid. This in turn leads to the creation of two parallel worlds—structured differently from each other—in and out of school settings (Jorgensen, Gates and Roper, 2014).

Shahid's participation trajectory in the mathematics classroom can further be examined by looking at the valuation of different solution strategies by classroom community and how some students get affected by such positive and negative valuations.

Shahid also seems to have internalised these distorted perceptions of different systems of knowledge and his own mathematical abilities. He has come to understand two mathematics as 'different' or separate; wherein school mathematics is given higher value over 'other' kinds of mathematics, and school written procedures over every day oral ones. He has not only developed a very low self-esteem as a mathematics learner but has also started perceiving mathematical knowledge used in selling activities in streets as inferior, owing to the constant rejection of his methods by the teacher and other students. He acknowledged that the everyday transactions which he engaged in streets require solving sums, but spontaneous oral techniques used in streets have little significance in comparison to the procedures taught in school. Connecting mathematics to everyday experiences is valued negatively. The transactional-based approach followed by the children in an out of school context, when applied exactly in the formal school context is perceived as their lack of mathematical competency (Civil and Planas, 2004), and is also accorded a low status. While written school mathematics is seen to be associated with the image of a schooled person (Abreu, Bishop and Presmeg, 2002), the oral techniques are associated with the unschooled people and this everyday knowledge cannot be 'traded' for good grades and 'proper' jobs. School mathematics is, thus, seen as the only 'legitimate' form of mathematics.

Highlighting the association between mathematical practices and social identities, Abreu (2002) argues that children are quite aware of how practices in and out of school

contexts are differentially valorised —competence in one providing access to power and other resulting in marginalisation (Nasir and Royston, 2013).

Atwater and Riley (1993) explains that to be successful in school mathematics, the children from historically marginalised groups need to continuously challenge the messages of inferiority transmitted to them about their abilities and their backgrounds. In Shahid's case, the active involvement in mathematical practices in one context has been replaced by passive submission in another amidst his struggles of making sense of mathematics he is learning at school resulting in a poor self-concept and low self-esteem. He gets totally confused by the school taught algorithms requiring one to "write numbers in some meaningless strange patterns" (Rampal, Ramanujam and Saraswathi, 1998). He is clearly located on the 'periphery of the classroom community' (Vithal, 2009).

Agency and Mathematics Learning

Variations were observed in the ways the students from these particular groups got access to school mathematics, their nature of participation and identification with mathematics classroom practices (Nasir and Royston, 2013). While Shahid exercised silence and withdrawal in such situations, another student was observed expressing competence in solving problems in both the settings. Talking about his mathematical experiences in streets and in schools, he said:

> "I've learnt more mathematics on my cart, than at school. In school, *masterji* makes you solve two-three problems in the whole day, while (you work) on the cart, you have one customer after another and thus get too many problems (to solve)."

For him, school does not have the monopoly over mathematics learning. He does not seem to consider his street selling activity 'mathematically inferior', rather the continuity and meaningful linkages established between every day and school mathematics helps him make sense of the decontextualised problems often posed in the classroom. As he further added:

> "For instance, if *masterji* gives the problem 200-165, I think 'in my head' that it means that a customer has bought things worth 165 from me and has given me a note of 200 rupees. Now how much change I need to tender him."

Even though opportunities to bridge in and out of school knowledge are very limited, he proudly cited his ability to bond and bridge the multiple sets of experiences and knowledge gained in and out of school settings. Thus, as Nasir and Royston (2013) note that while attending to the power dynamics, it becomes pertinent

to take cognisance of the ways in which individuals use their agency to act and resist being pushed to the peripheries. He continually attempts at defying the negative image others had of him as one belonging to the working class minority community and as a street vendor.

Foregrounding the Foregrounds

Students' intention for learning and the meaning they attribute to learning experiences need to be examined not only with reference to their backgrounds (who they are), but also with their 'foregrounds' (who they can become) (Skovsmose, et al., 2008). The notion of foreground, taking into consideration one's hopes and aspirations and how one relates mathematics learning to future possibilities could be helpful in understanding one's engagement or disengagement in learning processes. Sharing his hopes for the future, Abid told us:

> "I have to take admission in a good college. I will be an Engineer. And mathematics is a must for that."

Even though he seems to believe in an instrumental relationship between learning mathematics and future opportunities, these dreams motivate him to continue to learn mathematics with much interest and involvement. On the other hand, Shahid's dreams for the future seem to be broken or shattered. He seems to have a 'ruined foreground' (Skovsmose, 2005) owing to negative interactions with peers and teachers, and being a 'low status' student in the classroom. According to Skovsmose (2005), a ruined foreground can be viewed as a learning obstacle which is likely to prevent one from putting in more effort and to find any motivation so as to engage with the proposed tasks. This could eventually turn into low achievement and confirm one's exclusion.

Teachers' Knowledge, Beliefs and Expectations

The literature based on the conceptualisation of Mathematical Knowledge in Teaching (MKT) has over the years moved beyond the content-based categories of teacher knowledge and brings to fore the contextual shaping of teacher knowledge (Rowland and Ruthven, 2011). The reconceptualisation of the construct of MKT also attempts at foregrounding the role of teachers' beliefs about nature, learning and learners of mathematics through the multiple ways in which mathematical situations are dealt in classrooms.

The section, thus, attempts at understanding teaching practice as situated in classroom settings, and in the process creating a dialogic space wherein teachers could bring forth the negotiations and decisions made and challenges faced. This has been discussed here through some specific classroom instances, conversations with teachers and through studying teacher-textbook relationships.

Four primary teachers from the Municipal Corporation schools of Delhi, wherein both Shahid and Abid were enrolled and participated in the study. All the teachers had a degree in general education and Diploma in Elementary Teacher Education. Each of them had around 5–7 years of experience of teaching primary school children. The textbooks followed in the classrooms were based on NCF 2005. The following interaction with teachers highlights what is considered as important by them in mathematics and their beliefs about learners from socially disadvantaged backgrounds.

The stereotypical views that teachers are found to hold about the students belonging to disadvantaged backgrounds often result in lowered expectations from them. These students are thus exposed to a restricted curriculum in terms of scope and pedagogy — a curriculum relatively inferior to the one made available to other less-disadvantaged ones (Zevenbergen, 2003; Jorgensen and Niesche, 2008). This was also evident in one of the teachers' comment:

> "It is enough if they (children) do some addition and subtraction well. They work very slowly. It seems that they neither listen well nor understand well. It is fine even if the others (students) do ten problems correctly and these children do four to five problems correctly. It is useless to expect more than this (from them)."

Students in these schools are largely taught through rote and skill with a major focus on few basic skills and operations (Jorgensen and Niesche, 2008). Thus, the pedagogic practices reflecting the beliefs within a deficit framework reinforce the status quo and in the process, social differences get manifested as educational differences (Zevenbergen, 2003).

Teacher — Textbook Relationship

Even though the textbooks referred to in these classrooms address multiplicity of approaches rooted in children's everyday experiences and include thematic units and chapters based on real-life authentic contexts, these changes do not necessarily translate into the pedagogy and assessment patterns. These largely remain conventional, devoid of meaning and context. As Gay (2009) puts it, "the best curricula and instructional materials are only as good as the teachers who implement them". Teachers in our schools seem to be ill-prepared for actualising the changes proposed by the National Curriculum Framework, 2005.

The problems in the classrooms were solved without taking into cognizance of the child's context. It was feared by the teachers that the students would be lost in the story situations presented in textbooks and would not focus on carrying out the procedures correctly. As one of the teachers pointed out:

> "If one keeps telling stories in maths class, where is the time for maths?"

Besides incorporating real life authentic contexts, the revised textbooks move beyond the curriculum by integrating social justice concerns in teaching-learning of mathematics. This in turn poses greater challenges for teachers. The teachers were usually found following a selective pedagogy by omitting the conflicts arising from the situations presented in textbooks. Similar observations have been reported earlier in mathematics education research in Indian classrooms. For instance, Takker (2017) based on her study at a school in Mumbai, noted that discussions on these contexts and conflicts are avoided as they are considered as irrelevant to learning mathematics, or shrugged off as out-of-school knowledge. Teachers, at times, articulated difficulties in striking a balance between social and mathematical aspects underlying some situations.

The following comment offered by a teacher illustrates the incapacity for dealing with differences students bring with them:

> "If we start learning and teaching the (diverse) ways all pupils employ in solving problems, how will the syllabus be covered? This will only make the children more confused. I don't see any problem in the methods we follow in schools to teach. We also learnt in this way only."

Differences and diversity that these students bring are seen as a 'problem' rather than as potentially important learning resources. Teachers are found to be ill-prepared to capitalise on different ways of doing mathematics, and are stuck with the notion of teaching as they were taught.

Conclusion

The disjunction between school mathematics and mathematics rooted in everyday life experiences often acts as a disadvantage for some students more than others and hinder their opportunities for learning mathematics. This necessitates a fundamental and democratic reconceptualisation of the nature of mathematics and the approaches used in the teaching-learning of the subject. The 'new' vision must seek to "connect students' experiences in the mathematics classroom to their experiences in everyday life as well as to the political and social issues relevant to their lives… This involves a complex process of validating students' current identity and sense of themselves while expanding their sense of understanding to include new kinds of social, political, and mathematical activity" (Nasir, Hand and Taylor, 2008).

The study, rooted in a socio-political framework, reveals that students' non-participation and failure in mathematics cannot be fully understood in terms of cognitive deficits alone and need to incorporate the interplay of socio-cultural contexts, economic and emotional factors. Going beyond classroom and

school related factors, it is crucial to further take into account how macro-social structures influence micro-classroom contexts, practices and interactions. What comes to be valued in the classrooms need to be examined in the wider context of social inequalities.

Also, an urgent need is felt to create dialogic reflective spaces such as "justice communities" (Bullock, 2017) in order to push our agenda of addressing equity and social justice issues in mathematics education.

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Mentoring Teachers for English Language Acquisition through LSRW

Insights from Literature Review

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Abstract

The English language enjoys the status of the Lingua Franca, the international language, the language of technology, which clearly indicates its importance in every sphere all over the world. As 'LSRW' skills, i.e., 'Listening, Speaking, Reading and Writing', are one of the basic skills for English language acquisition, it is essential for learners belonging to various disciplines to master them for achieving success in the 21st century. NEP 2020 emphasises the enhancement of soft skills of learners and communication is one of them, hence LSRW skills are important. Even in crises like the COVID-19 pandemic, the education system revived its status with the help of digital technologies, innovative pedagogical interventions, modern digital methods and approaches of teaching and learning LSRW skills worked for effective English Language acquisition. This paper recognises the role and importance of teacher quality to address the enhancement of LSRW skills. It equally explores the use of mentoring as a professional development strategy in future English teachers and in the continuous professional development of currently practising teachers through a literature review of researches published

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between 2018–2022 in peer review journals. The findings are reported in four major themes: understanding LSRW, LSRW needs of learners, teachers' competency for transacting LSRW and mentoring for teachers' professional development.

Introduction

Our growth and development depend on how we are communicating our ideas and thoughts with one another, across institutions, workplaces and globally (Arputhamalar, 2019). In the age of globalisation, due to innovations in science and technology, the knowledge domains have seen unprecedented growth (Praveen, 2022). In this scenario, English as a communicative language has dominated across nations (Sreerekha, 2018).

Worldwide, English has been accepted and learnt as a second language (ESL) (Menaka and Sankar, 2019) or as a foreign (EFL), language or as a native language (ENL) (Khan and Mansoor, 2020). The English language is sought after in current workplaces in different organisations and companies (Sreerekha, 2018). It has been the medium for personal and professional growth, for social interactions, relationship building, learning and many more (Khan and Mansoor, 2020). In short, it is the ticket to one's growth and prosperity which we cannot ignore. From K-12 (Albahrey, 2021) to higher education, efforts to enhance the English language acquisition through basic approaches like L (Listening), S (Speaking), R (Reading) and W (Writing) has been critical as an instructional intervention by educators (Aravind and Rajasekaran, 2022).

The role of educators takes the centre stage in the acquisition of essential LSRW skills. Besides, learning English concepts at various levels, it is significant to pay attention to the development of LSRW skills. In this context, teachers paying attention to tracking the progression of LSRW skills of their learners bring meaningful differences (Mudiraj, 2022). The need to have quality teachers have been highlighted in the NEP 2020 and its role to enhance the LSRW skills cannot be ignored. NEP 2020 equally emphasise the need to support and invest in teachers, to be able to enhance the learning outcomes and experiences of their learners.

Existing literature on mentoring has contributed worldwide to the professional development of educators, right from the initial teacher education programme, through their induction (Aarts et al., 2020; Weimer, 2021) and their continuous professional development as practising teachers (Moorhouse and Harfitt, 2021). Considering, the existing LSRW skill divide between urban and rural learners and between tribal and rural learners and between genders needs to be seriously considered. The scope of preparing the future teachers during their university theory course and their practical experiences through the school internship needs to be closely

looked into (Stanulis et al., 2019). Alongside, the existing practising teachers need to engage in their continuous professional development in enhancing their learners' skill development in terms of LSRW needs to be on priority.

Based on current literature reviews, the researchers are guided by the following research questions.

i. What are the skills required for effective English language acquisition?
ii. What are the teaching methods, techniques and pedagogy for teaching and learning LSRW skills?
iii. During the COVID-19 crisis, how teachers have addressed the LSRW skill acquisition?
iv. What is the scope of mentoring English teachers (pre-service and practising) to upgrade their competencies in enhancing the LSRW skills of their learners?

Understanding Listening, Speaking, Reading and Writing (LSRW) Skills

The current paper is based on literature reviews of research articles published in peer-reviewed journals and books between 2018-2022. These articles are only related to English language skills, emphasising more on the Indian context. In order to understand the English Language acquisition through LSRW skills, the keywords used to search the relevant articles in Google Scholar were English Language acquisition, LSRW Skill, Mentoring, India, 2018, and 2022. For the analysis of the contents of the articles considered in this study, different coding schemes were used. Different dimensions of the coding consist of General Information, English Language Acquisition, English Language Communication, Learning English Language as, Framework for Learning LSRW Skills, Instructional Strategies and Learning Material.

Table 1
Coding Scheme for Analysis

Coding Scheme	Dimensions
General Information	Under this scheme information like year of publication, countries, and research population were collected.
English Language Acquisition	In this review, English Language Acquisition at pre-school, K-12, and higher education were observed.
English Language Communication	English Language Communication is being broadly divided into the following categories: 1. Basic Communication Skills 2. Advanced Communication Skills

Learning English Language as	• ESL (English as Second Language) • EFL (English as Foreign Language)
Framework for learning LSRW Skills	Reviewed articles included different frameworks like: • TELL and CALL, MI, IOT, BWM, ICLA and multidisciplinary pedagogical approaches, narrative approach using different tools used both in offline and online mode.
Instructional Strategies	Articles reviewed instructional strategies: • Discourse based strategies • Age-appropriate, student-centric, contextually relevant activities • Directed thinking activity
Learning Material	• Digital interactive material • Language games • Mass media (includes newspapers, books, internet, radio, magazines, movies, and television)

The findings are reported thematically. In English Language Teaching (ELT) Listening, Speaking, Reading and Writing (LSRW), have a prominent place with regard to communication skills. The key requirement for assimilating these skills, is to provide applicable pedagogy for effective LSRW skills in ELT. LSRW skills pedagogy need to be standardised at the universal level, as it will help learners to assess their level and will also help them to decide on their future learning plan. Globally various contemporary multidisciplinary pedagogical approaches are used for the integration of basic language LSRW skills in the English classrooms.

Communication can be divided into two categories. First is basic communication which includes the four language skills, viz listening, speaking, reading and writing (LSRW). Second, comes advanced communication skills (language functions) which consist of discussing, opinions and views, sharing ideas, negotiating, persuading, agreeing and/or disagreeing with others' views (Pasupathi, 2021). One of the crucial components of social skills is procurement of language skills through which a proper education system can be gained (Sylvia, 2019). Thus, the education system should provide the learners minimum levels of mastery on Listening, Speaking, Reading and Writing (LSRW) in company with their social application in general and creative purposes (Mudiraj, 2022).

Effective LSRW skills lead to an attractive personality and also installs a foundation of trust between leaders and team members through healthy communication (Sylvia, 2019). The concept of LSRW is reformulated here as follows:

1. Listening triggers an individual's learning process.
2. Speaking, even on the fundamental level, is the step for correcting mistakes and incorporating the received language.
3. Reading strengthens the standards of language and improves it.
4. Writing is the transcendent channel for nailing down and personalising the levels of language obtained.

Out of all the four skills (LSRW), listening is the hardest skill for fostering second language acquisition, also considered as the core skill for speaking and requires continuous practice, hard work and attention for becoming a professional in listening skills. They further suggested that flexibility should be provided regarding curriculum coverage and examination score, integration of various LSRW activities along with suitable digital material and technology can make the learning experience for the learners.

Language is an exceptional capability granted to human beings. The sub-skills of language comprise LSRW. In the academic sphere, specifically at the primary level (mother tongue as medium of instruction), listening is considered as the most ignored skill despite its first place in LSRW skills (Kannan, 2019).

Speaking skill is key in one's personal and professional life for social interaction and in other situation-based needs. Hearing someone speak, subconsciously the listener makes perceptions and understanding about the speaker's personality, their attitude and other characteristics. This further guides the listener to take the next appropriate move.

For learning and understanding authentic materials, reading plays a key role amidst the LSRW skills (Albahrey, 2021). In an Indonesian study conducted with 30, Grade VIII students, using DRTA (Directed Reading Thinking Activity), the authors reported this technique having a significant impact on improving reading comprehension.

During the pandemic time, when intensive English writing courses were conducted for the first time on an online platform, 42 participants have responded positively both for new platform usage by the teacher as well as for writing skill outcomes (Sheerah et al., 2022). A reading activity like poetry has shown results in influencing the writing skills through increased vocabulary, sentence formation, syntax, fluency and creative skills (Deepa and Ilankumaran, 2018).

Need and Importance of Listening, Speaking, Reading and Writing (LSRW) Skill

The current literature on LSRW has been explored at all levels of education. Indian students come from diverse geographical and socio-economic backgrounds as a result of which the teacher must understand their diverse needs, styles of learning, etc. By using English mobile application (EMA), e-learning platforms, ICT, various modern approaches, English language Teacher's Interaction Forum (ELTIF), teachers can cater to the learner's needs (Albahrey, 2021).

At the higher education level, various LSRW strategies have helped to improvise the LSRW skills, for example, use of technology, task-based assignment (firm editing), speaking based activities, language games, using grammar and poetry, narration and Neuro-Linguistic Programming (NLP) (Siddiqui, 2020).

Instructional Strategies for LSRW Skills

The researcher has come across the following instructional strategies for effective teaching and learning of LSRW skills:

Digital Interactive Tools for LSRW skills

Digital interaction tools are growing in popularity especially in education because they enhance learning through interaction which is one of the effective ways of imparting LSRW skills among learners. Digital interactive tools help learners develop both their lateral thinking and language skills (Pasupathi, 2021).

LSRW Skills Development through English Literature

English literature could be considered one of the finest teaching strategies that might encourage students to actively participate and meet language learning objectives. By studying English literature, one can increase their vocabulary with the Internet of Things (IoT) (Aravind and Rajasekaran, 2022). In ELT classrooms, and Literature serves as a vital tool for enhancing LSRW skills (Rao, 2018). When English as a second language (ESL) students feel comfortable with their learning task/ activity as their vocabulary level rises. It is the responsibility of the teachers to help students expand their vocabulary, since understanding will increase once they have the necessary language to express their ideas. IoT activities help people in learning a variety of knowledge and facts about a specific word. Thus, the curriculum should include task-based exercises and activities for evaluation.

Language Games for LSRW Skills

Teaching and learning English as a second language can be effectively accomplished through playing language games (Sankar, 2019).

LSRW Skills through Grammar Rules

The development of LSRW skills through grammatical rules improves communication skills. This lack of skill is observed in the majority of people around the world which could not be filled directly by using traditional methods. The only method to reach a large audience is through ODL'S dissemination of high-quality instruction. According to Kaliappan and Vivekaanandhan (2021), if the right material and methods are used, teaching grammar may be a fun exercise that blends several language skills. Grammar instruction should focus more on improving conversational skills than on teaching grammar rules.

M-learning for LSRW skills

M-learning is an effective method to improve LSRW skills using mobile devices (Venugopal et al., 2020). The idea of self-study is crucial while studying a second language like English. It is also one of the best ways to overcome geographical and temporal constraints to language learning.

Digital news platforms

The development of graduate students' English language skills depends heavily on digital news platforms (Arputhamalar, 2019). It has developed into a crucial method for several corporate operations all over the planet. Activity based on mass media allows students to enhance their LSRW skills, increase their desire to express themselves in English and also demonstrate their literary creativity (Ramani, 2018).

ICT for LSRW skills

The use of ICT in English as a foreign Language (EFL) can work as a wonder for inculcating LSRW skills among learners. The use of technology in the foreign language (FL) classroom increases student engagement, fosters intentional and meaningful interactions, and promotes passive and active learning (Vijayakumar, 2022). Technology-based virtual English language instruction improves both individual and group learning as well as classroom management. The traditional approach to teaching and learning English language skills are ineffective, boring, uninspiring and lacking innovation. ICT has a lot to offer teachers and students who want to expand their vocabulary and enhance their English language skills.

Direct Reading Thinking Activity (DRTA)

Teaching reading comprehension to students using the Direct Reading Thinking Activity (DRTA) technique is beneficial. Tamba (2022) in his study, stressed the significant effect of using the DRTA technique in teaching reading comprehension to learners.

Constructivist curriculum for imparting LSRW skills

The effectiveness of English language instruction is carried out using a constructivist curriculum that is process-oriented, learner-centred and activity-based, with a strong emphasis on "Discourse-based Pedagogy" relying on student involvement and desire to use the language (Praveen, 2022).

Development of LSRW skills through teaching poetry

Students' language skills can be improved through teaching poetry (Deepa and Ilankumaran, 2018). Poetry aids in language learning and cultural comprehension. The readers enjoy it because it provides them with fresh role models to imitate. Reading poetry helps learners develop their fluency, sentence structure, vocabulary, syntax and creative abilities.

Activity-based Teaching and Learning for LSRW skills

It is the need and duty of teachers to look into ways to make reading passages more activity-based for developing various skills of communication, grammar, vocabulary, and subskills of reading among the learners (Kalpana et al., 2018).

Narrative approach using digital short stories

The narrative approach using digital short stories has improved the LSRS skills of the learners (Vedadri and Rengaraj, 2020). It helps the students to master grammar without the use of tedious exercises of grammar. In addition, it helps one become fluent in expressions easily, exactly like when someone masters their native dialects which improves LSRW skills.

English publications and books

Srivastava (2018) in his study reveals that most English learners fear to speaking publicly in English and struggle with choice of words when writing in English. He further emphasised that greater encouragement is needed to read English publications and books to overcome those problems.

Benchmarking Checklist to evaluate E-apps for LSRW Skills

Best-Worst Method (BWM) and The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS)

Multi-criteria decision-making (MCDM) methods like BWM and TOPSIS could be used for effective evaluation of E-apps used for teaching and learning LSRW skills. Pasupathi (2021) in his study for young English learners suggested an evaluation and benchmarking decision matrix (DM) which is based on multicriteria decision-making (MCDM). The study reveals that for criterion weighting, BWM is appropriate and for benchmarking and ranking E-apps, TOPSIS is appropriate.

Decision Matrix

Decision matrix for analysing and evaluating students' English mobile applications (EMAs) (Zhao et al., 2021) will help the teacher in selecting the best and most effective mobile application out of various mobile applications available for teaching and learning LSRW skills.

Framework for LSRW Skills

Multiple Intelligence Theory

Gardner's Multiple Intelligence (MI) theory could be very helpful in enhancing online teaching and learning (Arokiaraj and Eusobia, 2022). By highlighting the individual differences of students throughout the online learning phase, this pedagogical offer will energise L2 students and teachers to create an effective web.

Computer-assisted Language Learning

Priya and Prasantha (2021) in their study outlined that Computer-assisted language learning (CALL) will act as a foundational framework for teachers who are recently required to enrol in online learning courses. CALL provides students access to a variety of learning opportunities through multimedia systems. The use of engaging tactics like animation helps the students comprehend ideas effectively.

Integrated Collaborative Learning Approach (ICLA)

As a multidisciplinary method, Khan and Mansoor (2020) in their study combined two approaches (ITA and CLA) to create the Integrated Collaborative Learning Approach (ICLA). Since both these approaches are extensively used in various disciplines around the globe thus, they are not restricted to teaching and learning of basic language skills (LSRW) but can be effectively used in various disciplines outside of ESL/ EFL classrooms.

Teachers' Competency for Transacting LSRW Skills

Having understood the importance and need for the betterment of LSRW skills of learners, the role of teachers and their competencies, become critical to understand (Menaka and Sankar, 2019). This has implications in the professional development of teachers (Khan and Mansoor, 2020) right from the teacher preparation stage, induction and in their continuous professional development as teachers. It also applies to educators at the university level, dealing with students' LSRW skills (Kannan, 2019; Srivastava, 2018).

Research findings have indicated, though teaching and learning English language concepts are important, greater emphasis has been put on developing the LSRW skills (Mudiraj, 2022). Multiple researchers across the world have experimented with various approaches that have shown encouraging results (Sheerah et al., 2022). Researchers equally have documented the traditional English language teaching methods as

unmotivated, boring and ineffective to address the LSRW skills (Sheerah et al., 2022). On the other hand, modern approaches have shown evidence of tremendous enhancement of LSRW skills by integrating the ICT (Information and Communication Technology) tools (Menaka and Sankar, 2019). Now, even activities based on NLP (Neuro-Linguistic Programme) are used in the classroom to get the desired results (Siddiqui, 2020).

Teachers During COVID 19 Situation

While dealing with students, it is important for the teacher to base their pedagogical interventions which are activity-based, learner-centered, process-oriented curriculum and guided by the constructivist paradigm (Praveen, 2022). The COVID 19 Pandemic situation brought a challenge in the teaching-learning processes (Vijayakumar, 2022). During this time, schools were shut down. However, teachers and other stakeholders kept the learning happening to their learners (Arokiaraj and Eusobia, 2022; Jayakumar et al., 2022).

This stressful situation brought an alternative medium to approach teaching-learning. Teachers focussed on developing their digital competencies to manoeuvre in the digital platforms and learnt to use the digital educational application to cater to the learning needs of their students. Research is now available to even predict the best and worst mobile applications used for LSRW skill enhancement where Montessori application being the best and FunWithFlupe being the worst application (Albahrey, 2021). Various other studies exploring the usage, methods and effectivity in the online medium are now available like LSRW evaluation methods and mobile learning applications (Vedadri and Rengaraj, 2020).

Mentoring for Teacher's Professional Development

Looking into the host of skills and competency demands on teachers, both at the face-to-face level and on a digital platform, the support and professional development need is undeniable. Worldwide, mentoring has been utilised as a professional development strategy in different disciplines like medical (Farlow et al., 2022), business (Owhoeke and Kemmer, 2021), industries (Bae et al., 2022). Mentoring has been growingly used in educational settings to support both learners at various levels and educator fraternities. Especially in the context of education, mentoring has been maximised in teacher preparation programmes (Gurl, 2019), where the university course focusses on the theoretical aspect of teaching and learning and the school internship programme of 20 weeks in India (Tripathi, 2020), emphasises in gaining the professional experiences to gain confidence for being school ready, to teach in real classrooms (Jita and

Munje, 2021). In this situation, the pre-service teacher act as a mentee and the cooperating teacher in the placement school act as a mentor (Karathanos-Aguilar and Ervin-Kassab, 2022). This professional collaboration and interaction mutually benefit both the mentor and the mentee. Mentoring in its simplest way can be understood as what a mentor does (Lynn and Nguyen, 2020). Therefore, the mentor's perspective, belief, methods used in operationalising the mentoring process hold key, to professionally equipping the teacher in making (Orland-Barak and Wang, 2020).

Mentoring has been defined in multiple ways by different researchers. Till now, there has been no consensus on the agreed definition of mentoring, since mentoring has been practised in varied contexts, cultures (Pattisson, 2020) and levels. However, what is commonly understood from the existing literature on mentoring is, a mentor is someone who is experienced with professional knowledge and expertise and a mentee is someone, who is seeking to learn the professional knowledge and practices from the experienced mentor (Lunsmann et al., 2019). Therefore, mentoring can be explored to see how the English pre-service teachers are professionally equipped to address the learning needs of the teacher candidate to teach LSRW skills and as teachers to improve the LSRW skills of their learners in the classroom situation (Flores, 2019).

Studies have also evidenced the use of mentoring of practising teachers in their continuous professional development, through peer-mentoring, group mentoring and using the School-Based Mentoring Program (SBMP) dealing with pre-service teachers (Gallchóir et al., 2019). In India, mentoring has been integrated in NEP 2020 to support both students and teachers. The draft bluebook on National Mentoring Mission (NMM) by National Council for Teacher Education (2021) is in sync with the NEP 2020, is currently open for public comments for its finalisation. The NMM focuses to institutionalise mentoring as guided by NEP 2020. During the COVID-19 pandemic times, mentoring too went digital and e-mentoring became reality very prominently (Erdoğan et al., 2022)

Conclusion

The current literature on English language acquisition through LSRW skills between the time period of 2018–2022, emphasise the need and relevance of focusing on the development of learner's skills, since this is the key to one's future growth and prosperity. For effective communication, learning to communicate in English is important due to its global appeal, occupational demands and greater scope for personal and professional development. Basic skills like LSRW are the key to strengthening the English

communicative competencies. The role and quality of English language teachers are crucial to achieving better LSRW skill enhancement of learners at various levels right from K-12 to higher education. Teachers' resilience and willingness to respond to a crisis on demand brought by the COVID-19 pandemic is encouraging since schools were closed but learning continued to happen in an alternative digital platform.

Looking at the limitations of the traditional teaching and learning methods/approaches and the challenges brought by the COVID 19 pandemic situation has accelerated the process of integrating technology and digital tools to address the learning needs of the students. Various studies focussing the effective strategies to increase the LSRW skills have been identified. At this junction what remains relevant is, how the teacher carves out their role to increase the LSRW skills of students in face-to-face mode and in the digital medium also. Irrespective of the medium used by the teachers, what remains the key aspect is the pedagogical interventions, teaching and methods approach, strategies used across the schools to higher education level.

The digital integration and use of ICT in enhancing the four LSRW skills is massive and growing. Teachers' ease and competencies to make better decisions, to choose the right digital educational applications, engaging students for better LRSW skills both offline and online mode needs to take priority by all educational stakeholders. Teachers were quick to learn and upgrade, by using digital tools and integrating technology in their teaching-learning processes and especially catering to the development of LSRW skills through different applications.

Mentoring worldwide has been used to maximise the potential of teachers right from the teacher preparatory stage to making learning happen to students in classrooms. Mentoring has been explored to professional support in the preparation of future teachers alongside contributing to the continuous professional development of existing teachers. During the pandemic times, mentoring also became digital. There is huge scope to harness the potential of using mentoring as a professional development strategy of teachers in India. India's National Education Policy 2020 and the draft National Mentoring Mission (NMM) are also aligned to provided guidelines towards the learning needs and directions to all stakeholders for a better and enhanced learnings experience of the students. Through this policy initiative, commitment to address the need to better prepare the current learners, equipped with the 21st century skills are spelt out.

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Protection and Reconstruction of Schooling in Conflict Zones
Reflections from the Field

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Abstract

The paper outlines the remedial measures, protective and reconstructive steps to protect schooling in conflict zones that are based on the information collected through the questionnaires, interviews and focus group discussion with the respondents (n=105) in Jammu and Kashmir. The union territory of Jammu and Kashmir has been hit by unrest for nearly three decades, and this situation of unrest prevailing in the region has impacted the education sector miserably. The present study is based on a descriptive survey method, intended to understand the broad trends of experiences, and factors influencing the experiences of various stakeholders. The paper is mostly based on the respondents' perceptions of the actions that must be performed to maintain the operation of schools as well as to improve the education system, which appears to be mistreated by conditions and problems in the way of protecting education. The type of protective measures discussed here are physical protection, community involvement, psychological protection and the role of government and NGOs that attempts to lessen the effect of armed conflict on schooling. Ensuring access to education need to be the priority and primary concern of the authorities as well as different stakeholders in education of the conflict hit zones.

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Introduction

The field of conflict and education has aroused interest in research studies, policy makers and practitioners. Education and conflict are mostly involved in two facets theoretically, i.e., effects of conflict situations on educational processes and, the ways through which education can mitigate conflict (Smith, 2005). Education can be a tool for reproduction of culture (Bourdeau, 1984), and it may also be a dynamic form of active political participation that opposes social inequalities existing in the societies.

In the case of Nepal, Moist took advantage of this aspect to channelise youngsters in support of their cause, with schools providing safe access to youngsters who might be employed for military purposes. Schools have also become a target for armed groups who abused students and teachers frequently (Phareli, 2019). Children are traumatised in conflict zones as they are very tender hearted, they develop a fear of abduction and physical torture. Vulnerable children are enroled in the state sponsored government schools in South Asia and they face difficulties not only in getting access but also in terms of becoming victims of poor quality of teaching and unacceptable levels of learning (Rai, 2018). Conflict creates further problems for the already vulnerable and make it difficult for them to access schools, and in case access is available they remain in the atmosphere of uncertainty. The geographical condition of Jammu and Kashmir impedes the development of basic infrastructure, which is exacerbated by armed conflict, which has taken a high toll on life and public property while also throwing normal life out of gear. The conflict in Kashmir has become increasingly violent in the valley since 1989. The conflict had far-reaching consequences. Apart from economic devastation, it caused social disorganisation, educational difficulties, psychological distress, and developmental issues (Hassan A., 2012). Putting emphasis on children's education and stating that both before and after an armed conflict, education may promote children's well-being, Winthrop and Krick (2008) noted that education can influence children's well-being by fostering a sense of normalcy through consistent attendance at school, opportunities for social interaction with peers, and a supportive atmosphere. The effects of the conflict on education are a major concern for global educational advancements. On the other hand, there is growing recognition that education can help reduce conflict. To be a citizen and to engage in professional activities, one must have access to education. It plays a crucial part in protecting children from abuse. During times of conflict or unrest, having access to safe schools can give students not only an education, but also physical and psychological protection. It might provide youngsters a sense of normalcy to be able to go to school

and see friends and trusted teachers on a regular basis. Schools can also be used to give aid, such as feeding and vaccination programmes, which help to reduce the humanitarian effects of conflict (Sheppard, 2019). In any circumstances, education is a fundamental entitlement for all children irrespective of differences. Children are denied this right at the times of emergency situations frequently and as a result, they are denied the opportunity to develop and gain the skills, information, and competencies which are necessary to overcome the challenging situations faced by them (Aguilar and Retamal, 2009). For every child, education is an important part of growing up. Safe and secure environment for children to learn and play is critical to their survival and well-being, and education is one of the hopes for a better future. But the children in the conflict zones do not get a chance to go to school and they miss out the opportunities to enjoy the benefits that education brings in.

Why Education is a Priority in Conflict Zones

There are several reasons to prioritise education during an armed conflict. Presently, education is recognised as a human right that must be fulfilled even in dangerous and impoverished situations (Save the Children, 2006). Therefore, any child residing in a conflict zone has the legal right to education and is required to have access to it. Even under the most challenging conditions, education should always be maintained as a right and should not be disregarded when there is animosity. This is not an ideological statement; rather, it suggests that if it is possible to maintain education in the midst of conflict, it might offer a crucial mechanism for the registration of young children and their protection from abuse. The education system is critical in both teaching people about their rights and establishing respect for the rights of others. Numerous resolutions emphasise the importance of education as both a right and a method of achieving other rights. The Convention on the Rights of the Child, adopted by the United Nations General Assembly in 1989, has become one of the most helpful tools for assessing and advocating for the needs of children in general, particularly those of children and young people in conflict-affected countries (Todres, 1998). Many researchers and academicians have recognised that education is critical to progress. Firstly, education is considered to be an important tool for human development, empowerment, and poverty eradication, and it gives youngsters hope for a brighter future. Second, it can play an important role in re-establishing a normal routine and peer networks for children whose lives have been disturbed, promoting psychological and social well-being, and cognitive development. Third, children rarely have a second chance at education; when the opportunity

to educate is lost due to conflict, it is not just a loss of individuals, but also a loss of social cultural capital and the society's ability to recover from the conflict. (Burlacu, 2012; Boyden J., 2002). Given the importance of education in a child's future and well-being, we should make every effort to protect and sustain education amid armed conflict. The global community has also pledged to meet the needs of education systems affected by conflict, natural disasters, and instabilities, and to conduct educational programmes in ways that promote mutual understanding, peace, and tolerance, as well as to help prevent violence and conflict, in order to achieve the goal of *education for all*. Protecting the school environment must be a top priority because it promotes children's well-being and establishes broader protection (Dupuy, 2008). Education is considered a positive force in social life, and key to increasing the quality of life and it is an important instrument to overcome violence and improve respect for human rights. Thus, all the children must be ensured right to quality education and safe learning environment. Schooling can shape children's well-being by restoring normalcy to regular school attendance, social opportunities with peers and nurturing environment with access to counsellors are likely to have positive influence on children. Schools and classrooms can provide the space in which people of different origin can be brought together and taught how to live and work together peacefully (Dupuy, 2008; Justino, 2016).

Research Objectives and Research Questions

The study dealt with the broad objectives that revolved around the key terms like armed conflict, school education and NGOs which are stated as: (1) To study the problems encountered by the educational stakeholders during conflict situations in Kashmir. (2) To understand the stakeholders perspectives regarding protection of school education during conflict situations. (3) To study the role of NGOs in protecting and managing school education in Kashmir. The research questions which were dealt with by this study in order to get the relevant information from the stakeholders were; what impact does armed conflict have on school education?; what are the challenges faced by the educational stakeholders due to armed conflict?; and what are the stakeholders perspectives on protection of schooling in conflict situations and how do NGOs play their role of mediating education amidst conflict?

Methodological Approach to Research

The study was based on a descriptive survey method intended to understand the broad trends of experiences, factors influencing the

experiences of various respondents in the research area. The study is descriptive in nature which revolves around the collection of data and its analysis based on the experiences in the 'field' (Creswell, 1999). The study was based on information collected through the research tools such as questionnaires, interviews and Focus Group Discussions (FGDs) in the research area from the actual experience of various stakeholders. Before going to the field secondary data was collected and review of related literature was done which helped to outline major issues regarding study that were used in developing tools for the study later on. A total of 70 questionnaires (50 students and 20 teachers) containing both open-ended and closed-ended items were distributed to the target groups in order to assess the impact of armed conflict on school education and to better understand the protective measures in place to keep education going during times of conflict. Similarly, interview schedules were developed for teachers and parents, which revealed the diversity of view points on the study's concerns and aided in the collection of information from the respondents. Over the course of more than a month, 10 interviews with parents and 15 with school teachers were done. The majority of the interviews were conducted in local language i.e. *Kashmiri,* and they were afterwards transcribed and translated into English. A Focus Group Discussion (FGD) was conducted with students to get deeper understanding of the concerned issues. The study was carried out in Anantnag, a district in the south kashmir region in the union territory of Jammu and Kashmir. Purposive sampling was used to identify respondents. For conducting fieldwork, Government Higher Secondary Schools (GHSS) located in both rural and urban areas were considered.

Analysis of Data

Protection of School Education

Stakeholders should try to maintain and sustain education during armed conflict, as it is one of the most crucial determinants for children's future and well-being. In order to achieve the goal of *education for all*, the international community pledged at the World Education Forum Dakar (UNESCO, 2000) to meet the needs of educational standards affected by crisis, natural calamities, and instabilities, and to conduct educational programmes in ways that promote mutual understanding, peace, and tolerance, as well as help to prevent violence and conflict. So far as the school education is concerned which is very crucial for deciding future aspirations of children, how this important stage of education is being affected in conflict areas of Jammu and Kashmir is the main concern for different stakeholders. To

protect schooling from armed conflict, opinions of different stakeholders are given below.

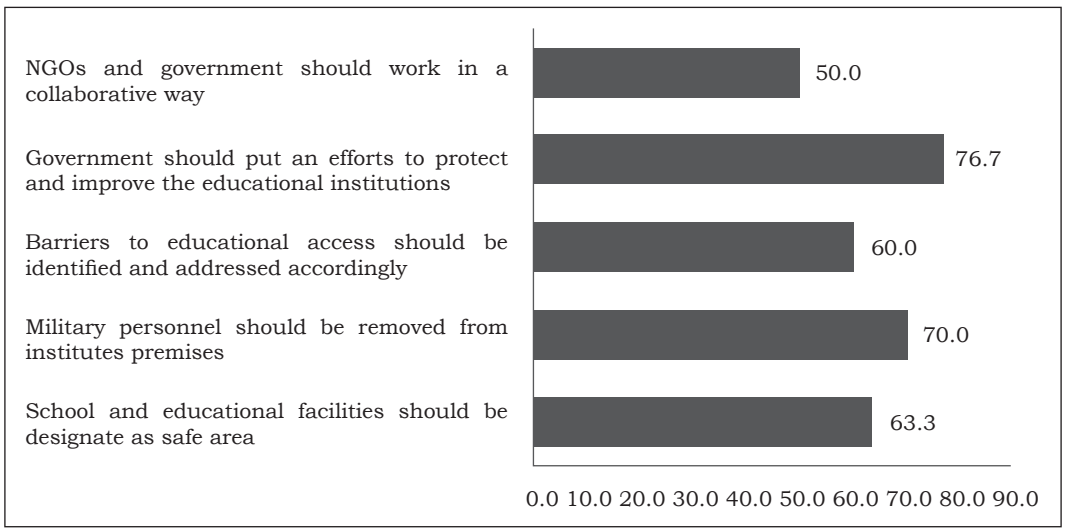

Fig. 1.1: Teachers' Perception towards Protecting Education
Source: Fieldwork, 2019

As a result of humanitarian events such as wars, natural disasters, and health crises, millions of children throughout the world skip school. Education may save a children's life, and not going to school in an emergency or during a conflict situations can put them at danger of child labour, early marriage, exploitation, and anti-social behaviour. It is evident from figure 1.1 that respondents have the convergence of opinion that government should put an efforts to protect and improve the educational institutions (76.7 %) in the valley and military personnel should not be given permission to enter school premises and the one who have occupied school surroundings should be removed. In the same manner, 60 per cent of the respondents were of the opinion that obstacles should be identified and addressed accordingly, and 63.30 per cent of respondents are of the opinion that schools and educational institutions must be established as safe areas. In this regard one of the teacher respondent said that,

> "*Whatever the circumstances are, the military forces should not be allowed to enter the school premises*" (2019)

Besides a number of respondents felt the need that NGOs and government should work in a collaborative way to protect schooling in Kashmir. Frequently, the influence of conflict on schooling is disregarded. In such circumstances, education can be a lasting instrument for creating post-conflict peace and restoring

normalcy to the region. It is also a technique of imparting hope and positivity in youth who are surrounded by violence and providing them with opportunities. Creating discontinuities is one of the most difficult aspects of education in a conflict situation. These factors affect both the academic and psycho-social development of students. Particularly talking about the contribution of NGOs in education sector, most of the NGOs are working with the government to build the schools that were destroyed or arson during the uprisings in Kashmir from time to time. These NGOs have identified the destroyed building and are making efforts to rebuild the structure for the public good.

Some of the respondents are of the view that,

> *"Communities should come forward to make some contributions to protect the education especially when there is chaos all around".* FGD, 2019.

There are many cases of attacks on school being observed by the community member teachers and students as well. So in this situation the survival of education is very difficult unless every stakeholder contributes for its sustenance.

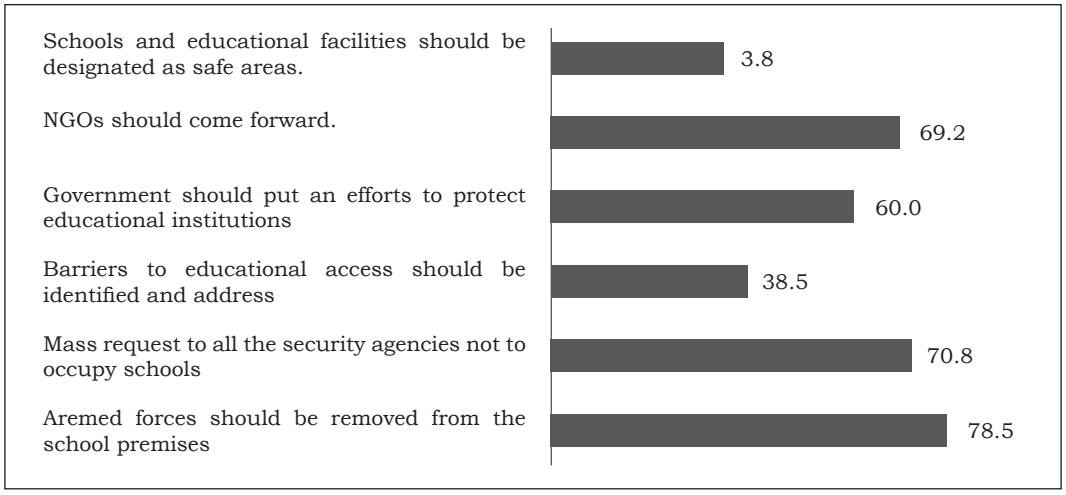

Fig. 1.2: Students' Perceptions towards Protecting Education
Source: Fieldwork, 2019

According to Figure 1.2, 78.50 per cent of respondents believe that there is a strong need to remove armed forces from school premises and that armed forces should not be granted permission to enter the premises of any educational institutes in order to protect and preserve education in the valley, because all respondents consider it to be the most serious problem in their communities. Furthermore, a sizable proportion of

respondents (70.8 per cent) believe that all armed forces should be asked not to occupy educational facilities. During the focus group discussion, practically every member agreed that a major appeal to all security forces should be organised because there is no other way to halt these school attacks. One of the narrative emerged from the FGD in this regard is below,

> *Halaat kharaab hony kay douraan hum nay bahut sey cases dekhty hain jab schools ko nuksaan pounchaya gya… humary mohally mein bhi eik school ko nuksaan pounchaya gaya. Yehi wajah hai ki parents bhi humy school jany ki ijazat nhe dety jab government ya separatists ki taraf say kabhi paabandiyaan lagti hain.,* (FGD, 2019)
>
> "We have seen many cases where schools are being destroyed or arson during conflict situation … one of the schools' infrastructure in this locality was also damaged during the uprising of 2016 that too in the day time and this becomes the core reason that even our parents stopped us from going to school during any type of restrictions imposed by either government organizations or separatist groups …"

Based on the above figure, 69.20 per cent of respondents believe that NGOs (Non-Governmental Organisations) should take an active part in safeguarding and maintaining education in the state during conflict situations. State parties and non-governmental organisations (NGOs) play an important role in this process by ensuring that education is a vital component of humanitarian assistance. Surprisingly, 60 per cent of respondents believe that the government should make aggressive efforts to defend education. Furthermore, due to the occupation of school buildings by armed forces, these schools were later clubbed to other adjacent schools, adding to the children's suffering in terms of school access, since they now have to walk further to reach the school. Furthermore, all of these respondents believe that educational hurdles should be identified and addressed in order to improve access to education in the valley. To protect education in the valley's conflict-affected areas, every stakeholder in the state should make it a priority to ensure the safety of educational institutions. During the interview one of the respondents (parent) stated:

> *"Meri umar 43 saal hai, main nay bahut say waqaat ka mushahida kiya hai jahan fouji aaehkaar schoolon mein daakhil hoty hain, inki hadood ki deewarron ko nuksaan pounchaty hain…2011 mein eaik kareebi school mein bhi fouji aaehlkaaroon ney kabza kar liya tha… Hukoomat ko chahy ki security forces ko school kay ander daakhil hony*

ki ijazat nahin dee jaaye chahy woh gaaoon ka school ho ya shehar ka, kyonki bacchy bahut naram dil hoty hain woh jaldi se mayoos ho jaaty hain jiski wajah se woh buray kaamoon ki taraf gaamzan hoty hain." (Fieldwork, 2019)

I am 43, I have witnessed a number of incidents where security forces enter the schools, destroying their boundary walls…one of the nearby school is also occupied by security forces in 2011 probably…government should not allow security forces to enter the school premises in villages or in cities, as children are already soft-hearted they easily get frustrated and start to begin antisocial behaviour…

The people in the local areas should jointly come forward to address this issue with mass appeal. Children and teachers must be prepared and ready to lessen the impact of something risky occurring on school grounds by having the necessary knowledge and abilities. The Global Coalition to Safeguard Education from Attack (GCPEA) has also developed rules for schools to follow in order to protect themselves. 'Parties to armed conflict also utilise schools and universities as bunkers and camps, for arms storage, as detention centres, and for other military uses', according to the GCPEA, putting students and staff's safety at risk and causing institutions to close for varied amounts of time. Long-term, such assaults on education and military usage of schools reduce student attendance and enrolment, obstruct learning, lower educational quality, and limit the number of persons certified to teach.

Role of Non-Governmental Organisations (NGOs) in Education

It was observed while interacting with the teachers and students that they are not aware of the activities of the NGOs especially in the field of education. They stated that there is no contribution from their side to protect and promote education during conflict situations. (*No attempts are being made in this study to interact with NGOs. These are the perceptions of students and teachers only*). Towards the contribution of NGOs in protecting school education in the valley, it was observed that students and teachers have mixed views. Some of the respondents are of the view that NGOs have identified the problems of school education in conflict situations and are hosting indoor gathering but they have not contributed much other than appreciating the toppers with prizes. One of the teachers stated that,

"*Talking about the efficiency of NGOs especially in our district, there are many organizations who have hanged big signboards outside their offices, but no developmental work has been taken up so far".* (Fieldwork, 2019)

Even in the NGO sector, there is a lack of accountability and transparency. On the other side some of the respondents are of the view that NGOs usually do not come forward in such difficult situations as they also have safety concerns, 'nobody wanted to get abused or hurt in such situations be it NGO workers, Government worker or any civilian'. Sometimes with the help of community members classes are being arranged in localities to keep the students in touch with their studies.

Challenges in Improving Education System in Kashmir

Article 21-A of the constitutiom of India deals with the basic right to education. "All children from 6–14 years will receive free and compulsory education in such a way as the state may by law designate." Everyone now acknowledges the constitutional necessity of education in India. However, in areas with ongoing conflicts, particularly in Kashmir, what occurs with this right is known to all. Whether the problems in Kashmir's education are caused by natural calamities or man-made ones, the children always suffer. In this regard, the researcher has attempted to assess the experiences of teachers, parents, and students and has gathered data on the difficulties that many stakeholders have faced in the pursuit of progress.

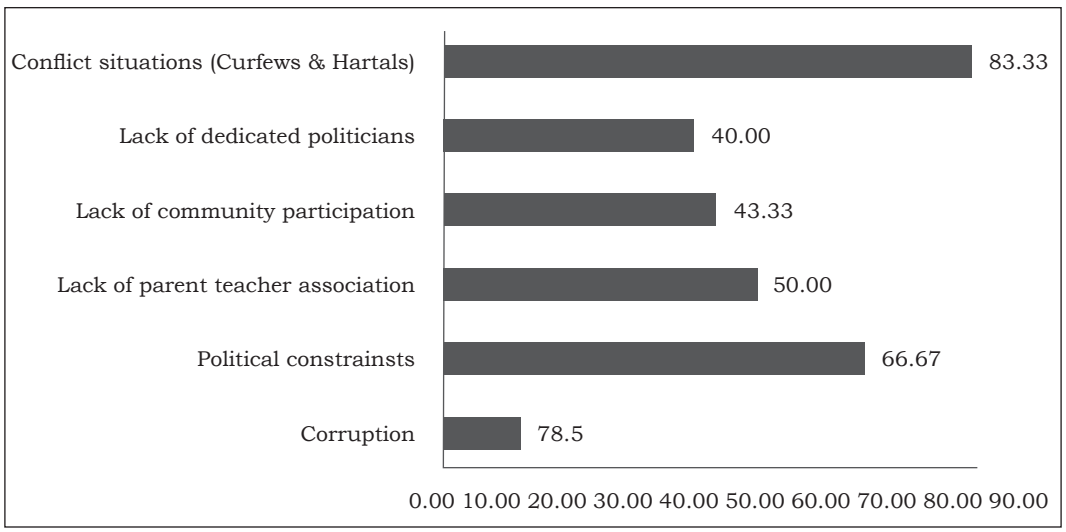

Fig. 1.3: Major Challenges in Development of Education
Source: Fieldwork, 2019

Education in communities impacted by violence has many difficulties. The above figure makes it clear that one of the main issues with protecting education in Kashmir's conflict-torn region is the conflict

scenario, which includes curfews, *hartals*, shutdowns, incidences of stone-pelting, internet suspension, and similar factors as a fundamental reason influencing education. Conflict circumstances were cited by 83.33 per cent of the teachers surveyed as a difficulty in protecting and improving education. In addition to this 66.67 per cent of respondents are of the opinion that there are countless political constraints which came into the way of development of education in the valley. This problem completely hampers the progress of student's education and the entire education system gets affected by these uninvited challenges. Besides, there is also a dearth of dedicated politicians which becomes a challenge for developing the education system in the disturbed state. Some teachers felt that challenges are also coming from the Parent Teacher Associations (PTA) because the level of participation in these meetings is very pathetic. 50 per cent of teachers are of the view that the Parent Teacher Associations (PTA) is also a challenge to overcome. 43.33 per cent of the teachers are of the opinion that lack of Parent Teacher Associations (PTA) is also a challenge in improving education in Kashmir. Community involvement is essential because when schools, parents, and the community collaborate, remarkable things may happen in the lives of children and young adults. Schools alone cannot be held accountable for raising a well-educated and civic-minded generation of children. In addition to this, most of the parents are of the opinion that armed conflict in the valley and corruption are the two main challenges which come into the way of improving education. One of the respondents said,

> "*Kisi bhi siyasatdan ki yeh koshish nahin rahi ki kaise taaleemi aadary ko sudhara ja sakhay, haalanki woh halaat say ba-khoobi waqif hain …" (*Fieldwork, 2019)
>
> There is no determination among the concerned politician to improve education system though they are quite aware of the grave issues.

This conflict needs to end, and most importantly, corruption needs to be eradicated, in order to promote education. Every stakeholder in education, including teachers, educational administrators, students, and community members, should play their part and approach things with great care and enthusiasm. Examples of such things include transparency in the educational system, creating a safe environment for learning, well-organized teachers' schedules and lesson plans, and recruiting trained teachers.

Remedial Measures to Improve Schooling in Kashmir

Education should be considered as a development agent and should be restored as soon as possible during emergencies. For rebuilding

and reconstructing education one of the core tools is a good analysis of situations of education which would be helpful in reformation and transformation (Pigozzi, 1999). From the very beginning, planning should be a part of every education programme and some important measures should be taken into consideration, such as, non-formal approaches, child-centered education, besides parents, communities and local resources should also be involved. In the study, responses were obtained about the reconstruction measures that need to be taken up to manage and improve educational sector in the union Terrtory of Jammu and Kashmir. Measures such as free coaching classes, conducting extra classes, mass promotions, scrapping vacations, etc., are some of the solutions as opined by respondents.

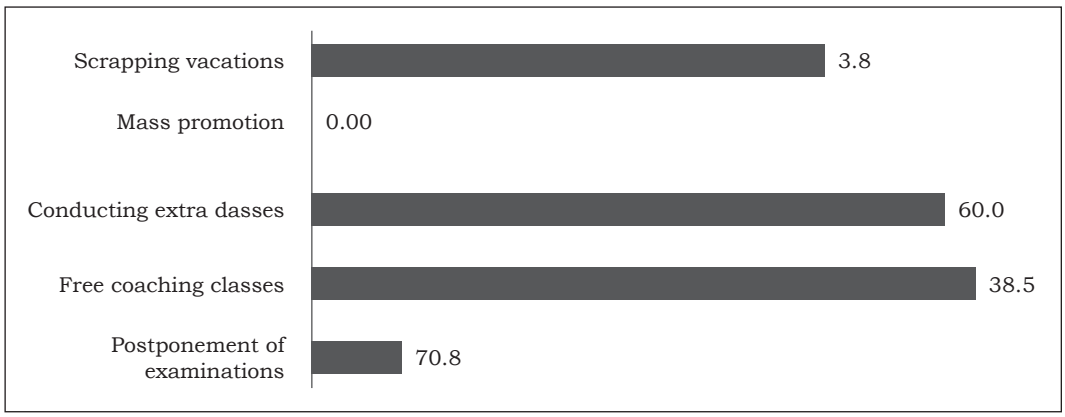

Fig. 1.4: Remedial Measures to Improve Quality in Education
Source: Fieldwork, 2019

Following the study's findings, 73.33 per cent of respondents said that authorities in educational institutions should set up free coaching sessions. The teachers held the opinion that free coaching sessons can improve students' performance at this stage of education and that students who are academically weak should receive extra attention. In this approach, the full curriculum can be taught to children even during school closures, curfews, or other types of *hartals* that interfere with the regular operation of the educational system. However, during curfews, schools are frequently closed, and students miss their classes, which becomes the most significant factor in increasing pressure on teachers to complete the given syllabus within the time frame. As a result, 70 per cent of teacher responders believe that they would hold extra lessons on normal working days to compensate for the loss, and that students would benefit from learning the complete syllabus. Postponement of secondary

school examinations is impossible because this is the critical stage for setting the pace for future aspirations and fulfilling the goals of life and education, so a very low percentage, i.e., only 10 per cent of teachers, are in favour of postponement of examinations because delay in examinations affects students' continuous preparation in their academics. Scrapping the vacations in the conflict-affected areas is another remedial measure felt by teachers. To avoid academic loss in the event of a shutdown, *hartal* (strike), unanticipated occurrence, or forced closure of the school, the next holiday should be regarded as a working day. Separate remedial sessions should be offered at the beginning of the academic year in the mornings or evenings for slow learners with large learning gaps. The above figure clearly depicts that there is not even a single respondent who is in favour of the mass promotion of students because of conflict situations.

Parents, as stakeholders in education, are well aware of the fact that suitable corrective actions are essential to address their children's educational issues. Many parents believe that free coaching lessons provided by the school administration, particularly for children in Class X and XII, are necessary to boost their learning and reduce stress before sitting for their board exams. There are already a lot of thoughts racing through their heads about their future goals, so adequate instruction would be quite beneficial to them. These free coaching sessions will help to bring underperforming and weak students into the mainstream. According to one of the parent respondents,

> *"…Hum itnay padhy likhy nahin hain ki bachu ki padhai ko leky kuch ikdaam utha sakhen, hum humesha kehty rehty hain ki khud say beath kay padhai kiya kro lekin unko Maths, Science aur Engish padhny mein mushkilaat ka samna karna padhta hai"* (Fieldwork, 2019)
>
> We cannot take any steps being not so literate, we always scold our kids, sit and study by you, but they feel hardships in mathematics, science and English language subjects.

As a result, some respondents (parents) believe that public holidays should be eliminated to compensate for academic loss. When schools first open, teachers are rushed to complete the curriculum, which negatively affects students' exam performance. Private tuition was another suggestion made by some responders, but it has its limitations as well, as children cannot attend tuition centres when there is conflict or instability in the neighbourhood.

Recommendations

1. Education should be given priority and should not get disturbed by hurdles. Whenever possible, authorities must

maintain safe and secure access to education during the unrest in the valley, by engaging with school, communities and all other relevant stakeholders in developing risk-reduction strategies and comprehensive safety and security. During periods of conflict, security personnel's camps and bunkers should not be established near educational institutions.

2. In order to turn educational institutions into safe learning environments, students should be made fearless and the consequences of conflict which have left a huge mental and psychological scar on their personalities should be resolved. Authorities must work to provide a safe learning environment so that the parents will get convinced to send their children, especially girls, to schools during the unrest, and it is only possible if educational institutions are designated as safe zones.
3. To ensure that teachers can complete their work and finish the syllabus on time, the educational department should adopt such teacher policies that encourage greater consistency among teachers. Teachers should be more punctual when conditions in the valley are normal and schools are operating normally. Furthermore, in order to increase student-centered learning, authorities must organise pre-service and in-service training programmes for teachers.
4. The implementation of pertinent curriculum in the schools during times of conflict requires special consideration. Priority must be given to timely curriculum updates, including the addition of new areas or pertinent topics as the situation demands.
5. As the findings of the study suggests, support for the re-establishment and continuity of education must be a priority strategy for NGOs in conflict and post conflict situations as well. As a core stakeholder NGOs should also monitor, report and respond to disruptions to education during conflict. They should come forward and take responsibilities for protecting and enhancing educational development in the valley. NGOs can also support programmes that respond to the psychological needs of the children by providing the counselling sessions on the regular basis.

Conclusion and Implications

In today's world development can be brought up in society by education only. In the conflict-affected areas like that of Kashmir, education plays a pertinent role in protecting future generation. The first and most important step is to protect education and educational infrastructures; regardless of the circumstances, education should not be hampered in any way. Education

can be a way to mediate the conflict and education services should be included into humanitarian aid as asserted by a number of studies (Aguilar and Retamal, 1998; Machel, 2001; Save the children, 2010). To improve the quality of education an effective mechanism should be put in place to check education related malpractices rampant in society. Certain things such as transparency in the education system, create a safe environment for learning, well organised teachers schedule and plan lessons, recruitment of trained teachers are some of the pertinent things that every stakeholder should take with great care. Access to education as a right should be maintained at all times, especially in the most difficult situations, and should not be disregarded during times of conflict. When educational opportunities are lost as a result of conflict, it is not only a loss of individuals, but also a loss of socio-cultural capital (Bourdieu, 2018) and a society's ability to recover from the conflict. Efforts should be taken to maintain the educational system during armed conflict since inequalities in educational access can lead to other inequities, such as, income, employment, nutrition, and health, as well as political status, which can worsen the situation in society. Furthermore, in order to recoup the shambled state of education, confidence must be rebuilt by creating a peaceful environment. However, ensuring that all students are incorporated into educational communities should not come at the expense of educational quality.

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Perceptions of Secondary Level Students toward Causes and Consequences of Bullying

Shweta Singh* and Seema Singh**

Abstract

The study aims to investigate the perceived causes and consequences of bullying among secondary-level students. Bullying is defined as the intentional and repeated negative behaviour directed towards individuals who are unable to defend themselves (Olweus, 1994). A qualitative survey approach was employed to gather data, utilising a semi-structured interview schedule. Thematic analysis was conducted to analyse the collected data. The findings of the study indicate that students perceive various factors as the major causes of bullying, including financial conditions, physical appearance, being different from others, seeking enjoyment from the pain others, displaying aggression, seeking revenge, exerting power, experiencing jealousy, and engaging in frequent use of social networking sites and sharing passwords with others. Additionally, students perceive several consequences resulting from bullying, such as, school absenteeism, dropout rates, academic underachievement, anxiety, stress, depression, decreased self-confidence, aggressive behavior, feelings of loneliness, and even suicidal tendencies. These results shed light on the significant impact of bullying on students' well-being and emphasise the need for interventions to address and prevent bullying in educational settings.

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Introduction

The act of bullying involves the deliberate and frequent harm caused to another individual. This harm can take various forms, such as verbal, physical, psychological, or social attacks (Singh and Singh, 2021). Bullying can occur both in person and online, and it may be overt and noticeable or concealed from others. Perpetrators of bullying can be either an individual or a group that holds more power than the victim.

According to Smith (2016), bullying is characterised by a repeated pattern of aggression directed towards a specific individual, where the target person (the victim) typically has less power than those who engage in the aggression (bullies). It is important to note that bullying not only impacts the bullies themselves, but also affects all students involved in bullying, whether as bullies, victims, or bystanders.

Students who engage in bullying are more likely to become involved in other behavioural issues in their adulthood or at any stage of life. These issues can include domestic violence, criminal behaviour, drug abuse, and participation in dangerous power dynamics (Singh and Singh, 2022). It is important to note that victims of bullying often face more challenges than those who bully others. They may experience physical symptoms such as stomach pain, headaches, sleep disturbances, and develop fears associated with going to school, dark rooms, or bathrooms. Additionally, they may suffer from psychological problems, including low self-confidence, negative self-perception, feelings of failure, unattractiveness, difficulty concentrating, and loneliness. Victims of bullying may also develop a sense of guilt, blaming themselves for being targeted. The severe consequences of repeated bullying can even lead to suicide. Therefore, it is crucial for everyone to address the issue of bullying, and specific measures should be taken to eradicate this problem from schools. Multiple studies have been conducted to investigate various aspects of bullying in schools, including awareness, nature, prevalence, impact, factors, and causes. Some of these studies include research by Nansel et al. (2001), Sokol (2009), De Moura, Cruz and Quevedo (2011), Ahmed et al. (2012), Jan (2015), Oluwakorede (2017), Marsh (2018), and Galal, Emadeldin, and Mwafy (2019). Garaigordobil and Machimbarrena (2019) focused on the relationship between victimisation and the perpetration of traditional bullying and cyberbullying. Nazir (2019) examined the prevalence of bullying and students' perceptions, including related myths. Chan, Cheung, and Wong (2020) discovered that social networking sites and environmental conditions play a role in predicting and shaping bullying behaviour. Pandey and Sonker (2021) investigated

the association between cyberbullying and socio-economic status. Despite the availability of valuable research on bullying prevention and intervention, there remains a gap in understanding how students perceive bullying issues, including its causes and consequences. By gaining insight into students' perceptions, significant steps can be taken towards eradicating bullying. Thus, the current study aims to analyse students' perceptions of the various causes and consequences of bullying.

Research Question

The following research question was framed: What are the perceived causes and consequences of bullying among secondary-level students?

Objectives

Objective 1: To explore the perceived causes of bullying among secondary-level students.

Objective 2: To explore the perceived consequences of bullying among secondary-level students.

Methodology

Research method: In the present study, qualitative survey research method has been used.

Sample: The present study involved purposively selecting 15 students (8 males and 7 females) from Class IX for interviews. The selection criteria for the participants were determined through the researcher's observations. Over a period of 1–2 months, the researcher spent time at the school for a research project and identified certain students who were deemed to be knowledgeable sources of information and had some level of involvement in bullying. Additionally, students who expressed a keen interest in participating, being part of the study, and sharing their opinions were also included in the sample.

Tool: To collect data, the researcher developed a semi-structured interview schedule. The questions in the schedule were formulated based on the operational definition of the variables being studied. After creating an initial draft, the schedule was shared with experts to ensure its reliability and validity. Experts provided feedback, opinions, and ideas regarding the content of the interview schedule. Corrections were made as necessary, taking the recommendations into account. The interview schedule consisted of two sections. The first section included a personal data sheet for the respondents, an explanation of the study's objectives, a statement regarding the confidentiality of the report, and a consent form for voice recording during the interview. The second section comprised a range of questions relevant to the inquiry being conducted.

Data analysis: Based on the research requirements, the data obtained from the interviews were compiled and organised in this step. The researcher transcribed the direct responses provided by the participants during

the interviews. Additionally, the researcher's own observations and insights generated during the interviews were also documented in a reflexive manner. In the next stage, the researcher carefully read and reviewed the participants' responses multiple times (iteration) to identify meaningful sentences. These sentences were then written separately as part of the data reduction process.

Subsequently, sentences that sounded similar or indicated similar situations were colour-coded with different colours, and the participant's name was noted alongside each sentence. At this stage, all the sentences with similar colours were grouped together under the respective participant's name. Iteration was used during this process to create codes that could effectively capture the essence conveyed by the set of words.

In the next stage, the researcher engaged in the interpretation of the codes, seeking to derive meaningful insights and understanding from the data.

Trustworthiness and Credibility of Qualitative Data— All participants in the member-checking procedure and all the sentences were examined to confirm the reliability and credibility of the data researcher. To check the validity and credibility of the study, the researcher also gives the transcription to another researcher for coding. The researcher discovered that both researchers/coders have similar codes for the data.

Findings

Objective 1: To explore the perceived causes of bullying among secondary-level students.

Table 1
Perception of Students towards Causes of Bullying

Causes of Bullying	No. of Responses	Percentage
Financial Condition	12	80
Physical Appearance	15	100
Odd one/anyhow differ from others	8	53.33
Fun/Enjoyment from the pain of others	14	93.33
Violence/Aggression	9	60
Seeking Revenge	5	33.33
Power	11	73.33
Jealousy	13	86.66
Frequent use of social networking sites/ Sharing passwords with others	5	33.33

Findings: According to Singh (2022), all students (100 per cent) consider physical appearance as a cause of bullying. The majority of students believe that financial conditions (80 per cent), for fun (93.33 per cent), showing

power (73.33 per cent), and jealousy (86.66 per cent) are significant factors contributing to bullying. A notable number of students also identified deviation from the normal condition (53.33 per cent), aggressive behaviour (60 per cent), revenge-seeking (33.33 per cent), and the frequent use of social networking sites and sharing passwords (33.33 per cent) as causes of bullying.

Discussion

Financial Condition: The financial condition of students plays a significant role in their social status within the school. Some students believe that it is easier to make friends based on their financial situation, while others express that they do not consider their classmates' financial condition when forming friendships. In the context of bullying, there are no fixed criteria or specific targeting based solely on being poor or financially weak. The occurrence of bullying depends on the dynamics of the situation, where a group of students with similar financial conditions may engage in bullying towards other students, regardless of their wealth or poverty. For instance, students may experience bullying for not possessing a particular brand of phone, bike, watch, or clothing, or conversely, they may be targeted for having specific branded products. As a girl shares her experience—"other students don't share their lunch with me and comment you people are rich and will get sick if you eat poor people's lunch like us, they don't even go outside with me telling you rich people will get sunburn. Sometimes they even say check this on your phone, please our phones don't work properly".

Another boy said "No one ever directly made fun of me for being poor, but sometimes it seems that they are beating me up. Just like someone says hey you don't even have a mobile, so what do you know what is going on in the world today, then everyone laughs out loud".

Physical Appearance: According to all the participants, physical appearance emerges as a significant factor in instances of bullying. Each participant shared their individual views and personal experiences regarding their physique. The nature of bullying varies from person to person, and similarly, the causes of bullying differ for each individual. One participant may have experienced bullying due to being overweight, while another may have faced bullying for being underweight. Similarly, one individual may have been targeted for being short in height, while another may have been bullied for being exceptionally tall. Skin colour also becomes a basis for bullying, where one person may face discrimination for having a dark complexion while another for having fair skin. Acne on the face, shape of nose shape, lips, wearing glasses, and even hairstyle are all potential aspects that students use to bully others. The diverse range of physical attributes targeted for

bullying illustrates how students can be singled out and mistreated based on their appearance. It highlights the need for addressing body shaming and promoting inclusivity and acceptance among students, regardless of their physical features. One girl said, "Earlier, I used to come to school by tying two braids with ribbon, and everyone in school used to make fun of me. Tired of this, I had a haircut".

bullying, regardless of one's academic standing. This phenomenon is not limited to academic achievements but extends to all aspects of school life. It applies to various aspects such as gender expression, dressing style, food habits, gestures, and the decision to follow or deviate from the masses. Even choices related to wearing or not wearing makeup can become a basis for bullying. The need to conform to

Table 2

Categories	Sub-categories	Example
Physical Appearance	Body shape	Slim— *shukhandi*, *sukhadi*, *titihari* Overweight— *motu*–mutton, hulk, *hathi*, *golu* Short height— *batha*, *bauna*, *chhotu* Long height— *lambu* dada, *baans*, *seedhi*.
	Facial structure	*Nakchipta*, *nepali*, *chinki aankh*
	Hairstyle	*Behenji*, *chidiya ka ghonsla*, *gaai ki poonch*, *singh* (*do choti*), *champu*.
	Race (skin color)	*Kalu*, *kali-mai*

Another student shared with the researcher that "I love food, so my brother at home and everyone in school call me *motu-mutton*. Apart from this, they call me a fat cartoon character. For example, *motu*, *elephant*, Xian, and *hulk*. And don't even let me eat in peace anywhere".

societal norms and expectations often results in individuals who do not fit the mainstream being targeted for their differences. This form of bullying highlights the importance of fostering a culture of acceptance and embracing diversity within school environments. Students should be encouraged to

Table 3

Categories	Sub-categories	Example
Odd one/ anyhow differ from others	High achievers	*Padhaku*, *rattu tota*.
	Low achievers	*Gadha*, *ponga pandit*.
	Behave like girls/boys	*Ladkiyo ki tarah bat karta hai*, *waise hi rota hai*, *mard-chhap*.

Indeed, the pressure to conform to societal expectations can lead to

celebrate their unique identities and express themselves authentically,

free from the fear of being ridiculed or marginalised by their peers. A girl shares her experience: "When I took admission in the school in my village, all the students used to harass me. They used to call me Miss *Beautifullya.* Because my clothes, jewelry, and hairstyle were different and I used to get ready and go to school. All the girls used to say how much makeup she has applied, she has come to study here by walking on the ramp, and they used to talk behind my back. Wherever they saw me, they made fun of me".

Another student (boy) shares his experience with the researcher: "My complexion is fair and I do not have a beard and mustache, so in every function of the school, they make me a girl and make me dance, even near my house, people make me Sita in *Ramleela*, all boys call me girl-girl and harass me".

Fun/Enjoyment: Bullying doesn't always happen with the aim to injure someone; occasionally, kids engage in pleasant activities without realising the potential for bullying or the negative effects of their choice. Because kids spend the majority of their time studying, when they do have free time, they simply want to have fun. This leads to ignorance among students who are unaware of bullying and who do not know the distinctions between bullying, fun, jokes, taunts, and teasing. A boy shares his experience "In our class, if a boy talks to a beautiful girl or both are friends, then all the boys make fun of him".

Another girl shares her experience "If any boy and girl talk among themselves, then all the boys call that girl sister-in-law and girls call that boy brother-in-law. The girls call only among themselves, but the boys call loudly and shout in the corridor as they come. Look sister-in-law has come".

Another boy said that "After a whole day of study, this is the only option to have fun. One cannot play a game all day long. We are not small children".

Violence/Aggression: A subset of aggressive behaviour is bullying. Students' violent behaviour hurts both the aggressive individual's friends and adversaries in addition to the aggressive person themselves. Aggression leads to impulsive behaviours, which can be harmful to both the aggressor and the target. The majority of bullying in this category is physical, yet aggression is the root of all forms of bullying. For example, an aggressive individual may threaten the bully, inflict harm to others, or require others to perform tasks his way. As a girl said "A boy in our class gets very angry, all the boys and girls are afraid of him because he used to snatch things from others and have their lunch and do not talk to him. He also got punishment many times but he does not improve. He starts beating someone without any reason and makes everyone do his work forcefully".

Another boy shares an incident with the researcher about the same student— "I was throttled in the bus

and the conductor's uncle came and rescued me. After that, I just changed my bus. Now wherever he meets me, he makes fun of me recalling the incident".

Seeking Revenge: Bullying incidents can occasionally occur just out of retaliation. Revenge may be taken simply because we are engaged in an open conflict or for covert reasons, in which case our adversaries are unaware of our objectives. It's also possible that we were harmed by other people's everyday behaviours and that we are now seeking retribution for our feelings. A girl shares an incident with her cousin "Once my cousin who is in another section didn't help his friends in the test, his friends got angry with him and when next day he got up to reply ma'am, they put a compass under him and he got hurt".

As a boy admitted, "We once trapped the class monitor to take revenge because of him if have a test ….and then maam punished him".

Power: It's usual in bullying to assert your dominance. Bullies used to put others down and flaunt their dominance. High academic achievement, status, caste, religion, physical attractiveness, seniority, teachers' favour, etc., may all be tied to power. Seniors and older children participate in demonstrating their abilities to their younger siblings or children. And they begin to bully others in order to flaunt their dominance. A girl shares an incident "Our seniors keep the boys of our class intimidated. If someone does not listen to those people, then everyone starts troubling him together. So what if we are juniors should we be afraid of them?".

A boy said, "This happens to everyone, if your elder brother or sister is good in studies and not you, you are just their servants they will scold you throughout the day and get all their work done by you".

Jealousy: Jealousy is a common human emotion that affects everyone. Sometimes this emotion takes over our entire psyche, making it impossible for us to distinguish between good and wrong. We just want to satisfy our ego, which could be motivated by anything, including lack of money, education, a girlfriend or boyfriend, a preference for a certain brand of goods, etc. As a result, we have historically been envious of those who possess the qualities we admire. And because of our envy and fears, we used to bully other people. A boy shares that "A classmate of mine used to harass me just because the girl he liked was my friend and both of us stayed close by, so we used to study together, that too he could not tolerate any more".

Another boy said, "I am the highest scorer in every test and I am the topper in the exam too, so everyone says that you are a rote parrot, you memorise everything and do not do any work at home so you study and top the class".

Frequent Use of Social Networking Sites/Sharing Passwords with Others: Everyone uses the internet

these days, which raises the risk of cyberbullying among adolescents because they are utilising it without the required training and safety precautions. Because there are so many social networking sites available and because most individuals use them for friendship and contact rather than taking the necessary security steps, cybercrime results. Students lack knowledge of how to protect their safety and privacy. Additionally, they do it carelessly, sharing their credentials with others. A student shared that "We came to know later that the messages of 'I love u' that we had received were sent by a boy from our class with the ID of his girlfriend".

Another boy said, "The co-players who are there in the online game give very dirty filthy abuses if anyone does not play well or if he makes a mistake and remove him from the group."

A girl said that "strange friend requests come on Facebook and WhatsApp and boys used to make lewd comments, so I stopped using Facebook and WhatsApp".

Objective 2: To explore the perceived consequences of bullying among secondary-level students.

Table 4
Perception of Students toward Consequences of Bullying

Consequences of bullying	No. of Responses	Percentage
School Absenteeism	10	66.66
Drop out	4	26.66
Low Academic Achievement	11	73.33
Anxiety/Stress/Depression	15	100
Shyness/Low Self-confidence	12	80
Aggressive Behaviour	7	46.66
Loneliness	11	73.33
Suicide	2	13.33

Findings: As per Singh (2022), school absenteeism is considered a consequence of bullying by the majority (66.66 per cent) of participants. Some students (26.66 per cent) mentioned dropping out as a result of bullying. Low academic achievements or a lack of interest in education were identified as consequences by a significant number of students (73.33 per cent). All participants (100%) stated experiencing anxiety, stress, and depression during and after being bullied. A considerable number of students (80 per cent) expressed that bullying leads to shyness, low self-confidence, and a loss of confidence in themselves. Aggressive behaviour was seen as a consequence by 46.66 per cent of participants. Feelings of loneliness were reported by students aslo participants mentioned suicide as a consequence of bullying.

Discussion

School Absenteeism: Due to bullying, pupils begin skipping classes and refusing to go to school because they are afraid that it will happen again and that someone would make fun of them. Students that are bullied are kept in a horrible condition where they begin to feel helpless and alone**.** A boy said that "Once a teacher called me a skirt since then the whole class calls me to skirt, I do not feel like coming to school but my parents scold me. I do not understand what to do. I try not to go to that teacher's class."

Drop Out: Bullying not only interferes with childrens' ability to learn, but also compels them to drop out of school or discontinue their studies. Although the researcher was unable to locate drop outs in the classroom, one girl recounts how she and her classmates bullied a Punjabi girl, who ultimately left the school for good. As she said "We were four friends, we had a junior who was Punjabi. Don't know her name but we used to call her a Punjabi girl. We used to ask her to do the *Bhangra* in the washroom and force her to do it. Wherever she was seen, we used to call her and make her dance. Then she did not appear for a few days, then we asked her friends and they told us that she does not come now, after that she was never seen in school."

Low Academic Achievement: Students who have been bullied do not want to attend classes that will damage their education or go to school. Sometimes, the grades of excellent student's decline gradually, and no one pays attention to what is really going on. Bullying can be the only reason for this. As a student share his condition "I was a topper in my village school, then took admission here in English medium school, because of my weak English, everyone started making fun of me, I used to write and understand English, just used to make a little mistake in speaking, then people used to make fun of me then I stopped answering in class. I don't feel like studying and now my grades are very bad."

Anxiety/Stress/Depression: The majority of kids admit that they experience anxiety and tension when being bullied; in fact, they remark that they have anxiety anytime they think back on the incident or encounter the bullies. Additionally, they experience shame for being bullied and begin to blame themselves, believing that it is their responsibility that they are being bullied. Some students say that "I shivers in my body."

Some say, "I feel a tickling sensation in my stomach and feel like going to the toilet."

Another said, "I got a headache and started sweating."

Another boy, "I don't want to talk to anyone now, I know everyone will make fun of me. Now I feel like living alone, neither friend nor foe."

Shyness/Low Self-confidence: Bullying has an impact on kids' emotions and levels of confidence in addition to their academic achievement. Bullying victims lose their self-confidence and begin to accept everything as fate. As a

result of losing faith in themselves, they begin to hide and struggle to convey their thoughts. Lack of social connection, inaction in class, lack of classmate cooperation, and absence from extracurricular activities. A boy said, "I can't think of my future because of my bad English." A girl says, "I sing very badly and everyone starts to laugh when I sing and my voice gradually becomes like a goat while singing that's why I never sing."

Aggressive Behaviour: Bullies often exhibit aggressive and dominant behaviour, which can be indicative of their nature. Their involvement in acts of violence further raises concerns regarding the potential consequences of their behaviour. There is a heightened likelihood that individuals who engage in bullying may eventually transition into criminal activities or contribute to social chaos. As a boy expresses his friend's future planning *"*You know, ma'am, he says that he will go to jail after doing some petty scandal, then come back and fight elections and become a leader. He is a fan of *Raja Bhaiya.* You must have known *Raja Bhaiya."*

Loneliness: Students begin to avoid social gatherings and making acquaintances because they feel that people don't accept them for who they are. They used to isolate themselves because they believed that everyone would mock or despise them for who they are. They progressively developed low self-esteem and sadness due to loneliness. A boy shares his classroom situations and also how other students react: "I carry eggs in my tiffin, then all the children of the class speak badly of me, hate me, and do not take me in their group. In fact, ma'am also says do not bring such things here. There is a WhatsApp group of the boys in our class, only I am not in that group. No one has added…It's okay now you can't force friendship, right?".

Suicide: Bullying has an impact on a student's entire personality, whether it be psychological or physical. Psychological issues include low self-esteem, thinking they're foolish, failing, or ugly, having trouble focusing, and feeling lonely; feel guilty about being bullied; believe that it is their fault that they are being bullied, and the remorse they feel drives them to commit suicide. As a girl shares her experience, *"*People talk about how ugly I look. I don't want to live, should I die now? God has made what should I do in this?."

Conclusion

Based on the findings of the study, it can be concluded that students perceive various factors as causes of bullying, including financial condition, physical appearance, being different from others, seeking fun or enjoyment, displaying aggression, seeking revenge, exerting power, experiencing jealousy, and the frequent use of social networking sites or sharing passwords. Additionally, the perceived consequences of bullying among students include

school absenteeism, drop-out rates, low academic achievement, feelings of anxiety, stress, and depression, shyness and low self-confidence, aggressive behaviour, feelings of loneliness, and the potential for suicide. These findings highlight the importance of not underestimating the impact of bullying, as it can harm students in multiple ways. It is crucial for everyone to be aware of the seriousness of bullying and to take proactive measures to sensitise children about its detrimental effects on both the victims and perpetrators. Each school should implement strict anti-bullying policies, ensuring that students and teachers are educated about this issue and equipped to address it effectively.

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Bridging Gaps in Theory and Practice
Exploring the Value of Internship

Sharad Sinha* and Vritika Singh**

Abstract

This article examines internship in the context of teacher education. It looks into issues that need to be addressed, such as duration, implementing innovative strategies while teaching, regular feedback from school administrators, teachers and peers, reflective activities on the teaching process during internship and so on that are faced by student teachers during internships, as well as some of the ongoing practices: use of student case diary and checklist, to maintain diversity and inclusion record for school, etc., which are prevalent in some institutes and can be incorporated by others in order to improvise the internship programmes. The article also proposes measures or methods viz. identifying partner institutions, Sandwich model, etc., for addressing issues and augmenting the internship experience.

Introduction

The lexical meaning of internship is "a period of undergoing practical instruction in one's field of study or career seeking". Modern day internship is distantly related to apprenticeships that came into picture under the guild system in the 11th century. It was replaced with vocational training in the 18th and 19th centuries. Apprenticeship resurfaced in late 1800s and early 1900s; employers replaced masters. Internship then evolved over in the 20th century as many fields laid emphasis on practical experiences within the curriculum. The term 'intern' was first used in the medical field in the 1920s. The Government and Private sector gradually adopted

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the term and courses have been designed emphasising the practical experiences (Taylor, 2014).

Internship in different professions viz. medical, fashion, law, media and public relations are prevalent in various forms. They may be based on various factors some of which are mentioned below:

1. **Duration:** Internships are planned on the basis of duration or the specific time of year, such as quarterly internships, semester internships, fall internships, holiday (summer or winter break) internships, etc. These types of internships are prevalent in the field of sales, management, journalism, etc.
2. **Paid or Unpaid:** Private sector/ other large organisations usually offer paid internships. These paid internships are common in management, medicine, journalism, judiciary, etc. They also evaluate the trainees on various fronts in order to develop/sculpt them as future professionals. Unpaid internships on the other hand, though beneficial, yet have a drawback that the magnitude and type of work assigned is limited in terms of accountability and completion of tasks. Also these internships are not very popular.
3. **Credit/No Credit:** Internships in colleges or universities are based on credit points or they are a part of Intern's co-curricular activity just to gain firsthand experience of the activities.
4. **Virtual or Offline Internship:** Virtual or Online Internships can be attended remotely. Such internships are popular among interns as they provide flexibility in working hours. In offline internships, the intern needs to be present physically. However, the experience gained through offline internships is generally more valuable as it exposes the intern to actual field situations (Chegg, Internships, 2019).
5. **Area or Field:** Internships can be based on area or field ordiscipline viz. marketing internships, advertising internships, legal internships, teaching internships, PR internships, etc. After studying about various fields, especially the ones with internships as an integral part the author has listed some in form of a figure:

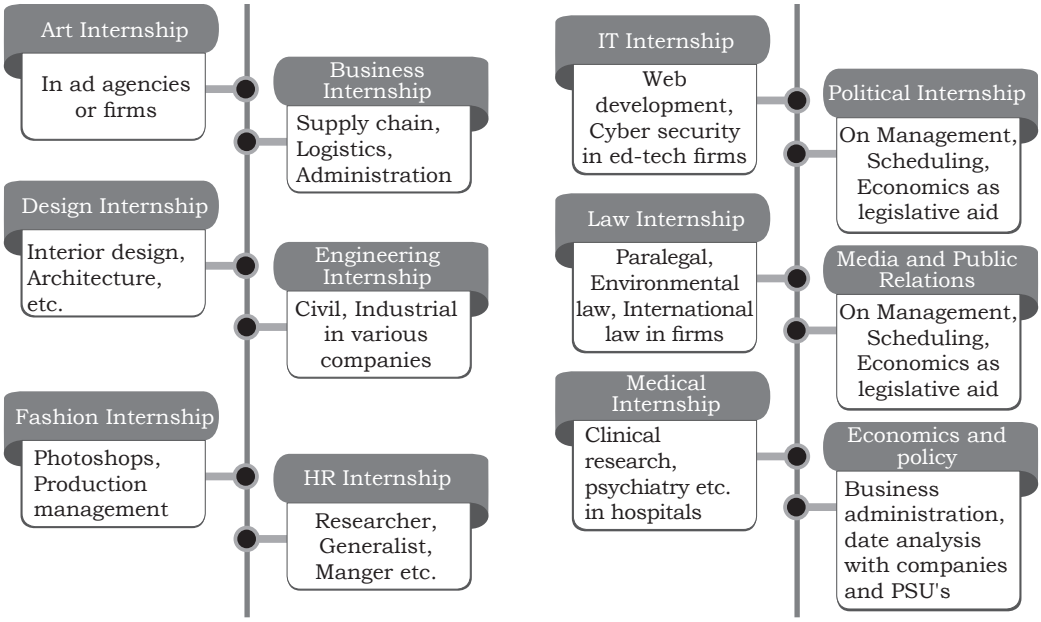

Fig 1: Areas of Internship
(Source: Authors)

Internship in Teacher Preparation

The concept of 'internship' was introduced in the education system to enable student teachers to experience first-hand. The teacher education system of the country is always a cynosure of all eyes. As teachers form the backbone of a society, they sculpt future citizens, contributing to the growth of the economy and society. Thereby, the governments always emphasise on the necessity of focusing on teacher education and bringing about reforms which cater to the demands of the society. Any educational reform looks to the teaching fraternity in particular for effective implementation.

Teacher preparation programmes in our country have a lot of variety; preparation of prospective quality teachers has been the aim of these teacher preparation programmes. We have programmes for different levels, of different duration and a varied

nomenclature: B.Ed. (1st year), B.El. Ed., D.El.Ed., D.Ed, B.Ed (2nd year) and B.A. B.Ed (4th year), B.Sc. B.Ed (4 years), *Shastri* and *Acharya* (for Sanskrit teachers), etc. While most teacher preparation programmes emphasise theory, internships help to bridge the gap between theory and practice. Wrenn J. and Wrenn B. (2009), mention that there are far too many anecdotal narratives of interns who are unable to confidently and successfully move from theory to practice. Making the transition from theory to practice could be challenging, at least in part considering the teacher or curriculum didn't incorporate theory and practice into the same academic programme in ways that were relevant and meaningful to the students. Hutchings (1990) also stated that, "What's at stake is the capacity to perform, to put what one knows into practice." It also provides Student-Teachers an opportunity to apply the skills and the learning of their teacher preparation programmes. The importance of internship has been emphasised by various commissions and committees on education, set up after independence in teacher education programmes.

The Secondary Education Commission (1952) suggested that effective teacher preparation is a key factor for equipping them to teach. It also mentioned that the opportunities of practice teaching in the classroom should be provided to prospective teachers in the able guidance of the experienced teachers. Teachers should be prepared to cater to the needs of students from diverse areas fields backgrounds.

The Kothari Commission (1964–1966) recommended improvement of quality by revising curriculum and syllabus of teacher education courses regularly.

Establishment of NCTE in 1995 was for planning a qualitative development of teacher education. It is a statutory body responsible for policy formulation and coordination of teacher education throughout the country.

The Justice Verma Commission (2012), identified various gaps in the functioning of NCTE and major issues and challenges faced by the teacher preparation institutes, their functioning and the inability of many such institutes to stand up to the aspirations of the entire teaching community.

Traditionally, teacher preparation programmes have laid more emphasis towards theoretical aspects, leaving insufficient time for student teachers to get an experience in real classroom situations. Kothari Commission (1964–66) recommended that practice teaching for student teachers should be organised in collaboration with cooperating schools. Acharya Ramamurti Committee (1990), in its review of NEP 1986, observed that internship model should be adopted for teacher education as internship involves development of teaching skills based on actual field experience. Presently, the

requirement of internship, which was initially confined primarily to medical practices, is now an essential part of teacher preparation programmes.

Internships give compliance and legitimacy to the teaching practices and involve work based learning (Dewey, 1997; Resnick, 1987, Kuh, 2008). It further aids in gaining professional experiences and opportunities to develop networks related to the profession. In Kansas City, Missouri, Burns and McDonnel, an engineering firm while hiring paid interns looks into the school activities the interns had participated in, apart from good grades and job experiences. Another company named *The Nation Magazine* also considers school activities and personal interests of the interns apart from grades, as these form the basis of how one's personality grows (Encyclopedia of Internship). Before hiring interns, companies assess their specific skills, personal interests as every corporation or institution has its own specific needs. Fletcher (1990) suggested that internship *enhances students' self confidence, values, attitudes and leads to an increase in student independence, social maturity and interpersonal skills*. It also provides employers with a pipeline of new talent who are equipped to deal with the changing scenarios (Bailey et al., 2000). NCTE, a regulatory body for teacher education has also emphasised on the internships. NCTE recommends that internship should be an integral part of a teacher education programme and should have a duration of at least 20 weeks. It also recommends that the objectives of internship should be to enable student teachers to gain practical experience, develop teaching skills and to understand the challenges of working in a real classroom setting. NCTE recommends that every student-teacher should be assigned a mentor teacher during the internship period.

Overall, the NCTE recommends that internship should be an integral part of teacher education programmes and should provide opportunities for student teachers to gain practical experience, develop teaching skills and prepare them for the challenges of working in real classroom settings. The NCTE also emphasises the need for mentorship, appropriate assessment mechanisms, and the selection of suitable schools for internship to ensure the effectiveness of the internship programme. Based on the recommendations of numerous commissions, organisations, and relevant policies that underline the value of internships in teacher preparation have been mentioned below.

The Role of Internships in Teacher Preparation

1. **Enhancing Confidence and Competence:** Internships are pedagogically based on the concept of experimental learning. The practicum part can be seen as a means for ameliorating the pedagogical skills, pedagogical

content knowledge, attitudes and behavioral aspects (Mora, 2014). During internship, the learner actively creates knowledge through direct experiences which he/she gains and creates the reflection for him/her. Student teacher applies the methods and techniques learned to real life classes/ pupils and gains necessary skills and attitude to face future professional challenges.

2. **Addressing the Needs of Heterogeneous Group(s):** Humans are diverse and dynamic by nature. Therefore, a singular approach may not be sufficient to devise methods for imparting education to a diverse group. Student–teachers through internship come across pupils from various backgrounds and with varied abilities. This experience enables the student-teacher to improvise upon the existing age-old methods and devise a seamless learning process addressing needs of every pupil in the class.
3. **Developing an Inclusive Perspective:** Time and over educational policies have emphasised an inclusive approach in classrooms; NEP, 2020 too lays special emphasis on inclusive education. The student-teachers should be able to understand the philosophy of inclusive education, and to be oriented towards the various interventions of the schools in fields of curriculum, infrastructure, school activities etc., so as to accommodate diverse learners. These can only be achieved through exposure in the field. (NCTE, is working on modalities and interventions for Digital Inclusive Education in the domain of Teacher Education, Draft NPST, 2021).
4. **Classroom Dynamics:** There may be various reasons behind classroom diversity. For example, while some of the pupils might be first generation learners, the others may come from a well educated family background. Further, some students may be more technologically equipped than others. A teacher should be able to cater to the requirements of all the pupils individually as well as a whole group. Internship provides the much needed training to a student-teacher to develop this capability.
5. **Improving Classroom Management:** The theoretical methods and techniques taught in teacher training institutes make the student-teacher aware of a 'bouquet of strategies' which works like a broad spectrum antibiotics, when they face the real classrooms. However, teaching or managing a class involves tackling situations that need a more localised solution. Internships enable student teachers to face these situations during the training itself, thereby allowing the time to improvise and improve

upon oneself before entering the arena of professional teaching. The failures in internships act as stepping stones towards maturing of student-teachers (Capasso and Daresh, 2001).

6. **Prepare for Varied Job Profiles:** The working/teaching conditions in India vary across institutes as well as different regions. For example, different teaching approaches may be required while teaching in *Anganwadis*, *Navodaya Vidyalayas*, private schools, etc. Internship across varied institutes helps the student teacher to be prepared for varied job profiles. It is therefore advisable that Student–Teachers should be sent to different types of schools to gain experience of the different working conditions and understand the pleasures and pains of the teacher. (Capasso and Daresh,2001).

There are numerous institutions that provide a wide range of teacher preparation courses. They plan the implementation of their courses on numerous approaches and models that are currently in use and that allow the institution to achieve its intended objectives.

Approaches of Internship: Teacher internship and pre-internship handbook (Colorado Mesa University, 2022) has identified a model constituting four approaches. Teaching institutes may use these internship approaches to conceptualise internships for student teachers. The internship models may account for factors such as mentoring, task clarity, and compensations, etc. to arrive at suitable internships for student teachers. Team teaching internship model is one of the internship models based on the collaborative efforts of both mentor and student teacher, incorporating strengths of both the partners. The key components of team teaching internship mode are: Collaborative teaching approaches, reduced student teacher ratio, peer support Groups, teaching and development opportunities.

Existing Models of Internship in Regional Institutes of Education (RIEs) and Some Universities

The National Council for Teacher Education (NCTE) guidelines issued in 2014 highlight the importance of internship and mandate a period of 20 weeks for the same. Pre-service training institutes in India have designed internship programme for the offered courses on the basis of these guidelines. Earlier in the Bachelor of Education (B.Ed) course of one year duration, the internship was based on a number of lesson plans. 40–60 lessons were to be covered from the two teaching subjects opted by the student. The duration of internship has been revised time and over as per emerging requirements. NCTE reviewed its recommendations and standards, notified them on 1 December 2014, mentioning the duration of B.Ed.

and M.Ed programmes will be increased from one year to two years. In 1999, NCERT introduced a B.Ed programme of two years duration in all its RIEs. NCTE regulations 2014, stipulated strengthening of practicum component by advocating a longer duration for internships, i.e., 20 weeks. This duration is segregated in two parts of 4 weeks and 16 weeks. According to the analysis of various teacher preparation programmes in various institutes viz. four RIEs and some of the Central Universities, this period has been classified and structured in a variety of ways, which has been stated in a tabular form.

Name of Institutions	Name of Course	Duration of Internship
RIE, Ajmer	B.Sc.B.Ed/ B.A. B.Ed	4 weeks in third year 16 weeks in fourth year
RIE, Bhopal	4 year courses (B. Sc, B. Ed/B.A., B. Ed)	Semester-VII, Pre-internship—3 weeks Internship—16 weeks
RIE, Bhubaneshwar	B.Sc.B.Ed/ B.A.B.Ed	16 weeks in 3rd semester 1 week pre-internship 1 week post- internship
RIE, Mysore	B.Sc, B.Ed/B.A.,B.Ed M.Sc.Ed.	7th Semester- 60 days in school 7th Semester- 60 days, 11th Sem- 15 days in Sr. Sec Schools
Central University of Rajasthan	M.Sc., B.Ed integrated	Semester-I, 6 weeks Semester-II, 14 weeks
Central University of South Bihar	4 Year, B.A.,B.Ed,/B. Sc.,B.Ed	20 weeks in total 3rd year- Micro teaching 4th year- 16 weeks in field i.8 weeks ii.8 weeks
Central University of Haryana	B. Ed	Sem-II, 8 weeks Sem-III, 16 weeks

While examining the length and structure of the teacher preparation programmes at various institutions, we found various prevalent practices during internships that gave student teachers additional insight into real-world circumstances and the approaches for dealing with them.

A Few Internship Practices

National Curriculum Framework for Teacher Education (NCFTE), 2009 mentions a sustained contact through internship would help teachers to choose, design, organise and conduct meaningful classroom activities, critically reflect upon their

own practices through observations, record keeping and analysis and develop strategies for evaluating students' learning for feedback into curriculum and pedagogic practice. Some universities are engaging in such practices, which can be emulated by others to improve their internship programmes. For instance, the Faculty of Education, BHU has identified different activities which are related to numerous facets of teaching and instructional behaviours, which provide the interns an introspection and reflection of their work, which helps them evolving holistically as a teacher:

i Student case diary and checklist of personal biases as a teacher: The interns are required to note down their personal biases with respect to gender, caste, region, religion, etc. This activity gives them an opportunity to move towards non-discriminative behavior and adopt a just outlook. This task facilitates interns to identify the factors for creating an exceptional teaching learning environment. The interns also write about their negative or positive reinforcements to their students.

ii Jot down complex ethical situations that challenge professional values: Situations can arise during internship where the intern face several ethical dilemmas relating to the profession such as contradictions of ideals and practices, values attached to profession and their personal moral values. This activity has its importance as it provides the interns an exposure to the hidden situations which may arise and have normally not been discussed in classroom interactions. Kolb (1984) and Fenwick (2001) emphasise the fact that learning cannot occur solely through experiences. This must be followed by introspective thought and internal processing that connect the event with prior knowledge and in some way alter prior understanding.

iii Diversity and inclusion record for school: To develop and nurture inclusive attitude in interns this activity is quite helpful. They need to be familiar with the existing diversities in the society and are visible in the classrooms.

iv Health status record and parent profile for a class: The interns maintain a record of the physical and mental health of their students. This assists them in understanding and dealing with them in an appropriate manner. When the interns write about their parent profile, they understand their needs and can develop a dialogue with them during meetings.

v. Brief description of the nature of collaboration with different units outside the school: The interns need to understand various formal and informal connections the organisation has to maintain with various administrative units and social agencies. (Patel and Srivastava, 2022).

In addition to these, changes have been made to the internship programmes in response to the pandemic situation. These changes were necessary in order to prevent the student-teacher from losing their academic focus. Due to the circumstances, the student-teachers had to finish their internship programmes online as well. Some of such instances of the programmes that were modified to suit the needs are mentioned below.

Improvisations in Internship Programmes in Response to COVID–19 Pandemic

After the COVID–19 pandemic and subsequent introduction of social distancing norms, the education sector had to improvise drastically in order to maintain the continuity in educational activities. One of the key improvisations by the schools was adoption of an online mode of teaching. Accordingly, the pre-service training institutes were also compelled to align their internship curriculum with the school's modified mode of teaching (Eliyana, 2021). Internship programs of the undergraduate teacher education at Adventist University of Sao Paulo, were divided into equal duration periods comprising online and offline modules. However, the offline modules remained inactive, waiting for the pandemic to get over (Prata et al., 2020). Federal University of Triângulo Mineiro, in state of Minas Gerais, suspended all its undergraduate academic events and started fully online programs in view of COVID-19 (Parta et al., 2020). The student teachers had to put in significant effort to meet the changes in teaching styles, activities and the schedules. Lack of technology literacy, compatible devices/infrastructure, and online connectivity were some of the biggest challenges faced by the student-teachers (Prata et al.,2020).

The pandemic experience further strengthened that the internship practices need better planning to integrate technological skills so that the interns develop capabilities to address the emerging challenges to address the online or offline modes of teaching as per requirement. It is the need of the hour that student teachers are given specialised training in the following areas in order to adapt to mode of online teaching—

i. Knowledge of various web conferencing platforms and connectivity issues.
ii. Sharing of different types of learning materials, e.g., worksheet, videos, etc.
iii. Dealing with focus issues of students in online teaching

especially pre-primary and primary.

iv. Communication issues: sometimes students are not able to express themselves freely in online teaching. The instructions should also be conveyed in a way that all are able to follow.

v. Providing feedback.

Issues Faced by Student-Teachers During Internships

A Google questionnaire was mailed to the recently graduated student teachers (100) from MSU, Vadodara and Central Universities of Haryana, South Bihar and Rajasthan. Out of 100, we received responses from 58 student-teachers. The main questions were on the procedures followed, the activities undertaken during the internship programmes, their level of satisfaction with the duration of the internship programme, the need to add additional activities, increasing the duration of internship, to mention a few. Although the majority of them felt that the current programme was satisfactory, more than 60 per cent of them said that a lot more can be done to enhance the current internship programmes. Their replies allowed us to narrow down some of the issues that must be considered while formulating an internship programme:

i. Selecting appropriate schools for internships.

ii. Time management in accordance with the internship programme.

iii. Resistance faced by student teachers from students who are aware that student-teachers will only be teaching for a short time.

iv. Introducing new techniques to students who have grown accustomed to traditional methods.

v. Introduction of new or innovative strategies in view of limited IT or other infrastructure (Panda, 2014).

vi. Along with regular teachers, student teachers participate in a variety of school activities such as maintaining registers, annual meetings, sports days, parent teacher meetings, exam invigilation, and so on. It is natural for the student-teachers to expect a stipend for their efforts during the internship. Giving them a stipend as an option will undoubtedly keep them motivated and energetic about the task. (Patel and Srivastava, 2020).

vii. International students face a shortage of internship opportunities in their disciplines or fields. Inadequate stipends are another source of concern for international students, as many must leave their regular jobs to complete their internships and other

factors such as socio-economic status, achievement levels, distances and so on influence overseas students participation in internships.

Planning a Student Teacher Internship

The internship practices may be improvised if we want to empower our student-teachers to face the upcoming challenges of the classrooms. For instance the existing resources must be made in tune with the requirements of the internship programme to be more comprehensive and effective. For this focus on the following points may help the student-teachers in doing so:

i. The concept and perspective of the teacher's involvement in achieving learning outcomes differ significantly across teacher education institutions and real-world schools. Inadequate time to complete the prescribed syllabus, inadequate pupil-teacher ratio per section, community outlook, etc. (Chennat,2014) are some of the aspects that should be addressed before planning an internship.

ii. How to address parents' problems—teachers are the link between the school administration and the parents. The student-teachers thus need orientations on addressing the parent's concerns in view of the administrative limitations of the school.

iii. How to forge the bonds between student-teachers and students—For achieving the desired learning outcomes, a rapport needs to be established between the student-teacher and student. The students are well aware that the student-teachers are there for a short period; hence the attention or seriousness given to the student teacher leaves a lot to be desired. The student teachers should be oriented and equipped to deal with such situations.

iv. Some schools may consider the task of providing internships to student-teachers as non-relevant to their institution. Therefore, the schools should be motivated to provide quality internships to the student teachers. (Patel and Srivastava, 2020).

v. In various small cities and towns in India, only girls' schools usually prefer female interns and only boys' schools prefer male interns. The allocation of school to various interns should be

done accordingly (Patel and Srivastava, 2020).

vi. Different working set ups such as rural/urban—the conditions in rural schools differs vastly from the urban schools and the student teachers are expected to deal with:
    - Parent attitude: Mindset of the rural population focuses on earning a livelihood and the need for education is evaluated by them accordingly. Sending kids to school is perceived as a loss of earning hands. Therefore, education in rural areas is not supported psychologically as well as financially (Kzlaslan, 2012).
    - Gender biasness: It is widely prevalent in rural areas and affects the female participation.
    - Lack of resources: In terms of lack of infrastructure, finances, etc.
    - Personal issues: The conservative attitudes, restrictions in rural sector create difficulties for student teachers. Lack of basic amenities such as transportation and lodging are of concern in remote areas (Goodnough and Mulcahy, 2011).

Re-imagining Internship

> A teacher educator one day came across a student-teacher, sitting and wandering his thoughts, the educator asked "what was troubling him?", the student-teacher replied, "I feel something is missing in my way of teaching, don't know how to that?" The educator replied, "Give up center stage! Give up any part of stage! You are not being evaluated! (only assessed). Be confident! That process is more important than the product. Cultivate uncertainty and try not to solve the problem or project ahead of time. Just be a facilitator!"

Some gaps between theory and practice which have emerged as per the recommendations from various commissions, committees and the responses to the questionnaire from various student-teachers who have recently completed internship, a few suggestions which could be instrumental in bridging these gaps while planning an internship programme emerged.

1. Identifying partner institutions, their types and requirements.
2. Orientation of principals, administrators and teachers of the identified institutes about the programme.
3. Apprise the students about the objectives of the internship.
4. Determine the learning outcomes to be achieved on the completion of the programme.

5. Develop a structured programme along with assigning experienced supervisors to guide interns.
6. Provide resource support and encourage interns to reflect, as well as to make them aware with the necessary skills needed and ways to improve upon them.
7. Adopt mechanisms to gather regular feedback from interns.
8. Set evaluation criteria.
9. Obtain periodic feedback from school administrators and school teachers, this would help in identifying strengths and weaknesses of the concerned intern.
10. Analysis of the feedback obtained from school administrators and teachers to improve the quality of the internship programme.
11. Monitoring of progress, this will help in evaluating the effectiveness of internship programme overtime.
12. Advocating longer durations for internships, so as to ensure the achievement of desired outcomes.
13. Ensuring flexibility in undertaking the course, in case of a missed internship programme. (If due to unforeseen reasons student misses the programme, they should be provided with alternate time periods to undertake the same.)
14. Arranging internship programmes in school complexes to gain first-hand knowledge of their operations.
15. Internships can be arranged during vacations of student-teachers on an honorarium basis. (This will motivate the interns and assist them in developing their skills.) One of the models that may be used and would be very beneficial in filling in the gaps in this context of reimagining internship is the sandwich model.

Sandwich model: In this model, student teachers get some period post first phase of internship and the second phase. They get time for reflective thinking on their internship experiences. This would benefit them to introspect on the techniques used, classroom management, day-to-day activities of school, etc. This would help them to rectify their mistakes when they go after a break for the next internship period, to improve their teaching practice, etc. Student-teachers should also find time for metacognition, to understand not only what was learned, also how it was learned and how this fits into future learning needs. Models like self-analysis, successful structuring of problems and interpretation should be encouraged. There are some more aspects which can be considered while planning an internship, these will aid interns for a qualitative development such as, individual skill-building problem assignments can be incorporated into project questions. The duration of the internship could be extended to include more practicum time. The Justice Verma Commission (2012),

mentions the need for improvement in teacher education programmes (2.1.4, 2.1.5), as well as the extension of pre-service teacher education and the provision of professional development. According to Building Kinder Brains, UNESCO MGIEP, 2021, Social and Emotional Learning (SEL) is a necessary condition for all learners. The evolution of the human brain is dynamic and is guided by the social emotional environment to which it is exposed. Student-teachers should embody SEL Children usually imitate the behaviour of people around them, so teachers should ideally practice SEL in their classrooms as well in other learning spaces. The pupil teachers can be made aware of these new research outcomes and up-skilled to apply the learning in the field. The student-teachers can be educated to bring about a transition in learners from 'reactive' to 'proactive'. Self Directed Learning (SDL) encourages natural blooming of self-confidence, inventiveness, tenacity and gratification. Student-teachers should be able to assess the readiness of the students; they should be able to motivate children towards SDL for their balanced growth. Internship in teacher education can be re-imagined and implemented in light of the NEP 2020. This would be a useful step in acclimatisation of student-teachers with the changing dynamics of the school and society. Probably internships with larger durations, spreading over the teacher preparation programmes with continuous mentoring, under guidance of a subject teacher associated with a modest stipend and deeper involvement in school activities may be the cardinal change required.

Conclusion

An elaborate internship experience provides student-teachers an opportunity to implement the theory they have learned in practice in teaching-learning situations. Additionally, it helps prospective teachers choose, organise, plan, and carry out purposeful classroom activities. The planning for the internship in teacher preparation courses needs to be intense, considering the number of weeks and activities that will be involved throughout the programme. NEP 2020 also puts forth various recommendations regarding the preparation programmes as well as the institutions offering them (Para 5.24). One of the main directives for teacher education in the National Education Policy 2020 is holistic development of teachers considering the multidisciplinary approach and inclusive education system. In this regard ITEP which is a dual-major holistic bachelor's degree programme that awards B.A. B.Ed., B.Sc. B. Ed., and B.Com. B.Ed., was announced on 22 October 2021. In 57 Central or State Government Universities or Institutions around the nation, it is scheduled to be piloted.

We are optimistic that if the internship in the teacher preparation programmes are given due weightage and conducted in a systematic way it would definitely add quality to teacher preparation.

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Teachers' Continuous Professional Development in South Asia
Challenges and Policy Initiatives

Subitha GV*

Abstract

The article is a review of teachers' continuous professional development programmes in South Asia. The article, through a review of global reports, policy documents, and research articles argues for providing high quality teacher professional development programmes so as to improve the quality of school education in the South Asian region. With particular focus on countries such as India, Bangladesh, Sri Lanka, Nepal and Pakistan, this article analyses the current nature of professional development programmes for teachers, highlights policy thrusts and interventions in the area and suggests areas of improvement.

Introduction

During the last decade countries in South Asia have centered their attention on achieving universal access and improving quality at the level of Primary and Secondary education. The investment has been successful with data showing an increase in the net enrolment of boys and girls at the Primary level, reduction in the numbers of Primary school-age out-of-school children and adolescents and narrowing of male-female gap at least at the primary level (UNICEF, South Asia, 2015).

Despite these significant improvements in the access, enrolment and retention of children in schools, research evidence suggests that schools in South Asia do not guarantee quality in learning (UNICEF South Asia 2015). Brinkmann (2017), highlights the 'learning crises' where

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the process of completing the full cycle of basic education is difficult for many children in South Asia. Data reveals that for every 100 children in South Asia who start primary education, 36 will not reach the last grade (UNICEF South Asia, 2015). About 11.3 million children at the primary level and 20.6 million children at the lower secondary level continue to be out-of-school and there are still a million children who complete primary education without mastering the foundational skills of basic numeracy and literacy (UNICEF South Asia, 2015).

One prime reason for this dismal situation in education in South Asia is because in the last few decades, the region has focused more on input related factors (for example, access and enrolment) rather than on outputs—with the implicit assumption that the inputs would translate into better learning outcomes (Dundar et al., 2014). Under the present circumstances of low quality school education being provided in schools, education policy debates in the region have emphasised the need for the shift in focus from input related factors to output related factors, thereby paving the way for economic development in the region. South Asia has the largest number of youth population in the world and they need to be provided quality education beyond the basic foundations of literacy and numeracy in order to enable them to navigate in a world of rapid technological change and increasing global competitiveness. The youth need to be equipped with higher order thinking skills such as, problem solving skills, analytical skills and critical thinking skills, that would contribute to their personal development and further to the regions' communal, societal and economic development.

According to Brinkmann (2017), the solution to deal with the challenge of learning crisis in South Asia, is to move away from the 'right to education' to the 'right to learning'. This situation calls for a renewed focus on improving teaching and student learning outcomes so as to bridge the gaps in learning that accumulate from the point of entry into the school system and widens over time. The situation calls for a competent teaching force in the region. Reforms in the education system in South Asia and improvement in learning outcomes among children can be achieved only with renewed focus on teachers and their professional development. Empirical research has time and again stressed the importance of improving teaching quality in improving pupil outcomes (Glewwe and Kremer, 2006). Teachers' participation in Continuous Professional Development (CPD) have a direct positive impact on boosting student achievement (Yoon et al., 2007) and reducing the performance gap among students (Meissel, Parr and Timperley, 2016). Research studies have documented the

importance of teacher professional development on teacher change (Clarke and Holingsworth, 2002); modifications in teachers' beliefs and classroom practices (Young, 2001) and improvement of student learning outcomes (Vogt and Rogalla, 2009).

The article, through a review of global reports, policy documents, and research articles argues for the need to provide high quality teacher professional development programmes in order to improve the quality of school education in the region. The article highlights the challenges associated with classroom teaching in South Asian region and reviews the traditional methods of teacher professional development programmes adopted in the region. The study highlights policy thrusts and interventions in the area and suggests areas of improvement.

Challenges in Classroom Teaching in South Asia

In countries, such as, Bangladesh, research studies (for example, Moyer and Sperandio, 2019, Setty et al., 2019) point out that the quality of public education remains a major dilemma. The study reveals that major attempts at integrating 'best practice' teaching methods through several educational reforms initiatives have met with limited success. The dominant pedagogical approach used by teachers is lecture-based and teacher-centric. Teachers have been characterised as passive and lacking enthusiasm in their interactions with students (Ahmed, 2009). Research reveals that gaps in teacher's content knowledge (Alam, 2016), uncertainty in how to develop subject-specific literacy and absence of adequate learning opportunities for teachers are key factors that affect learning outcomes (Sarkar, 2013). The Bangladesh Education Sector Review (2013) has concluded that low quality of teaching has resulted in low learning levels among children, inadequate acquisition of non-cognitive skills, inequitable learning among students and a high degree of variation between urban and rural schools.

A similar trend has been noticed in the education sector in Sri Lanka too. Senarathne and Gunarathne (2019) highlights that among the many problems in the education system in Sri Lanka, poor quality of education tops the list. An evaluation study by UNICEF (2016) has pointed out that the quality of teaching in Sri Lanka is poor, one of the reasons being the poor quality of teacher training. Teachers are not well prepared for teaching primary classes and lack competency in applying child-centric methods in classroom teaching. Research studies reveal that the reason for the lack of teacher quality in Sri Lanka is also related to other systemic factors, such as, relaxation of the minimum qualification for recruitment, imbalanced deployment of teachers with a surplus of subject teachers in urban areas and shortages in rural areas, and a weak

teacher training system (Dundar et al., 2017; Ministry of Education, Sri Lanka, 2017). Insufficient pre-service training, lack of teacher training facilities, funding limitations, lack of teacher educators and resource centers, dearth of literature in Sinhala and Tamil languages and insufficient focus on training primary school teachers are also quoted as reasons for poor quality teaching in the country (Ministry of Education, Sri Lanka, 2017).

The pedagogical approaches applied by teachers in classrooms has impacted the quality of school education in Nepal (The School Sector Development Plan, 2016. Many classrooms remain textbook and teacher focused and follow didactic teaching methods that emphasise rote learning and uncritical absorption of facts. Poyck et al., (2016) noted that although teachers were being trained, new learning methods are not being transferred to classrooms.

In the case of Indian schools and classrooms, Brinkman (2015) reveals that despite enormous investments in quality improvement initiatives under the *Sarva Shiksha Abhiyaan* (SSA), the National Curriculum Framework (NCF) 2005's vision of child-centric pedagogy being applied in classrooms continue to be elusive. The 'chalk and talk' or teacher instruction still dominates Indian classrooms. Similar concerns were also voiced by reports, such as that of British Council (2019).

Rationale of the Study

Teachers are the most important factors affecting learning in schools and their role will invariably be important in order to fulfill UNESCO's New Education Agenda 2030. Continuous Professional Development (CPD) activities is an integral part of the professionalisation of the teaching workforce as it provides teachers with opportunities for further learning and improvement throughout their careers (Guerriero, 2017). The inclusion of teachers' participation in CPD as an indicator for the achievement of United Nations (UN) Sustainable Development Goals (SDGs) is evidence of the increasing relevance of continuous professional development on the growth and development of teachers. Research studies and reports have highlighted that teacher quality matters more in developing countries than in the developed countries (Bau and Das, 2017; World Development Report 2018, mainly because of the inherent low learning outcomes among children in developing nations. In regions like South Asia, where schools are highly heterogeneous in terms of socio-economic, linguistic and religious backgrounds, and where many of the children are first-generation learners, there is an urgent need for teacher support through professional development programmes. According to Dundar et al., (2014), with the rapid expansion of schooling in South Asia, teachers often have to deal with large multi-

grade teaching situations, which pre-service and in-service training rarely prepares them for. Differences in how teachers engage their students appear to be the single biggest factor determining student learning (Béteille and Loeb, 2009). Brinkman (2017) observes that getting instruction right is particularly challenging in a context like that of South Asia, and advocates the need for implementation of transformative teacher training models that can bring about successful interventions in changing teacher beliefs and practices, and at the same time develop teacher competencies to ensure holistic outcomes among children that goes beyond foundational skills.

Current Status of Teachers' Continuous Professional Development in South Asia: A Review

Most professional development programmes in developing countries are centrally planned, formalised and prescribed, and do not cater to the teachers' interests and preference for development of certain relevant skills (UNESCO, 2016). The same trend has also been noticed in South Asia. The Asian Development Bank (2017), reports that teacher training in Bangladesh applies the Training of Trainers (TOT) process, and is implemented by the Training Division at the Central Ministry level. There is minimum involvement of local universities and the teacher training institutes and colleges. The training programmes are not institutionalised and have to endure lack of government funds and coordination. Further, the training programmes are project-based and are not linked to any incentive or promotion system (Asian Development Bank, 2017). Lack of supervision, support and monitoring mechanisms impedes the successful transfer of training knowledge. Research studies have revealed that teachers learn little from traditional in-service teacher training programmes (Ehsan, Biswas and Ashrafuzzaman, 2012) following which they use traditional lecture methods in classrooms leading to poor student participation and negligible learning. Teachers often complain that in-service training is theoretical and far removed from their daily work experiences.

Tahira, Hassan, Malik and Yousuf (2020) and Ali (2011) reveal that in Pakistan, most in-service training programmes are donor funded, and focus on achieving quantitative targets rather than qualitative changes. The teacher training programmes are funded by donor agencies and lack a database of trained teachers. Most often the master trainers are not adequately trained, there is insufficient monitoring and poor support system, and lack of accredited institutions to certify teachers (Tahira et al., 2020).

Sri Lanka follows a cascade model of teacher professional development. Teachers have expressed their disapproval of the cascade teacher training model where knowledge

provided during the training face risk of distortion and dilution down the line (ADB, 2017). The National Institute of Education (NIE) provides institutional support for in-service teacher education in Sri Lanka. According to The National Education Commission (2016), in-service programmes are designed as short-term programmes by NIE and Provincial Education Authority (PEA). These programmes do not have a long-term perspective and are not need-based. The usual procedure is for NIE is to train In-service Advisors (ISAs) to function as trainers in the provincial and zonal teacher training programmes. In-service teacher training in Sri Lanka face issues of unattractive lectures that lack relevance, lack of infrastructure and physical facilities; inadequate travelling and subsistence payments that discourage participants.

In Nepal, Poyck et al., (2016) highlight that poor teacher training is one of the reasons for low student achievement and poor learning outcomes. The School Sector Reform Plan (SSRP) reports that cascade model is followed for teacher development and that has resulted in poor quality of teacher training in the country. The report also quotes that the training modules are not need-based and that the teacher trainers themselves do not have the necessary training in pedagogical skills. The report further argued that the quality of teacher training can be improved with added emphasis on change in ethos, attitude and motivation of teachers—an outcome which the cascade model of training is not endowed to deliver. Gurung and Sharma (2013), reveal that though National Centre for Education Development (NCED) has authorised the Resource Centres (RCs) for empowering basic level teachers and Lead Resource Centres and Educational Training Centres (ETCs) for training of secondary school teachers, lack of availability of trained resource persons has hampered the effectiveness of the training programmes. Resource Centres are overloaded and they do not have sufficient willingness or capability to provide training to lower secondary school teachers. Shrestha (2008) highlights that NCED is not equipped with quality professionals to discharge important professional tasks and the institution does not have a mechanism to use professional institutions and individuals to develop plans and programmes on teacher development.

Bolitho and Padwad (2013) pointed out that in India, in-service training programmes, are generally short-term events, infrequent and usually conducted once a year. Saigal (2012) and National Council of Educational Research and Training (2016) observed that in-service training adopts the cascade model of knowledge dissemination. Brinkman (2015), highlights that in India, teachers have deep cultural beliefs which one-time training workshops are hardly able to address. Therefore teachers'

beliefs remain unchanged because the training programmes fail to address the culturally rooted values in which their practice is grounded. Therefore, though policies are attempting to change teacher practices from teacher-centric to learner-centric, in most classrooms, the dominant pedagogy used is teacher-centric.

The above mentioned reviews highlight the lack of a sound teacher professional development programme in South Asia which in turn has impacted classroom teaching quality. Brinkmann (2017) points out that at the heart of the learning crisis lay the teacher-centric pedagogy that dominates majority of the classrooms in South Asia. Teaching in South Asia is still dominated by reading directly from the text book, having students follow along and repeat, and having students copy directly from the textbook into their notebooks (Setty et al., 2019).

Policy Interventions in South Asia for Improving Teacher Professional Development

Policy initiatives in South Asia are indeed moving towards a shift from input related factors to output related factors with focus on improving student learning. The following paragraph provides a summary of the policy initiatives that countries in the region are initiating in order to improve the quality of teacher professional development.

a. **Bangladesh:** The Bangladesh Education Sector Review (2013) articulated the role of institutions such as National Teacher Education Council (NTEC), NTRCA (Non-Government Teachers' Registration and Certification Authority) and Technical Teachers Training College (TTCs) for the development of a well-trained teacher force for secondary education in Bangladesh. The report suggested the need to strengthen and formalise partnership with universities in order to improve the quality of in-service training. The report suggested that TTCs should provide a one-year diploma course focusing on pedagogy to improve the quality of secondary teachers and institutions. The report also highlighted the need for Continuous Professional Development (CPD) programmes through mentoring and on-site support for teachers via a network of field-based District Teacher Educators (DTEs) and Teacher Educators (TEs) located in high schools and teacher education colleges. The Asian Development Bank (2017), highlighted the need to set up an institution for teacher development policy; for formulation of a strategic development plan covering both pre-service and in-service training and for acknowledgment of in-service training programs as an essential part of teachers' CPD.

b. **Nepal:** According to the Ministry of Education, Nepal, School Sector Development Plan (2016),

teachers need to take up in-service training based on a National Teachers' Competency Framework and the National Framework for Teacher Development and Professional Preparation, with added mentoring by peers and head teachers. National Centre for Educational Development (NCED) needs to prepare courses to suit the professional development needs of the teachers with emphasis on subject knowledge, child-centric and active learning, inclusive education, and formative assessment to meet the learning needs of every child. The Education Training Centres (ETCs) needs to be strengthened and professional development packages are to be developed at district levels to allow contextualisation. Teachers are to be linked with senior teachers for peer mentoring and encouraged to undertake self and peer assessment to identify their professional development needs. Poyck et al., (2016), recommends the need to expand TPD as school-based teacher training programme for all teachers and also develop Resource Centre level networks for sharing innovation after the direct training. The Asian Development Bank (2017), recommended the need to convert Resource Centers and ETCs to Learning Centers, and make ETCs as autonomous training centers to enable them to utilise the existing facilities and services. The report recommends that Resource Centers should continue to organise thematic workshops while encouraging subject-wise meetings of teachers. The Centers should develop need-based ICT-based materials and make them available to teachers.

c. Sri Lanka: The National Education Commission (2016) recommends that selected TTCs have to be either upgraded to the level of National Colleges of Education (NCoE) or restructured as TTCs. The documents highlight the need to strengthen school-based teacher development programmes in order to improve the quality of education. The other suggestions include linking teacher appraisal, teacher promotion, to define and establish a set of Teaching Standards in order to ensure teacher quality and teacher evaluation. The Ministry of Education Training and Development Plan: 2017–18, recommends that the training impact has to be evaluated and suggested facilitation and rewarding of training participation. The National Education Commission (2016) envisions changes along three pronged ways (a) at the organisation level: National Colleges of Education (NCOEs) are to empower teachers to build a future generation of students who would be able to meet the demands of the new economy in terms of their ability; (b) At task level: there will be changes in the

subject matter, delivery methods (learner-centric methods) and assessment of learning. New subjects will be introduced particularly in the technology. (c) At the person level: development of the personal self of teachers in terms of self-understanding, motivation, ability to work as a team and to be able to innovative. The Commission suggests that every in-service programme should be need-based and should also include teacher professional development plan which should be communicated to the In-service Advisor (ISAs) through the principals. ISAs should identify the needs of the teachers and should develop a comprehensive in-service programme. School-based teacher development programmes that are designed and developed by school principals should be promoted in schools. These programmes should have inbuilt mentoring by senior teachers and formation of peer groups of teachers to provide mutual support in teaching and self-improvement.

d. India: In India, NEP 2020 has outlined that teachers would be provided CPD at different levels including those at the local, regional, state, national, international as well as through online workshops. Teachers are supposed to participate in at least 50 hours of CPD opportunities every year to increase their opportunities for professional development. The teachers are expected to be updated on the emerging pedagogies regarding foundational literacy and numeracy, assessment, competency-based learning, etc. NEP 2020 also envisions creation of school complexes for building a vibrant teacher community and a vibrant teacher knowledge base. School complexes would be platforms where teachers can share innovative teaching practices with each other and work cooperatively and collaboratively towards improving student learning outcomes. NEP 2020 envisages the use of platforms such as, SWAYAM, DIKSHA, etc., for supporting online training of teachers. National policies in India historically have been concerned with the quality improvement and indigenisation of teacher education, reflected in the recommendations of various commissions and committees appointed by the Government of India such as The University Education Commission (1948) and Acharya Ramamurthy Committee (1990). The Kothari Commission (1964–1966), acknowledged that teacher education programmes are largely divorced from the realities of the school and emphasised the need for improving quality in teacher education programmes through rooting the teacher education curriculum in Indian conditions. The National Policy on Education

(NPE-1986) asserted the need to modify teacher education curriculum in tune with the contemporary educational needs of the society and envisaged pre-service and in-service education as two ends of a continuum. Following the recommendations of the National Policy on Education (NPE-1986), the National Council of Teacher Education (NCTE) was established. NCTE devised the National Curriculum Framework for quality teacher education in the year 1998, followed by a revised National Curriculum Framework for Teacher Education (NCFTE) in the year 2009. The NCFTE 2009 envisaged a teacher education course that is constructivist and focuses on experiential and collaborative learning. At the same time, the Right to Education Act (RTE 2009) highlighted the significance of teachers within the education system by setting norms for availability of trained teachers in the school system, specified the academic duties of the teachers and set norms of pupil-teacher ratio in primary and upper primary schools. The Justice Verma Commission Report on Teacher education (2012) identified challenges to teacher education and in-service training and provided suggestions on revamping, improving and monitoring of teacher education and teacher performance in India. The report also reviewed whether the regulatory norms and procedures laid down by NCTE are being properly enforced. In 2017, NCTE launched DIKSHA (diksha.gov.in)— a national digital portal to support teachers in class teaching with resources, content and opportunities to interact with online teacher communities. The National Curriculum Framework 2005, expected that teachers have to be facilitators for students learning and reinforced a constructivist approach to teacher-student classroom interaction. The framework called for a reorientation of teacher educators in the emerging pedagogies who are trained in conventional methods and are used to conventional pedagogies.

Policies aside, the countries in South Asia have initiated innovative methods of teacher professional development. The following paragraphs describe innovations in teacher CPD in the South Asian region.

Innovations in CPD

1. School based in-service education is a powerful tool for improving quality of teaching (Beeson, 1987). Among the innovative approaches initiated by Bangladesh, one pre-pilot intervention study of an international education development programme in Bangladesh, demonstrated that school-based technology-enhanced support systems impacted classroom practice and helped teachers' professional

development. The study concluded that school-based teachers' professional development through technology-enhanced learning contributed significantly to in-service training in a resource-constrained context (Shohel and Banks, 2012). Along the same lines, Ashrafuzzaman (2016), analysed the programme English in Action (EIA) to improve the quality of English Language learning at the primary and secondary levels of school education. EIA focused on technology-based classroom teaching and included cluster meetings as part of the implementation. The study drew attention to the role of cluster meetings that were supported by audio and visual instructional materials and were conducted based on the interest, demands and problems of the teachers. Wijesundera (2002), studied a school improvement project carried out in Sri Lanka, where a facilitator from a central organisation worked with the principal and tutorial staff of a disadvantaged school for a 2 year period. Ten in-house sessions were conducted over the period. Base line surveys, observations and initial interactions with the staff were used to diagnose the needs of the school and strategies for interventions were planned accordingly. Development planning and self-assessment processes were used extensively in the interventions. These strategies have been effective in developing leadership and critical reflection habits of teachers. Furthermore, they have been instrumental in making the curriculum more relevant to the needs of the pupils and inducing the need for self-development in the staff.

2. Chang (2014), and Hussain and Ali (1998), drew attention to the role of cluster-based mentoring in Pakistan for teacher professional development in Baluchistan province. In this set up, a mentor teacher, posted at a Learning Resource Center (LRC) collaborated with 25 teachers of school clusters to conduct workshops, generate teaching and learning resources, observe mentee-teachers and give feedback. The study highlighted the role of cluster-based mentoring in changing teachers practices from traditional teaching to a more advanced activity-based teaching.
3. According to Jita and Mokhele (2014), teacher clusters are a recent experiment in teacher professional development. The study reveals that clusters improved teachers' content knowledge and pedagogical content knowledge and instilled process benefits such as the sense of collaboration, instructional guidance and teacher leadership. In India, NEP 2020's vision for school complexes or clusters can

be an example in this direction for teacher professional development using cluster approach.

4. Alam (2016), undertook a participatory action research of teacher collaboration and praxis in Bangladesh, wherein teachers discussed their own and others' practice collaboratively in tune with the needs of the students while reflecting on how they might change their practice to better meet the needs of the students. This collaboration resulted in a teacher learning community and a changed understanding of their roles and practices. The study showcased how a school, situated in a specific context, explored possibilities to do things differently and how the teachers themselves worked collaboratively to identify what was needed to improve their practice.
5. Pouezevara and Khan (2007), studied the use of mobile connectivity to determine whether it was an effective way of in-service teacher training to reach remote and rural teachers in Bangladesh including women and disadvantaged groups. The training process led to the development of learning communities, encouraged group and self-directed learning. The change in teachers was reflected in the new teaching that teachers were implementing in their own schools. Mobile technology improved convenience of training access, created opportunities for ongoing communication, and took into consideration the socio-cultural realities of the school and the country context.
6. The study by Di Biase (2019) asserted that teachers need continuous, localised and school-based professional development in order to enable them to expand their range of pedagogical strategies, such as, facilitating classroom discussion, managing group work, student interaction, monitoring classroom activities. The study attempted to understand the enabling conditions for pedagogy reforms by examining the conditions that influence how education innovations work in real-life practice in the Maldives school context. The study designed a pedagogical intervention in collaboration with teachers and school management, to support enactment of active learning in the school. The intervention provided a framework for teacher practice of active learning methodology by enabling teachers to view teaching as an interaction between teachers and students. The teachers had operational clarity on their roles and practices, and what is feasible and desirable as these were conceived and were compatible with the circumstances of their work. The intervention had the support of the research schools which ensured positive school culture. Teachers' practice was supported by resources and

classroom-based support. The study revealed that innovative practices need to acknowledge contextual conditions and develop a shared vision for change within the school community.

7. Rizvi and Nagi (2016) evaluated a teacher training approach called the Cluster-Based Mentoring Programme (CBMP) for the professional development of government primary school teachers in Pakistan. Data revealed that CBMP was effective in terms of improving teacher practices and student behaviour. The study revealed that the success of CBMP can be attributed to a cohort of teacher educators and experienced government primary school teachers who are selected and developed as mentors, who in turn mentored other teachers in their respective school contexts. The process led to the creation of horizontal mentor–mentee channels of communication that were more conducive for deep learning. The process enabled teachers to develop 'horizontal' learning networks among each other, take charge of their own learning, and keep the process of learning going on.
8. The study by Saigal (2012) examined an innovative model (collaborative apprenticeship model) for teacher support in Rajasthan's government schools. Drawing on the principles of collaborative learning processes, the paper discusses two support strategies in the form of professional dialogic interactions and modeling of pedagogic strategies used by the Educational Research Intermediaries (ERI) to interact with the teachers. The ERIs' supported the teachers through recognising and responding to teachers' 'local knowledge' thereby repositioning the teachers as an active learner.

Conclusion

The paper provides insights into the challenges and policy initiatives of countries in South Asia with regard to the CPD of teachers. The paper also provides insights into innovative practices in the area of teachers' professional development so as to enable policy makers to develop need based CPD programmes in their respective countries.

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Book Review

Children's Ideas in Science

Priya Johry* and Alka Bankra**

Edition: 2000 Edition
Editors: Rosalind Driver, Edith Guesne and Andree Tiberghien
Publisher: Milton Keynes Buckinghamshire; Philadelphia, Open University Press
Publication Year: 1985
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Language of the book: English
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Price of the book: 3,409 in Indian rupees

With the advent of globalisation, science and technology has become a significant or rather indispensable part of our life. And to advance in the modern age of innovation, we need to empower ourselves with the 21st century skills and should learn the know-how of inquiry-based science education. On considering equipping with the 21st century skills, several important questions arise, should science be taught differently in classrooms? What if the teacher needs to emphasise upon the process or the outcome? And the most significant question is about the child's psychology, i.e., how do they learn? The book, *Children's Ideas in Science,* tries to answer these critical questions and traverse through the secondary school children's ideas that are in the age group of 10–16 years, on a range of natural phenomena such as light, heat, force, motion, the structure of matter and electricity. The book intents to unveil the journey of understanding and shifting frames of knowledge of these children on the various topics of science, well illustrated and exemplified in its various chapters, depicting how these ideas change and develop with teaching.

It tries to widen the scope for reflective teaching practices for both

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teachers and teacher educators for the cultivation of student-centric, outcome-based learning as highly recommended by NEP 2020. The book seems to be well-organised and reader-friendly and has been divided into 10 chapters briefly painting the different frames of classroom scenarios tie-in with constructivism and connectivism learning theories.

Chapter 1 titled, 'Children's Ideas and the Science Learning' describes that students' minds are not blank slates and the children arrive in their science classroom with their own ideas and interpretations of phenomena even when they have received no systematic instruction on these subjects. These ideas and interpretations, are either a natural result of their daily experience of physical activities or social interactions or exposure to media. Thus, their thought process can give diverse interpretations on the same topic as a manifestation of their previously acquired notions and their exposure to new concepts taught in the class. Their learning experience is immensely influenced by the way new information is acquired and the way in which scientific knowledge is generated. Several examples have been cited throughout the book to illustrate that students don't modify their ideas soon after the attempt made by the teacher, who challenges their ideas by offering them counter evidence but instead; students may either ignore the counter-evidence or interpret it in terms of their prior ideas. In Chapter 2 titled, 'Light', the author conducted an experimental study on school children of various countries related to the topics—light and shadow, light and daylight and light and vision, it highlights the differences in perception of children for an entity—'light'. The analysis of study was done at multiple levels, i.e., individual level, within an age group and across age groups which clearly demarcated the differences in their perceptions. The results added for understanding that the same child perceived the concept differently when his/her age increased while children in the same age group showed different perceptions and thought processes for the same entity but they did have a clear limit regarding the depth of their perception. And at the third level, children in higher age groups clearly had a higher depth of thought and perception about the same physical entity—light.

The pedagogical implications that can be stated would be in terms of the efforts required by a teacher to develop and nurture the thought process of students in different age groups but within the limitation of their natural age and biological thinking limits. Pushing students to think beyond their natural capacities at tender ages can also be counter-productive to their overall development. The pupil should not be forced to learn a concept, but instead there should be a gradual ramp-up of thought-building encouraged

by the teacher through the thought-provoking questioning as with gradual learning, reading, age and maturity, students would naturally progress in their level of thinking individually.

There are many topics in science that children find difficult to learn and undoubtedly electricity is one of them. What is suggested in Chapter 3 of the book titled *Electricity in Simple Circuit* is in line to Jean Piaget's theory of cognitive development advocating the use of analogies as pedagogical tool for teaching children in concrete operational stage. Since, children in concrete operational stage cannot be expected to transfer logical deductions readily from one physical system to another, thus, the author advocates the use of analogies especially for transacting difficult topics for easy, effective and relatable learning. Chapter 4 titled, 'Heat and Temperature' provides an overview of pupils' ideas on the phenomenon of heat and temperature and sheds light on the way pupils shift their frames of knowledge on a concept with classroom teaching. Another important observation made by the authors discussed in Chapter 5 of the book explains that children often make their own models of science concepts based on their general observations and ideas from their day-to-day routine. These models may differ from those taught in books and by teachers. Therefore, teachers should create a conducive and open to learn classroom environment for their children to foster their free thinking. The author also states that language plays a most prominent role in teaching and learning and advice teachers to use language that students can relate to and connect with their daily experiences. Furthermore, teachers should understand that children have different levels of knowledge and should often practice teaching methods like discussion and debate to aid their understanding. Additionally, the chapter highlights the importance of introducing real-world materials to students before they do experiments to foster the need to use the laboratory qualitatively rather than quantitatively. Chapter 6 titled, 'The Gaseous State' exhibits common teaching mistakes and challenges faced by the Teachers while transacting a topic with broad array of concepts. In Chapter 7, the particular nature of matter in the gaseous state is in continuation to the study done by the authors in Chapter 6 where the authors conducted case studies in different countries to investigate and explore the difficulties confronted by pupils in understanding and learning behaviour of gases and its properties. The descriptions and arguments intended to stimulate awareness and sensitivity to pupils' alternative beliefs regarding the structure of matter and its particulate nature and its particulate nature. Lessons taught from the deterministic nature of students' preconceptions prompt teachers to search for more effective

teaching strategies. Lessons taught from the deterministic nature of students' preconceptions prompt teachers to search for more effective teaching strategies. The study concludes that major conceptual change is initiated only as a result of conflict between children's pervious conceptions and contradictory suggestion. And in science teaching, teachers should create a free environment to use the conceptual conflict as a teaching aid to facilitate the students' centered learning where the student openly exposes and articulates their preconceptions. Moreover, by recognising the persistence of these preconceptions, educators can be motivated to search for more operational teaching methods. If we turn the pages further, Chapters 8–9 titled, 'Beyond Appearances: The Conservation of Matter under the Physics and Chemical Transformation,' and 'The Earth as a Cosmic Body', respectively explores the types of reasoning used by 11–16 year old children about three types of changes, i.e., change of state, the process of dissolving, and the process of burning. Studies of secondary school children's ideas about these phenomena have been undertaken in a number of countries including Britain, France, Sweden, and New Zealand. The findings of the study identified that scientific concepts are not internalised on the immediate basis as intended with their formal teaching in schools rather, primitive elements tend to persevere in children's notions for some time despite of formal instruction. Another important observation made by the authors during the study was that the science topics are typically taught based only on the subject matter, without analysing the cognitive demands presented by the topic which restraints effective learning. The book ends with Chapter 10 titled, 'Some Features of Children's Ideas and their Implications for Teaching', which concludes that students should base their reasoning on observational features in problem situations. The authors suggest that in curriculum designing process, it is necessary to consider not only the structure of the curriculum but also the learners' perspectives. Moreover, knowing the students' ideas is a key component in specific learning tasks and teachers should provide opportunities to the students to make their own ideas explicit, allowing them to practice their ideas in a variety of situations and asking Socratic questions to change the students' conceptual learning. Also, students should be motivated to explore their ideas through discussion with their peers in small groups or brainstorming in class which can help them to appreciate the possible lack of consistency in their own thinking and to reconstruct their ideas in a more coherent way. The chapter also highlights that integrating new concepts is a longer-term process, and it may be difficult to assess the

effectiveness of teaching in promoting conceptual change in the short term, therefore, teachers may need to adopt long-term goals for pupils' conceptual learning.

Children's Ideas in Education is an insightful and thought-provoking book which tries to explore the reverberation of the children's preconceptions, or preconceived ideas on their learning of a subject and argues that these preconceptions of children play a critical role in shaping their understanding of new concepts. The book's informative discourse and field reportage insist the teachers to be aware of these preconceptions to improve their teaching practice to effectively facilitate learning. Another key strength of the book is its ability to present complex ideas in a clear and accessible way by making it easy to understand even for those with no background in psychology or education. Overall, the opus is an excellent resource for teachers and educators who are looking to gain a deeper understanding of how children learn by providing a comprehensive overview of the role of children's preconceptions in learning. The book is well-researched, clearly written, and highly practical, making it an indispensable tool for anyone who is engrossed in education.

Other books by editor Rosland Driver includes *The Pupils as Scientists*, first published in 1983 and *Making Sense of Secondary Science*, published in 2014. These books try to explore the critical perception of children in the light of a variety of science lessons from biologically to Earth sciences with an aim to widen the purview for science classroom teaching. Thus, an insight into the conceptual world of children in science classrooms would make science teaching and learning more rewarding for both teachers and students.

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