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एन सी ई आर टी
NCERT

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NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

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Editor's Note

National Education Policy 2020 envisions revolutionising the Indian education system by improving the quality of the system to prepare India as a global knowledge superpower. The country has been meticulously devising the plan for its effective implementation through well thought programmes and activities to strengthen the roots of this bulky fruit bearing tree of the country's education system while allowing its boundaries to flourish like a green bay tree. NEP 2020 recommends raising the excellence levels of teachers and teacher education programmes. It suggests mandatory as well as need-based participation of teachers in at least 50 hours of Continuing Professional Development (CPD) each year to accelerate their own professional growth. These programmes are expected to provide tremendous opportunities to the teachers to be fully acquainted with most recent technology advances and pedagogical strategies in order to meet the transboundaries of global change and the dynamic needs for learning. The policy also seeks to establish the National Professional Standards for Teachers (NPST), which will govern all the facets of teacher career management, professional development initiatives, pay increment, etc., with the inclusion of teacher audits and professional evaluations. To sum up, NEP 2020 policy has broaden the scope of Indian education system and is a sea of opportunities to be explored, discovered and to be dived into. The articles, case studies and research papers in the current issue of *Journal of Indian Education (JIE)* strongly aligns with the promising global prospects of the policy to aid in the construction of a resilient education system for the country.

Nidhi Gulati and Manish Jain did an in depth systematic review of the various government reports, documents, research reports and journal articles on the idea and conception of 'teacher' in India's National Education Policy to discover the rationale for delegating a pivot role to the school teacher in bringing educational reforms. The critical analysis indicated four particular constructs in the policy, namely, language schism, community, incentivisation and performance as the major grounds. The education system has been magnificently the accoutred in the past few years and has grown by leaps and bounds. To ace up with these dynamic needs of the 21st century, one should be technologically advanced and versatile. In this line of thought, NEP 2020 recommends enthusiastic participation of teachers in organised Continuous Professional Development Programmes to strengthen their professional competencies. Kriti Maheshwari through her study teachers' self-efficacy and their choice of Continuous Professional Development Strategies examines the major setbacks in effective implementation of CPD strategies. The investigations

of the study reveal that although majority of the teachers have moderate level of self-efficacy and were capable of choosing the appropriate strategy, but the time constraints and lack of autonomy in opting CPD strategy as per their needs refrained them from participating in the programmes conducted. B.P. Bhardwaj undertook a qualitative study in Jawahar Navodaya Vidyalayas of Chandigarh and Niwarsi to determine the effective and dynamic role of pedagogical leadership in proficient and systematic functioning of a school. The study could serve as a promising aid in designing and developing Continuous Professional Development Programmes and Strategies.

M.M. Roy, Meena Sehrawat and Ritika Dabas try to explore the knowledge and readiness of primary teachers on School Based Assessment subsequent to their NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement) training culmination. The crux of the study evinced the need for thorough training to make the programme ride high and achieve its goals. The findings also imply that training in procedural knowledge could prove to be an efficacious capacity building aid in filling the cranny nooks of knowledge and competency of the teachers. One of the NEP 2020 recommendations includes the development of scientific temper among the students where emancipatory pedagogy has a keen role to play. It is a conjugation of empowered teachers with autonomy to experiment and expand pedagogical horizons. Dhanya Krishnan through her paper 'Designing a Blended Learning Course on Pedagogy of Science of Pre-Service Teacher Education Programme', tries to unveil the theoretical pedestals with the pertinence and latitude of approach, providing an exemplar model of a blended learning design for Science pedagogy course in pre-service teacher education programme. The article also tries to the shed light on the key challenges in efficiently designing, implementing and adapting the course with respect to the current teacher education system of India.

Both NEP 2020 and Sustainable Development Goal 5 lay stress on gender equality and female empowerment to construct a just, sustainable and prosperous society. Shivani Bakshi's case study on school leadership journey of two women leaders of Kerala schools is in the same vein, where she spots on the gloomy areas of tight bureaucratic setup stained with patriarchal beliefs hindering the path of accomplishments of such emerging women leaders while criticising their competence of delivering results. Bhabani Senapati and Gowramma I.P. did a survey research to explore the cognizance of the students of the teacher education institution of Odisha on the subject of sexual harassment. The estimates reported that a huge number of respondents were not acquainted of the Internal Complaint Committee (ICC) for handling sexual harassment cases and lacked knowledge on its composition, functions or on the procedures of handling grievances. The delineations also accentuate on the pressing need of training programmes to educate and sensitise the students on such sensitive and serious issues.

Indu Sharma, through her paper 'Ecology and Inclusive', tries to foreground the essence of ecological orientation in inclusive educational practice. The author puts together the diverse and multiple perspectives of ecology to identify its feasibility and pertinence in the teaching-learning process for Children with Special Needs (CWSN) predominantly to understand and assess the students' learning behaviour and outcomes in a classroom environment.

Volunteering for teaching could prove to be a pillar of strength in helping achieve the objective of universalisation of education and foundational literacy and numeracy. Rajiv Kumar attempts to probe the potential and interest of Indian Civil Service aspirants to serve as Educational Volunteers in Special Education Zones where education remains isolated and off the map. The analysis favoured the introduction of mandatory voluntary services in education as it was found that majority of partakers were keenly interested to volunteer and contribute their teaching and mentoring services in various government schemes related to education, particularly in SEZ for the national progress and development.

MD Nawaz Sarif and Vandana did a cross-sectional study to investigate the prevalence of stress, anxiety, and depression among the students in North-East India with respect to their class grades. The findings of the study calls for swift, favourable, and resilient actions including home-school partnership, yoga, and physical exercises with guidance and counseling to rein in the disquieting magnitude of these mental health issues, thus, providing a conducive and supportive environment to students to a meliorate their psycho-social behaviour and conflict resolution skills while easing their adaptability with peers and society.

Eman Haidar Almoussabi and Brajesh Priyadarshi performed a contrasting gender-based research to statically compare and analyse the sequential acquisition of auditory and visual perceptual skills (AVPS) in Arabic-speaking children for Classes I to VIII of government school (lower socio-economic status: LSES) and the private school (higher socio-economic status: HSES) in the Sana'a district of Yemen. Evidences proved that the performance of the children gradually improved from lower to higher grades with no symbolic differences with respect to their gender or school type.

The COVID-19 has caused an unprecedented loss while placing a substantial mental health burden on students, raising several psychological risk factors. Jaya Rajagopalan, through her findings in the light of socio-emotional competence and adjustment of students in COVID-19 pandemic, traces the lowest scores on the regression analysis scale for a majority of students indicating a strong need to include socio-emotional learning interventions in school education.

Ruchi Garg's idea of adding innovative pedagogical techniques to the mathematics classroom would definitely make the learning of this arduous subject easy and interesting. Her idea of providing autonomy to the students to choose the learning material and deciding what and how to learn, combined with a positive way of delivering the feedback, is the most significant part that integrates innovation into these multi-grade and multi-age teaching classrooms.

We expect that our readers would be able to relate their personal experiences with the issues or concerns discussed by the authors of these articles and research papers presented in the current issue. We invite our readers from different levels of school education and teacher education to contribute to the journal by sharing their knowledge in the form of articles, action research reports, theoretical papers, book reviews, etc. Your valuable suggestions and comments for improvement of the quality of the journal are welcome.

Vijayan K.
Academic Editor

The Idea of School Teacher in the National Education Policy 2020

Nidhi Gulati* and Manish Jain**

Abstract

This paper analyses the idea and conception of the school teacher in India's National Education Policy (NEP) 2020. It explains the various reasons discussed in the research studies and the National Education Policy to assign a centrality to the school teacher in order to bring educational reform. The article examines the idea of the school teacher through the lens of NEP 2020 considering four frames of reference namely language schism, community, incentivisation and performance to discuss the construct of the teacher in NEP 2020.

Introduction

Various facets of the service conditions of the school teachers in India such as increasing contractualisation since 1990s, poor working conditions and lack of pay parity have received attention in the reports of various commissions and in the researches on the motivation of teachers (Ramachandran, 2005). Teachers' core work of teaching-learning is often unsupported as they work amid many lacks, primarily those of resources and materials. Research and policy have placed the blame of the system's inability to address the concerns of equity and quality on teachers' inaction, absenteeism, apathy, deficit, and epistemological beliefs in the ineducability of the children from marginalised communities.

Their professional status is nebulous as they have been mired in administrative responsibilities, kept away from decision-making and subject to a system where results, outcomes, and efficiency have to be showcased. Teacher failure

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cascades through student failure as poor performance of students in various national and state surveys is blamed solely on the teacher. Some support is found in in-service teacher programmes and ICT initiatives, such as DIKSHA. However, it has been argued that training is often not need-based, and often couched in a language of 'deficit', where workshops and seminars attempt to 'fill the gaps' (TISS-AUD, 2019). The National Education Policy 2020 aims to intervene and reshape this landscape.

Area of Research

This paper attempts to focus on the idea and conception of the teacher in NEP 2020. The policy assigns a certain pre-eminence to the teacher. To understand its conception of the teacher, expectations from them, and the distinctive ways in which change and transformation are postulated in the policy vis-a-vis the teacher, this paper focuses on: (i) why is it important to focus on the teacher, (ii) the idea of a teacher, (iii) teacher professionalism, (iv) appointments and communities of practice.

Objectives

The main objectives of the paper are:

(i) To examine the new ways of thinking that have emerged in the National Education Policy 2020.

(ii) To understand the issues around the teacher's work and teacher quality recalibrated in the National Education Policy.

(iii) To understand the way NEP 2020 imagines the development of the capacity of teachers and the quality of school education.

Methodology

To achieve the above objectives, this study undertakes a systematic review of the various government reports and documents, research reports and journal articles to understand the nature of concerns about teachers. Then, it undertakes a critical policy analysis of the NEP 2020 and subsequently, makes arguments based on the analysis of the secondary data.

Discourse on the 'Teacher Effect'

Teachers have acquired a distinct centrality in the policy discourses on education, education reforms, learning of students and quality of school education (NCTE 2009; OECD 2005; Gomendio 2017). A series of research studies spells out multiple answers to the question— why is improving the quality of teachers so crucial to improve the quality of education in a developing country.

The first set of arguments pertains to the crucial effect of the 'school dependent factors' (quality of teachers, resources, community-based management and adequate infrastructure) over familial and cultural factors in determining the quality of schooling for primary school children in low-income countries. This effect is discussed in a classic study by Heyneman and Loxley (1983),

known as the H-L effect, wherein they compare data from twenty-nine high and low-income countries. They further report that 'the proportion of the explained achievement variance due to schools and teachers are 90 per cent in India' whereas for Australia, it is 22 per cent and 26 per cent for the Netherlands. Further, their finding—'the poorer the national setting in economic terms, the more powerful the school effect', has several implications for investing in school education (Heyneman and Loxley, 1983.

Subsequent follow-up research argued for a fading H-L effect (Baker, et al., 2002). In the Indian context, this dramatic H-L effect was not replicated in follow-up studies that reported that both home-related and school-related factors contributed to students' learning achievement (Govinda and Verghese, 1993; Kingdon, 1998; Reddy, 2004). These researchers found that the school-related factors that impact children's learning levels are infrastructural facilities, instructional materials and textbooks, teacher quality, teaching practices, teacher commitment, Head Teacher leadership, teacher attendance and pupil-teacher ratio. However, follow-up studies by Heyneman, (2004) reveal that children from higher-educated families did considerably better in Europe but it was far less true in case of Thailand, Columbia, and India.

Thus, efforts such as changing curriculum, revamping textbooks, and the interventions targeted at more parental involvement and/or standalone interventions for improving quality have not proven to be sufficient. Textbooks have proven to be useful cultural artefacts to overworked and under-resourced teachers to actively engage in the social organisation of knowledge. However, if textbooks become the only resource for changing the quality of teaching-learning, without making investments in teacher education and empowerment of teachers, desired changes may not be possible (Batra, 2005).

The second set of studies draws attention to the interrelationship between teacher qualifications and experience and children's learning. It is argued that teacher qualifications are the 'most important determinant' of children's performance on learning achievement tests (Govinda and Verghese 1993; Kingdon, 1998). This holds significance in the Indian context, where teacher qualifications are lacking and para teachers are appointed in several states to make up for teacher shortages. In states like Karnataka, Meghalaya, Assam, Maharashtra, Nagaland, Odisha, Sikkim and West Bengal, nearly 38–40 per cent of teachers have only higher secondary qualifications or lesser (Calculated from U-DISE 2019–20, MoE, 2022). Further, the status and prestige of school teachers in society and the lower preference for school teaching as the profession also impact both the qualifications and long-term commitment to the profession. Interactions with urban

students entering teacher education programmes reveal that education is a 'fallback option' and the least favoured profession choice, and often a route to other career paths than school teaching (Batra 2005; Gulati, 2013). This concern with attracting the brightest and most talented to the profession has been reiterated across several committee and commission reports.

The third set of research evidence focuses on the pedagogical processes. Copying the textbook content by the teacher onto a blackboard, and the subsequent copying of this content by children in their notebook, followed by rote memorisation does not translate into conceptual knowledge development and engagement with ideas. Research shows that changes in classroom-based practices like explaining new concepts with pertinent examples, motivating children, allocation of homework and assignments and giving detailed feedback are the teaching-learning practices that improve children's learning levels (Govinda and Verghese, 1993).

The fourth set of arguments focuses on the linguistic schism between the teacher and the child, i.e., between home language and the language of teaching-learning, which impacts the quality of teaching-learning (Agnihotri, 2014). The fifth set of arguments revolves around constructs like teacher commitment, absenteeism (Kremer et al., 2005; Reddy, 2004), teacher de-motivation (Ramachandran, 2005), performance and accountability. Research has pointed out that the time spent by the teacher on task, i.e., the time spent in class teaching, classroom management and discipline, and time spent on administrative and other duties defining the nature of teachers, work, often has the least focus on teaching-learning (Sankar and Linden, 2014). A critical point of this shift is that most teachers have internalised the notions of 'performance management' through a mapping of input-output, 'levels of performance' and 'forms of quality' (Ball, 2007; Subramanian, 2018).

Huge teacher vacancies, their employment across public and private schools, and the dominance of private players in pre-service teacher education add to this complexity. At present, there are about 97 lakh teachers in India (Table 1). About 4 lakh private schools in the country employ 40 lakh teaching staff. 80 per cent of these private schools are low-fee paying schools. The ratio of government institutions and private institutions in school education and teacher availability in them is skewed. 68 per cent of the country's children attend government schools. 74 per cent of the total number of schools are government or government-aided and employ 59 per cent of the total teachers. Most teachers are trained in private institutions as less than 9 per cent of teacher education institutions are government (MoE, 2022).

Table 1
Demographics of School Education

Management	Number of Schools		Enrolment		Teachers	
	n	(%)	n	(%)	n	(%)
Government	10,32,570	68.04	1,309,31,634	49.50	49,38,868	50.98
Government aided	84,362	5.59	2,74,98,530	10.39	8,20,301	8.47
Private Recognised on Private Unaided	3,37,499	22.38	9,82,09,302	37.13	36,02,625	37.19
Others	53,277	3.54	78,88,109	2.98	3,25,783	3.36

(Source: MoE, 2022, UDISE+ 2019–2020)

The legacy of the teacher's systematic disempowerment, beset with confusions, tensions and complications about her place and role in education and society looms large over any educational reform or policy, including the NEP. It is amidst these complex realities that we need to examine how the NEP 2020 looks at the challenges involved in reforming the system with a focus on the teacher.

The Idea of a Teacher

The NEP 2020 brings back the focus on the 'teacher' and places the teacher at the 'heart of the learning process' and pays special attention to their recruitment, continuous professional development, positive working environments and service conditions. The policy commits to 'do everything to empower teachers and help them to do their job as effectively as possible' (MHRD, 2020: 38).

The lack of teacher commitment and belonging has been addressed by re-aligning the teacher-community relationship. It is articulated by hiring and deployment of teachers from local communities, voluntary work and one-on-one mentoring.

The linguistic schism between the home language of the child and the medium of instruction has been addressed by choosing the teacher from the 'local area'. Here local signifies several dimensions—geographical location, identity locations and familiarity with the local language(s). It aims to retain the teacher by providing them with local housing, increased housing allowances and incentives to teach in rural areas. The policy incentivises the deployment of teachers fluent in the local language to rural areas with high dropout rates that are 'currently facing acute shortage of quality teachers' (MHRD, 2020: 20).

Hiring teachers according to the home language of the learners is given preference in NEP, 2020. The policy stipulates that states may enter in to bilateral agreements to 'hire teachers in large numbers from each

other' to 'satisfy the three-language formula in their respective states' (MHRD, 2020: 13). This teacher, being a bearer of local language would fulfill different roles, which include making pedagogic plans and a print-rich environment, recognising local resources and materials such as local toys, folk songs and crafts for teaching. Therefore, the teacher is the main vehicle for making the minority language as the medium of instruction. It is expected that such a teacher would promote equity in multifarious dimensions such as access to schools, resources and indigenous and folk knowledge. These are expected to instil a sense of belonging and confidence among children.

Several dimensions of the community are mobilised in the policy. First, the community appears as an assemblage of the local, and unfractured by gender, caste, class and religion. Second, the community of people engaged in teaching includes the youth, the employed, the retired and a plethora of non-state actors. Third, the community is involved through the decentralised functions performed by the School Complex Management Committees. Fourth, the community is pulled into the teaching-learning of the school through the notion of volunteerism. Taken together, these dimensions aim to revive the community.

The policy articulates and recognises the socio-economic context of teachers' work, particularly in deprived areas and links it with incentives.

NEP 2020 simultaneously draws upon and deviates from the global teacher reform discourse despite the policy's placement in a wider neo-liberal frame. The global teacher reform discourse is increasingly focused on performance and competitive behaviour, '...judgments, comparisons and displays as means of incentive, control, attrition and change – based on rewards and sanctions both material and symbolic', (Ball, 2003: 216). However, NEP's proposed 'conditional' incentives are based on the conditions of work and the learning needs of children. There has been an issue of teacher deployment in rural or geographically difficult areas and teachers' preference for urban areas that lead to further neglect. The policy recognises this disadvantage in teaching-learning conditions and addresses it through special allowances for those working in geographically tough areas, where teachers are needed more. The policy stipulates that 'regions of the country with large populations from Socio-Economically Disadvantaged Groups (SEDGs)' be declared as 'Special Education Zones (SEZs)' (MHRD, 2020: 26).

Secondly, the language of standards, performance appraisal and accountability is used to incentivise and recognise outstanding teachers (MHRDs, 2020: 22–23, 32). If we read these conceptual deployments with the policy's greater emphasis on output

than on input, insistence on learning outcomes, and recognise teachers for 'novel approaches to teaching that improve learning outcomes in their classrooms' (MHRD, 2020: 11, 21–22), it becomes evident that the new norms are not delinked from the global education policy discourse. What is interesting to note is how the goals of equity and the framework of new public management come together to reframe teachers' work.

Thirdly, promotions have hitherto been based on seniority and not on an 'appraisal'. Teacher performance is measured indirectly through the children's performance in the periodic National and State Assessment Surveys. But by suggesting the setting up of the National Professional Standards for Teachers (NPST), NEP 2020 aims to standardise and visibilise teacher's labour and link it to learner performance. Teachers' performance cannot exist independent of the wider school education system.

Professionalism

In the 1970s, the conception of a teacher as a professional became popular, concomitant to the imagination of a 'reflective practitioner' in Australia, a 'critical pedagogue' and a 'thinking intellectual' in the United States.

There are six frames within which teacher professionalism as conceptualised below.

1. **Professionalism as an effect:** According to the National Policy on Education 1986, professionalism needs to come out as a result of rigorous teacher education programmes, both pre-service and in-service. Professionalism, according to the NCFTE (NCTE, 2009) develops through reflective practice and engagement with a wide array of individuals, groups, practices and structures.
2. **Professionalism as consciousness and work ethic:** This referred to the consciousness of one's self-teaching as a learner and independent thinker (Yashpal Committee, 1993).
3. **Professionalism as efficacy:** It focuses on particular characteristics of teacher self-efficacy, primarily defined in psychological terms of student engagement and classroom management (Bandura, 1977; Deci, 1985; Schwartz, 2015)
4. **Accountability and engagement: with the community:** Teachers' professionalism may best be defined by teacher accountability and decreased social distance from the community.
5. **Trust, knowledge and competence:** Teacher professionalism is conceptualised in the vocabulary of trust, and the premise that teachers are competent to discern and make judgments about why, what and how to teach (Whitty, 2000).
6. **New Public Management (NPM) discourse:** It conceptualises professionalism in terms of efficiency and cost-effectiveness, teacher accountability, monitoring

attendance and an outcome orientation (Verger et al., 2012).

Moving towards professionalising teachers' work, NEP 2020 focuses on instituting the standards of teachers' work and competencies, differently for each stage. This may include criteria for performance evaluation, making the subjective expectations less nebulous. However, there are concerns to be attended here. It is important to note that the standards must complement and carry forward the basics laid out in the Right to Education Act (Gazette of India, 2009). However, if teaching-learning becomes more characterised by a 'predefined set of professional standards of conduct and particularly prescriptive instructional resources, the profession may become more vulnerable to public criticism and frequently invasive external scrutiny' (Hargreaves et al., 2007). The Policy's Implementation Plan must deliberate on what frames of professionalism would be operationalised.

NEP 2020 asserts that quality is dependent on the teachers, who are 'at the heart of the learning process' and an avowal to 'do everything to empower teachers and help them to do their job as effectively as possible' (MHRD, 2020: 38). Restoration of trust is at the core of improvements in teacher development. Sadovnik and Giroux (1988) argues for an 'open' and 'discerning' pedagogy that assumes that teachers must have 'some control over the conditions of their pedagogical labour' to foster 'individual and social agency'. Academic labour flourishes when it is open to dialogue and recognises the teacher's work. It includes respect and consideration for the time and condition under which teachers must prepare lessons, conduct research, collaborate and engage valuable community resources. The most important challenge before the NEP's implementation is to accord teachers the dignity, service conditions, remuneration, academic autonomy and resources.

Conditions of Service and Communities of Practice and Care

In 2019–20, there were 3,36,970 vacancies in elementary schools and 5,06,740 total vacancies for school teachers (Ramachandran et al., 2020a). The maximum number of teacher vacancies exists in Bihar, followed by Uttar Pradesh, Madhya Pradesh, Jharkhand, Chhattisgarh and West Bengal. These vacancies have to be filled by qualified teachers. In response to the longstanding teacher shortage, delineation of the appointment of teachers is one of the strengths of NEP 2020. It articulates the need to 'recruit the very best and brightest to enter the teaching profession at all levels, by ensuring livelihood, respect, dignity, and autonomy, while also instilling in the system basic methods of quality control and accountability' (MHRD, 2020: 38). Firstly, it is envisaged that

bright students would be encouraged to join teacher preparation programmes by offering incentives and merit-based scholarships.

Second, NEP 2020 recommends simplification and transparency of the recruitment procedures, basing it on Teacher Eligibility Tests (TETs), classroom demonstration and/or interviews and knowledge of the local language. It is stipulated that teachers would be hired in schools at the local level with a planned and considered sharing of teachers across schools (MHRD, 2020: 5).

Third, the policy recommends a proper procedure for recruitment and deployment of teachers, paying special attention to ensure that all schools have the required specialised subjects and subject teachers. The nuanced differentiation of recognition of a subject teacher is drawn from the demands of vocabulary, literacy, genres, purposes and aims that are specific to each discipline. The creation, evaluation and dissemination of knowledge in each discipline also follow its own distinct trajectories (Bussert-Webb, 2011).

Fourth, the policy acknowledges that frequent and 'excessive' transfers are deployed as a political tool and therefore, limits transfer accountability only to exceptional situations, through transparent systematic open online systems. Such steps aim to reassure teachers, reduce unrest and apprehensions and lead to a continuity of relationships with students.

The leitmotif of the policy is the development of 'decent and pleasant service conditions' and 'caring and inclusive culture' by 'overhauling the service environment and culture of schools'. The policy articulates a vision for schools to become 'vibrant, caring, and inclusive communities of teachers, students, parents, principals, and other support staff' (MHRD, 2020: 21). This is visualised through 'community building', 'resource sharing' and relationships between teachers in school complexes so that no teacher feels isolated. The policy places teachers as participants in a community, as lifelong learners, invested in their students' learning (Ramachandran, 2020b).

The making of the communities of practice and care is indeed onerous. These communities are theoretically moored in communities of practice (Lave and Wenger, 1991) and 'ethic of care' or communities of care (Johnson and Gilligan, 1983, Sadovnik and Giroux, 1988). The implementation is tasked with creating environments that enable the flourishing of all participants in the school education system. For such a shift, strong political will and financial investments in the public education system is vital.

Conclusion

In this section, we conclude the paper by doing three things simultaneously.

These are: summarising the different theoretical frameworks discussed in the paper, juxtapose the discourse of NEP 2020 vis-a-vis these frameworks, and suggest certain issues and ways for consideration in the implementation of the policy.

We have argued that akin to the contemporary policy literature on the centrality of the school teachers to bring educational reforms, NEP 2020 also emphasises the significance of the school teachers in bringing a series of changes. To decipher the idea of the teacher in NEP 2020, the paper pays attention to four particular constructs in the policy, namely, language schism, community, incentivisation and performance. It talks about how these frames aim to address the concerns related to inequities and also overlap with the global education reform discourse. The paper spells out how NEP 2020 addresses concerns about working conditions and the pre-requisites for forming teachers as community of practice. The paper spells out how NEP 2020 responds to concerns about conditions of work and the pre-conditions needed to forge teachers as a community of practice.

To understand the idea of the teacher in NEP 2020, this paper deployed multiple frames of reference. The first one pertains to the significance of the teacher in the learning and capability development of children with a focus on the relative significance of the school-related factors vis-a-vis versus the influence of familial and cultural factors, teacher qualifications, pedagogic processes and the language used in the both classroom and child's home. The discussion about family and home in NEP 2020 largely pertains to the linguistic schism along with communication to the parents about the childs progress card, availability of the digital devices and home-schooling for learners with disabilities. The implementation plans of the policy need to recognise the multiple ways in which the social locations and power differential influence families, their interaction with schools and teachers and their influence on the learning of the students. Such a plan requires the institutionalisation of constant dialogue between schools, teachers and parents beyond parent-teacher meetings and school management committees. It would require mutual recognition of teachers and parents as repositories of knowledge and partners in the well-being of the child. As outlined before, NEP 2020 gives considerable emphasis on augmenting teacher qualifications and attracting the 'brightest' to join this profession. But this historically reiterated policy intent requires considerable political, financial and policy commitment to ensure the employment of teachers on professional terms to have secure livelihood and service conditions, charting a clear path of career development to make the profession aspirational and deployment of human resources in the school itself

that is complementary to teachers' role and work. The emerging political economy of private schools poses considerable challenges to such a vision.

The policy emphasises on 'holistic, integrated, enjoyable and engaging' curriculum and pedagogy but this is not attainable simply by reducing content, experiential learning and more subject choices. Whilst the NEP aptly draws the link between assessment and pedagogy from the socio-cultural theories of learning, it must be ensured that—(i) such assessment and pedagogy are adequately understood as teacher-driven and not adapted from a centralised model and/or dependent on external agencies ranging from NGOs, Corporate Social Responsibility to market and universities that lead to deskilling of teachers instead of scaffolding, (ii) assessment leads to pedagogy based on learners' needs, and (iii) teachers' time, work and labour in designing and undertaking these tasks are recognised. Importantly rather than being protean and invasive, school complexes can be built on communities of practise and non-hierarchical peer relationships for support. (Hargreaves et al., 2007).

The policy must be applauded for taking note of the linguistic schism between the teacher and the child and for entrusting the teacher to ensure significant space to the 'local' and 'minority' language to ensure learning and building confidence among students. But surely, such a mammoth task needs mobilisation of the various germane institutions to generate resources for such use. Further, policy implementation must recognise how English has become a mark of aspiration, social mobility, economic necessity and redefining the self needs recognition with its complex historical legacy and relationships with other Indian languages. And it is within the contours of this landscape that multilingualism has to find its voice(s).

Of the six frames of professionalism discussed in the paper, NEP 2020 seems to lean more towards professionalism as an effect of rigorous teacher education programmes; as efficacy couched in content of teacher characteristics and achievement; greater embeddedness and engagement with the local community and its way of life; and the New Public Management (NPM) discourse focused on efficiency, responsibilisation and accountability measured in terms of standards, learning outcomes and cost-effectiveness. To assign teachers a centrality in education and in students' learning and well-being, beyond more instrumental rationality and position, it is important that the other two frames of professionalism which focus on autonomy, criticality, reflection and trust emphasised in the recent policy texts and discourse on teacher education in India are accreted. A case in point could be the participation of the teacher to arrive

at measurable standards and criteria, both for students learning and teacher performance and appraisal.

The possibility of who a teacher can be in the reimagined 'democratic spaces' of the school must be carefully sifted from the cacophony created by global actors. In the 75th year of India's Independence, to decolonise India's education system, bring back the centrality of the teacher (*guru*) and claim its distinct status in the family of nations, we must realise that enslaved teachers cannot create autonomous learners who value freedom, equality and justice as the foundational core of Indian democracy.

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Teachers' Self-efficacy and their Choice of Continuous Professional Development Strategies in Trained Graduate Teachers of NCT Delhi

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Abstract

The 21st century skills need commitment from professionals to update their knowledge on their own which will in turn help in the development of the students. The Indian government started Massive Open Online Courses (MOOCs) on Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) portal based on transformative model which is the need of the hour. These types of programmes require motivation for self-learning. Therefore, the researcher administered self-efficacy scale and questionnaire to achieve the objectives of the research on 30 Trained Graduate Teachers (TGTs) teaching in secondary/ senior secondary schools (both government and private) of NCT Delhi. The findings show that no autonomy is given to teachers in choosing the Continuous Professional Development (CPD) programme. The self-efficacy test shows that they are capable enough to take the responsibility for their own Professional Development (PD). Time issues and lack of supportive environment in school caused major hurdles in effective implementation of the CPD strategies.

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Introduction

In this globally and digitally interconnected world, change is constant and learning never stops. Changes in the global demand for skills have profound implications for the competencies which teachers themselves need to acquire to effectively teach 21st century skills to their students. It is mandatory for the teachers to update themselves to be at par with the changing knowledge. But for updating their knowledge, they cannot merely rely on government programmes rather they themselves should take up the responsibility of their professional development. Teachers must be so intrinsically motivated that they autonomously enroll in various Continuous Professional Development programmes for the purpose of updating their knowledge as per the dynamic needs of the current times. Here, teachers' self-efficacy plays a major role.

Heutagogy (Self-determined learning) can provide the optimal approach to learning in the twenty-first century, particular in capability development. Capable people are also described as those who know how to learn, are creative, have a high degree of self-efficacy, can apply competencies in novel as well as familiar situations, and can work well with others (Eberle, 2013).

Generally, teachers' self-efficacy is understood with the self-belief of teachers that they can make positive effects on students' success. So, teachers' self-efficacy may be conceptualised as individual teachers' beliefs in their ability to plan, organise, and carry out activities that are required to attain educational goals. Perceived self-efficacy is concerned with people's beliefs in their capabilities to exercise control their own functioning and events that affect their lives. Beliefs in personal efficacy affect life choices, level of motivation, quality of functioning, resilience to adversity and vulnerability to stress and depression. Choosing a professional development strategy is a life changing decision. So, teachers' perceived self-efficacy will also affect their choice to choose the PD strategy autonomously or attend the strategy which is forced upon them.

When teachers' have high self-efficacy, they will be more confident to take control of their learning. They will become self-learners. Only then, teachers can adopt self-determined learning in CPD. Teachers have to come forward on their own.

Models of Continuous Professional Development

Aileen Kennedy (2005) has provided different types of models for CPD under three different purposes. This helps to critically examine the existing models in use to determine models for futuristic needs and advancements.

1. Transmission

(a) The training model: It supports a skills-based, technocratic view of teaching.

(b) The award bearing model: It relies on, or emphasises the completion of award-bearing programmes of study.

(c) The deficit model: CPD can be designed specifically to address a perceived deficit in teachers performance.

(d) The cascade model: It involves individual teachers attending 'training events' and then cascading or disseminating the information to colleagues.

2. Transitional

(a) The standards-based model: It represents a desire to create a system of teaching and teacher education, that can generate and empirically validate connections between teacher effectiveness and student learning.

(b) The coaching/mentoring model: The main characteristic of this model is the importance of the one-to-one relationship, generally between two teachers.

(c) The community of practice model: It recognises that learning within a community of practice happen as a result of that community and its interactions.

3. Transformative

(a) The action research model: It is the study of the social situation as researchers, with a view to improve the quality of decisions and action.

(b) The transformative model: It involves the combination of a number of processes and conditions, aspects of which are drawn from other models. The key characteristic is its effective integration of the range of models, together with a real sense of awareness of the issues of power, i.e., whose agendas are being addressed through the process.

Review of Related Literature

PD is not a new area of concern. It has been prioritised since a long time, though not in the shape as it is now. The researcher wants to study previous initiatives taken by the Government of India and other literature related to CPD to understand the changes in the model of CPD with time.

On the recommendation of Secondary Education Commission (1952–53), 100 extension services department in teacher training colleges were established to impart in-service education to teachers (Ministry of Human Resource Development, 2012). Kothari Commission (GoI, 1966) recommended allocation of more funds for teacher preparation, better salaries and improved service conditions for teachers and their educators to attract competent people to the profession (Kaur, 2013). National Policy on Education 1986 recommended the establishment of DIET in each district, and upgradation of 250 colleges of education as Colleges of Teacher Education (CTE)

and strengthening 50 of them as Institute of Advanced Studies in Education (IASE) (Ministry of Human Resource Development, 2012). *Vision of Teacher Education in India: Quality and Regulatory Perspective* (Ministry of Human Resource Development, 2012) recommended that all the existing teacher training institutions imparting in-service teacher education need to be strengthened. NEP 2020 recommended that teachers will be expected to participate in at least 50 hours of CPD opportunities every year for their own PD, driven by their own interests.

Schunk (1991) defined teaching as teacher's personal beliefs about capabilities to help students to learn. These beliefs may in them influence the teachers' activities, effort, and persistence. He found that teachers who had higher self-efficacy were more likely to have a positive classroom environment, support students' ideas, and meet the needs of all students. Organisation for Economic Co-operation and Development (OECD) report (2009) discusses the barriers of PD during 2007–2008 academic year as conflict with work schedule, no suitable PD, family responsibilities, too expensive, lack of employer support, and not meeting the pre-requisites. Darling-Hammond, et al., (2010) researched the CPD strategies of various countries and found out some effective strategies like lesson study (Japan), establishment of grants to pursue long-term course (Sweden), fixed number of hours for CPD (South Korea), action research project and master's degree from National University (Singapore), funding to improve PD (Australia), and school-based PD (Finland). Stefani and Elton (2002) discussed the importance of active involvement of teachers for CPD as it should be experiential, problem-based, research-based, self-initiated, and should take place at the learner's location. Blaschke and Hase (2016) defined heutagogy as a learner-centered educational theory founded on the key principles of learner agency, self-efficacy, capability, metacognition (knowing how to learn), and reflection.

Need for the Study

Teachers have an important responsibility in shaping the future of the students. They are responsible not only for the development of themselves but also of their students. The need for PD of teachers has been felt and given due importance since a long time and therefore, various agencies such as DIETs, State Council of Educational Research and Training (SCERTs), IASEs etc., have been conducting refresher programmes and orientation programmes for the teachers. But researches show that not many of these efforts have been successful in bringing positive results and report a lot of issues and problems. In India, the in-service teacher education programmes are not democratic in nature as they are based on the deficit

model and bring the teachers under an extremely intense a hierarchical structure (Ministry of Human Resource Development, 2012). Instead of benefitting from that model of PD, the teachers feel overburdened as those programmes were made compulsory for them and mostly took part in them reluctantly or for the sake of getting a certificate. Thus, it becomes necessary to shift the focus from the age-old ways of CPD training to more contemporary ways.

Now in India, the government has taken initiatives to start MOOCs on SWAYAM portal, which is based on transformative model rather than standards-based model, which is the need of the 21st century. The programmes like NISHTHA also require motivation to be learned on their own. However, it is very important to know whether our teachers have confidence to take initiatives, take control of their learning, have intrinsic motivation, and whether they want to take onus of their own learning. Therefore, the researcher proposed to undertake the study on self-efficacy of teachers and their choice of CPD strategies.

Research Question

How does teachers' self-efficacy influence their choice of Continuous Professional Development strategies?

Operational Definitions

- **Teachers' Self-efficacy:** Teachers' beliefs in their capabilities and competencies to improve their skills to achieve positive outcomes in students' learning.
- **Continuous Professional Development:** CPD is a continuous learning process throughout one's professional career. It should consist of formal as well as informal activities which will help to update oneself with the changing needs and demands globally.

Objectives of the Study

1. To study the level of self-efficacy of teachers.
2. To study the various sources (namely Performance Accomplishments, Vicarious Experience, Verbal Persuasion, and Emotional Arousal) of self-efficacy of teachers.
3. To compare the self-efficacy of teachers with respect to the mode of acquiring professional qualification and their reasons for joining teaching profession.
4. To study the perception of teachers towards various CPD strategies.
5. To examine the influence of teachers' self-efficacy on their choice of CPD strategies.

Hypotheses

The given null hypotheses were tested: There is no significant difference in the self-efficacy of teachers with respect to their—

1. Mode of acquiring professional qualification

2. Reason for joining teaching profession

Delimitation

The present study is confined to the TGTs of Secondary/Senior Secondary Schools of NCT Delhi.

Methodology of the Research

The following methodology was adopted by the researcher in order to fulfill the above stated research objectives.

Population

The population of the present study comprised all the Trained Graduate Teachers (TGTs), teaching in Secondary/Senior Secondary Schools (both government and private) of NCT Delhi, who have attended at least one in-service programme.

Sample

The sample of the present study comprised 30 TGTs, teaching Classes VI–VIII in private and government schools.

Selection of Sample

The self-efficacy scale and questionnaire were administered only on those teachers who had attended at least one in-service programme, as the intricate details relevant and required for this study could have been obtained only through them.

Selection of Teachers

From amongst the teachers who were teaching Classes VI–VIII and had attended at least one in-service programme, 30 TGTs were selected randomly using proportionate random sampling technique, from two Government and six Private senior secondary schools chosen on convenience basis. Those schools were selected which allowed to collect data.

Description and Development of Tools

Self-efficacy Scale

- Aspects of self-efficacy scale: The career decision self-efficacy scale 'Career Decision Self-Efficacy Scale-Short Form (CDSES-SF)' by Taylor and Betz, (1981) was adapted. The changes were made according to the objectives of this study.
- Formulation of the statements of the self-efficacy scale: Some statements which fulfilled the purpose of the study were chosen from the CDSES-SF related to initiatives, making plans, determining steps, etc., but the statements were changed from career focused to general self-efficacy.

The scale is divided into four sources of self-efficacy, i.e., Performance Accomplishment, Vicarious Experience, Verbal Persuasion, and Emotional Arousal and has 6, 2, 1, and 5 statements, respectively. The scoring was done on a 5-pointer likert scale, i.e., No confidence at all (1), Very little confidence (2), Moderate

confidence (3), Much confidence (4), and Complete confidence (5).

Questionnaire

- Aspects of questionnaire: The fine dimension that were chosen for the CPD questionnaire include the need of CPD, the CPD strategies teachers would prefer to adopt with reasons and challanges for making such strategic choices. The questionnaire also tries to comprehend the teachers' perception towards teaching as a carrier.
- Formulation of questions of questionnaire: On the basis of the dimensions selected, the questions were formulated. For each dimension, questions were formulated to inquire about the same. Both closed and open-ended questions were included.

Analysis of the Data

The analysis of the data through the self-efficacy scale was analysed quantitatively, and the data through the questionnaire was collected qualitatively.

Self-efficacy of Teachers

Self-efficacy is all about the belief in one's own abilities as it pertains to deal with various situations. The basic principle behind self-efficacy theory is that individuals are more likely to engage in activities for which they have high self-efficacy and less likely to engage in those in which they do not have self-efficacy.

Table 1
Mean, Standard Deviation of Sample, and Confidence Intervals for Population Mean

N	Mean	Standard Deviation	Confidence Interval (at 95% confidence)
30	54.3	9.48	50.91 to 57.69

Table 1 shows that the mean scores of the sample are 54.3. The standard deviation is 9.48. The true mean of the population will lie between 50.91 and 57.69 (95% confidence). It can be interpreted that there is a large variation in the population interms of teachers' self-efficacy of the teachers that can be moderate/high. Had the sample size been larger it could have been possible to be more conclusive about the level of self-efficacy of teachers in the population.

Table 2
Self-efficacy of Teachers

Self-efficacy scores of teachers	No. of teachers	Per centage
14–28	1	3.33%
28–56	15	50%
56–70	14	46.66%

From table 2, it can be interpreted that most of the teachers (50%) have moderate self-efficacy. The self-efficacy affects the amount of efforts individuals apply to a given task. A teacher with moderate self-efficacy has moderate confidence in making the relevant goals and completing them.

Level of Self-efficacy

In order to find the level of self-efficacy, it has been divided into three categories, i.e., the scores between 14 and 28 reflect low self-efficacy, the scores between 28 and 56 reflect moderate self-efficacy, and the scores between 56 and 70 reflect high self-efficacy of teachers.

It is evident from Figure 1 that 50 per cent of teachers have moderate level of self-efficacy and 47 per cent of teachers have high level of self-efficacy, whereas negligible number of teachers (3 per cent) have low self-efficacy. Bandura (1977) hypothesised that self-efficacy affects an individual's choice of activities, efforts, and persistence. Teachers with moderate self-efficacy show that they are not sure about their choices but on the other hand, teachers with high perceived self-efficacy show that they have complete confidence about their choices and they make relevant plan to meet their goals.

Hypothesis 1: There is no significant difference in the self-efficacy of regular and distance mode B.Ed. School teachers.

To compare the self-efficacy of teachers who have done B.Ed. from regular and distance mode, t-ratio was calculated (Table 3).

Table 3
Self-efficacy of Regular and Distance Mode B.Ed. School Teachers

B.Ed.	N	Mean	Standard Deviation	df	t-value	Table value (at 0.05)
Regular mode	16	53.5	8.13	24	–0.48	2.06
Distance mode	14	55.21	11.07			

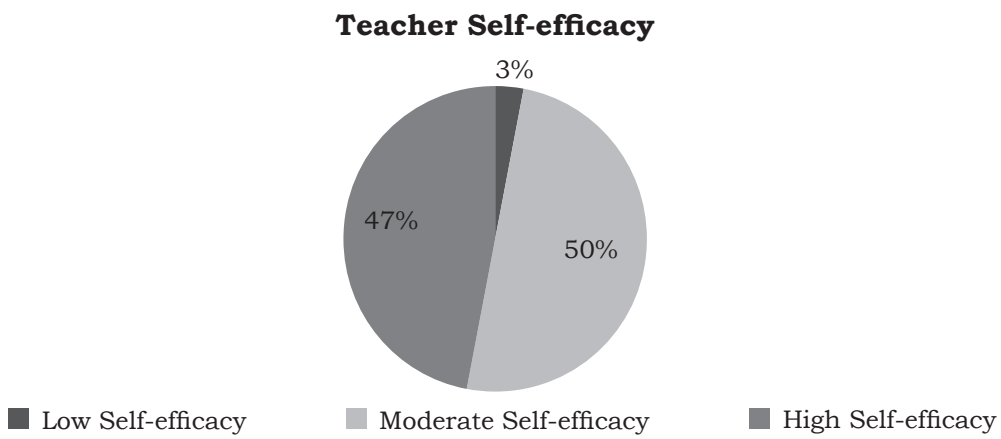

Fig. 1: Pie Chart showing Teachers' Self-efficacy

From Table 3, it can be seen that self-efficacy mean score of the teachers who have done B.Ed. from regular mode (53.5) is less than those who have done B.Ed. from distance mode (55.21). This difference is real as there is apparent difference in standard deviation as well. The calculated t-value –0.48 is less than the table value at 0.05 (2.06). Therefore, the null hypothesis is accepted.

Thus, it can be concluded that there is no significant difference in the self-efficacy of teachers who have done B.Ed. from regular and distance mode.

Hypothesis 2: There is no significant difference in the self-efficacy of teachers who perceive teaching career as simply a job or by choice.

To compare the self-efficacy of teachers who perceive teaching career as simply a job or by choice, t-ratio was calculated (Table 4).

From Table 4, it can be seen that self-efficacy mean score for the teachers who perceive teaching as simply a job (50.2) is less than that of the teachers who opted teaching profession by choice (55.12). But the apparent is not 'real'. The calculated t-value –0.842 is less than the table value at 0.05 (2.57). Therefore, the null hypothesis is accepted.

Thus, it can be concluded that there is no significant difference in the self-efficacy of teachers who perceive teaching as simply a job or by choice.

Sources of Self-efficacy

Bandura (1977) outlined four sources of information that individuals employ to judge their efficacy: performance outcomes (performance accomplishments), vicarious experiences, verbal persuasion, and physiological feedback (emotional arousal). These components help individuals determine if they believe they have the capability to accomplish specific tasks. Zimmerman (2000) has defined the sources of self-efficacy from most to least influential:

1. Performance accomplishments
2. Vicarious experience
3. Verbal persuasion
4. Emotional arousal

In Table 5, the statements of self-efficacy scale are categorised according to the sources of self-efficacy: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal.

Table 4
Self-efficacy of Teachers' Perception towards Teaching Career

Teaching perceived as	N	Mean	Standard Deviation	df	t-value	Table value (at 0.05)
Simply a job	5	50.2	12.44	5	–0.842	2.57
By choice	25	55.12	8.87			

Table 5
Statement wise Self-efficacy of Teacher

Sources of Self-efficacy	How much confidence do you have so that you could	Total scores	Self-efficacy scores									
			No confidence at all (Low self-efficacy)		*Very little confidence*		*Moderate confidence (Moderate self-efficacy)*		*Much confidence*		*Complete confidence (High self-efficacy)*	
			N	%	N	%	N	%	N	%	N	%
Performance Accomplishment: Previous successes in similar situations	find information in the library about the works you are interested in	120	–	–	2	6.66	8	26.66	8	26.66	12	40
	find out/search the relevant materials to learn	124	–	–	2	6.66	3	10	14	46.66	11	36.66
	make relevant plan for your goals	118	–	–	2	6.66	7	23.33	12	40	9	30
	determine the steps you need to take to successfully complete your goals	119	–	–	3	10	5	16.66	12	40	10	33.33
	determine the steps to be taken if you are having trouble in achieving our goals	106	1	3.33	4	13.33	10	33.33	8	26.66	7	23.33

	find information about educational or professional institutions	131	–	–	2	6.66	3	10	7	23.33	18	60
Vicarious experience: Modeling on others in the same situation	talk with a person who has already mastered the skill/ knowledge which you want to achieve	118	–	–	3	10	4	13.33	15	50	8	26.66
	identify different sources relevant to your career possibilities	119	–	–	3	10	6	20	10	33.33	11	36.66
Verbal persuasion: Undergoing verbal persuasion by powerful, trustworthy, expert, and other people	persistently work at your goal even when you get frustrated	108	1	3.33	4	13.33	9	30	8	26.66	8	26.66

Emotional arousal: When physiologically aroused and experiencing negative emotions, our self-efficacy may be undermined, whereas such arousal paired with positive emotions heightens the sense of self-efficacy.	determine what you want to learn	128	–	–	1	3.33	3	10	13	43.33	13	43.33
	accurately assess your abilities	114	–	–	3	10	8	26.66	14	46.66	5	16.66
	change your plans if the previous plans did not work to achieve your goals	115	–	–	4	13.33	5	16.66	13	43.33	8	26.66
	make a decision and then not worry about whether it was right or wrong	114	–	–	4	13.33	8	26.66	8	26.66	10	33.33
	figure out for what you are ready and not ready to sacrifice to achieve your goal	108	1	3.33	4	13.33	8	26.66	10	33.33	7	23.33

For each statement, the lowest score is 30 and the highest score is 150. The scores are categorised into three levels: 30–60 show low self-efficacy score, 60–120 show moderate self-efficacy scores, and 120–150 show high self-efficacy score. In majority of the statements, teachers have moderate self-efficacy and a substantial number of teachers has high self-efficacy.

Continuous Professional Development of Teachers

All the teachers have some experience of in-service programmes conducted by institutions. CPD programme vary from school to school. The programmes attended by teachers were: workshop on happiness curriculum, super teacher seminar, workshop on 3D printing, workshop on classroom management and so on.

There are five themes under which questionnaires were analysed:

1. Teachers' perception towards teaching as a career
2. Need of continuous professional development
3. Continuous professional development strategies that the adopted by teachers
4. Continuous professional development strategies that the teachers would prefer to adopt and the reasons behind it.
5. Barriers faced by teachers while adopting continuous professional development strategies

Influence of Teachers' Self-efficacy on Their Choice of Continuous Professional Development Strategies

Self-efficacy has influence over people's ability to learn, their motivation and their performance, as people will often attempt to learn and perform only those tasks for which they believe they will be successful. CPD is one of those tasks which needs their high perceived self-efficacy, because if teachers believe in themselves then they will be successful in it, will be able to learn, have motivation to participate in it, and try to perform well.

As 50 per cent of teachers have moderate self-efficacy and 46.66 per cent of teachers have high self-efficacy, it shows that teachers have belief in their own abilities to make relevant plan for their goals, find information in the library, find relevant material, accurately assess their abilities, change plans if needed, etc. The moderate and high self-efficacy shows that they have the ability to choose the PD programme for themselves as per their own needs.

So, here if a person has belief in oneself, one can acquire the skills which one wants to as majority of the teachers (93%) feel the need of CPD in their teaching career. Also majority of them have at least moderate self-efficacy (96%), which represents that these teachers are able to take initiative for their own CPD. And when asked about the efforts they make for their own PD, majority of the teachers (86%) mentioned making efforts for it.

And those who do not make any effort end up facing hurdles (time issue and no support from school).

There were different types of strategies mentioned when asked about the strategies which teachers want to adopt. These strategies can be differentiated in two categories—formal (workshop, faculty exchange, conference and meeting) and informal (library, researches, enrolling in short term course, long term course, distance course, online course). Majority of teachers (75%) who perceive their self-efficacy as high want to adopt informal type of CPD, mainly, library and researches. Teachers with moderate self-efficacy choose both type of strategies (informal and formal) equally.

To conclude, teachers are willing to make efforts for their PD but they face barriers, mainly related to time and support from school.

Major Findings

The major findings of the study undertaken by the researcher are reported as follows:

Major Findings Related to Self-Efficacy of Teachers

Majority of the teachers have moderate level of self-efficacy, which shows that majority of the teachers have moderate level of confidence to pursue PD on their own. The analysis of every statement of self-efficacy scale shows that teachers have moderate level of self-efficacy. The statements of self-efficacy scale were grouped on the basis of sources of self-efficacy (performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal). The findings were as follows:

Performance accomplishments

All teachers have moderate or high level of self-efficacy in the statements related to performance accomplishments. This shows that teachers have positive outcomes of their previous experiences, and that is why, they have moderate or high level of self-efficacy.

Vicarious experience

Teachers have moderate or high level of self-efficacy in the statements related to vicarious experience, which shows that they have people around them who have the same capabilities to master the skills which raises their belief in themselves.

Verbal Persuasion

Teachers have moderate level of self-efficacy in the statements related to verbal persuasion, which shows that teachers have influential people in their lives who can strengthen their beliefs in their own capabilities to do a certain task.

Emotional Arousal

Most of the teachers have moderate level of self-efficacy and some teachers have high-level of self-efficacy, which shows that most of the teachers have positive emotions which boost their confidence in their skills.

There is no significant difference in self-efficacy of teachers with respect to professional qualification, and how teachers perceive teaching as a career.

Major Findings Related to Continuous Professional Development of Teachers

Teachers' perception towards teaching as a career

The Majority of the teachers chose teaching as a career, well demonstrated through their commitment towards by teaching career. As productivity and job engagement get affected 'if a person chooses a specific carrier for themselves' or else 'they consider it just as a job'.

Need of CPD

Majority of the teachers feel the need of in-service teacher training. They stated that CPD helps to update knowledge, attitude, and skills.

CPD strategies adopted by teachers

While adopting CPD strategies, majority of the teachers participate in workshops as they are compulsory in schools. Most teachers do not get the choice for CPD strategies. The least chosen option was enrolling in a long-term course, as the job does not allow them and schools do not support this. Majority of the teachers adopt CPD strategies to update themselves and the negligible number of teachers who cannot adopt the strategies were due to lack of support from school and time constraints.

CPD strategies that the teachers would prefer to adopt and the reasons behind it

There were many options from which the most chosen option was 'library' as a strategic source to update their knowledge, attitude and skills as teachers are not willing to adopt long term course as a CPD strategy.

Barriers faced by teachers while adopting CPD strategies

For all the strategies, two barriers are common—time constraint, and no support from school. As the researcher has also analysed teachers' engagement in school in teaching or non-teaching activities, it can be interpreted that in schools, teachers spend more time on teaching and remaining time on non-teaching activities. But the tasks during non-teaching time are always allotted for different activities like assembly duty, in charge of different clubs, or notebook checking (which is a never-ending task in schools). Teachers get no time for PD activities.

Influence of Teachers' Self-efficacy on Their Choice of Continuous Professional Development Strategies

To find their choice of CPD strategy, to understand their autonomy to choose activities for themselves and the choice of activities they want to adopt if autonomy is given to them, the data was collected through self-efficacy scale and questionnaire. So, the self-efficacy of teachers affects

the CPD strategies that they want to adopt. Majority of the teachers who perceive their self-efficacy as moderate, wanted to adopt informal PD strategies which shows their willingness to adopt CPD strategies for themselves.

Conclusion

CPD is an important aspect of a teachers' career, but it is the most neglected one. The programmes are made compulsory, and the needs of teachers are not catered. Most of the programmes are also isolated in nature. No autonomy is given to teachers in choosing a relevant programme for themselves. Previous researches on CPD show that autonomy should be given to teachers and they are responsible for their own CPD. When autonomy is given to teachers, they will choose the CPD strategy of their choice and as per their needs. But with autonomy, one important aspect comes along, i.e., capability. The results showed that teachers are capable enough to take the responsibility for their own PD. But self-efficacy is not static in nature, so with appropriate environment, a person's self-efficacy can increase as well. Furthermore, the research also showed that teachers were willing to adopt CPD strategies, which show that they can choose CPD strategy according to their needs. Most teachers faced barriers related to time and lack of supportive environment. As teachers are capable of choosing the appropriate strategy for themselves, teachers should adopt self-determined learning and schools should support it.

Teachers should be given enough opportunities to take their own decisions. Teachers should get autonomy to choose CPD strategies as job-embedded by ensuring that they get enough time in school or schools should provide specific time for PD. Also, school teachers must be aware about self-determined learning, where in teacher educators will act as facilitators and provide support to teachers, if needed.

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Pedagogical Leadership in School
A Qualitative Study

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Abstract

The concept of pedagogical leadership in school is relatively new that has emerged in the early 1980s and has not received much attention in the modern India. Since school is a people-based organisation, the quality of relationships among stakeholders is significant in determining the effectiveness of its functioning. The role of the principal or school head as an effective pedagogical leader improves the quality of teachers' pedagogic styles and the engagement of students in the teaching-learning process. In this study, the two Jawahar Navodaya Vidyalayas, one located in Chandigarh and the other in Niwarsi, Kurukshetra, were randomly selected. The case study method was followed to study the quality of education. The findings of the study are useful for policymakers and Principals to develop a capacity-building programme for Principals.

Introduction

Since its independence, India has made an unprecedented quantitative expansion of education facilities at all levels. We had 1.4 lakh schools in India in the year 1950–51 at the time of independence. However, according to the UDISE+ data, as per the academic year 2018–19, India has more than 10.83 lakh schools (UDISE+, 2019–20). At the United Nations Conference, 17 Sustainable Development Goals (SDGs) were developed for the years 2015–2030, replacing the eight Millennium Development Goals. The idea was to establish a set of global objectives related to the political, social, and

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economic problems that the humanity is currently facing. Of these 17 SDGs, which we are planning to attain by 2030, Goal 4 aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Thus, 'quality of education' is a significant concern even in the global forum. Likewise, in modern India, one of the major concerns of Indian Education is to improve the quality for which there have been enormous innovations and interventions since the time of independence.

These include the Mid-day Meal Scheme, Continuous and Comprehensive Evaluation, innovative teacher education programmes, special attention to Early Childhood Care and Education, and different kinds of schools under organisations like Kendriya Vidyalayas, Navodayas, Sarvodayas, Rajkiya Pratibha Vikas Vidyalayas, Nayugs, Kasturba Gandhi Balika Vidyalayas, Ashram Schools, Eklavya Model Schools, etc.

We cannot deny the role of stakeholders in improving the quality of education. Stakeholders, such as policymakers, school heads, teachers, parents, administrators, etc., are a part and parcel of the process of expansion of quality and quantity of education. Out of all the stakeholders, this paper highlights the head teacher/ principal's role as a pedagogical leader in improving the quality of education. The principal of a school has a massive role in the development of schools, for which they have many managerial responsibilities related to infrastructure, stock, facilities and management of staff. They are the ones who facilitate the implementation of policy and initiatives proposed by the government organisations or autonomous bodies.

Further, they also contribute in guiding teachers to regulate and enhance the performance of learners, which is the main focus of pedagogical leadership. The concept of pedagogical leadership of a principal in a school is a relatively new concept that emerged in the early 1980s and has not been explored much in the modern Indian context. We can even see the evidences of the traces of leadership in educational administration in our ancient texts, where *Acharyas* brought together knowledge, tradition and practices to run an effective educational process through various teaching-learning strategies. This study emerged as the result of a need to develop an in-depth understanding of the contributions of principals of secondary schools. We aim to determine how they perceive their role as pedagogical leaders for providing pedagogical support to the teachers in their school to improve the teaching-learning process.

The objectives of the study to:

- Assess the principals' understanding of their role as a pedagogical leader.
- Identify pedagogical support principals provide to teachers to improve classroom teaching processes.

- Explore the issues and challenges faced by principals while facilitating as pedagogical leaders.
- Examine the effectiveness of the principal's pedagogical support from the teacher's perspective in improving the teaching-learning process.

The following are the research questions:

- What is the level of awareness of a principal as a pedagogical leader in the school?
- How is the school's principal providing pedagogical support to teachers for improving student learning outcomes?
- How are the school improvement strategies planned and implemented by the principal effectively?
- What problems and constraints in school improvement are experienced by the school principals?
- How do teachers perceive the pedagogical support of the principals in improving their teaching process?
- To what extent are the parents satisfied with the teachers' behaviour with them and their wards/children?

Literature Review

Heikka and Suhonen (2019) conducted a research on Distributed Pedagogical Leadership functions in Early Childhood Education (ECE). The research was carried out in a medium-sized town in Finland between 2016 and 2018. This research collected the data via six semi-structured theme interviews and written documents from the participants. This small-scale study aimed at identifying the functions of distributed pedagogical leadership through the interdependence of leadership enactments by the Centre Directors and ECE teachers. Data on the perceptions of six ECE professionals, two ECE Centre Directors, two ECE teachers and two child care nurses on distributed pedagogical leadership were collected via individual interviews and written documents. The study concluded that for a real-world function of ECE, there was a need for shared visions, goals, and values constructed between the staff. Interdependence between the staff and the leadership is significant for pedagogical development. The teachers valued the space of guidance and reflection in enhancing their pedagogical practices. Operational structure and cultural ethos are significant for the system's functioning. Enhancing efficient and participative decision-making within centres to increase interdependence built the decisions about pedagogy, pedagogical development and interventions from the community.

Similarly, Fonsen and Soukainen (2019) conducted a research titled Sustainable Pedagogical Leadership in Finnish Early Childhood

Education (ECE): An Evaluation by ECE Professionals'. The research aimed to investigate how ECE professionals evaluate their Leadership. The context of the study was a development project called Sustainable Leadership in ECE conducted in two municipalities in Finland. The project aimed to investigate and create a sustainable structure for ECE leadership to strengthen pedagogical leadership. The participants comprised 110 ECE professionals, including experts, directors, teachers, and nurses. The research was based on responses to an electronic questionnaire about the quality of ECE leadership built around six themes: Leadership of the organisation, Human resource management, Structure of the organisation, Pedagogical leadership, Knowledge management and well-being, and Leadership of self. The results indicate that only in the pedagogical leadership theme, there were statistically significant differences between the groups of professionals. Having high professional status and being highly qualified seem to enhance the ability of professionals to reflect critically on pedagogical leadership and to have more demanding attitudes about the quality of pedagogical leadership.

Seiser (2020) conducted a research titled 'Exploring Enhanced Pedagogical Leadership: An action research study involving Swedish Principals'. This action research reports about the principals'. pedagogical leadership and what happens when the school principals explore pedagogical leading. Principals tried out different pedagogical leading actions in their schools. The results showed that these actions were significant in the improvement work and brought about several substantial changes in their leading pedagogical practices.

Aung (2018) conducted a study titled 'Pedagogical Leadership in Myanmar: An Exploratory Study'. The research aims to explore the practices and experiences of the current Myanmar secondary school principals concerning embracing pedagogical leadership to adopt new educational changes. The findings revealed that High School Principals focused on the development of the whole child as the primary responsibility, that is, to attend both academic and non-academic functions. In contrast, staff development is a secondary concern. It also claimed that a supportive school community could allow them to focus on both primary and secondary concerns. In this, there were imbalances in the inception of pedagogical leadership indicated in the priorities of school principals.

Marak (2013) conducted a study titled 'A Study of Educational Leadership among Secondary School Teachers in South Garo Hills District of Meghalaya'. The study aimed to find out the leadership in education among secondary school teachers

in South Garo Hills district of Meghalaya. The findings of the study indicated that half of the teachers secondary school in South Garo Hills district of Meghalaya were having high educational leadership. Further, no significant difference was found between male and female teachers. But male teachers were having slightly higher educational leadership than the female counterparts. Also, there was no significant difference observed between rural and urban teachers. But rural teachers were at slightly higher level in educational leadership than the urban teachers. The trained secondary school teachers were having higher educational leadership than the untrained teachers.

Gafoor and Ali (2009) conducted a study titled 'Existing Knowledge Base and Perspectives of Principals on Weaker Links in Educational Leadership Preparation in Kerala' to study the perspectives of Principals on the strengths and weaknesses in Educational Leadership Programmes. The results of the study indicated that the school administrators lacked the ability of planning, controlling, effectively communicating with and providing motivation to teachers. They failed to maintain a balance between observing the official rules along with instilling confidence in their colleagues and also, failed to express creative criticism harmoniously and in providing humanitarian consideration to colleagues. Content analysis revealed that there was not enough accumulated body of knowledge and practice to foster the competencies expected from an educational leader for realising the current visions on education in the local context of Kerala.

Methodology

The study uses a qualitative approach where the focus is to develop an understanding of the research objective in natural settings. The study uses the case study method. The list of ten good-performing Navodaya Vidyalayas in the northern region were provided by Navodaya Vidyalaya Samiti (NVS). Out of them, two schools were randomly selected on merit basis through intensive discussion with the Principals of the schools. One school from Chandigarh region situated at Chandigarh and another from the Jaipur region situated at Niwarsi, Kurukshetra, were selected for the case study. A team comprising of 2–3 experts from the NCERT visited each school for four to five days. The research team conducted an in-depth study on the role of the school principal as a pedagogical leader. The team interacted with the Principal, teachers, students, parents, Librarian, Mess In charge, and other employees of the school to determine the working/functioning of the school. Various tools were used to identify and evaluate how the instructional strategies provided by the Principal assisted and facilitated the aspects of the teaching process. The research team developed an Observation Schedule to observe the

school environment and curricular activities. The research team developed and used a questionnaire to cover basic information on various aspects like infrastructure facilities, human resources, and teaching-learning facilities, including ICT and other resources for the overall development of students. A semi-structured interview schedule was developed to collect information from Principals, teachers, and parents. Focus Group Discussions with students and parents were conducted. Documents like lesson plans, project work, curricular activities, various school records, annual reports, institutional reports, duty master reports, and class inspection tools were reviewed and analysed to collect information related to various aspects of the study. Field notes were taken by the research team while administering various tools in the schools. Data was analysed school-wise narratively and thematically to draw conclusions and implications of the study.

Delimitation of the Study

The sample size is limited to two schools, as the objective was to develop an understanding of the role of Principals as pedagogic leaders in developing a capacity-building programme.

Findings

Jawahar Navodaya Vidyalaya is a co-educational residential school. These schools are fully financed by the Government of India and Navodaya Vidyalaya Samiti (NVS)— an autonomous organisation under the Ministry of Education. There are 484 students, 29 teachers, and 17 non-teaching staff in the school in Chandigarh. There are 519 students, 38 teachers, and 17 non-teaching staff in the school in Niwarsi, Kurukshetra.

Interaction with the Students

In their focus group discussion with the team of the NCERT, students in both schools reported that they were satisfied with the school environment and facilities. The team members observed a strong bond between the students and teachers. The students from the school in Chandigarh highlighted that the Principal had taken a keen interest in developing a Social Science Garden in the school, which was very useful for students in understanding various concepts such as the earth's structure, mountains, forms of rivers, etc. The school gave good results in the CBSE examinations. The Principal in Niwarsi, Kurukshetra, has developed a Herbal Garden in the Vidyalaya to make the students aware and familiar about medicinal plants.

Students emphasised that their school is better than other schools in many ways, such as eco-club activities, library as well as readers-club activities, and sports and games activities. The students enrolled for professional courses stated that the students who have passed out were already in high-ranking positions, which inspired them to

dream and work hard. Students from both schools told the team that the school authorities provided ample opportunities to interact and contribute to different programmes. Students reported that credit for all this goes to the Principal and teachers of the school.

Interaction with the Teachers

In their interviews with the team members, teachers reported that they always discussed academic issues with the Principal, who provided guidance to address those issues. The Principal in Chandigarh leads the Subject Committee Meeting with the PGT and TGT teachers, thus providing teachers with space to discuss the subject-related issues. Likewise, the Principal in Niwarsi, Kurukshetra, would organise monthly meetings to improve the quality of education and a monthly subject committee to facilitate teachers and hear their views. Thus, creating a communal working space for the teachers to share and discuss their pedagogical strategies. Since the Principals were heading the subject committee meetings of social sciences in Chandigarh and of sciences in Niwarsi, Kurukshetra, their presence and feedback to improve the courses were helpful for the teachers. The guidance of the Principal from Chandigarh has motivated the teachers to identify the low-achieving students and give more personal attention to them. This attention has helped children very well in improving their performance.

Interaction with the Parents

In their focus group discussion with the NCERT team, the Parents Teacher Council members reported they were pleased with the Principal and teachers' performance and the school's overall environment. The parents from the Chandigarh school further expressed a significant improvement in their children's behaviour and observed that they have become more responsible and self-confident. Children also improved their time-management skills. Meanwhile, parents shared that the opportunity to seek career counselling and guidance in the school in Niwarsi, Kurukshetra, was significant in helping children with their aspirations. The parents in the Council in Niwarsi, Kurukshetra, were also engaged in the process of schooling. Their contributions helped in the development of the infrastructure of the schools, for instance, the fans and hall tiles in the school. Principals were mindful of parents' suggestions and welcomed their participation in school activities.

Interaction with the Principals

The school's Principal at Chandigarh shared with the team members that she took an interest in planning, monitoring, and executing all the academic and administrative activities. She also took the initiative to provide academic guidance to the teachers whenever needed. The Principal said she is striving hard to inculcate values among teachers and students and develop excellence in all areas

through teamwork. She monitored and facilitated all the activities at the school, such as physical training, morning assembly, teaching in the classroom, afternoon remedial and supervised study, coverage of subject-wise and class-wise syllabus, and conducting unit and term tests.

The Principal was not simply an authority figure, but her engagement in mentoring the staff and children helped in the inculcation of values, traditions of excellence, and alliance in the school. Also, the encouragement from the Principal to participate in competitions, of both curricular and co-curricular nature, developed a healthy rapport between students and the Principal. In the Principal's words, the school bagged not only regional toppers in Class XII (2016–17) but also regional and national toppers in Class X (2017–18).

The Principal of the JNV at Niwarsi, Kurukshetra, would invite subject experts and experts in pedagogy from universities and colleges from time to time for the professional growth of teachers. The role of a pedagogic leader motivates the Principal to develop positive relationships between teachers and students. She also advised her teachers to generate a classroom learning environment full of joy and excitement. Such an environment motivates students to work hard to their full potential. When the Principal joined the school, the result of the CBSE board exams was only 70 per cent, but now with the efforts of the team, it has increased to 77.8 per cent. The credit for increased results goes to the effort by the Principal to invite guest lecturers and experts to empower the teachers in the school.

Additionally, in the school in Niwarsi, Kurukshetra, the Principal coordinated and participated in many exchange programmes. In 2010, she got an opportunity to visit the Associated school of the U.K. During the programme, the Principals of five schools in the U.K., along with 22 students, visited JNV Niwarsi, Kurukshetra. A delegation of 39 countries visited the school. The teams from South Korea, North Korea and Vietnam recorded video of all the school's activities and telecasted the Vedic Mathematics class on one of the famous channels in South Korea. Development of language laboratory, Math Park, and Herbal Garden were among the other initiatives that the Principal conducted. These kinds of spaces for hands on activities facilitated rapport-building among students and fostered collaborative learning.

Discussion

The main objectives of the study were to determine the extent to which the Principals of schools perceived their role as pedagogical leaders and its impact on the pedagogical processes and the quality of education. From the case studies of the two schools, it is clear that the pedagogical leadership of Principals affects all the aspects of teaching-learning processes. The endeavors of the Principals of JNVs

in addressing the learning needs of the students and teaching practices of the teachers in the school are praiseworthy. These Principals have also increased the level of students' academic achievement. Zaretta (2015) says, 'As children enter school, we expect them to be dependent learners. One of the key responsibilities of teachers in the early school years is to help students become independent learners. We expect students to become independent learners by third grade.' However, frequently secreate their school experiences in the classroom. Therefore, we need influential pedagogical leaders in schools who will not only empower teachers to help children become independent learners. According to Gardener, there are multiple pathways to learning. In a teacher-led classroom, only limited learning styles can be accommodated. Nevertheless, in a student-centred classroom, there is space to cater to these multiple learning styles—especially when the Principals are keen on making teaching a reflective process and on making learning more cooperative.

Moreover, collaborative learning and environmental interaction facilitate the process of knowledge construction (Guthrie and Schuermann, 2010). Thus, we need Principals who prefer student–centred learning environments in the schools over teacher-directed classrooms. From both the schools, we observed that the Principals encouraged students to engage in various activities, making the school a personal space, thus shortening the gap between home and school.

Conclusion

Leadership, especially in schools, is about change, as it is a people-based space. The relationship that the leader, i.e., the Principal in this case, has with the teachers, students, parents, non-teaching staff, and other stakeholders, are preliminary in determining the quality of education. Principals, as pedagogic leaders, not only focus on the school's development but also have a role in improving the classroom practices. The Principal's role in implementing the policies and regulating initiatives is significant for the school's growth. The dynamics of the Principal's relationship with the teachers and students make the classroom practices constructive and improve students' learning and teachers' qualities. This study can be further expanded to many public and private schools.

Implication of the Study

Based on the findings of the study, the NCERT may develop a training design for capacity building of Principals/ School Heads. The duration of interaction may be of two to three days. Experiences may be provided through self-learning mode. The programmes may be organised on a regional basis in which Principals/ School Heads and SCERT personnel may be invited. Later the programme may be passed on to the SCERTs.

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Knowledge and Readiness of Primary Teachers on School Based Assessment

An Exploratory Study

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Abstract

In Delhi, primary teachers from the South Delhi Municipal Corporation of Delhi attended NISHTHA training conducted by SCERT, Delhi, for five days. Teachers attended different training schedules conducted from November 2019 to February 2020. Teachers completed various training modules, of which one module was on school-based assessment (SBA). After the completion of the training, it was necessary to follow up the classroom practices of the teachers in terms of knowledge and readiness about SBA. Two research questions were proposed to elicit information about teachers' knowledge and readiness. The research study used a qualitative research method to answer the research questions, and data were collected from 10 primary school teachers in District South West B, who were selected through purposive sampling and were interviewed. Findings showed that teachers still require SBA training and this becomes very essential for the present time in which we are to implement and achieve the goal of foundational literacy and numeracy. So, effective training sessions may be able to meet their requirements. Procedural knowledge training on SBA has the potential to provide the necessary skills and competence for them to deal with the issues and processes that they will encounter while implementing SBA.

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Background

Evaluation, according to the National Policy on Education 1986, is an important aspect of the teaching-learning process since it gives evidence of a child's progress and development.

Continuous and comprehensive evaluation of students' progress and development in both scholastic and non-scholastic domains, extended over the entire range of teaching-learning time, were indicated as one of the aims. The notion of Continuous and Comprehensive Evaluation (CCE) has been utilised in Indian school education literature for over 30 years. It is used to comprehend and label a child's growth and development as a result of school-based teaching and learning procedures.

This widespread use of CCE, as well as the autonomy provided to each school, institution, and individual to design their own CCE programme, has created many ailments in the minds of the general public, leading to a loss of trust in the programme and system. The nature of evaluation in the physical system (on a ratio scale) differs from that of behavioural elements (on interval and ordinal scales), and another important consideration was the employment of varied tools and techniques in assessment.

Even in CCE, paper-pencil assessments dominated the evaluation process. Despite these significant challenges, no one doubted the CCE scheme's intentions. As a result, it was decided that the implementation of CCE scheme should be reconsidered. School-based Assessment (SBA) has been presented as the next generation assessment to address the ailments and flaws that emerged during the implementation of CCE, resulting in widespread malfunction Surender Singh (Speaker).

According to School-based Assessment can be defined as an approach.

"During the teaching-learning process, that enables the attainment of competencies in terms of learning outcomes in a holistic manner." Assessment is thus interwoven with the teaching-learning activities within a broader educational paradigm of 'assessment for learning,' where school teachers will assesses students.

As per the NCERT NISHTHA Module on School Based Assessment (2019), the following are the salient features of SBA. SBA involves the integration of teaching-learning and assessment, no documentation-recording-reporting workload on teachers, child-centred and activity-based pedagogy, and a focus on (learning-outcome based) competency development rather than content memorisation. Non-threatening, stress-free, and enhanced participation/interaction are the key features of SBA.

Teachers can utilise school-based assessment to assess a child's development, provide

timely feedback, and offer support to help the child overcome any difficulty. The micro-monitoring of educational quality is supported by school-based assessment.

The fundamental purpose of assessment is to determine what children need to learn so that they can build on their strengths and fill in the knowledge gaps, if any NAS-National Achievement Survey. Multiple evidence-based assessments are necessary, which entails collecting information on multiple areas of learning, such as knowledge, skills, interests, attitude/disposition, and motivation, through a variety of activities that the child performs both inside and outside the classroom.

Although third-party periodic assessments such as National Achievement Survey (NAS) and State Achievement Survey (SAS) are used to uncover unbiased learning gaps in students, school-based assessments (SBA) will be integrated into the teaching and learning process to create a non-threatening, stress-free, interactive, and supportive learning environment. Portfolios, projects, game-based learning, Holistic Progress Cards, group work, oral presentations, and other school-based assessments are some examples of assessment strategies.

SBA cannot be replaced by standardised assessments available at the state or national levels. SBA is all about assessing quality on a micro level with assessment assignments provided by the class teacher based on the needs of the class and children. The SBA method of teacher-led assessment is better for the child than taking one-time examinations. In SBA, the child is an equal collaborator in the assessment process, which includes strategies such as teacher observation, portfolio tracking of each child's development, peer assessment, and self-assessment. The ability of teachers and the degree of autonomy given to teachers to assess their classes in novel ways are critical to SBA's success. As a result, the teacher is the primary facilitator in SBA, and the emphasis is on empowering teachers by giving them complete autonomy in assessing the child's performance, aptitude, attitude, interest, and achievements.

Literature Review

The SBA's main objective is to provide teachers with the resources that they need to support students learn more effectively. Through SBA, school leaders, teachers, and the entire network of school authorities are working on a framework for improving the quality of learning in schools.

National Focus Group on Examination Reforms (NCERT, 2006) pointed out that 'school-based continuous and comprehensive evaluation system be established in order to: (i) reduce stress on children, (ii) make evaluation comprehensive and regular, (iii) provide space for the teacher for creative teaching, (iv) provide a tool for diagnosis and for producing learners with greater

skills. The CCE scheme should be simple, flexible, and implementable in any type of school from the elite one to a school located in rural or tribal areas. Keeping in view the broad principles of the scheme, each school should evolve a simple suitable scheme involving its teachers, and owned by the teachers.

NEP 2020 (MHRD, 2020) mentioned that 'The aim of assessment in the culture of our schooling system will shift from one that is summative and primarily tests rote memorisation skills to one that is more regular and formative, is more competency-based, promotes learning and development for our students, and tests higher-order skills, such as analysis, critical thinking, and conceptual clarity. The primary purpose of assessment will indeed be for learning; it will help the teacher and student, and the entire schooling system, continuously revise teaching-learning processes to optimise learning and development for all students. This will be the underlying principle for assessment at all levels of education'. This is school based assessment which has been mentioned by the NEP 2020.

The knowledge of teachers in SBA has a direct impact on the learning situations and outcomes of students. According to McMillan's (2000) research, teachers who had adequate knowledge of assessments were able to integrate them well into their teaching. They were also able to improve their students' competencies by employing effective approaches, techniques, and strategies. Veloo et al. (2015) found in his exploratory qualitative study that there were respondents who lacked knowledge about SBA, and some of them were dissatisfied with how the authorities disseminated knowledge to them.

According to Fook and Sidhu (2006), teachers with inadequate assessment knowledge will definitely fail to support their students' learning progress. According to Chew and Muhamad (2017), teachers' skills or knowledge in implementing the SBA is extremely important since it can make or break the effectiveness of teaching and learning in the classroom, putting the SBA's implementation in schools at risk.

Some studies have also shown that there are teachers who are not ready to implement the SBA. According to Slameto, readiness is a requirement for the next research project (Slameto, 2003). Some people define readiness as the ability or willingness of someone to do something. Cronbach (1946) defines readiness as a full nature or force that causes people to react in a particular way. According to Norani and Saifulazri (2010), some teachers are unwilling to conduct SBA. They observed that some teachers were unwilling to conduct SBA due to a lack of training, which had an adverse impact on their confidence in doing so. Stiggins (2005) stated that teachers are reluctant to implement new assessment systems for learning

in the classroom because they do not have the opportunity to learn effective assessment strategies.

Sandhya Sangai, (2019) showed that school based assessment may be a fun and interesting process. Children will not be labeled as 'slow,' 'intelligent,' or by any such adjective. Negative feedback should be avoided at all costs. Children must be given positive feedback in order to progress by building self-confidence. It is necessary to collect and record information on a continuous basis.

Rationale of the Study

According to the *NISHTHA* document on the SBA module of NCERT, exams are being phased out in favour of school-based assessments. As a result of this change, teachers will now have to perform the dual roles of teacher and assessor. School-Based Assessment (SBA) is used in conjunction with external assessments to provide a more comprehensive and reliable assessment of student abilities, according to research (Auty, 1997; Giddings, et al., 1991). By testing students on a variety of objectives over time, the SBA eliminates many of the issues associated with a 'one-shot' external assessment. The ongoing nature of SBA also provides teachers with a formative picture of individual students' progress, allowing them to better address the specific needs of their students.

Teachers' knowledge of SBA implementation has a direct impact on students' learning situations and outcomes in schools. According to McMillan's (2000) research, teachers must have the necessary knowledge and understanding to conduct student learning assessments. He found that the teachers who were well-versed in assessments, were able to integrate them effectively into their classrooms. They were also able to improve the competencies of their students by applying viable solutions, techniques, and strategies. According to Cheah (2010), the most difficult aspects of conducting the SBA were knowledge, abilities, and teacher attitudes. He made a point of saying that formal training in the form of workshops or seminars enables teachers to gain new knowledge in order to meet the objectives of the assessment system.

Some teachers, according to Norani and Saifulazri (2010), were reluctant to implement SBA due to a lack of training, which had an unintended consequence on their confidence. As a result of the preceding discussion, it was observed that teachers' knowledge of SBA and their readiness to implement SBA have an impact on learning situations.

In Delhi, primary teachers of South Delhi Municipal Corporation of Delhi attended NISHTHA training for five days, which was conducted from November 2019 to February 2020, in which teachers completed

various training modules and in which one module was on School Based Assessment. The objectives of the module were to —

1. Understand the genesis and importance of School Based Assessment,
2. Familiarise with learner-centred approaches for assessment,
3. Facilitate integration of teaching-learning process with assessment procedures,
4. Develop context-based exemplars in the relevant subject areas for the purpose of assessment.

After the completion of the training, it was imperative that teachers must have knowledge about SBA and expected that they were going to practice SBA in the school. As discussed above in the rationale of the study, teachers' knowledge and readiness in the implementation of SBA has a direct impact on students' learning situations and outcomes in schools.

In this content, the investigators decided to conduct a study that would provide policymakers and stakeholders with valuable insights about teachers' knowledge and readiness to implement SBA with the following objective.

Objective of the Study

The objective is to explore the knowledge and readiness of primary school teachers who took training in November 2019 to conduct School Based Assessment in schools.

In the light of the above objective, it was decided by the investigators to seek the answers of the following research questions also.

1. Did the primary school teachers, who took training on SBA, have the knowledge of school-based assessment to implement it in schools?
2. Were the primary school teachers, who took training on SBA, ready to implement school-based assessment in schools?

Methodology

Participants

The research study used qualitative research method to answer the research questions, and data were collected from 10 primary school teachers of SDMC of South West B district. Teachers were selected through purposive sampling from the teachers who attended training from November 2019 to February 2020.

Tool

Data were collected through interview schedule having ten structured questions based on the different dimensions of knowledge such as factual, conceptual and procedural. Table 1 shows knowledge and readiness questions of interview schedule.

Table 1
Knowledge and Readiness Questions in Interview Schedule

1. What are your views about the following in relation to SBA? (i) Assessment (ii) Criteria of assessment	Factual
2. As per SBA, what are your views about the purpose of assessment for the students and teachers?	Factual
3. What qualities do you perceive about the school-based assessment?	Factual
4. How assessment under 'School Based Assessment' is different from the generally practiced way of evaluation in School Based Examination?	Conceptual
5. From the two—School Based Assessment and School Based Examination, which one is more relevant to provide timely feedback and support to help the student overcome any learning difficulties? Give some points to support your answer.	Conceptual
6. How do the following activity or activities relate to the individual assessment of the child? Written/oral, creative writing (essay, story, poem writing), picture reading, experimentation, individual projects, drawing and craft work.	Conceptual
7. Select one concept of your choice from any class/subject and explain what will be the process of conducting both individual as well as group assessment using project work?	Procedural
8. Teachers often consider group activities as learning activities. How group activities can be considered as both the learning activity as well as assessment strategy? Support your answer with one example.	Conceptual
9. Suppose you want to conduct a group activity. Explain what will be the steps to prepare rubrics for participation of students for peer assessment tool.	Procedural
10. To what extent are you ready to implement SBA in your class? If you have implemented SBA, what types of problems or difficulties have you faced while implementing SBA?	Readiness

Table 1 shows that from the ten questions, first three are factual knowledge based, whereas question 4, 5, 6 and 8 are conceptual knowledge questions (7 and 9) assess procedural knowledge while last question, which

is question 10 explores the readiness of the teachers.

Analysis and Results

Data so collected were qualitatively analysed.

- Profile of the teachers: The majority of the teachers' personal information, such as their names, classes taught, and educational and professional qualifications, was collected. Questionnaires were asked to be filled in by all the teachers who attended The programme from November 2019 to February 2020, and the majority of them taught Class V. Investigators collected the data from the teachers who had educational qualifications as Graduate and the majority had D.El.Ed. as professional qualification.
- The findings of the open-ended questionnaire are displayed given below. The teachers' responses on SBA have been presented as individual cases to give a glimpse of the teachers' readiness and knowledge with regard to SBA, particularly after almost one and a half years of training and their involvement in the COVID-19 situation, during which SBA becomes more crucial regarding the student learning and assessment.

1. Understanding of Assessment and its Criteria in SBA

What are your views about the following in relation to SBA?

(a) Assessment

(b) Criteria of assessment

Assessment involves the gathering of information from all the possible sources regarding knowledge, skill, attitude, ability, and beliefs of the children, while documenting the same and using this data to make informed instructional decisions, refine or restructure processes and ultimately improve the children's learning. The criteria used in SBA for assessment is the achievement of learning outcomes. So, in this regard, respondents were asked about their views related to assessment and its criteria. It was found that a few teachers were able to describe the term assessment but none of them could describe clearly about the criteria of assessment as discussed in Module 4 of NISHTHA Programme on SBA. According to respondents:

"Assessment is the systematic basis for making inferences about the learning and development of students. It is the process of defining, selecting, designing, collecting, analyzing, interpreting, and using information to increase students' learning and development."(RES-1) and (RES-4)

"Assessment is to test the learning of students and to check whether teaching was effective or if it should be modified with some different method." (RES-7) and (RES-9)

The question was framed to explore the factual knowledge of the respondents but only a few teachers were having factual knowledge

of the term 'assessment'. None of the respondents were having factual knowledge of the criteria of assessment.

2. Purpose of Assessment

As per SBA, what are your views about the purpose of assessment for the students and teachers?

Here, the question was framed to explore the factual knowledge of the respondents regarding the views on purpose of the assessment. It was found that majority of the respondents were able to answer its purpose as per their understanding of the term assessment. According to them:

'Just as assessment helps students, assessment helps teachers. Frequent assessment allows teachers to see if their teaching has been effective. Assessment also allows teachers to ensure students learn what they need to know in order to meet the course's learning objectives.' (RES-1)

'Assessment informs students of their progress. Effective assessment provides students with a sense of what they know and don't know about a subject. If done well, the feedback provided to students will indicate to them how to improve their performance.' (RES-4)

'Feedback on students' learning outcomes (RES-5)

'How much are they able to perform'? (RES-6)

Assessment helps to find whether they have achieved our required learning outcomes or not.' (RES-7, 9)

'It provides us with the learning level of each student.' (RES-8, 10)

Effective assessment provides students with a sense of what they know and don't know about a subject. Frequent assessment allows teachers to see if their teaching has been effective. It also helps teachers to ensure students learn what they need to know in order to meet the course objectives.

3. Two Salient Features of School-Based Assessment

What qualities do you perceive about the school-based assessment?

This question was framed to explore the factual knowledge of the respondents regarding their perception about the qualities of schools-based assessment and it was found that half of the respondents were able to describe the qualities of SBA. According to them:

"Integrating teaching, learning, and assessment will leave. No load on the teachers for documentation, recordings, or reports. Further focusing on child centered learning activity based pedagogy. Focus facilitates competency development rather than content memorisation". (RES-1, 3, 4, 7, 9)

SBA is to integrate teaching-learning and assessment. Its focus is on (learning-outcome based) competency development rather than content memorisation. It provides non-threatening, stress free and enhanced participation/interaction and which shows faith on teacher and the system and overall enhancing self-confidence in children.

4. How School-Based Examination is different from SBA?

How assessment under "School Based Assessment" is different from the generally practiced way of evaluation in School-Based Examination?

The question framed here was to explore the conceptual knowledge of the respondents regarding how school-based examination is different from SBA. School-based examination has been affected by a lack of focus on affective and psychomotor aspects, as well as has an over-emphasis on rote memorisation. It is dominated by examination, with a large burden on teachers for paper work, recording, and recordkeeping. The question was answered by only half of the teachers and rest were not able to give valid reason for the difference. According to them:

'SBA is more effective than school-based examinations.' (RES-2)

'Focus on competency development rather than content memorisation, stress-free and enhanced participation.' (RES-3).

'A school-based examination is used to examine a child's knowledge of what he or she has learned. Testing measures the level of skill or knowledge that has been reached. School-based assessment is the process of documenting knowledge, skills, attitudes and beliefs, usually in measurable terms. The goal of assessment is to make improvements as opposed to simply being judged. It is the process of describing, collecting, recording, scoring, and interpreting information about learning.' (RES-4).

'In school-based examinations, we test knowledge gained by students. In school-based assessment, we empower the teacher to improve the learning levels of the students.' (RES-7, 9)

'School-based examinations focus only on the academic part, but SBA continuously assesses the performance of students in all fields.' (RES-8)

SBA is more effective than school-based examination. It focuses on competency development rather than content memorizations, is stress free and enhances participation. In school-based assessment, we empower the teachers to improve their learning levels. SBA continuously assesses the performance of students in all fields.

5. Which out of the two are important and relevant for students and why?

Out of the two, School-Based assessment and School-Based Examination, which one is more relevant to provide timely feedback and support to help the student overcome any learning difficulties? Provide some views to support your answer.

The question explored the conceptual knowledge of the respondents regarding which out of the two (School-based examination and SBA) is relevant to provide timely feedback and support to help the student overcome any learning difficulties? Very few teachers could answer with reason. According to them:

'SBA provides opportunities for the teacher to gather data on students' performance over a time period and provides a more reliable assessment of the student by those who know their students best—their subject teachers.' (RES-1)

'School-based assessment is more relevant as it is more formative in nature, and we can sum up this with the fact that in schools there is a formative assessment which contributes to 60 per cent of the final result and only 40 per cent is given to final marks.' (RES-4)

'School-based assessment is relevant as it focuses on the improvement of learning levels and does not judge students' memorisation.' (RES-7, 9) 'School based assessment' as it focuses on improvement of learning levels and do not judge students memorisation.

So, from the responses of the teachers, it is clear that SBA provides opportunities for the teacher to gather data on students' performance over a time period and provides a more reliable assessment of the students by those who know their students best–their subject teachers. (RES-1)

6. Which of the following may be used for individual assessment and why?

Written/oral, creative writing (essay, story, poem writing), picture reading, experimentation, individual projects, drawing and craftwork

How do the following activity or activities relate to the individual assessment of the child?

It explored the conceptual knowledge of the respondents. It was found that very few teachers were able to answer that all activities can be related to the individual assessment. According to them:

'From the above stated options, creative writing, individual projects, and picture reading can be used for individual assessment as these strategies help in revealing the true potential of a child. Also, while doing these activities, a child is fully involved with all of his or her senses.' (RES-4)

'All of these may be used for individual assessment as they encompass the maximum parameters of a student's learning.' (RES-5)

'All these activities can be used for individual assessment. All work according to the situation and child's level'. (RES-7)

'All these activities can be used for individual assessment.' (RES-9)

All activities provide opportunities for learning in all the dimensions, so all the domains of learning can be assessed.

7. Select one concept of your choice from any class/subject and explain how projects can be useful for both individual as well as for group assessment?

Select one concept of your choice from any class/subject and explain what will be the process of conducting both

individual as well as group assessment using project work?

This question was framed to explore the procedural knowledge of the respondents and it was found that most of the teachers were not able to describe the process of conducting the individual as well as group assessment using project work. Very few could answer its usefulness for individual as well as for the group assessment. Some of the responses are:

'Project on pollution for students will develop the child's ability to work with his or her peers, building teamwork and group skills. It allows the teacher to learn more about the child as a person. It helps the teacher communicate in progressive and meaningful ways with the child or a group of children on a range of issues.' (RES-3)

'We can take the concept of germination in this context. Germination can be useful for both individual as well as group assessment.' (RES-4)

'I will choose the concept of—things we get from trees. It will be beneficial in both cases.' If the child does it individually, it will be interesting for him. If it is done in a group, it will be a great group work.' (RES-7)

8. Will you consider group work activities as learning activity or assessment strategy? Support your answer with one example.

Teachers often consider group activities as learning activity. How group activities can be considered as both the learning activity as well as assessment strategy? Support your answer with one example.

The conceptual knowledge of the respondents was obtained through this question and only a few respondents were able to provide the answer that group activities can be considered as both the learning activity as well as assessment strategy. Following respondents supported the answer with some examples. Responses are:

'Group work activities are considered a learning activity and also an assessment strategy. For example, a group activity on representing the benefits of plants will help in assessing individual skills along with learning the skills of team work and role play.' (RES-3)

'Group activities can be considered as both learning activities and assessment strategies. While explaining the concept of noun to students, they can be provided with the different types of nouns on the paper chits, which in turn can be placed in a bowl. Now the students will be asked to take out a paper chit on which different types of nouns are written, and they will be segregated based on the type of noun that he or she may get from the bowl. In this way, students will learn different types of nouns and we can also assess the students. While taking out the paper chits, the students would show anger, happiness, anxiety, etc. This will help in the assessment of the students.' (RES-4)

'Learning as well as assessment: while it stands as an opportunity for peer learning, it gives the teacher a chance

to assess the learners skills in a group.' (RES-5)

9. How will you prepare rubrics for participation of students for peer assessment through group work activities?

Suppose you want to conduct a group activity. Explain what will be the steps to prepare rubrics for participation of students for peer assessment tool.

A rubric is a collection of criteria for assessing pupils' performance on a certain task. The rubric lays out the performance and assessment criteria for the task. It is created by both the teacher and the students with their participation in a cooperative manner. Rubrics can be prepared for both the individual as well as group work activities. Thus, the question explored the procedural knowledge of the respondents regarding the steps of the preparation of rubrics for participation of students for peer assessment through group work activities. Only RES-4 could explain the steps for the preparation of rubrics for peer assessment through group work activities.

- 'The following steps are involved in preparing the rubric for the participation of students for peer assessment through group work activities. Firstly, choose a suitable task. Secondly, work out appropriate categories and criteria for the task without student input. Next, tell students what criteria they will have to display to have their work evaluated in each particular category and provide time for them to work on the chosen task. Last but not the least, collect students' work and assess it according to the criteria that you have decided according to each category.' (RES-4)
- 'Different parameters related to activities will be added for better assessment of students.' (RES-8)

10. Extent of implementation of SBA and challenges faced by teachers in class

To what extent are you ready to implement SBA in your class? If you have implemented SBA, what types of problems or difficulties have you faced while implementing SBA?

This question was framed to seek the answer regarding the extent of readiness of teachers to implement SBA and also challenges faced by them in the class while implementing it. Only few teachers were able to implement to the maximum extent after the training and also found challenges in terms of absenteeism of students, the period of lockdown and technological issues in conducting online classes. Some responses are:

- 'I have implemented SBA and faced the challenges, i.e., 'absenteeism of students', 'improper representation and 'unsupportive home environment.' (RES-8)
- 'School-based assessment has been implemented to the maximum extent possible. Some challenges faced while implementing school-based assessment in the class were that the students were not

ready to use the techniques in COVID-19 situation, as the whole process was different from school-based examination. A few other challenges faced were grading system, change in exam pattern, teacher assessment issues, technological issues, lack of training, etc.' (RES-4)

'School-based assessment is not implemented at fully-fledged in the current scenario as students are not coming to the schools. But some school based assessments are done in online classes. Challenges include individual observation of learners.' (RES-3)

'In my class, there are 80 students, so implementation is difficult.' (RES-2).

Above results of the study are similar to the study of Chew and Muhamad (2017). They found that teachers' skills or knowledge in implementing the SBA is highly significant. Very few respondents were able to implement SBA to the maximum extent and the rest found challenges in terms of absence of the students, lockdown period, and technological issues during online teaching. This shows their lack of the readiness to implement SBA in their schools, and this lack of readiness can be seen from the result of their knowledge of SBA. Joachim and Hashim (2021) showed that the majority of the respondents are well knowledgeable about SBA application in English classes. Similarly, the findings revealed that the majority of respondents had a positive level of readiness to implement SBA in elementary schools for English classes. Above results are different from the present study.

Conclusion

Finally, teachers still require SBA training and this becomes very essential for the present time in which we are to implement and achieve the goal of Foundational Literacy and Numeracy. So, effective training sessions may be able to meet their requirements. Procedural knowledge training on SBA has the potential to provide the necessary skills and competence for them to deal with the issues and processes that they will encounter when implementing SBA. Findings of this study further suggest the policymakers and stakeholders that in order to implement and make NISHTHA programme successful and also to achieve the goals of Functional Literacy and Numeracy, In-service as well as pre-service teachers must be given rigorous training of SBA so that they may practice it with full confidence and it will come only through having the knowledge and readiness to implement SBA.

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Designing a Blended Learning Course on Pedagogy of Science of Pre-service Teacher Education Programme

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Abstract

Blended learning, an innovative pedagogical approach, has been emerged as a catalyst in optimising learning by strengthening the prospects of online and face-to-face mode of learning. This has a lot of relevance in teacher preparation programmes with its potential for providing multiple learning opportunities. Student teachers are in the process of becoming 'reflective practitioners' and so blending the strengths of online learning along with face-to-face instruction could be of immense help. It provides room for open communication and deeper analysis on wider platforms by allowing flexibility, convenience and critical reflection that online mode offers along with the benefits of in-person communication and interaction inside the classroom. However, designing a highly participatory, reflective blended learning course on Pedagogy of Science is challenging. This paper is an attempt to reflect on the relevance and scope of blended learning course on the pedagogy of science in a teacher education programme. Theoretical perspectives of blended learning are analysed in detail. The paper also provides an exemplar model of blended course that may be adapted or explored further while redesigning the course on Pedagogy of Science as a blended course in teacher education programme.

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Introduction

Blended learning has gained momentum as one of the innovative pedagogical approaches in both school education and higher education. The pedagogical principle behind blended learning is to tap the potentials of both the learning environments meaningfully and thus ensure maximum student engagement. Blended learning represents a 'thoughtful fusion of face-to-face and online learning experiences' (Garrison and Vaughan, 2008). We can find variations in the way blended learning is defined in literature as it is considered as an 'ill defined' term.

Oliver and Trigwell (2005) asserted that identifying the impact of growth in blended learning has been challenging because of the definitional ambiguity. 'There are numerous definitions used for blended learning (BL) environments in research' (Graham, 2017). However, online learning is considered as one of the major components along with classroom instruction. In a blended class, 'various learning experiences are synthesised, complement each other, and are planned or orchestrated to run in parallel' (Cleveland-Innes and Wilton, 2018). There are researches indicating that student success and satisfaction had been improved in blended courses and the possibility of developing sense of community in a blended learning environment is enormous (Dziuban and Moskal, 2011; Means et al., 2013; Rovai and Jordan, 2004). Researches also suggest that blended courses can have a positive impact on efficiency, convenience, and learning outcomes. (Online Learning Consortium, 2014; Garrison and Kanuka, 2004).

Though the potential of blended learning is recognised widely, designing such a course by duly exploring the underpinnings of both methodologies and by combining the strengths of both pedagogies is a challenge for curriculum planners, designers and developers. A blended course must be designed in alignment with the learning needs of students, curricular expectations, and quality learning experiences and also based on the extent of access to various technological tools. While designing pre-service teacher education programme in a blended mode, it raises certain issues depending on readiness of students and teachers- mental, technological and pedagogical readiness to engage in the course, need for overcoming limitations of traditionally perceived course, infrastructural challenges along with its highly practicum based modality of teaching-learning practices, etc. Pedagogy course, as one of the most vital skill based courses in teacher preparation programme, blending online learning environment with offline experiences, raise lots of concerns. However, by realising enormous potential of both the modes of learning, it is interesting to explore the potentials of designing a blended learning course on pedagogy of science.

Significance of Blended Learning in Teacher Education Programme

As teacher preparation programme involves meta-learning activities, it is imperative to understand the process in a multi-faceted way. In this instance, blended learning offers continuous and systematic resource supply in online and face-to-face modalities with scope for flexibility in terms of time and space. At the same time, without compromising the vision of teacher education as preparing 'reflective teachers', blended learning can extend a variety of learning experiences to student teachers by providing opportunities for self-analysis, peer reflection and feedback from teacher educators. That would help them to critically examine their own activities, thus creating space for reflection. Researchers such as Hernández-Ramos (2004); and Stiller and Philleo (2003) found that 'teacher educators used the blended format mainly for developing reflection skills'. 'Student teachers were satisfied with the blended approach as it provided them with opportunities to improve their knowledge by themselves' (Khine and Lourdusamy, 2003).

There is no doubt that face-to-face activities help in stimulating thinking among student teachers on various issues at hand. But it is also worthwhile to understand the additional benefit of accruing deeper sense of teaching as a profession with minute nuances of field reality and contemplation on the issues relatively large online platforms. The discussion and analysis may take a varied turn through mentored activities inside classroom too. This continuous cycle of exploration offers prospective teachers to dive deep into curricular inputs in a more systematic way to understand the subjective reality of schooling with plausible pedagogical interventions and related issues. There are researchers like Collopy and Arnold (2009), El-Deghaidy and Nouby (2008), and Turvey (2010), who confirm effectiveness of blended learning approach in teacher preparation programmes in terms of competency, achievement and professional knowledge. In addition, it is found that 'pre-service teachers favoured the blended learning method in comparison to face-to-face or online learning alone, as blended learning was observed to be more effective' (Le and Pham, 2021). However, designing blended learning programmes is not easy it, requires lot of planning and effort in bringing synergy and orchestration between online and in-person learning environment in teacher preparation. Understanding theoretical perspectives of blended learning may be of help to realise the potentials of a blended course in teacher education programme.

Theoretical Perspectives of Blended Learning

Any innovation in the educational field is sustainable if it lies on a strong theoretical framework. There are many researchers who worked

on various pedagogical principles and theoretical frameworks of blended learning. As per Community of Inquiry (CoI) model proposed by Garrison and Akyol (2013), blended learning offers a combination of these three— Cognitive, Social and Teaching presence in the course. Cognitive presence denotes to what extent students are able to construct in a community of engusing through continuous reflection. (Garrison, Anderson and Archer 1999) It also includes the meaning making process where the learner is thinking, listening and is seen actively involved in the discourse. Social presence represents the critical dialogue among peers and mentor whereas, 'teaching presence' is related to design and facilitation. The scope of blended learning in meaningfully engaging learners with the content, peers and teachers could be tapped in the pedagogy course considering the very aim of teacher education programme of developing a critical community of learners. Understanding elements and strategies of each presence is very essential to create this community of deep learning. The teacher educator can design and transact the curriculum accordingly to facilitate the interactive process in both offline and online mode, and give immediate feedback to learners easily.

The TPACK framework is a model proposed by Mishra and Koehler, (2008), the which explains the integration of technology, specifying the need for a strong knowledge structure for teachers such as Technological Pedagogical Content Knowledge to facilitate the learning process. Developing this deeper knowledge structure is quite challenging through limited classroom interactions and fixed learning activities of regular classroom. By integrating both the learning environments for students, opportunities are provided to restructure and transform their knowledge in content, pedagogy and technology into a higher knowledge structure which is called Technological Pedagogical Content Knowledge structure that is of immense potential for making an effective teacher for develop 21st century skills among learners.

Another model called Technology Integration Matrix powered by Arizona K 12 centre suggests five mutually dependent attributes of meaningful learning environments, which are— active, constructive, goal-directed, authentic and collaborative. 'Online and blended learning bring opportunities and challenges, including more opportunities for authentic activities' (Gikandi, et al., 2011). A beautiful blend of offline and online learning environment is an attempt to bring forth meaningful learning with all these characteristics. The higher learning outcomes could be achieved by involving students through problem-based learning and engaging them in purposeful inquiry process through collaboration and built a sense of community amongst each other.

As per Complex Adaptive Blended Learning System (CABLS) by Wang et al. (2015), another approach of exploring theoretical perspective of blended learning, there are six elements, such as the learner, the teacher, the technology, the content, the learning support and the institution, which are highly significant in creating blended learning environment. However, it is important to understand that each element has sub systems and each has a vibrant relationship to one another but learner is at the centre of the whole learning process. The CABLS framework is intended to 'facilitate a deeper, more accurate understanding of the dynamic and adaptive nature of blended learning' (Wang et al., 2015).

The theoretical frameworks would definitely help the curriculum planners and teacher educators to design any specific course or restructure the complete teacher education programme in a blended way.

Relevance of Designing a Blended Learning Course on Pedagogy of Science

After National Curriculum Framework for Teacher Education (NCFTE), 2009 came into action, followed by National Council for Teacher Education (NCTE) Guidelines 2014, most of the teacher education curriculum of the country has been reorganised. There is consensus on the relevance of pedagogy course in any teacher education programme as it offers a detailed knowledge structure on the various pedagogical strategies with its theoretical relevance. Its scope for empowering student teachers with indispensable skills of becoming a competent facilitator is enormous. Most of the teacher educators would agree that in a face-to-face classroom environment in a teacher education institute, the scope of examining the nature of the discipline, which is the essential starting point of any pedagogy course, is delimited only to lecturing the history and philosophy of the subject. Also, most of the students remain in a mute mode with little scope of pondering over aims and objectives of teaching the subject in detail. 'Teachers and students are no longer comfortable with learning in a passive setting that is still largely text-based and heavily dependent on the lecture format—the foundation of the traditional classroom' (Duhaney, 2012). One of the threats of this approach is that students do not get an opportunity to clearly articulate the nature of the discipline with the contemporary issues of pedagogy. They end up in considering it as something highly theoretical with little relevance to other aspects of pedagogy. No one to blame, the teacher education curriculum has been designed and implemented in a tightly compartmentalised form that most of the time, it resists an interdisciplinary outlook into it. In addition, the sociological and psychological perspective which are covered under other courses of curriculum are rarely integrated into pedagogy course. Integrating school content with pedagogy class

in a synchronised manner is another challenge considering the scope of the course and constraints like availability of time to explore. Critical analysis of content is, most of the time, done as a routine activity in a pedagogy class and identifying appropriate pedagogical strategies become difficult for majority of student teachers as the experiences provided most of the time fail in developing pedagogical content knowledge among prospective teachers.

"Currently, in a traditional face-to-face science teaching methods, course time includes the teaching of science content and pedagogical content knowledge leaving less time for practicing with hands-on inquiry methods" (Yimaz and Malone, 2020). Also, assessment, unfortunately is delimited largely to fixed mode such as tests and assignments which are mostly theoretical. This paper isn't trying to pinpoint the limitations in transacting a pedagogy course in a traditional classroom, rather it is an attempt to analyse the scope of blending online learning along with potential benefits of interaction plausible in face-to-face instruction.

Possibilities of Designing a Pedagogy of Science Course in a Blended Learning Mode in Pre-service Teacher Education Programme

A critical understanding about the nature of the subject and implication of pedagogical principles and skills to facilitate learning are key factors in designing and implementing science curriculum to school students at secondary stage. As prospective Science teachers, if these and many more skills like these if could be imbibed through a pedagogy course, it would be of immense help. One of the concerns in teacher preparation programme is this organic synchronisation of content with school curriculum. As curricular expectations, increase, so the responsibility of a Science teacher, especially in the fast advancing world. Blended learning strategy provides scope for involving students in an open and trustworthy dialogue both offline and online. The meaning making process, by interacting with peer and mentor, do have a scope for engaging in critical discourse with the content at the same time in building up the ideas learnt. Many of our students in the teacher education institutes have access to technology especially internet facilities either in their laptops or mobile phones and these students in addition to can critically use online learning their regular classes. 'Learning environments, incorporated with information technology have been shown to have specific benefits for learning science in terms of (1) promoting cognitive development, (2) allowing for a wider range of student experiences, (3) supporting students' self-management ability, and (4) supporting students' development of conceptual understanding by facilitating data collection and collaboration.' (Webb, 2008)

A blended course has to be purely customised considering the leaning needs of students and curricular expectations. So it is highly important to identify learner centred learning outcomes with an intention to optimise student engagement and participation. Also, it is required to make a well informed decision to choose which activity has to be planned for in-person environment and the activities for offline learning environment. No 'one size fits for all' works here. The design has to be customised as per the requirement of the course, for every model to be used. We need to make sure that the design has scope for flexibility, convenience, better opportunity for interaction with content, peer and teacher. 'Facilitating the flexibility now needed in the learning environment can help to reshape teacher preparation programmes to better assist teachers to be more effective in the classroom' (Duhaney, 2012). Garrison and Vaughan (2008) has listed three key design assumptions for an effective blended course: '(a) the thoughtful integration of face-to-face and online learning; (b) fundamentally rethinking the course design to optimise student engagement; and (c) restructuring and replacing traditional class contact hours.' Therefore, teacher education curriculum has to be redesigned by specifying the desired learning outcomes. The type of blended learning activities need to be organised with the integration of technological tools and techniques following the appropriate assessment processes in accordance to the blended learning environment to ensure students' participation and learning. It is very important to specify which activities are meant to be conducted offline and the activities which are planned for the classroom.

If both online and in-person activities are not deep, engaging, challenging and complementing to each other, we cannot expect a blended course to be as effective as we had planned. Student teachers may get largely benefitted from this approach because of larger interaction possible in both online and in-person methods. It is evident from research findings of Yimaz and Malone (2020) that 'students' perceptions are positive towards the use of blended learning within their science education methods course'. To ensure students participation, there should be enough opportunities for individual activities as well as group activities to build a sense of communities among learners wherein collaborative reflection is possible, be it through online forum discussion, wikipedia, blogs, chat, etc. Restructuring the design for developing students' self-regulated learning skill by providing flexibility, and having the possibility of reflection, individually and in group, is very significant. However very few researchers such as Heba and Nouby (2008) and Jahjouh (2014) explored the potentials of blended learning programmes for pedagogy course in Science. Therefore, a lot of scope exists in blended learning with

specific attention to pedagogy course in Science. One possible method that could allow for more active science learning in science methods courses for elementary preservice teachers could be the use of blended learning (Yimaz and Malone, 2020). National Education Policy (2020) also reiterates the need for identifying and implementing different effective models of blended learning for different subjects.

There are different models of blended learning such as flipped learning, rotation model, self-blend model, etc. Selection of the appropriate model, is based on the course requirement and the context. An exemplar design of blended learning for pedagogy of Science course of teacher education programme is provided below. This is not the only way; however, this proposed design may help teacher educators to initiate the process of designing a blended course in teacher education programme.

Design of a Blended Course on Pedagogy of Science—an Exemplar

The following exemplar is an attempt to integrate online component into an existing pedagogy of science course with more possibility of deep discussion and reflection in the offline class in a blended environment. This could be tried out, in place of the conventional, fully face-to-face science pedagogy course with introduction of a Learning Management System (LMS) for online learning component. Just as an example, one of the design frameworks for blended course on pedagogy of science is provided below. It is open for the teacher educators to make changes in the strategy or tools as per contextual demand and variation in content. The given exemplar is prepared largely considering the overall aim and objectives of the pedagogy course of science in teacher education institutes. This could be extended further to bring changes in the curricular structure of field-based experience activities such as school exposure and internship of Pre-service Teacher Education Programme.

Learning Objectives

A few important learning objectives of the pedagogy of science are:

1. Explain the nature of science and specify the aims and objectives of science learning
2. Analyse science curricula and textbooks
3. Explore the methods of facilitating science learning in schools
4. Create unit plans, lesson plans and concept maps in science
5. Design assessment framework for science learning

Available and required resources

Computer facility with good internet speed, textbooks and other reference materials, lab, smart classrooms, software and apps

Assessment

- Assessment of student teachers' projects on the preparation of blog, report, concept maps, etc., on various themes

- Assessment of participation in online discussion board as well as classroom discussion
- Assignment assessment based on criteria such as perseverance, creativity and applicability
- Assessment of textbook analysis based on textbook analysis criteria
- Tests to assess the overall understanding of student teachers
- Preparation of e-portfolio

Design Plan

- LMS such as Moodle or Google Classroom or any other may be used to run the course online along with in-person classes and lab activities.

Learning objective	Content	Activity description	Technology requirements/ OER*	Teaching/ facilitation/ Assessment Requirements
Explain the nature of science and specify the aims and objectives of science learning	• Meaning and nature of science • Evolution of science • Aims and objectives of learning science • Writing learning objectives in science	1. Posting a video online about a pseudo-science topic like astrology, asking students to reflect on how it is not a 'science'. By analysing the attributes of pseudo-science areas, students are asked to reflect on the attributes of Science. With the help of the mentor, students identify the characteristics of science and the facilitator gives a brief description about the nature of science by a historical analysis of evolution of Science.	1. Video on Astrology 2. Wikipedia 3. Slide share (https://www.slideshare.net/) 4. Jamboard/ padlet (https://jamboard.google.com/) (https://padlet.com/) 5. ICT collaborative tools, such as Parlay ideas/ Flipgrid, for organising discussion (https://parlayideas.com/) https://info.flipgrid.com/)	1. Preparation/ selection of the video 2. Assessment of wiki project and adding inputs into it 3. Initiating the online discussion using any online discussion tool 4. Facilitating classroom discussion in small groups and consolidating the points 5. Preparation and sharing of the presentation on slideshare

* Open Educational Resources

		2. A collaborative group project using Wikipedia on the contribution of scientists in the process of evolving science, with an intention for learners to appreciate the historical perspective of science 3. Discussion on Social and ethical concerns of scientific achievements in an Online Discussion Board available in the LMS or using interactive discussion board tools such as Parlay ideas or Flipgrid 4. Brainstorming session on 'Why Students Should Learn Science' using jam board / padlet/ideaboardz in the classroom 5. Classroom discussion in small groups to identify the aims and objectives of Science. Teacher facilitates the activity and elaborates on the aims and objectives of science learning.		

		6. Teacher presentation and sharing information on slideshare about the revised taxonomy by Anderson and Krathwohl 7. Students identify learning objectives in science topics based on revised Blooms Taxonomy and a critical reflection by posting it online		
Analyse science curricula and textbooks	• Place and scope of science curriculum • National and International science surricula projects • Criteria of sood science curriculum	1. Online lecture video on various National and International Science Curricula and self-reflection of students on the evolution of science curricula at secondary school level 2. Online lecture on criteria for science curriculum/ textbook analysis 3. Small group work of textbook analysis in the classroom using the criteria posted online in the course page and asking students to upload textbook analysis document in the course page	1. E-textbooks (http://ncert.nic.in/textbook/textbook.htm?iesc 1=0-15) 2. Science Curricular Project of Reports 3. National Curriculum Frameworks	1. Preparing and using PowerPoint presentation during lecture 2. Identifying the criteria of curricula/ textbook analysis 3. e-Assessment of textbook analysis using Rubi Star

Explore several methods of facilitating science	• Pedagogical methods and strategies of learning science • Approaches of learning Science • Constructivist approach of learning science • Various pedagogical strategies • ICT based teaching-learning in Science	1. Students are asked to blog on their experience as students in their science classroom at school 2. Uploading a video on constructivist way of learning science and students are asked to reflect their perception online about the possibilities of constructivist classroom 3. Classroom discussion on how constructivist way of learning is different from the traditional way of giving lectures 4. Watching online science learning episodes based on various approaches and strategies (one of the resources could be National Repository of Open Educational Resources (NROER) 5. Demonstration of various pedagogical strategies such as experimentation, problem-based learning (Use of laboratory as required)	1. Videos 2. Blog 3. National Repository of Open Educational Resources (NROER) 4. Science specific free and open resources such as Stellarium (https://stellarium.org/), avogadro.cc (https://phet.colorado.edu/) 5. Laboratory resources	1. Giving feedback on students' blog and encouraging students to go through other students' blog 2. Uploading a video 3. Facilitating group discussion in the classroom 4. Giving feedback on simulated lessons by students 5. Encouraging and providing necessary help in downloading free softwares in science learning and online mentoring

		6. Simulated science teaching-learning process in the classroom using various approaches followed by discussion. Video of the simulated lessons could be uploaded on the course platform and reflection of students on the same could be invited 7. Exploring and listing various ICT based teaching-learning approaches in Science using Google search 8. Practice sessions in the computer laboratory or own laptops on science specific simulation software/ apps such as Stellarium, Kalzium, Avogadro, PhET, etc. 9. Online discussion on how the above listed softwares/ apps could be integrated into science lessons		
Create unit plans, lesson plans and concept maps in science	• Need for planning a lesson • Development of unit plans and lesson plans	1. Students watch videos posted online in the course webpage by the mentor on the relevance of content analysis in the process	1. Video 2. Concept map softwares/ apps (https://cmap.ihmu.us/)	1. Preparation of video and uploading on the course webpage 2. Facilitating content analysis

	• Meaning and process of concept mapping-tool for planning	of planning a unit, lesson and activities 2. Classroom activity of content analysis of a science topic 3. Representing the interrelationship of the identified concepts in the form of a concept map using Cmap, Freeplane or any other concept map tool and uploading on the course site 4. Peer reflection on the concept map developed by students on online discussion forum 5. Group activity in the classroom on preparation of unit plan and developing an exemplar lesson plan in science 6. Uploading of a lesson plan as an assignment and taking mentor feedback on the same	(https:// sourceforge. net/projects/ freeplane/ files/latest/ download)	activity by evolving the criteria of analysis through discussion 3. Managing peer reflection on concept maps prepared by students 4. Motivating and encouraging students' activity in the classroom and giving necessary guidance on the preparation of unit and lesson plans 5. Providing feedback on assignments
Design assessment framework for science learning	• Paradigm shift in assessment • Factors to be considered for assessment (Creating assessment framework) • Forms and tools of assessment	1. A small video lecture uploaded on the course page by the facilitator on significance of assessment and paradigm shifts in the process of assessment 2. Classroom discussion on various forms of assessment in science	Video e-rubrics e-portfolio softwares (https://kahoot. com/schools/ assessment/ https://quizizz. com/ https://www. edcite.com/)	1. Preparation of video lecture 2. Facilitating classroom discussion on forms of assessment 3. Monitoring and guiding the group activity on blueprint

	• Preparation of blueprint • ICT in assessment	3. Group activity of preparation of blueprint in the class with guidance from the teacher 4. Role of ICT in assessment—students posts opinion in the discussion forum 5. Mentor uploads the examples of e-assessment tools such as Kahoot, quizizz, Quizlet, Edcite, etc. 6. Assignment—preparation of e-portfolio		4. Initiating discussion forum on the role of ICT in assessment, specifying a few examples 5. Demonstration of ICT assessment tools 6. Preparation and uploading of worksheet on e-assessment 7. Developing guidelines on the preparation of e-portfolio

Note: The ICT tools and activities mentioned here are only suggestive, recommending designers to choose the best for their classes.

Conclusion

A blended learning design for science pedagogy course in pre-service teacher education programme is suggested in this paper. There are many challenges of implementing it in the current teacher education system of India such as technological requirements including access to internet and lack of knowledge and skills in using the technological tools, etc. Students' varying degrees of learning competence is also another concern. Also, teacher educators' skill of redesigning the curriculum becomes imperative in effective designing and implementation of a blended course. However, with proper guidance and support from the institute and a conscious effort of teacher educators in bringing improvement in teacher preparation process, these challenges could be addressed and towards achieving higher learning outcomes which is possible in a blended learning environment. Blended learning is an immediate requirement and with effort, teacher educators would be able to design a course having a beautiful blend of between classroom as well as online learning environment.

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Schools, Leadership and Gender
A Study on Women School Leaders in Kerala Schools

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Abstract

With the advancement of professional prospects for women globally, top positions are now open and accessible to women across the professional arenas. School leadership is one such professional zone where women's participation as school leaders is emerging firmly as ever before. Since women contribute as a major and defining workforce in Indian schools as teachers (MHRD, 2018), it becomes apparent and reasonable to have more females as school leaders. However, process of this emergence of females as school face many challenges during their role transformations. They sustain the administration and management-related impediments and fight a distinct war of the patriarchal mindset that questions their calibre of delivering results.

The paper presents a case study from Kerala's field experience under the doctoral thesis. Using an in-depth interview schedule under qualitative research methodology, the cases portray the journey of two women leaders' in the schools situated in Trivandrum and Quillon, respectively. The study engages in a dialogue in women's leadership where the dynamics operate in a tight bureaucratic setup tinted with patriarchy shades. It questions the legitimacy of gendering the concept of school leadership and the implications drawn for the Indian school system.

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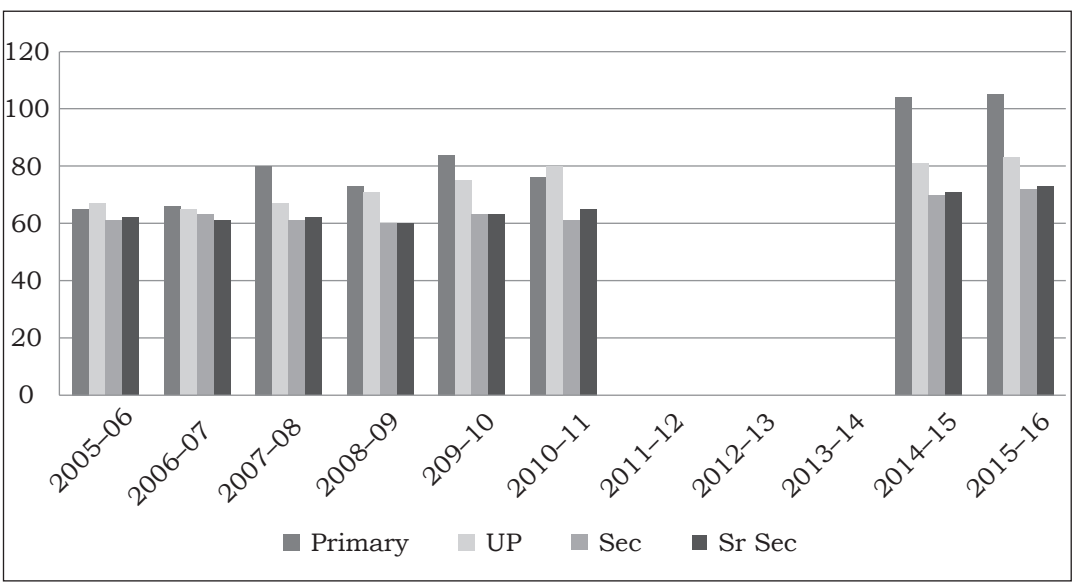
Introduction

Gender discourse in school leadership has garnered considerable attention over recent decades (Schein, 2001). Women as centrally significant and sustainable forces for leading schools are seldom looked up at par with their male counterparts. As a result, female participation as school leaders in Indian schools lags behind. (Mythili, 2019).

As per the statistics released by the MHRD (2018), female participation in the education sector is highest at the primary education level. However, it persistently drops at the secondary and senior secondary levels of schooling (Fig.1).

One of the primary reasons behind an increased intake of women at the lower levels of schooling is due to the perception of caretaking and nurturance associated with them (Ross-Smith and Kornberger, 2004). The skewed rationality ensures and sustains gender inequalities at all levels. Nevertheless, as the gender states to declines, in significant change arises parity in the Secondary and Senior Secondary. Education levels.

Despite having more female representation in the Indian school education, 'women as school leaders' seldom get the chance to prove their mettle. The widening gap between an idea and its implementation corresponds to the hegemonic stereotyping of leadership under the male influence. It results in a contorted understanding of leadership values, nourishes the expectations, and feeds into the existing patriarchal



Source: (MHRD, 2018)

Fig. 1: Number of Female Teachers per Hundred Male Teachers

understanding of power and control. Male administrators configure their roles as leaders concerning the pre-conditioned masculinity ideas and are expected to fit in those moulds (Lata and Yadav, 2018). The reason corresponds to the social expectations in the private and the public sectors. India's socialisation essentially shapes the patriarchal mindset and is subsequently reinforced through inherently accepted norms (Gupta et al., 2008). Leadership, otherwise a gender-neutral realm, becomes a socially constructed process that is not instinctively inclined (Jenkins, 2018).

Gender, on the other hand, is 'performative,' a term coined by the famous feminist theorist Judith Butler (Butler, 1988). It refers to the processes involved in the construction of 'gender identity' by performing repetitive roles. Therefore, being a male or a female leader is not 'self-evident'. Viewing their subsequent leadership performance is thus not free from regulated notions of dominant patriarchal views. Therefore, the dichotomy of gender roles being typecast in educational leadership needs an extensive discourse. Unfortunately, the discourse on women's leadership is often used interchangeably with women's empowerment. It underrepresents their recognition as impactful leaders, disregarding them as 'career-seeking individuals,' having their strengths and capabilities (Mythili, 2019).

Research validates that men and women vary in leadership styles (Appelbaum et al., 2003; Dwiri and Okatan, 2019). The difference lies in the approach towards the concept of leadership where men perceive it as 'leading'; and women see it in terms of 'facilitating'. The concept of achievement varies too, as it is more concrete, structured, and extrinsic for men while it is subtle, qualitative, and intrinsic for women. The difference in leadership styles hence, aids in deriving a rationale for identifying the hidden gender biases and discrimination that the women administrators face while working in educational institutions (Appelbaum et al., 2003; Avgeri, 2015; Eklund et al., 2017; Lata and Yadav, 2018).

Context of the Study

The paper presents a case study on women's educational leadership status in Kerala, India. The central idea of gender formation in the leadership scenario leads to the section that bifurcates the literature review into two major subheads: women's education in India and the subsequent leadership prospects and the women emamcipation in Kerala's reformations society. First, the historical trajectory sketches the women's empowerment in the state under a transitional lens of modernity. The following section on the theoretical framework discusses standpoint theory related to women's leadership narrative and its

pertinence in studying women's leadership under that lens. Methodological underpinnings inform the study's approach and direct it towards the gender struggles and complexities in school leadership before weaving in the theoretical framework for discussion and implications.

Review of Literature

Women in Indian School Education

Women are undoubtedly under-represented in leadership positions across most school categories at pan India level. For example, only 35 per cent of academics are women in India, and even fewer show up in leadership positions (Lata and Yadav, 2018). A state-wise analysis reflects that Chandigarh, Goa, Meghalaya, Punjab, and Tamil Nadu have a higher representation of women school leaders in all leadership positions, namely. 'Acting Headmistress', 'Designated Headmistress', 'Vice Principal', and 'the Principal'. Further, despite a marked improvement in their leadership positions, males dominate leadership positions (Mythili, 2019, pp. 13–19).

Research studies show that more girls than boys drop out in India, resulting in a widening gender gap between primary and secondary, and tertiary education enrollment ratios. Women's participation in the labour market is not fairly represented. Since the 1950s, the proportion of women in low-literacy states has been unsatisfactory, constituting 21 and 23 per cent at the primary and elementary levels of schooling, respectively (Agrawal and Aggarwal, 1992). Another issue remains: if girls fail to complete their school education, they do not qualify the teacher training, which impedes their induction into teacher education and professional development (Rao, 2000; Sengupta and Guha, 2002). As girls progress on the educational ladder, their chances of discontinuing education, especially at the secondary and senior secondary levels increase (Mahalanabis and Acharya, 2021)

It is apparent that if women leaders encounter issues concerning handling power, exercising authority, and charting out strategic initiatives, it owes much to the marginalisation faced at the preceding education levels. The dilemma often extends to have confrontations and interface with gender matrices, where women leaders deal with male subordinates and challenge the power structures. Such confrontations are deeply rooted in socio-cultural contexts and require more profound engagement with the external environments (Mahalanabis and Acharya, 2021). The following section briefs the historical trajectory of women emancipation in Kerala.

Women Emancipation in Kerala

Several socio-religious reform movements from 1812 onwards decided the course of political development in Kerala. There was an awakening of the masses, especially women, as in the 18th century,

women in Kerala had to pay the *Mulakkaram* or the breast tax, just because they had breasts (Nair, 2022). Changes in Kerala's structure and practices in the past century have had wide-ranging implications for gender relations. The conventional indicators in understanding women's status assume a direct link between education and fertility. However, the hypothesis stands contested. Education alone does not enable women to challenge gender relations (Eapen and Kodoth, 2002). Much depends on engendering education to enable critical attitudes. Crucially domestic violence and dowry deaths went alongside rising levels of education in Kerala. It emphasised focusing on the social context, defined by iniquitous gender relations. Women became a subordinate group, both inside and outside the family, with very little power to make decisions (Kodoth, 2002). The missionaries' educational activities and the reformations brought in by Sree Narayana Guru and Sahodaran Ayyappan helped eradicate many evil customs and practices to develop a favourable attitude towards women's education and participation in society. The reforms considerably enhanced women's educational and social status in the society of Kerala in the first half of the 20th century (Dominic, 2016).

The historical transformation of the status of women in Kerala is undoubtedly an eye-opener. A state, which marks high rates of literacy and the highest human development index (0.79) compared to the rest, too experienced turmoil when it came to recognising the significance of another half of the society (CDS, 2005; Kerala State Planning Board, 2019; PIB, 2021). However, with continued education, literacy, and poverty alleviation, Kerala carved a noticeable space amidst educational discourse. The following section backs the debate with a theory pertinent to understanding Kerala's women leaders' leadership styles.

Theoretical Framework

Standpoint theory, a term coined by the American feminist theorist Sandra Harding, is a feminist theoretical perspective that asserts that knowledge stems from a woman's social position. It negates the conventional thought process of science being 'objective'. It asserts that since women have been marginalised oversages, their voices, thinking patterns, and opinions have somewhat submerged in the society's material reality. The theoretical framework for the study provides a foundation to view school situations, impediments and challenges faced by the school leaders of Kerala and their initiatives to overcome them.

Rationale

School leadership cannot be undermined in ensuring school improvement (Klein and Schwanenberg, 2020; Pechota and Scott, 2020; Sharma, 2016; Sillins,

2016; Sinay and Ryan, 2016). Moreover, there is an unprecedented need to have a contextualised understanding of situational challenges and issues that school leaders face and the practices taken up to overcome them (Grin et al., 2018; Moir, 2017; Osborn et al., 2002). Indeed, the ways of handling the situations differ across the gender binaries (Avgeri, 2015; Eklund et al., 2017; Lata and Yadav, 2018; Ross-Smith and Kornberger, 2004).

Hence, the study derives its rationale from exploring the nature of leadership challenges and the subsequent solutions offered by the women leaders to usher in school improvement in Kerala, which is known for acing universal school education at the primary level, having HDI at par with the developed nations and a robust school administration to facilitate learning across the schools (Anupama and Sreekala, 2020; CDS, 2005; Kerala State Planning Board, 2019).

Methodology

The paper discusses two case studies within a qualitative framework to understand women's leadership experiences in two schools in Kerala, India. The schools comprise State-run as well as CBSE governed schools. The method adopted is that of a case study. An in-depth interview schedule was administered to identify the complexities arising in relationships with colleagues and students, and determine the success of the school leaders.

Research Questions

(a) What kind of issues are faced by women school leaders in Kerala schools?

(b) How do they overcome those issues?

School Profiles

Case 1: Government Higher Secondary School, Jagathy, Thiruvananthapuram

It is a government Higher Secondary School located in Thiruvananthapuram's Jagathy area. It caters to the students suffering from auditory impairment. After a rich service of 33 years, the principal Jeannie (name changed) neared superannuation and recollected her struggles through a vivid narrative. An interpreter in the annual meet for the All-Kerala Deaf Association, she is an active member in numerous clubs for people with auditory impairment. The conversation took her back to the years when she had simply started as a sociology teacher. She transitioned through multifarious roles and responsibilities, starting from a teacher to becoming a social worker, where she reached out to the students' families coming from marginalised sections of society. Her leadership experience rested on individual efforts rather than on any fallacious support over the years. The leader focussed on making the students employable at all levels besides their academic scores to become independent, even when

there was a limited scope. Further, after school hours, she approached public schools to collaborate with NSS students and convince them to initiate a programme regarding language development for her special needs students. She not only focused on the collaborative aspect and skill development but also ensured that her students got a fair opportunity to interact with the external environment.

The leader realised the systemic limitations but kept a steady approach to make working in the school sustainable for the students and teachers alike. Here, being a woman, she traversed on a guardian and a professional's lines, which marked the next level of camaraderie between the students and the teachers. She faced the resource crunch, issues with the grant disbursal from a centralised system and even more, there was lack of trained professionals to handle student-related issues, however, with a much more positive outlook, she overcame the challenge by taking the lead from the front and carving out sustainable solutions in the long run.

A significant shared instance accounted for her overcoming a significant roadblock in the path of her leadership success. She returned to the school as a leader after six years of a legal battle against her colleagues. Being a female teacher, she faced biases, impediments, judgments, and marginalisation from the authorities, especially from the male colleagues. She admitted that she was framed in a legal case by the school authorities but she pursued the case religiously with her family's and students' support. They kept her courage, optimism, and faith in the law undeterred. Nevertheless, the repercussions were borne heavily. In their bid to suppress her voice, she faced much public criticism, and her name got tarnished before she was transferred to another school. However, after six years of an enduring journey, her victorious acquittal changed the scene of her professional tenure. She was honoured by the Directorate of Education by giving her charge of the same school as a leader.

On her ladder of success, she met the same people who had charged the case against her and ensured that she suffered endlessly. However, she chose to bury the past episode for good and encouraged them to start afresh. The school observed a surge in the development and infrastructure and improved students' attendance post her appointment from case study:

'I was just a higher secondary teacher while I was transferred, but I came back as the principal to this school. I am extremely happy to be back. Although I feel the pain, I have some colleagues working with me back then in school even now. To be more specific, one among them was there in the conspiracy. I don't behave differently, keeping that in mind. Whatever happened in the past should be buried in the past itself. I do not feel good about digging that up.

The pressure posed on women leaders is multi-directional. With rising pressure and bare minimum support, the expectations remain the same. As a result, women leaders have to work harder to reach higher job levels. The phenomenon is referred to as the 'glass cliff effect', wherein a double standard defines the status quo (Ryan and Haslam, 2005). While women leaders remain more tactful in handling the job, they are rarely spared the flak and criticism of their male colleagues. In the present case, the principal had to bear all the prejudices and manoeuvre her successful leadership path. She led the school under excessive vigilance from her male colleagues, higher authorities, and even the community.

Case 2: Sree Buddha Central School, Karunagapally, Kollam, Kerala

The school is a co-educational, composite school having Classes from I to XII. The leader was from a CBSE school in Quillon district with a strength of 3000+ students. The school is a composite co-ed school, having classes from primary to senior secondary and attracting a holistic student clientele across the barriers of class, creed, and religion. The principal, Manjula (name changed), having spent 26 years in the teaching profession, took pride in association with the school as a principal for five years, wherein she started her professional journey as a teacher and eventually became the principal against all odds. Besides carrying out administrative responsibilities, she engages with student discussions and takes up senior secondary classes for teaching. Excerpts:

'... before coming here, I was working in another school. I was a Vice Principal there and many of the teachers weren't happy with me. I was pretty strict in all my work so naturally, they had discomfort and disliked me. They all accused me that my certificate has no value. Many teachers did not appreciate me for having a B.Ed. Degree through correspondence. That was my challenge to take the degree and stand before them. I went for that (regular B.Ed. degree), and there was an entrance exam for the admission, and I got 4th rank in the entrance exam and I joined a prestigious teacher training college ... No, there wasn't any pressure from them only from certain teachers that I took the challenge.'

In the last decade, before her superannuation, she chose to pursue another B.Ed. Degree in a regular mode to eradicate the misconceptions about her inabilities and forged certification. However, the episode did make her doubt her self-worth and question her credibility. Even when she earned the same degree in regular mode, all her efforts pointed towards proving her worth and identity. Despite undergoing all the discomfiture, she braced herself for future challenges. In the present school, she faced hardships in managing teachers and convincing parents to shift from the conventional thinking patterns of pursuing science

education to that of humanities. Having double Master Degree in Botany and History, respectively, Manjula taught History using 'Yoga method'. She continued to develop students' interest in Humanities. Excerpts from case study:

'See, the main problem is with the parents, they want their children to come up to their level and for that, they are pressurising the students to do a specific branch. The reason for the hunger is if the marks are there, they are good. They don't allow the children to think differently and approach any other branch the children desire. I want to change the students' mind. I see a lot of teachers in Science but hardly anyone in Humanities, so I am still sticking on to that. I use different types of techniques as they will lose interest after one point. Right now, I am using Yoga method to teach History. I am pretty much aware of the student's calibre; they may not be interested in Physics or Maths even then they have to learn the professional course and if they gets a supplementary exam then also the blame will be on them.'

However, her initiatives of bettering students' futures went unnoticed as she faced criticism from everyone but gathered significant student support. When she was questioned about her leadership credentials, her engagement with the students gave her new hope. Next, she concentrated on her teachers and started building rapport by instilling leadership qualities. She subtly conveyed to them the essence of empathy and ownership by generating autonomy in their decision-making. Excerpts from case study:

'When I joined the school four years back, I was not much aware of how the teachers are and what all are their capabilities. In the first year I divided the job for all the departments in the school, from this I came to a conclusion how to understand a person based on their merits and demerits and how much they are lagging behind and how much they are innovative in their ways. Then I approached the teachers for feedback.'

Manjula's transition into the school was subtle and slow, but she admitted that students had been the last to judge and evaluate her. She also undertook teacher training to develop her teachers for future leadership experiences so that they do not undergo what she had undergone. She inducted new teachers through monthly staff meetings and systematically followed her B.Ed. lessons of teacher training. In all, she kept it basic and uncomplicated. Hence, in commenting on school improvement, she had clarity about its conceptualisation. Excerpts:

'The first and the foremost important priority in school improvement is the students' discipline. It is not based on what military professionals do. It is said to respect others, behave decently, dress well mannered, and do whatever is considered to be a model in front of the world. If the

school lacks any of the attributes which I mentioned before then the impact will be felt directly, like if the school lacked discipline, then the parents don't feel like admitting them to the school, and apparently, if the teaching is not good, again the parents will be reluctant in sending their wards to school.'

She emphasised the need to promote academic merit and linguistic competence in English. Seeing her stay back for meetings, plan schedules and work, other teachers were encouraged to plan and volunteer for co-curricular tasks and work together in dealing with problem areas that students face. She explained her leadership style as basic. Excerpts from case study:

'My leadership style is very simple, as I told you earlier, I am pretty much humble, I don't do things over my pride. I don't even interact to increase with the subordinate at the lowest level and treat everyone equal. I believe that on a humanitarian basis we all are the same, only our position varies.'

Despite belonging to different school setups, structures, and districts, Manjula, like Jeannie, faced criticism and doubt to prove her mettle and manoeuvre through her leadership journey. Yet, whenever they were accused, doubted, and questioned for their worth, they surrendered to their faith, persevered through responsibilities, and overcame impediments.

Findings

Women leaders in India traverse across the barriers of normativity, sexuality, and categorically defined gendered spaces in professional spheres. Leadership positions, therefore, guarantee meaning generation through conflict. The opportunities are sparse, and the structures are complex. Therefore, the distinctive character of women leaders in India leads to a new genre in leadership research where the traditional approach replaces conventionality, and the progressive mindset replaces the modern. The key results of the study can be summed up based on the research questions as follows:

(a) What kinds of issues are faced by women school leaders?

There is a significant resource crunch in the schools, especially with an inclusive setup, infrastructure, relevant equipment for the auditory impaired students, trained professionals to facilitate teaching-learning, and a good skill acquisition programme. The leaders face a tough time in managing these and facilitating student learning while experiencing a lot of prejudice, bias, and judgmental attitude while working with male colleagues. Their ego issues act as impediments and thwart their progress in carving out their own identity. They barely get any guidance and stand at crossroads when they have to ensure everyone's participation. Even though leaders

have a support system, performance pressure lingers over them continuously. There is a constant struggle to have everyone in the school work together and work as a team. In addition, the gender identity of the leader presupposes the path to her success as they have to work harder and deliver twice as much as is expected from them.

(b) How do they overcome those issues?

The women leaders focused on collaborating with local schools in the vicinity to engage more training and infrastructural support. Each step in the career path acted as a milestone, and they ensured that they negotiated with all the stakeholders equally including NGOs which brought them much knowledge and direction to drive towards leadership goals sustainably. They showed flexibility in decision-making and student dealing. With effective teacher management strategies, they strengthened their schools' culture. Through persistent sustained communication and persevering on tangible results, both women leaders balanced the gender binaries and minimised ego clashes. Further, they mobilised teachers to make fundamental changes in their teaching styles and pedagogical approach to prepare and gain the necessary capabilities for moving in new directions and reaching higher ideal performance peaks.

Discussion

Standpoint theory helped the researcher develop an epistemological aspect of philosophy as it situates the *loci* via women leaders' experiences embedded in their narratives. Knowledge became socially situated, arising from an individual's social position and subsequently reinforced. The purpose behind selecting the standpoint theory for the theoretical framework was twofold. Firstly, it strengthened the subdued voices of the women there experiencing problems in learning, and who were career growth. It deconstructs the stated conventions of everyday experiences and offers an alternate reality and meaning to the same practices. Secondly, analysing the case study under the stated theoretical lens opens the insider-outsider position in a professional setup. It helps in understanding the power relations more suitably. The dominant practices have led to create a space that is blind to their credit. It, therefore, assures a robust understanding of leadership practices that are relevantly empowering besides being contextual (Gurung, 2020).

As both the leaders neared their retirement, maturity dawned upon them. They reflected how a considerable shift in their perception of the situations and teachers had also turned metamorphic. The confidence reflected their self-assuredness, complacence, and soft skills built over time, with age

and experience against the youth's hyperactivity. Hence, in both case profiles, women leaders interpreted and defined their legitimacy within the system as they learned to lead and received acknowledgment from the community, higher authorities, and subordinates alike (Mythili, 2019, pp. 179–181).

Implications

1. *Ensuring collaborative leadership practices in the policy*

The schools need an open forum to engage the teachers and principals in a dialogue catering to the contemporary challenges. Collaborative leadership induces a strong school culture and brings greater job satisfaction (Teasley, 2017).

2. *Active leader participation in school improvement*

The findings complement that leadership impacts student achievement and overall culture of the school (Grissom et al., 2021; Leithwood and Massey, 2010; Mitchell et al., 2015; Osborne et al., 2015; Shatzer et al., 2014). Principals and teachers create an environment that impacts people at all levels to make sense of state standards, tests, and other student development measures.

3. *Need for context-specific training*

Although government initiatives such as National Initiative for School Heads and Teachers' Holistic Advancement 'NISHTHA' and NEP 2020 focus on the importance of context-based development and training programmes, there is a need to carve context-specific diagnosis for the situational challenges.

4. *States support for the preparation and professional development of women school stakeholders*

Although pressure on women school stakeholders increased over time, the professional development support extended to them is relatively new. NEP 2020 mandates robust CPD but the capacity building of women school professionals also needs attention (GoI, 2020).

5. *Better administrative functioning is required*

State and district level policymakers need to engage more strategically in determining how states can provide support to implement the locally defined policies for transparency and improvement.

Conclusion

The study directed the course of the narrative to the gender aspect in school education, particularly school leadership. The narratives highlighted the hardships faced by women teachers in their journey to becoming principals. Besides knowledge production, it ushered drastic changes in women leaders' voices in social science research and grooming women leaders within and beyond the schools.

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Towards Inclusion through Awareness of Sexual Harassment Policies
Case of Teacher Education Institution

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Abstract

Educational institutions are vested with the responsibility of offering a safe, secure, and inclusive teaching-learning environment. There are many instances showing that real inclusion in terms of gender, disability, sexuality, race, and ethnicity is always ignored at all levels of education. The paper aimed to explore the status of legal awareness on sexual harassment and raise the level of sensitivity towards inclusion among students of the teacher education institution of Odisha. The research found that 90 per cent of respondents are unaware of the Internal Complaint Committee (ICC) for handling sexual harassment cases, its composition, procedures for grievances, and its functions. 14 per cent of respondents have received awareness training programmes on gender equality and women's issues but not on sexual harassment. It is recommended to create and update policies related to sexual harassment and communicate it in various ways in the institution to raise the awareness level among students in teacher education institutions ensuring a safe learning environment.

Introduction

The Right to Education Act (2009) has brought a wave of change in creating an inclusive environment in Indian education system. With an increase in the school-going population, safety and security in Indian schools need to be examined with close scruting.

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A sense of safety and security can be introduced in schools by taking action against bullying, corporal punishment, and abuse in any form such as physical, verbal, emotional, or sexual by teachers, students, other personnel, and parents. According to the report of Ministry of Women and Child Development (2007), the cases of emotional abuse (83%) and sexual abuse (53.22%) are more compared to physical abuse cases (50%). Inclusive education emphasises welcoming all and providing a safe environment for all in schools. Broadly, the boundaries in this outline are acute along the lines of disability, race, gender, class, sexuality, bilingualism, ethnicity, and geographic location (Rix, et al., 2005).

The Indian higher education system is subject to provide a safe and healthy environment to students but the reality is awful where the cases of students experiencing sexual harassment go unreported because of the ignorance of the victims (Kulshrestha and Pelemo, 2018). The umbrella term sexual harassment is composed of three categories of behaviour: (i) gender harassment (verbal and non-verbal behaviours that convey hostility, objectification, exclusion, of members of one gender), (ii) unwanted sexual attention (verbal or physical unwelcome sexual advances and assault), and (iii) sexual coercion (National Institutes of Health Workplace Climate and Harassment Survey, 2020). Thus, sexual harassment includes any form of unwanted sexual touching, non-consensual sexual intercourse, sexual exploitation, or physical harassment which is experienced as a sexual intent and consists of visual, physical, or verbal aggression that can be perceived as unwanted sexual activity (University Grants Commission, 2015).

Need and Significance

Several studies support Paludi and Barickman's (1991) finding that men rarely suffer from sexual harassment (Hurley and Fagenson-Eland, 1996; Kastl and Kleiner, 2001; Whaley and Tucker, 1998; and Kayuni, 2009). However, some men face sexual harassment from both men and women (Reena and Saheab, 2014). (Mailhot, et at., 2021) observed that specific groups are at greater risk of being the victims of sexual harassment (e.g., women, children, racial/ethnic minorities, sexual, and gender minorities). Studies reveal situational factors that encourage men to sexually harass women like organisational power, male-dominated work environment, cultural beliefs, and permissible workplace environment (Mackinnon, 1979). Bargh et al. (1995) reported a lack of awareness of harassers about the inappropriateness of their behaviour leading to sexual harassment and power misuse.

The Odisha Government reported that more than five girls in the age group of 12 to 16 in tribal residential schools became pregnant in the past

three years and 12 girls in residential schools were raped, faced sexual advances, and other harassment (*The Hindu*, 2015). This presents a strong reason for not sending daughters to schools as schools fail to provide a safe and secure environment for children to learn. Union Minister of State for Human Resource Development stated that 149 cases of sexual harassment were reported from universities and 39 cases from colleges and other institutions in 2017 (Sexual Harassment in Indian School and College Campuses Increases by 50 per cent where are we Headed, 2018) (Sharma, 2018). There are reports of students' lack of awareness on the grievance procedure of sexual harassment and which is consequent cause for on increase in such abuses leading to a belief that it is an inevitable life experience (Kulshrestha and Pelemo, 2018).

The constitution and international obligations have worked as legislation against sexual harassment in India. The Convention on the Elimination of All Forms of Discrimination against Women (1979); Protection of Human Right Act (1993); Indian Penal Code (1860); Protection of Children from Sexual Offences Act (2012); National Council of Educational Research and Training Policy on Prevention, Prohibition and Redressal of Sexual Harassment of Women at Workplace (2013); University Grants Commission (Prevention, Prohibition and Redressal of Sexual Harassment of Women Employees and Students in Higher Educational Institutions) Regulations, 2015; and many other laws and policies are falling short in protecting students at educational institutes in treating victims. Article 14 (fundamental right to equality before the law and equal protection of laws), Article 15 (right to non-discrimination on any grounds, including sex), Article 19 (fundamental freedoms), and Article 21 (right to life and liberty) of the Constitution are violated in the cases of sexual harassment. Article 42 in the constitution is entitled to provide for just and humane conditions of work and laid the foundation for future measures and legal remedies against sexual harassment at the workplace. The Vishaka judgment recognised that sexual harassment violated the constitutional guarantee of gender equality, women's fundamental right to live with dignity, to personal liberty, and to carry on any occupation (Vishaka v. State of Rajasthan, 1997). Pina and Gannon (2010) are right when they observed that the mere framing of a sexual harassment policy is not enough to safeguard or stop sexual harassment from occurring (Kulshreshta and Pelesmo, 2018.

This paper is an attempt to examine the awareness level of the legal aspects of sexual harassment among student teachers in teacher education institutions. The significance of this topic is due to the seriousness of consequences

suffered by students thinking that it is not a matter to complain. It is also important for employers, employees, students, and parents to acquire a conceptual understanding of sexual harassment and its prevention in teacher education institutions. The issue must be oriented and addressed at the grassroots level where the teacher plays a prime role to create awareness among students, parents, society, and the community. Perhaps the best way to prevent sexual harassment is offered by the teacher in the most educative way and the crime cannot spread out to other fields of work life. Therefore, educational institutions, especially teacher education institutions, have a central role in ensuring that everyone has an appropriate level of awareness, knowledge, and skill to cope up with situations that can help them to make critical decisions regarding gender harmony both in their professional and personal lives, and ultimately establishing an inclusive learning environment.

Objective Status

To draw out and improve the level of awareness of student teachers of teacher education institutions on the legal aspect of sexual harassment.

Research Methodology

The present study is of descriptive research design. A survey method is applied for collecting data using a self-prepared questionnaire on awareness of Sexual Harassment Committee and Policy. The population for the study was two hundred student teachers of one of the Teacher Education Institutions (TEIs) in Bhubaneswar, Odisha. Data was collected from 69 student teachers (males=27, females=42) selected through purposive, and convenience sampling procedures. The student teachers selected for the sample of the study were doing programmes like M.Ed., M.Phil., Ph.D. course work, and Junior Research Fellows with at least one year of experience in the TEI. The questionnaire contained 14 items on a three-point scale with two open-ended items to explore the awareness level of participants regarding the sexual harassment committee and policy. The data was quantitatively analysed using descriptive statistics like frequency and percentage. The open-ended items in the questionnaire were: the reasons for not complaining to ICC of the TEI if experienced any kind of related incidence, details about ICC, and other policies that safeguard students in TEIs. These responses are analysed and discussed thematically.

Awareness of Sexual Harassment Committee and Policy

The questionnaire elicited responses to assess the awareness of the Sexual Harassment Committee and its policy. Dimensions like: the Internal Complaint Committee (ICC), procedures for treating the complaints, anti-sexual harassment

policies, awareness programmes, and dissemination of anti-sexual harassment policy were covered in the questionnaire. Respondents were expected to choose among the three options given which are rated as—yes, no, and don't know. The tables below give a picture of its frequency (N) and percentage (%).

The high percentage of students not knowing about ICC clearly reflects a low level of awareness of ICC. Only 10 per cent of students are aware of the existence of ICC in the institution. Though 14 per cent of respondents affirm that the institutions conduct awareness programmes in institutions on women's rights and gender issues but they are never exposed how to address the issue of sexual harassment. 29 per cent of the respondents stated that they do not know (not sure) whether any anti-sexual harassment policy related information is appropriately disseminated by the institution or not and 57 per cent opined that the institution does not publicise the anti-sexual harassment policy by displaying it at appropriate places in the institution so that everyone can read about and understand the prevention and prohibition of sexual harassment. A large number of students (80 per cent) responded they have not seen any copy of the anti-sexual harassment policy. Further exploration was done on the 10 per cent of the students who were aware of ICC in the institution as given as the table:

Table 1
Existence of ICC and Dissemination of Information on Sexual Harassment Policies in the Institution

S.No.	Items	Yes		No		Don't know	
1.	Existence of ICC to report sexual harassment	**No.**	**%**	**No.**	**%**	**No.**	**%**
		7	10	27	40	35	50
2.	Awareness programmes on sexual harassment in the institution	**No.**	**%**	**No.**	**%**	**No.**	**%**
		10	14	20	29	39	57
3.	Anti-sexual harassment policy displayed in any language at appropriate places in institution for everyone to understand	**No.**	**%**	**No.**	**%**	**No.**	**%**
		10	14	39	57	20	29
4.	Copy of the anti-sexual harassment policy	**No.**	**%**	**No.**	**%**	**No.**	**%**
		4	6	55	80	10	14

Table 2
Detailed Exploration on Awareness of ICC

S.No.	Items	Yes		No		Don't know	
1.	Sexual harassment cases handled by ICC	**No.**	**%**	**No.**	**%**	**No.**	**%**
		5	72			2	28
2.	Is ICC headed by a woman?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		1	14			6	86
3.	Are half the members of ICC women?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		3	43	1	14	3	43
4.	Does ICC ensure time-bound treatment of complaints?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		3	43	1	14	3	43
5.	Does ICC maintain confidentiality with regard to the complaint provided by the victim?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		3	43	2	29	2	28
6.	Does ICC provide support to the victim?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		3	43	1	14	3	43
7.	Does the victim approaching, and filing complaints in ICC face undesirable academic consequences?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		3	43	3	43	1	14
8.	Does ICC ensure the protection of the victim and the witnesses?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		3	43	1	14	3	43
9.	Do the members of ICC maintain a patient hearing in a non-biased manner?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		2	28	3	43	2	29
10.	Was there any kind of action taken by ICC against the perpetrator?	**No.**	**%**	**No.**	**%**	**No.**	**%**
		2	29	22	28	3	43

It is clear that there were complaints in the ICC, but a small number of students are aware of the composition, management, function, procedure and channel for treating the complaints. The students opined in their open-ended responses that a few of them complained to the higher authority, not to any specific committee where as some of them only know that there is a committee dealing with these cases. Thus, they had a very confusing and vague idea regarding ICC. They affirm the existence of ICC in the institution because they have heard it from somewhere and someone else.

The participants responded to the open-ended item on policies regarding sexual harassment. They stated that the Protection of Children from Sexual Offences (POCSO) Act, 2012, is mentioned in their syllabus but a detailed discussion is not done

with them regarding the act. The respondents offered their feedback on improving the functions of ICC. Many participants suggested that only policy framing is not enough rather strict implementation, severe punishment, and action can prevent sexual harassment. Respondents also considered sexual harassment as an omnipresent crime experienced by teachers, students, female colleagues, and higher authorities. They proposed that the institutions must have anti-harassment cells that should work independently without any bias. It is the responsibility of the educational institutions and teachers to conduct a training programme on various policies and orient students to protect themselves. Providing adolescent education at an early stage, comfortable talks, and discussion can work towards creating awareness.

A few students shared their experience of sexual harassment that they faced in the comment box of the questionnaire, about which they did not complain formally in the institution. Their reasons for not complaining are presented thematically in Table 3 with possible explanations for their reasons.

It is noticed that student teachers did not complain because of their mistrust of the system, fear of blame, shame, social isolation, self-esteem, security, the dominance of power,

Table 3
Reasons for not complaining to ICC with possible explanations

Reasons	Possible Explanations
I thought of leaving the person (perpetrator) thinking that the person may realise their own fault.	Karma Theory
I was afraid as he was my teacher, the practical marks also were to be given by him and it could have spoiled my career.	Role of Power Play
I would have insecure to join the class after complaining. Everyone's behaviour and attitude will suddenly change after this. I was afraid of the situation and did not have the courage.	Fear and Disgrace
It's a common experience for all girls so it is not a matter to complain. I did not want to lose my mental peace. The tools used must be different for both genders as boys don't face sexual harassment.	Faulty socialisation
I personally find it difficult to distinguish between love, lust, friendship, and harassment. Physical abuse is only sexual harassment.	Lack of awareness
It was handled personally. The committee may have a negative attitude if I fail to produce sufficient evidence and I am afraid of the consequences after reporting.	Mistrust in the system

position, the role of gender, strong patriarchy in the socialisation process and misconceptions regarding sexual harassment leading to low awareness on it. Thus, the student teachers perceived sexual harassment as a normalised behaviour, a part and parcel of life, and learned to live with it.

Findings and Discussion

The research results show that nearly 90 per cent of student teachers of the institution are unaware of the sexual harassment committee, its composition, and its procedural and functional aspects. Though a few complained to the higher authority, and some wanted to complain about sexual harassment but most of them were unaware about whom to complain, and where and how to complain. A similar situation was seen in the study by Das and Rath (2015), where they discovered their participants are unaware of the various 'Indian Acts' that protect them from sexual harassment in their college. As per the findings of Apaak and Sarpong (2015), though the level of knowledge of female university athletes in Ghana on sexual harassment was significantly high, a majority of them were ignorant about the committee provided to address the issue. This postulation is congruent with that of Priyadarshini, et al. (2016), where 250 out of 407 respondents were unaware of the provision of the grievances committee referring to sexual harassment in their colleges. Nonetheless, Thomas (2015), in his study, found that 85 per cent of the Indian educational institutions have not framed a policy to deal with sexual harassment complaints knowing that it is a legal mandate. The lower level of reporting may be due to the non-functional and irregular periodic check-ups by Internal Complaints Committee (ICC) in the institution.

Thomas (2015) indentified a number of additional factors for not complaining of ICC such as the harasser's power and position, Victims lack of confidence in procedural justice, victims' lack of courage, fear of social isolation and sexual harassment resolution being skewed in favour of males. Thus, unequal gender and power relation-based violence impacts negatively and stands as an antecedent for committing sexual harassment (WHO, 2009). However, insufficient evidence, people blaming the victim, lack of seriousness towards the issue, and gender bias attitude in committee may be the reasons for victims not complaining to ICC. Psychological unacceptance of the happening of sexual harassment incidents with males among the majority of male respondents is a serious issue that needs further exploration.

90 per cent of respondents of the institution opined that no anti-sexual harassment policy was displayed in any language at appropriate places in the institution resulting in a lack of awareness of the policy. Norman

et al. (2013) supported the above finding, where they explored medical schools in Ghana that appeared to have sexual harassment policies, but they were not widely publicised, and the students were not aware of the protections offered to them. Thus, only framing policies is not enough (Sable et al., 2006) in the absence of its dissemination for the benefit of the public.

Approximately, 80 per cent of respondents did not have any sexual harassment policies and guidelines to refer to in any form from any source. This finding has similarity to that of Joubert, et al. (2011), where only a few respondents of their study had training on the policy contributing to a low level of knowledge of the policy. Hence, they suggested sexual harassment education be offered when students join institutions, followed up with regular seminars, workshops, guidance and training.

These findings present the lack of awareness regarding sexual harassment policy and committee depicting the concern for a conducive teaching-learning environment, where accessibility to the existing provisions to protect a victim of sexual harassment is yet to reach. As a result, the opportunity to create a gender-inclusive environment is threatened. As future teacher educators and teachers, the empowerment to support and stand as bystanders for the education system is hampered. Therefore, it is suggested that awareness of educational intervention strategies and prevention policies can work well to create awareness and remove the cultural gender barrier in perceiving and handling sexual harassment issues (Sable, et al., 2006). As a result, the meaning of inclusion will prevail in teacher education institutions.

Recommendations

Based on the findings, the following recommendations are made. Similar suggestions are offered by Kulshrestha and Palemo (2018):

- All the government educational institutions including teacher education institutions are required to have access to ICC, a complaint box and students must be encouraged to submit complaints, if they have any.
- The composition and constitution and contact details of ICC and its members should be declared and updated from time to time and work independently without any bias.
- UGC should have a periodic check on Higher Educational Institutions to assess their level of abidance with the guidelines provided on the subject matter.
- The educational institutions must give education on sexual harassment during an orientation day and continue educating on it by including it in the curriculum.
- Institutions should organise interactive seminars, workshops, and training on curbing sexual harassment.

Educational Implications

The severity of sexual harassment may affect student-teachers physiologically, psychologically, and financially. The students continue to be in a state of harassment for a long time resulting in dropping from the programmes or irregularity in attendance. As a result, the quality of students' education will deteriorate. It is a threat to the system and its ability to follow an inclusive approach.

Conclusion

The paper concludes that sexual harassment is a serious issue that needs to be taken seriously in educational institutions to ensure safety and security. Responsibility doubles when it is about future teachers. This research reveals the low level of awareness of sexual harassment prevalent at teacher education institutions, the key issue for not reporting. Therefore, an issue of such high magnitude needs to be addressed in educational institutions. If the Teacher Education Institutions fail in this responsibility, the students are more likely to be targeted as victims of sexual harassment and the policies will remain ineffective.

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Ecology and Inclusive Education

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Abstract

The concept of 'ecology' has been thoroughly researched in the past, but the possibility of its applicability in inclusive education is something that is yet to be explored in depth. The ecological lens has been significant in the education sector to understand and assess the learning behaviour and outcomes of students in a classroom environment. Here is an attempt to comprehend the diverse multiple perspectives of ecology in the diaspora of inclusive education. Through this paper, an understanding has been developed that this ecological lens has not been utilised in varied contexts (like the relevance of ecology in developmental research) of the teaching-learning process for Children With Special Needs (CWSN). Keeping in mind the nascent awareness and acceptance of inclusion in the field of education, the paper explores the significance of ecological orientation in educational practices.

INTRODUCTION

Ecology has its origin in biological sciences where it has been understood as the study of living organisms and their functioning in the natural world. But this understanding also alludes to a certain degree of interconnectedness and dependence on each other for survival, which has been further applied in the education sector.

This interdependence has been researched widely in various forms and types. For many years, ecology as a concept has been associated with its biological underpinnings, although this paper examins ecology with respect to its application in the education sector. It thrusts upon the application of ecology in the education space, as well as the interface and relevance of ecology

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for inclusive education. The primary purpose of the study of ecology is not hypothesis-testing but the discovery, that is, the identification of those systems, properties, and processes that affect, and are affected by, the behaviour and development of the learner.

To fully understand the impact of quality of teacher-child relationships on children's achievement, relationships must be studied using ecological-contextual models of development (Pianta and Walsh, 1998). This paper intends to explore the relationships between these processes and systems of ecology and inclusive education.

Extensive research has been conducted on the culture of schools and classrooms but there is a dearth of studies on the ecology of education. There is literature available though not enough to show the importance of ecological approach in the education of children. The existing literature further shrinks when we want to study the learning behaviour of Children with Special Needs (CWSN), that too in the Indian context. Special needs mainly arise under two conditions—one due to impairments and another due to positive discrepancy from an accepted norm on the potential continuum. Since classroom ecology and its relation to inclusive education of CWSN has not been researched adequately, this paper attempts to explore the interface of classroom ecology which will impact the pedagogical practices for teaching Special Educational Needs (SEN) children in inclusive classrooms.

Ecology: The Concept

What do we mean by the term 'Ecology'? The Oxford Dictionary describes ecology as 'the relationship of living things in relation to their environments' (Hawkins, 1998). Webster's New World Dictionary's meaning of the word 'ecology' is 'the complex of relations between a specific organism and its environment' (Neufeldt and Guralnik, 1994). Ecology can be described as a science that deals with the relationships of organisms with one another and with other factors that make up their environment. The concept of ecology originated from the discipline of biology. According to the biological understanding of ecology, it is a scientific study of the relationship and interaction between living organisms and the environment. Bronfenbrenner (1977) defined the bio-ecology system as the environment of a human that includes their own biology, their immediate environment, their larger social context, and the interactions among these contexts. There is a 'circular' mutuality in the biological notion of ecology, but in educational set-ups it prevails in terms of 'supportive' mutuality, i.e., of parents, teachers, students, and school administrators (Matusov, 1999). They are united by the common problems of learning and teaching. Accordingly, 'the environment and classroom

relationships in the classroom ecology vary along four dimensions: resource richness, number of students and aids, time and duration of lessons, and grouping patterns (Brint, 1998). The epistemological notion of ecology argues to view the total group as one and whatever happens in it is a cumulative effect altogether and not due to individual contributions.

Bronfenbrenner's theory in 1976 was an analytical tool for understanding individual development within a complex social system. Every person is developed within many deeply interconnected rings of influence (Hess and Schultz, 2008). Bronfenbrenner system (1977 and 1979) named the four interconnected rings encircling the developing person as the macrosystem, microsystem, mesosystem, and exosystem. Recently a fifth system has been included—the chronosystem, which accounts for the temporal aspect of the developmental research (Santrock as cited in Clark et al., 2020). Traditional models of development typically focus on stages, for example, biological, cognitive, or physiological states, or an individual's environmental contexts. Bronfenbrenner (1988) proposed to move from these simplistic models of development to consider the advantages of the more complex ecological models, wherein the individual is fluid and moderated by an interplay between the characteristics of the person and the structures of the environmental context yielding positive or negative influences and effects. The model is constituted of five systems to explain the influence of environment on the development processes of a human being.

The theoretical propositions of Bronfenbrenner (1988) shifted from only focusing on environmental influences to developmental processes of individuals' experiences over time. His theory has been used to link psychological and educational theory to early educational curriculums and practice. At the center of the theory is the developing child, and all that occurs within and between the five ecological systems are done so as to benefit the child in the classroom (Guy-Evans, 2020). Some of these benefits include strengthening the development of the ecological systems in educational practice as a result of good communication between parents and teachers. According to the theory, if parents and teachers have a good relationship, this should shape the child's development in a positive way. Likewise, the child must also be active in their learning, engaged both academically and socially. They must work as a team with their peers and get involved in meaningful learning experiences to enable positive development (Guy-Evans, 2020).

Analysing different conceptualisations of ecology, the underlying premise of ecology is a symbiotic relationship between the actors and the environments

which try to comfort one other by accommodating and having shared understandings and meanings. Mutually a natural balance is created within the ecosystem to support one another. Basically, it is the survival instinct, which guides the concept of ecology being obvious and natural. This is what happens in a exactly real life situation. Therefore, studying ecology provides a comprehensive view of a particular situation as compared to other approaches. The physical aspects that have been ignored definitely play a determining role in what exists. This aspect has been well documented by several researchers viz. Eggleston (1977), Peck et al. (as cited in Gaylord-Ross,1989), and Bowers and Flinders (1993). A study to analyse the distinctive function and role of the specialist teacher across settings in helping to facilitate an appropriate balance of curriculum 'access' was conducted. The ecological systems theory of development by Bronfenbrenner (as cited in McLinden and McCracken (2016) was used to examine the dual model of access within and between different 'systems' in a complex 'ecology of inclusive education'. It was found that this theory had the advantage of not only focusing on the characteristics of the learner but also the complexity and multidimensional nature of the influences on development. The distinguishing characteristic of symbiotic relationships in ecology can be examined in the education sector, wherein a classroom can be seen as an ecosystem in which the teachers and students would be the actors interacting in the school environment. The conventional understanding of ecology fails to acknowledge the physical aspects of a classroom which play a crucial role in determining the learning of students. Therefore, it is highly relevant to explore the use of ecological orientations in educational settings.

Ecology and Culture

Bowers and Flinders (1993) have explained classroom ecology 'as a complex pattern of action, interaction and relationships.' However, some researchers viewed ecology from a narrow perspective. Tagiuri (as cited in Boyd,1992) conceptualised ecology as one of the four dimensions while defining school context. She viewed the ecology of a school as consisting of only inorganic elements, namely, resources available, physical arrangements, scheduling patterns, school size, demographic shifts, working conditions, and local, state, and federal policies that emphasise more on the physical elements of ecology. The social dimensions have been treated separately as a part of school culture or milieu or social system. Similarly, another sociologist Brint (1998) has delineated 'ecological' features of the classroom (such as the number of students in class, the way instructional time is divided, and the methods of grouping students as one of the important aspects of the classroom life, the other two being the

bureaucratic setting of mass schooling and the prevailing instructional culture. He had proposed classroom ecology as different from classroom culture naming it instructional culture. The dynamic aspect of ecology, the continuum of actions and interactions, and the feather of mutuality distinguish it from culture. The vital role of the physical part of 'ecology' and dynamism of interactional processes created between the physical and non-physical aspects of the contextual environment differentiates it from 'culture'.

Ecology of Education

The Process-Person-Context-Time (PPCT) context model wasn't adopted in most development research as Bronfenbrenner (1988) explained its relevance 'to make possible the analysis of moderating and mediating processes that constitute linkages between and within the environmental systems shaping the course of human development'. This paradigm incorporates a key domain having equal status as the environment, which includes a set of factors that contribute to the development of biological and psychological characteristics of the persons involved in the process. In most developmental research, the differentiating characteristics of the person were left unspecified unlike in the process-person-context model. The conception of the environment and the dynamic relation between person and situation implied in the ecological understanding of education draws heavily on the learning theories of Kurt Lewin (1935, 1936, 1948, 1951), as explained by Bronfenbrenner (1988). Lewin stated that 'each person exists within a field of forces and this field, to which the individual is responding or reacting to, is called his life-space'. The influence of this life space is what constitutes the ecology of a classroom. Thus, Bronfenbrenner (1976) reformulated Lewin's equation to add the learning processes to focus on the behaviour of learner and research beyond the behaviouristic paradigm to include the person in developmental research along with context in the person-process-context model.

Recently in school reform studies, other than looking only at human resources, physical resources and the mutual interactions between physical and human resources have gained ground in determining and studying how these aspects affect different educational performances (Eggleston, 1977, and Peck, Richarz, Peterson, Hayden and Wandschneider as cited in Gaylord-Ross, 1989). The ecological approaches take into account other aspects like social/political contexts along with the pedagogical ones (Eggleston, 1977; Peck et al. as cited in Gaylord-Ross, 1989; Guralnick, Kochhar and Gopal as cited in Lynch, et al., 1997). It provides a further explanation to understand children's learning experiences. It is based on an understanding that in different

locations, human beings take on different patterns of behaviour, lifestyles and accept different patterns of achievement. This meant that the locations are given and unaltered.

Peck et al. (as cited in Gaylord-Ross,1989) from their research study on integrated preschool programmes developed an ecological process model and identified three categories of concerns or needs perceived by parents, teachers, and administrators for their successful implementation and survival. The three most crucial and distinct needs thus noted were— adequate preparation for integration, potential loss of control over programmes and children represented in shifts to from a more integrated programme arrangement, and availability of adequate resources for operating high-quality integrated programmes. On the other hand, Eggleston (1977) viewed the ecology of school as 'an organic, dynamic environment of individuals with a fine balance of forces operating within it'. His model explained the ecology of education as 'an ecology of shortage, even scarcity of resources' and therefore emphasised resource management more. Stressing the need aspect of ecology, Mishra, Sinha and Berry (1996), in their cross-cultural study on Adivasis in Bihar, have clearly written that 'the basic proposition of the ecology element is that human organisms interact with their physical environment in ways which seek to satisfy their needs.' Similarly, Quinn (as cited in Eggleston,1977) has equated ecology as the study of human adjustment to the physical environment.

The study on the community of learners conceptualised the ecology of an innovative school with four models of community maintenance (Matusov, 1999). One of the four processes and the corresponding abstract model, described was the ecological model wherein members of the community develop different but compatible ways of doing things. It was noted that 'compatibility is based on an ecological synergy of the diversity, mutual tolerance, adjustment and open-endedness of development of the ways of doing things' (Matusov, 1999). The ecological model is based on the principle of mutuality and support. It was argued that in this model, everybody works towards an 'ecological zone of community comfort' which is akin to Vygotsky's (1978) 'zone of proximal development' for learning concepts as cited in Matusov (1999). In this zone, people cross the boundaries of their skills and participate in various activity for example, press help each other learning. Learning takes place via an expansion of a newcomer's ecological zone of community. The multifaceted character and advantages of this model lie in having ecological zones of comfort involving many participants at a time, unlike the other models which only focus on personal zones of comfort. The focus on ecological zones of community sets apart Matusov's model from other models, which only

take personal zones of comfort into consideration.

Besides academic learning, it helps in developing values like providing and nurturing friendships with the children, becoming a group member rather than just being an ideal or leader member, and the emergence of characteristics of a group as a whole rather than of individuals. The ecological approach promotes the enhancement of positive energy amongst the mutual relationships of actors in the groups. It is the total aggregated outcome of these group processes, which forms the ecology. However, there isn't enough research literature to study the ecological perspective while teaching children with special needs in educational settings particularly for Indian classrooms.

Guerrettazs and Johnston (2013), suggested that the framework of ecology, with its emphasis on affordance and emergence provide a compelling lens through which we can study the ways in which materials are actually deployed in classrooms, and how teachers and students conceive of the work being done there. The crux is the interactional aspect and the symbiotic relationship, which are the distinct features of ecology. The ecological approach aims to promote the enhancement of positive energy amongst the mutual relationships of the actors in the groups. The above-mentioned ecological features play an important role while teaching children with special needs and leave a lasting effect on their learning process.

Bronfenbrenner (1976) gave three aspects of experimental ecology of education. First, he noted that, in contrast to most educational research, the ecology of education is not and cannot be confined solely to the investigations in strictly educational settings. Second, the ecology of education cannot be confined solely to the conditions and events occurring within a single setting, rather equal emphasis must be given to the relations obtained between different settings. Third, an ecological model emphasises the conceptualisation of environments and relationships in terms of systems. Implicit in this injunction is the recognition that the relation between person and environment has the properties of a system with a momentum of its own; the only way to discover the nature of this inertia, and its interdependencies, is to try to disturb the existing balance.

The learning standards are an essential component of the ecology of a classroom. According to Dusenbury et al. (as cited in Vasquez, 2012), 'learning standards create uniformity and coherence in education by establishing and communicating priorities, and providing a common language and structure for instruction within subject areas'. When standards are taken seriously, they become the plan or blueprint for instruction, shaping and influencing what happens in the classroom. Studies by different Indian researchers on ecology by Saraswati

and Dutta, 1988; Mistry and Dutta, 2015; Khalakdina, 2011; Saraswathi and Oke, 2013, and others have mainly focused on the different aspects of lifespan development but not much on the educational aspects. Saraswati and Dutta (1988) adopted ecological perspective to investigate the socialisation process of children in poor social conditions of urban and rural India. Mistry and Dutta (2015) studied ecology to highlight the advances that have been made in addressing the conceptual, theoretical, and methodological challenges in actualising the integration of culture into the study of human development. Khalakdina (2011) studied ecology from the perspective of analysing human development and behaviour in India. Saraswathi and Oke (2013) have focused on the ecology of adolescence in India. Thus, learning from different complexities of processes comprising the ecosystem, the aim of this paper is to understand the relevance of ecological approach for inclusion of children with special needs in the educational setups.

Ecological Approach to Inclusive Education

The journey to consciously educate students with special needs from an inclusive school perspective started in the 1990s and still, new possibilities are being explored to effectively implement this approach. Ainscow (1999) defined 'inclusion as a process of increasing the participation of pupils in, and reducing their exclusion from the cultures, curricula, and communities of their local schools, not forgetting, of course, that education involves many processes that occur outside of schools'. There are several authors who have documented the obvious need for inclusive education of SEN children. Here the acceptance of children's needs by the educational system requires attention. Lipsky and Gartner (as cited in Thomas, 1997) have noted that unlike in the readiness model by Piaget and related theorists, inclusion of special needs children is about the acceptance of educational setting to prove its readiness. The new model is situated within the interactionism perspective where the dynamic role of environmental interaction is vital in the way it responds to the needs of children. To illustrate this point, Dyson and Millward (as cited in Pijl, Meijer and Hegarty, 1997) wrote about the shift in paradigm in special education from psycho-medical to interactive or organisational paradigm. The readiness of the organisation's structure and function to respond well to individual needs of SEN children is the underlying premise for inclusive education. The Special Educational Needs (SEN) children in the present article refer to all the children defined in the Rights of Persons with Disabilities (RPwD) Act, 2016. Judging on the developments for SEN children, policy reviews, and actual achievements in

practice, inclusion seems to be the probable way ahead. It promotes quality education for all children, not for SEN alone. The concept of inclusion in practice is not very old, but there is increasing evidence of its implementation. Jangira (1991) pointed out the need of education for all children with disability under the Government of India's Education for All (EFA) programme, where most of them will be educated in general schools Curriculum as well as by compulsion. Staub and Peck (1995) interpreted, after reviewing a number of studies, curriculum that purposes of inclusion are highly relevant to the needs of all children. Baker, Wang and Walberg (1995) conducted early research on inclusion and found that the classification and placement of special needs students in non-inclusive environments have been ineffective and discriminatory. It was recommended that placement for special education should only be given when the Special Educational Needs (SEN) are accurately classified and non-inclusion shows better results.

Hegarty and Thomas (as cited in Thomas, 1997) analysed the research studies on having or not having integrated education, and concluded that there is no clear-cut evidence for or against integration. A major international review of literature on integration for the 'Organisation for Economic Cooperation and Development (OECD, 1998) concluded that 'while (the inadequacy of comparative research) means that any inferences drawn must be tentative, the absence of a clear-cut balance of advantage supports integration.' The reasons for being so are the methodological problems associated with this type of study, for example, the impossibility of randomly assigning pupils to treatments, for getting firm and clear findings. There has been enough research evidence otherwise, to demonstrate that children with diverse needs have gained a lot through mainstream school rather than in a segregated school placement (Staub and Peck, 1995; Baker, et al., 1995; Casey, 1988).

There are several authors who have documented the need for conducive ecology in order to promote inclusive education. Jangira (1997) noted four major reasons for the need of inclusive practices in India after reviewing and writing the trend report for research in the area of special education. In the light of universatisation of elementary education, the scarcity of school in remote and rural area restricts the supply of educational services for both SEN and non-SEN children.

Furthermore, the major mentions for neglecting the children population in SEN segment includes their low retention, underachievement scores, in equity in investments with school's inefficiency in responding to diverse needs of all children.

Recognising the varying needs of children and the inclusive philosophy

of 'Schools for all children', agencies like the research and disability unit of 'Save the children fund' and 'Education Committee of Disabled People's International' expressed that education is same for everybody whether SEN or non-SEN, and each of us has different needs (Mackey and McQueen, 1998). The major thrust is how and why the placement of SEN, in different educational settings determines their learning. On similar lines, Jangira (as cited in NCERT, 1997, pp. 495–508) also expressed the need for research and study on 'the ecology of classrooms having SEN children'. Heward and Orlansky (1988) has noted in their book that the work of Rhodes and his colleagues has proposed six categories of models for educating emotionally disturbed children. One of them is an ecological model stressing on interaction of the child with the people around him and with social institutions. They have well documented that many researchers supported the effectiveness of the ecological and behavioural models. The effectiveness of these models lies in their characteristic feature of analysing and modifying the ways in which a child interacts with the environment. Quite a number of studies (Gaylord-Ross and Peck; Guralmick; Rick and Cooke; Semmel, Gottlieb and Robinson; Strain and Kear as cited in Gaylord-Ross, 1989) noted that other than pedagogical variables such as intervention type, personal attributes, heredity, intelligence, curricular design of classroom environments, including social/political and personal contents logistical needs of parents, teachers, administrations highly influence in forming social ecology of the classroom. Through these variables also judge the effectiveness of integrated educational arrangements yet they have received very less attention. Similarly, Eggleston (1977) also substantiated this point to recognise the importance of economic, political, and social characteristics of locations for searching an explanation for different students' responses and outcomes. These may not be related or even in conflict with a child's direct educational needs.

Kochhar and Gopal (as cited in Lynch et al., 1997) have noted that it is not vital to focus only on individual deficits or environmental of deficits, but rather it is a commitment of an ecological approach towards educational development and shared responsibility within communities for the healthy development of all children. The question about why there is a need for inclusive schools can be answered with the simple reason that it would benefit not only students with special needs but also the students without special needs. To illustrate the need for an ecological approach for inclusive classrooms, one can say that as Bronfenbrenner (1988) emphasised on mesosystem, where the development of a child is built on her/his interaction with the surrounding settings like family and school, and the teaching strategies

that play a crucial role in an inclusive classroom. This participation should be in the process of making decisions, beginning from their admission in the system to the expectations carved out for them, and of course the nature of systemic engagement that is provided to them. A constant interaction is required between the teachers, parents, and special educators along with the children, to inform them on any planning that is done for each child, rather than deciding what they should study, based on a set of pre-determined assumptions (Ranganathan, 2020). Thus, ecological approach means having a constant interactional classroom environment and shared space to support each others' learning. Lastly, a few Indian studies as described in the account before, could be traced to substantiate the importance of employing ecological dimensions for educating SEN in Indian classrooms, which calls for a need to pursue extensive research in this area.

Conclusion

The explanation above has shown that the influence of processes and functions for creating favourable ecological space facilitates effective inclusive practices. It may be concluded that the study of classroom ecology is an inpending assessment topic that can contribute to further modifications in the education sector with respect to the learning environment in the schools. Especially, the influence of ecology on a child with disability has been found to be fundamental to her/ his academic as well as social and emotional development. It has been found that after understanding the views of available literature, there is a need to conduct more research to employ ecological approach for inclusive education, especially in the Indian context.

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Potential of Educational Volunteers under Special Education Zones

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Abstract

Education remains inaccessible for millions of children in different pockets of the world. Such pockets could be declared as Special Education Zones (SEZ), where volunteers could play complementary and supplementary roles. Voluntary service in education has been an underutilised domain, particularly for educationally disadvantaged groups. In the post COVID-19 era, this could be a potential tool to bridge the large learning gap which was created due to the lost time of pandemic. Exploratory content analysis method was used to the examine the volunteers. Indian Civil Service aspirants were taken as the study group, since they seem to be one of the highly motivated individuals to serve the community. This paper found that almost 97 per cent of them were interested in volunteering for education. Education has the ability to shape the next generation and bring a silent revolution for the nation's development. And, volunteering could become a tool in bringing such revolution at SEZs.

Introduction

5th December is mandated for celebrating International Volunteer Day by the United Nations General Assembly (United Nations, 1985). The day provides yet another occasion to highlight the importance of volunteerism and the potential of volunteers. India's National Education Policy 2020 also aspired to involve community and alumni to volunteer efforts for enhanced

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learning. Education empowers a person and creates choices which are necessary for human development. But, still there are many pockets in the world where people are deprived of education.

Those areas could be termed as Special Education Zones (SEZ) with the sole aim of improving the educational outcomes. But in such zones, only the governmental effort would not suffice, it would also require the services of educational volunteers. However, the service of such volunteers has not been utilised up to its potential in India. The demographic dividend of a nation is an added advantage in this regard. The healthy and educated citizens could be motivated to provide voluntary services in education. Voluntary activity is beneficial in two ways. It does not only help the receiver, but also aids in building the personality of the volunteer and provides motivation to other members of the society. So, such volunteers could play a critical role in reducing the learning gap that was created during COVID-19 era. But, there are a few challenges in utilising the potential of volunteers. Holman, Body and Hogg (2016) identified three barriers in engaging volunteers— (i) internal pressures in terms of managing, training and safeguarding issues, (ii) the skill and commitment of volunteers and (iii) the struggle to ensure volunteers work in synchronisation with the ongoing policy and curriculum shifts.

Conceptual Framework

'Even before COVID-19 hit, the world was experiencing a learning crisis. 258 million children of primary level and secondary school level were out of school, and the learning poverty rate in low- and middle-income countries was 53 per cent, suggesting that over half of all the 10 year old children could not read and understand a simple text. In Sub-Saharan Africa, the figure was closer to 90 per cent' (World Bank, 2021). The COVID-19, pendemic led to further deterioration of this situation. Hence, SEZs hold a special significance.

SEZs are those regions where educational outcome is much poor compared to other regions. The concept of SEZ was coined to bring equity in education. India's National Education Policy 2020 recommended for identifying those areas, which have large population of educationally-disadvantaged, socio-economically disadvantaged groups (SEDGs) and termed those area as SEZ. In such regions, all the schemes and policies related to education were to be implemented in a more focused way and specific interventions are to be made as per the local needs. Additional resources in terms of infrastructure, teachers, finances and other educators, are to be provided.

The geographical boundary of SEZ could be few hamlets in difficult terrains to a block or subdivision or may be a district, depending on the need. These areas are to be earmarked

based on low performance in various educational indicators like enrolment rate, learning outcome, fundamental literacy and numeracy, etc. Such zones needed special treatment in terms of efforts finance, and assistance of educational volunteers.

Volunteering is any activity, formal or informal, which is conducted by choice without setting paid to benefit another (Wilson, 2000). Voluntary means something done on free will without any payment and without being asked for it. It is done based on one's own motivation for providing service to the society and nation. So, voluntary services would mean performing some task or giving self-service for a specified function, without any form of compulsion, legal obligation or emolument. In fact, volunteers are the heart of community services. Through their rich experience and knowledge, they can become a pillar of socio-political development and for the upliftment of disadvantaged group. Their role in educational services becomes more important, particularly for the advancement of educationally backward regions like SEZ. The additional resources, time or energy contributed by them can be a great help in achieving the aim of uiversal and quality education for all.

Who Could be Educational Volunteers?

The college going students, civil services aspirants, any healthy and educated citizen including old age literate persons, highly motivated government or private employees, retired personnel among others could provide voluntary education services. The community members should be encouraged to become volunteers for academic or non-academic works. National Education Policy 2020 suggested that it will be far easier for trained volunteers, from both the local community and beyond, to participate in voluntary services. 'Every literate member of the community could commit to teaching one student/ person how to read and it would change the country's landscape very quickly' (National Education Policy, 2020, p. 9).

Literature Review

College going students often enjoy doing voluntary activities. University students in Hungary were increasingly involved in voluntary works for financial reasons, due to their passion or for gaining experience (Fényes and Pusztai, 2012). Altruism, social integration, enhancing leadership skills and value addition of curriculum vitae were among other reasons of their participation (McCabe, et al., 2007). Volunteerism in education enhances employee's competencies, productivity and motivation. And for employers, promotion of voluntary activities leads to increased loyalty of volunteers towards employers and also increases their profit (Percy and Rogers, 2021). Volunteerism provides rich learning experiences and brings innovative solutions to

societal challenges (McFadden and Smeaton, 2017). 70 per cent of public schools in West utilised volunteer teacher services totalling to around 1.3 million in number. Apart from academic activities, many were engaged in non-academic activities like monitoring school lunch breaks, playgrounds and even relieving teachers from paper work (National Research Council, 1990). Voluntary activity is beneficial in two ways that it develops social cohesion. It also motivates volunteers to engage in community works (Australian Bureau of Statistics, 2001). Voluntary action provides schools additional skills and resources, and foster community engagement and philanthropic activities (Holman, et al., 2016). Educate a Child Programme (2020) highlighted the role of volunteers in enhancing quality primary education for most marginalised out-of-school students. The need of volunteerism could also be understood from the literacy figures. There are only 73 per cent literates in India. The corresponding figure for rural India is even lower at 67.8 per cent and a mere 58 per cent for rural female (Census, 2011). This literacy level in India was when a literate person was simply defined as any person aged seven or above and having the ability to read and write with understanding. Also, a large proportion of students currently in elementary schools, estimated to be over 50 million in number, have not attained foundational literacy and numeracy. So, peer tutoring as a voluntary and joyful activity with due safety measures was suggested (National Education Policy 2020). There are 9.4 million teachers, teaching 250 million students in 15.5 lakh schools in India (UDISE+, 2021). The pupil teacher ratio is 28 for primary and 20 for upper primary level. But these numbers of teachers are also burdened with many non-academic works. This would need the help of educational volunteers in bridging the learning gap.

Research Gaps

'Desh Ke Mentor' programme in Delhi aimed at mentorship of senior secondary students by volunteers of age group 18–35 years for 10–15 minutes daily on issues like career choices and teenage concerns (Government of Delhi, 2021). Similarly, the Government of Haryana (2021) launched 'Samarpan portal' as a platform to offer voluntary services in the field of education, skill development, sports and agriculture. But, such a formal platform to aware and register the educational volunteers at country level is missing. At the same time, there is also a lack of understanding about the potential volunteer groups and their expectation in terms of remuneration or ways flexibility in timelines, and carrier and future prospects.

Methodology

Quantitative method with exploratory research design was used to investigate the problem. Exploration means 'to

examine a thing or idea for diagnostic purposes, to search it systematically for something' (Stebbins, 2001, p.2). Due to its open ended nature, the author has chosen this method to build a strong foundation for this research and for better understanding of the research problem. Although, at times, there is a limitation of using exploratory research, i.e., choosing a small sample for a large generalised population, nevertheless, it is an effective way under limited time and resources.

Research Questions

- What is the possibility of finding volunteers for education services?
- What is the potential of volunteers for the upliftment of educationally disadvantaged groups?
- What are the expectations of educational volunteers?

Research Context

The approximately two years of COVID-19 era have increased the learning gap by more than two academic years. The students in these years moved two grades up but their learning level moved down by more than two grades due to disconnect and discontinuity in the teaching-learning process. This holds more relevance for the students belonging to disadvantaged groups and from the rural settings. Now, the recovery demands extended hours of teaching where regular teachers would not suffice; rather volunteerism in education would be required. The volunteers could contribute their time and efforts to accelerate the learning of school children. National Education Policy 2020; also emphasised on volunteering activity for learning. The role of volunteers particularly becomes important especially for SEZs.

Rationale for Selecting Civil Services Aspirants as Sample

India's civil services aspirants were chosen as the sample group, since they could be transformed into of the most eligible and possible groups of potential volunteers for providing education services under SEZ. They seem to be one of the highly motivated individuals for providing services to the community. Most of them put their extreme efforts to join the services. In 2018, out of total 1.06 million who applied for civil services exam, 759 were finally recommended (UPSC 2020). So, only a few hundred among millions succeed while hundreds of thousand only remain to be an educate. Both during the preparation and after the completion of this long process, they could be utilised as potential volunteers for providing education services.

Research Tool and Development Procedure

Web based survey tool was used to collect primary data through Google form. The online survey provided advantage and flexibility, particularly during pandemic times in terms of designing, developing and obtaining responses from the sample population. Semi-structured questionnaire was

disseminated through email to the sample population. Questions were carefully framed in sync with the research demand and pertained to respondents educational qualification, their present status, their interest in voluntary education services, time which they could devote in this pursuit and their expectations. It comprised 16 questions including a few open ended questions.

Sampling Procedure and Size

Heterogeneous purposive sampling was used for this research paper, due to its time and cost effectiveness. COVID-19 restrictions also led the author to choose this method after thoroughly filtering the suitable sample group. The maximum variation sampling also allowed the author to examine diverse range of cases relevant to this research. A total of 57 responses were collected between the period of 30th May 2021 and 3rd July 2021.

Data Collection and Analysis

Primary data was collected directly from the subject through semi-structured questionnaire. Mails were sent to administrative heads of selected civil services coaching institutes in Delhi, requesting them to forward the mail to civil services aspirants. Then Union Public Service Commission also publishes the data of civil services aspirants who have appeared for interview. Responses were also collected from them. Data analysis was carried using SPSS software. First, these responses were filtered and organised through a spreadsheet. Google form also allowed the data analysis and its graphical representation. Cross tabulations were created to understand the common theme and responses of the sample towards voluntary services.

FINDINGS

In terms of academic qualification, nearly 40 per cent of sample population was post graduate and less than 2 per cent possessed doctorate degree. Almost half of the sampled group belonged to science/maths/ engineering field, which could aid in bridging the foundational literacy and numeracy. The lack of post graduation degree is an impediment to entry into teaching field.

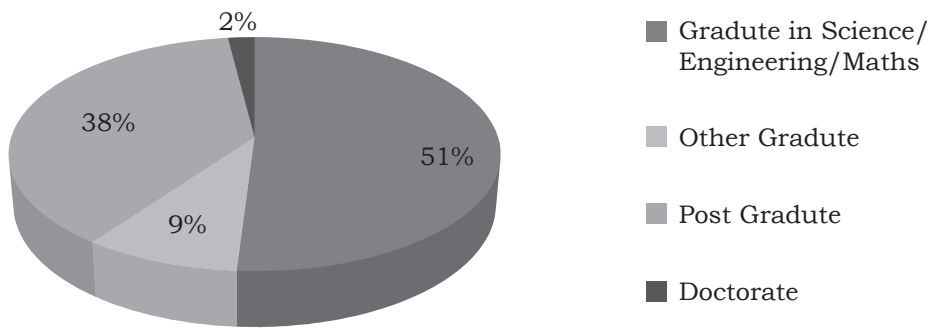

Fig. 1: Qualification of the participants

Source: Primary data

More than two-third of the sample population, who had exhausted their attempts where unemployed at the time of collection of data. Then, less than 10 per cent of them possessed the degree of Bachelors or Masters in Education, which is mandatory for entering the profession of teaching in school education. Nearly 66 per cent of the sample population did not aspire to get this degree in future even.

The teaching profession at college level often mandates the qualification of NET/JRF. But even this qualification was attained by less than one-fourth of the sample population. Rather, only one-fifth of those who possessed a bachelor and master degree in education while having their attempts exhausted for Civil Services appear for NET/JRF certification. Also, merely 13 per cent of them were further interested in acquiring such degrees. So the question arises, if they should be allowed to enter in teaching profession without Bachelor or Master degree in Education or not.

Table 1
Respondents' employment status, professional degree and remaining attempts for Civil Services exam (data in %, N=57)

		Exhausted Attempt of Civil Services Exam or Crossed the Age Limit	
		No	**Yes**
Presently employed in government or private job	No	71.4	60
	Yes	28.6	40
Teaching Degree	Possess B.Ed.	9.5	0
	Possess M.Ed.	2.4	0
	Not Interested	59.5	86.7
	Wish to get it in future	28.6	13.3
NET/JRF (eligibility for Assistant Professor)	No	76.2	80
	Yes	23.8	20

Source: Primary data

Table 2
Number of respondents who were interested in teaching and development of online study material (N=57)

		*Interested in teaching to students of different grade						#Study material dev.		
		N	**P**	**UP/S**	**SS**	**C**	**O**	**N**	**Y**	**M**
Qualification	Graduate in Science/ Maths/Engineering	2	0	5	4	8	10	2	13	14
	Other graduate	0	0	0	3	1	1	1	0	4
	Post graduate	0	0	10	2	5	5	0	15	7
	Doctorate	0	0	0	0	1	0	0	1	0

Teaching Degree	Possess B.Ed.	0	0	3	1	0	0	0	3	1
	Possess M.Ed.	0	0	1	0	0	0	0	1	0
	Not Interested	2	0	8	4	12	12	2	16	20
	Wish to get it in future	0	0	3	4	3	4	1	9	4
Finished Attempts	No	1	0	10	6	11	14	2	19	21
	Yes	1	0	5	3	4	2	1	10	4
Qualified PT	Not yet	1	0	9	1	4	3	0	11	7
	Once	0	0	1	4	2	1	1	4	3
	Twice	0	0	1	2	4	3	0	7	3
	More than Twice	1	0	4	2	5	9	2	7	12

Source: Primary Data

* Not Interested (N), Primary (P)/Upper Primary (UP), Secondary (S), Senior Secondary (SS), College (C), Online only (O);

\# Not interested (N), Interested (Y), May be (M)

And when it came to their interest in sharing their subject knowledge with school or college going students, only 3.5 per cent of the sample group said they were not interested at all in such a pursuit. Around 30 per cent said that they could share knowledge only through online mode. None of them had shown interest in engaging with the primary students. But, some of the aspirants, around one-fourth in number, had been interested in engaging with the upper primary/secondary and college going students. Then, 16 per cent of them were interested in sharing knowledge with the students of senior secondary level.

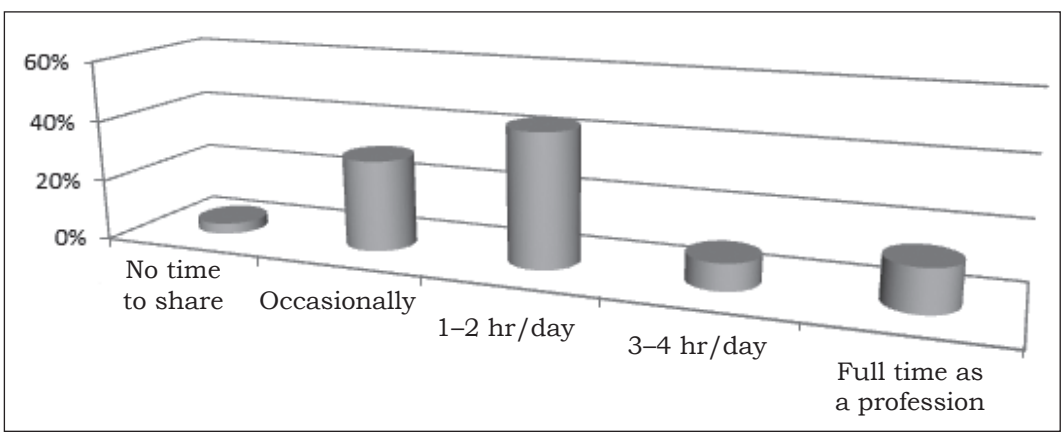

Fig. 2: Respondents' distribution in terms of time which they could spend as an educational volunteer

Source: Primary data

Also, only 3.5 per cent of the sample population had believed that they could not find enough time to contribute in knowledge sharing with junior students. Almost half of them had responded that they can contribute part time (1 to 4 hours daily) in sharing their knowledge. 14 per cent of the respondents wanted to consider it as a full time profession. Possessing multidisciplinary knowledge by them is an asset which could be tapped by different school/colleges on voluntary basis.

Discussion

Possibility of Finding Volunteers for Education Services

The outcome of the findings reflected the possibility of utilising Civil and Defence Services aspirants as educational volunteers. India has millions of aspirants who prepare for such exams. During the year 2019–20, Union Public Service Commission of India received 3.04 million applications for its Civil and Defence Services exams. Out of them, almost 0.8 million appeared in each exam, of which 4351 candidates were finally recommended for the post. Even if we consider only Indian civil services exam, then in 2018, out of total 1.06 million who applied for the post, 0.5 million appeared and 759 were finally recommended (UPSC, 2020).

So, out of millions of aspirants, a few thousands get selected. During this journey and post-journey, these aspirants could be transformed as educational volunteers for educationally disadvantaged students studying in lower class grades in schools or colleges. At the same time, irrespective of whether the sampled group had exhausted their attempts for appearing in civil services exam or not, most of them were ready to share their knowledge with the students of lower grades. Further, 95 per cent of them were ready to contribute in the development of online resource material of their subject. It could be of great help in digital learning of youth, particularly for students belonging to disadvantaged groups. Then, although three-fourth of the sample group had their attempts still available, but even then, they were ready to contribute in the development of online study material.

There could be one time mandatory volunteerism among students to inculcate the value of voluntary services for the whole life. In fact, a few hours of voluntary service provides exposure to society and community services and aids to the personality development of volunteer. But, voluntary services in education have been under-utilised in India, although volunteerism as a concept is well rooted in its culture. Mahatma Gandhi believed voluntarism and decentralisation as the organising principles of ideal an society (IGNOU, 2021). Indian thinker Ramakrishna Paramahansa and Vivekananda had given the idea: service to *Jiva* is service to Shiva Ideology Belur Math, 2019. It meant that service to mankind

is service to the God. In the recent times, National Education Policy 2020 also mentioned the necessity of volunteerism and suggested for high-quality capacity building of educators and volunteers. It mentioned about the National Literacy Mission 1988 based on the voluntary involvement of people, which resulted in a significant increase in national literacy during the period 1991–2011.

It was found that 96 per cent of the sample population was interested in providing voluntary services in education. But, less than 10 per cent of sample population possessed the degree in education (B.Ed./M.Ed.). And moreover, two-third of the sample group were not even interested in acquiring such degrees in future. So, some short-term training might be provided to turn them into educational volunteers. National Education Policy 2020 mentioned that qualified local community members including from higher educational institutions would be encouraged to take a short training course and volunteer, as adult literacy instructors and will be recognised for their critical service to the nation. So, the civil services aspirants and other such students, who are either undergoing preparation process or have already moved out of this process, could become the potential volunteers for education services.

The Potential as Educational Volunteers

Thus, educational volunteers have a special role in improving the overall educational attainment, particularly under SEZ, since these are the areas where a large proportion of educationally disadvantaged students lies. These areas are much behind in terms of educational indicators in comparison to the other areas in their proximity. So here, the service of regular teachers would not suffice; rather additional help from volunteers would be required. The educational volunteers have a large potential to bring such educationally disadvantaged groups into mainstream. The youths are full of energy and motivation to contribute back to the society. They are in constant search of opportunities to work which would not only uplift them but also the society. Their energy must be channelised through voluntary services.

The findings showed that most of the sample group had qualified the preliminary exam of Union Public Service Commission, which could be taken as an evidence of possessing the subject knowledge or their capability in the development of online resource material. They belong to a variety of streams from humanity, science and engineering to medical stream. Their knowledge base could be tapped to fill the learning gap in the country and the world. The data showed that around 70 per cent of the sampled population had appeared in Civil Services mains exam at least once and almost 97 per cent of them were very much interested in sharing their knowledge with the school or college going students.

In general, it was found that those aspirants who have exhausted their limits for appearing in the exam (in terms of age or number of attempts), they mostly end up in not much productive or suitable livelihood ventures. They no longer remain eligible for other government services due to crossing age limit. At the same time, private jobs either no longer match their academic profile or simply remain uneventful for them. It often leads to the wastage of talent, their academic experience and non-utilisation of demographic dividend.

Access to teaching profession also becomes distant to them often due to lack of a postgraduate or doctorate degree. Most civil service aspirants had rarely pursued B.Ed. or M.Ed. degree, which becomes a barrier for their entry into formal teaching field. Now at near 30s (age), they lacked the interest for pursuing Masters or B.Ed. degree, since earning money seemed to be the immediate need and challenge. But one thing that they earn in this process is their knowledge of the subject and about the day to day events in the country and around the world. So, if in any way, their knowledge base could be tapped in education, it could increase the availability, affordability and accessibility of learning, particularly for students belonging to Socio-Economically Disadvantaged Groups (SEDGs) and students under SEZ.

There is also a dire need for the promotion of digital education under the SEZ. UGC (2021) proposed that all the higher educational institutions (HEIs) should be allowed to teach 40 per cent of any course online and the rest 60 per cent offline. Here also, these volunteers could be utilised for providing online learning. From Table 2, it was evident that a majority of the sample population were interested in contributing to digital learning. This could be a great boon to the educationally disadvantaged students. Also, National Education Policy 2020 encouraged every district to establish 'Bal Bhavan' as a special day time boarding school where students could participate in art, career and play related activities. Here, also voluntary services could be utilised for the progress of the society and the nation. Then, almost half of the sample belonged to science/maths/engineering graduates, which was an added advantage in improving the foundational literacy and numeracy.

Academic pedagogy in India should introduce mandatory voluntary services in education to foster civic responsibilities. The Government could create a platform where such volunteers could share their knowledge and experience with the school or college going students. Some authentication and accountability, mechanism should be created for keeping a check on such activities. These aspirants could also become the mentor of school and college going students in guiding them on career related issues. They could also come forward to

aware the citizens on various socio-political environmental issues. Even the volunteers could become the ambassadors for various government schemes related to education, particularly in SEZs.

Expectations of Educational Volunteers

What would be the incentive for providing voluntary services in education? Respondents were asked about their expectations in return for providing educationals services. 16 per cent of respondents expected no incentive in return; rather they considered it as their duty towards nation building.

One-fifth of them expected just a certificate of recognition from the government for their endeavour. 35 per cent of them wished for some financial incentives. Only 28 per cent of the respondents demanded proper remuneration as per the profession. It meant that around three-fourth of the respondents expected either some financial incentive or non-monetary incentives. So, these civil service aspirants could well be tapped as volunteers for education services. Even some funds could be earmarked by the government for such volunteers for their motivation and effective utilisation of the voluntary education services.

Limitations or Challenges

Due to the limited time and space, the present study could not collect the views of the other possible group of volunteers like working people, old age literate and healthy people, college going students, retired persons and others. Also, volunteerism involves inherent challenges like training and administrative barriers, safety and accountability issues, the need of teaching ability and skills of volunteers, the sustained motivation and continued commitment of volunteers to engage in routine works, among others. These challenges could be overcome with proper training, continuous engagement, motivation and giving incentives to them.

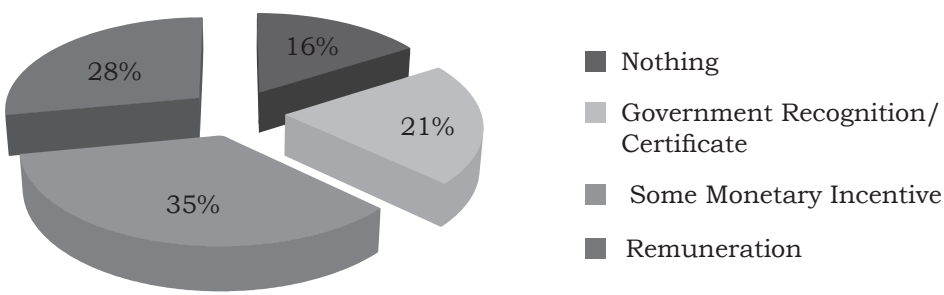

Fig. 3: Incentives expected by participants to act as educational volunteers

Source: Primary data

Conclusion

Education has the ability to shape the next generation and bring a silent revolution for the nation's development. Here, educational volunteers could become a potential tool in bringing this revolution. Through their rich experience and knowledge, they could become a pillar of socio-political development and upliftment of educationally disadvantaged groups under SEZ. The additional resources, time and energy contributed by them could complement and supplement educators in achieving the target of providing universal and quality education for all. On the closure of international year of volunteers 2001, United Nations asked the people to get more engaged in volunteer action (United Nations, 2001). It highlighted the potential of volunteerism at global level. Even India's National Policy on the Voluntary Sector 2007, envisaged a creative and effective voluntary sector with diverse functions which could contribute in socio-cultural and economic development (Government of India, 2007). Rather, the role of educational volunteers becomes even more important under SEZ, where students could get ample opportunities to interact one-to-one with them and seek their help in improving their educational outcomes. The collaborative effort of educational volunteers and teachers has a potential to turn the population SEZ from liability accountability to an asset.

Recommendations

- There is a need for awareness towards volunteerism in society. It should be encouraged as a fundamental duty of the citizens.
- A dedicated centre for registering educational volunteers needs to be created at country level. To bridge the learning gap in education, the support of volunteers is the need of the hour.
- Multidisciplinary knowledge of the Indian civil and defences service's aspirants qualifies them as the potential volunteers. The plethora of expertise and experiences of these volunteers would help in reducing learning poverty in the country.
- Volunteers could be trained for one-to-one focus on students from educationally disadvantaged groups. They could be engaged in academic or non-academic activities. Non-academic activities may be organising students, trips, fund-raising activities for the school, general maintenance of the school, monitoring of government educational schemes and other such things.
- Dedicating some time in voluntary service in education could be made compulsory for receiving academic degrees. Extra weightage of voluntary services could be assigned in the recruitment for government as well as private jobs.

- Additional funds could be earmarked to address the learning crisis in the post COVID-19 era. The volunteers could be paid monetary or non-monetary incentives for their motivation. Public donation and international assistance from the World Bank, charitable organisations and other such groups could be sought.
- Further studies should be done to generate more insights on the channelisation of volunteers for education services.

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Stress, Anxiety, and Depression among School Students

A Cross-sectional Study

MD Nawaz Sarif* and Vandana**

Abstract

The issues of psychiatric disorders and negative emotions are highly prevalent among school-going students. The current study investigated the prevalence of stress, anxiety, and depression among students in North-East India and found its significant difference and vertical pattern across grades. Using DASS-42, data collection was done from a non-representative sample of 192 students of VII, VIII, and IX grades. Findings showed a high prevalence of psychiatric disorders among sampled students. It was found that anxiety (65.9 per cent) was much more prevalent among students, followed by depression (45.97 per cent) and stress (34.09 per cent). It was identified that the prevalence of stress, anxiety, and depression was higher among IX students (44.54 per cent, 71.43 per cent and 53.78 per cent), followed by the VIII (36.11 per cent, 66.67 per cent and 50 per cent) and VII grades (21.62 per cent, 59.64 per cent and 34.14 per cent). Besides, it also revealed a significant mean difference in students' anxiety, X2(2) =7.149, p=0.028, and depression, X2(2) =9.666, p=0.008 with respect to their grades, while no significant mean difference was recorded in stress, X2(2) =2.076, p=0.354. From the findings, it was inferred that mental health issues among school-going students increase with an increase in their level of school education, which raises serious concerns for stakeholders.

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Introduction

Mental health problems such as stress, anxiety, and depression are common medical illnesses and psychiatric disorders that mainly affect children and students. Globally, it is estimated that 10–20 per cent of children and students suffer from mental health issues, which can escalate serious chronic diseases and disorders (WHO, 2017). Students' mental health disorders account for 12 per cent of the global burden of diseases, age group where this number was expected to rise by 15 per cent by 2020. (WHO, 2001). The prevalence of mental health issues among Indian Students is particularly concerning.

India has one of the most diversified populations globally, with 75.5 million young people (13–15 years) out of a total population of 1311.1 million (WHO, 2017). It was observed that approximately 6.5 per cent of Indians of all ages suffer from behavioural and mental illnesses and disorders and are in the state of requiring support (WHO, 2001; Gururaj et al., 2016).

Health is the most precious aspect of a student's life. It is crucial to lead a successful life. It is health that Mahatma Gandhi also acknowledged as the real wealth, and even more important than pieces of gold and silver (Somoskovi et al., 2013). According to the World Health Organisation, health is a complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1998). Mental health is an inseparable aspect of complete health, and without mental health, there can be no proper physical health (Kolappa et al., 2013). A sound mind lives in a healthy body (Schayegh, 2005). Henceforth, mental health is defined as a state of well-being in which individuals realise their abilities, can cope with the everyday stress of life, work productively and fruitfully, and contribute to their community (WHO, 2004).

Around 1.2 billion people worldwide are students aged 10 to 19 years (Lake, 2011). The school-aged students included in the present study were in their early stage of adolescence. Adolescence is a formative period that is critical for personal growth and development. In addition, because of its physical, psychological, and behavioural transformation from childhood to adulthood, it is also a phase of 'stress and storm', as defined by G. Stanley Hall in 1904 (Arnett, 1999). Students' mental illness can lead to a wide range of behavioural issues at school, at home, community, and even among peers. It makes them vulnerable to chronic mental illness, behavioural disorders, and health-risk behaviours. It has a deleterious impact on their cognitive, emotional, and behavioural functions. It impairs their physical and mental health, leading to poor mental health, low subjective happiness, higher academic anxiety, academic stress, and other emotional and

behavioural adjustment issues that negatively affect their personal and academic lives (Pathak et al., 2011; Bostani et al., 2014; Subramani and Kadhiravan, 2017; WHO, 2018). In this backdrop, the researchers investigate the prevalence of stress, anxiety, and depression among school-going students in North-East India and find its significant mean difference and vertical pattern of its prevalence across grades.

To accomplish the constructed objectives, researchers have formulated the following research questions and null hypotheses:

Question 1: What is the level of stress, anxiety, and depression among school students across different?

Question 2: What is the pattern of prevalence of stress, anxiety, and depression among school students across different classes?

HO_1: There is no statistically significant mean difference in the prevalence of stress among school students based on their classes.

HO_2: There is no statistically significant mean difference in the prevalence of anxiety among school students based on their classes.

HO_3: There is no statistically significant mean difference in the prevalence of depression among school students based on their classes.

Methodology

Research Methods

The present study was quantitative, where a descriptive survey method was used to collect research input on the prevalence of mental health issues from students. It used a grade-based cross-sectional research design because of its merit in comprehending and analysing the prevalence of stress, anxiety, and depression among school-going students across VII, VIII, and IX standards.

Population and Sample

The upper primary school students and students of secondary schools in the East Khasi Hills district of Meghalaya formed the population of the present study. Using a purposive sampling technique, data collection was completed from a non-representative sample of 192 school students (boys = 112 , girls = 80), where 37 students were from Class VII (boys = 24, girls = 13), 36 students were from Class VIII (boys = 21, girls = 15), and 119 students were from Class IX (boys = 67, girls = 52). The sample was selected from two private and three government schools in Shillong city of Meghalaya.

Tool Used

DASS (Depression, Anxiety, and Stress Scale) by Lovibond and Lovibond (1995), was used to assess the prevalence of stress, anxiety, and depression among school students. The scale has 42 items, and each of its dimensions, i.e., stress, anxiety, and depression, has 14 items. Cronbach's alpha method was used for testing the reliability of the scale. The performed statistics showed Cronbach's Alpha value of 0.904 (>0.70), confirmed the

high internal consistency of the scale. Besides, the inter-item correlation matrix also evidenced a high positive association among stress, anxiety, and depression dimensions (r= >0.75). Data analysis was completed based on the norm values of the tool, which is provided in the tool, with respect to stress, anxiety, and depression.

Data Collection

A total of seven schools, both elementary and secondary, were invited for the present study. However, only five schools given consent, and thereby one included in the present study. The researchers themselves have collected the data. Before administration of the tool, each participant was informed about the purpose of data collection. Also, participants were informed of keeping their personal information confidential, such as their names, ages, exam results, and institution names. The participation was entirely voluntary, and participants were informed of their choice to opt out if they wanted so. The tool's administration was done during the school period. Students were given one hour class to complete the tool. It was conducted in the presence of class teachers which took around 30–40 minutes.

Sample Statistics

The descriptive statistics showed skewness values of 0.668, 0.511, and 0.942 for stress, anxiety, and depression, respectively. Besides, the Shapiro-Wilk test was employed, and it was found statistically significant for all the three dimensions of the scale (p-value <0.05). Thus, it indicated that the collected data were unfit for normal distribution, and so the researchers utilised non-parametric statistics for differential analysis.

Statistical Design

In the present study, descriptive and non-parametric differential statistics were employed for data analysis. Descriptive statistics, such as frequency distribution, cross-tab analysis, mean, and differential statistics, such as an independent sample Kruskal-Wallis H (One-Way ANOVA on Rank) test, were performed using IBM SPSS Statistics 22.

Analysis and Results

Prevalence of Stress, Anxiety, and Depression among School Students

Table 1 showed that the prevalence of stress, anxiety, and depression among school students was high. It was found that the prevalence of anxiety (65.9%), was comparatively higher among school students, followed by depression (45.97%), and stress (34.09%). It revealed that the prevalence of stress, anxiety, and depression was high among school students across classes. Further analysis showed that stress, anxiety, and depression increased as they went to higher classes. Analysis showed that the prevalence of stress, anxiety, and depression was 21.62,

59.64, and 35.14 per cent for grade VII; 36.11, 66.67, and 50 per cent for grade VIII, and 44.54, 71.43, and 53.78 per cent for grade IX students, respectively. Results also evidenced an upward trend of stress, anxiety, and depression among students, increasing with their level of school education. Stress, anxiety, and depression were highest among grade IX students, followed by grade VIII and grade VII students (Figure 1).

Descriptive Analysis of Stress, Anxiety, and Depression in Terms of Students' Grades

Table 2 showed that among surveyed students, 78.38 per cent of grade VII students had an average level of stress, and 21.62 per cent of grade VII students reported mental stress issues. Of the 21.62 per cent of stressed students, 13.51 per cent had mild, 5.41 per cent had moderate, and 2.70 per cent had severe stress levels. 63.89 per cent of grade VIII school

Table 1
Descriptive analysis of stress, anxiety and depression among school students across grades

Grades	Frequency of stress, anxiety, and depression (%)		
	Stress	**Anxiety**	**Depression**
VII	21.62	59.64	35.14
VIII	36.11	66.67	50
IX	44.54	71.43	53.78
Overall	34.09	65.91	45.97

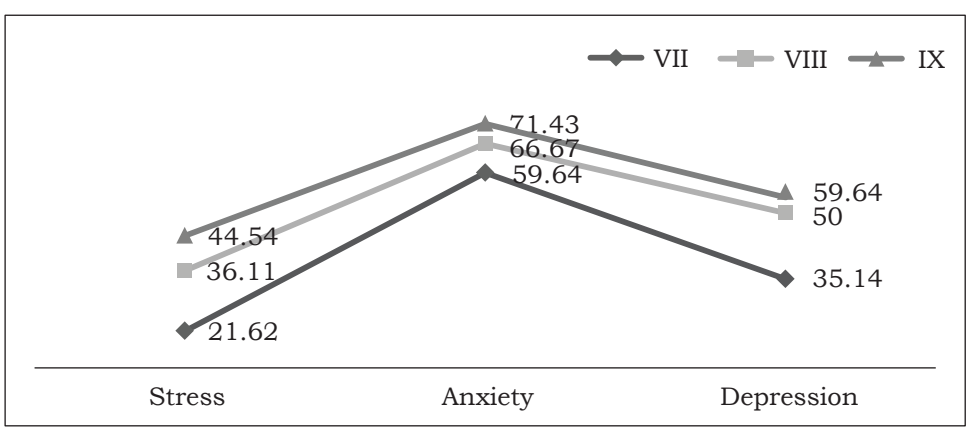

Fig. 1: Pattern of stress, anxiety and depression among school students (%)

students had normal stress levels, while 36.11 per cent reported having mental stress issues. Out of these 36.11 per cent of students, 19.44 per cent had mild, 11.11 per cent had moderate, 2.78 per cent had severe, and 2.78 per cent had extremely severe stress. Lastly, 55.46 per cent of IX grade school students had normal stress levels, while 44.54 per cent of students reported having mental stress issues. Out of these 44.54 per cent of students, 16.81 per cent had mild, 15.97 per cent had moderate, 10.08 per cent had severe, and 1.68 per cent had extremely severe stress levels. Thus, the results evidenced a high prevalence of stress symptoms among school students across grades at mild, moderate, severe, and extremely severe levels (Figure 2).

Similarly, Table 2 showed that 40.54 per cent of grade VII students had normal anxiety levels among all the surveyed students, while 59.46 per cent of students reported having mental anxiety. Out of 59.46 per cent of students with anxiety, 21.62 per cent had mild, 24.32 per cent had moderate, 8.11 per cent had severe, and 5.41 per cent had extremely severe anxiety levels. 33.33 per cent of grade VIII students had normal anxiety levels, while 66.67 per cent of students reported having mental anxiety. Among grade VIII students, 11.11 per cent had mild, 30.56 per cent had moderate, 22.22 per cent had severe, and 2.78 per cent had extremely severe anxiety. Lastly, 28.57 per cent of IX grade students had normal anxiety levels, and 71.43 per cent reported having mental anxiety symptoms. 8.40 per cent had mild, 20.17 per cent had moderate, 21.01 per cent had severe, and 21.85 per cent had extremely severe anxiety levels. Thus, the analysis evidenced a high prevalence of anxiety symptoms among school students across different grades at mild, moderate, severe, and extremely severe levels (Figure 3).

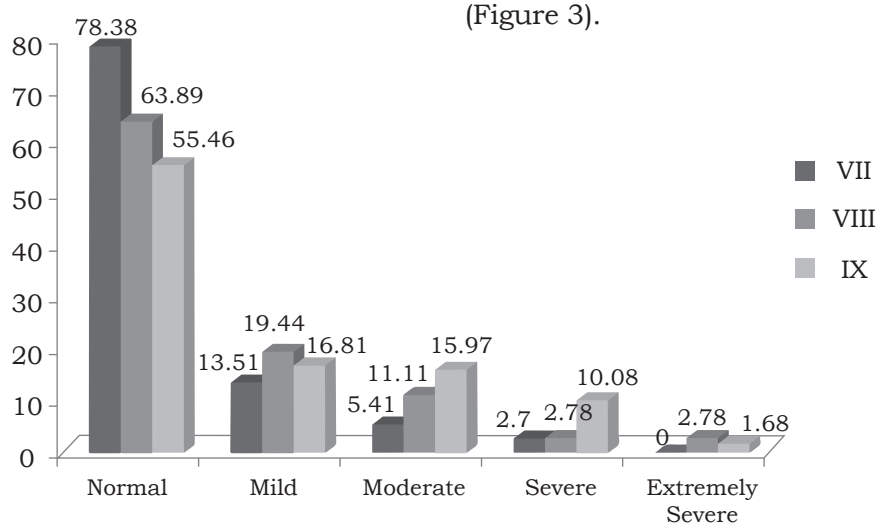

Fig. 2: Level of stress among school students across grades (%)

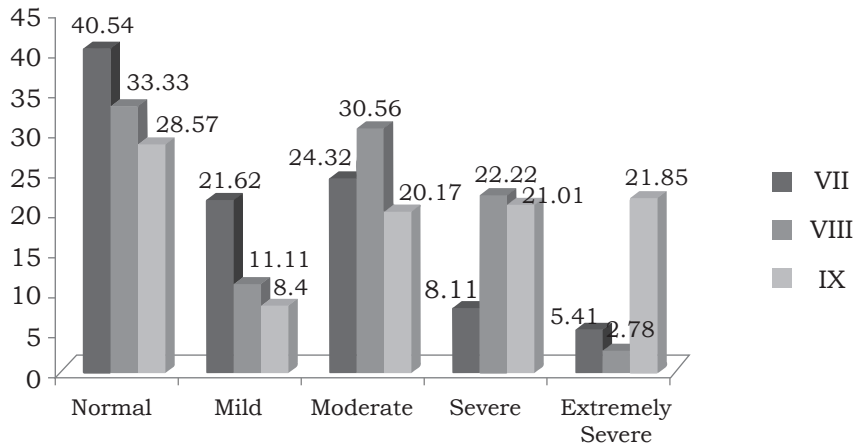

Fig. 3: Level of anxiety among school students across grades (%)

Furthermore, Table 2 showed that 64.86 per cent of grade VII students had no depression, while 35.14 per cent of students reported having symptoms of mental depression. Out of 34.14 per cent of depressed students, 21.62 per cent had mild, 8.11 per cent had moderate, and 5.41 per cent had a severe level of depression. Again, 50 per cent of grade VIII students had an average score on the depression scale, and 50 per cent of students reported having symptoms of mental depression. Among students with depression, 16.67 per cent had mild, 19.44 per cent had moderate, 8.33 per cent had severe, and 5.56 per cent had extremely severe levels of depression. In grade IX, 46.22 per cent of students

Table 2
Stress, anxiety, and depression among school students across grades at different levels

Mental health dimensions	Grades	N (%)	Levels N (%)				
			Normal	***Mild***	***Moderate***	***Severe***	***Extremely Severe***
Stress	VII	19.27	78.38	13.51	5.41	2.70	00
	VIII	18.75	63.89	19.44	11.11	2.78	2.78
	IX	61.98	55.46	16.81	15.97	10.08	1.68
Anxiety	VII	19.27	40.54	21.62	24.32	8.11	5.41
	VIII	18.75	33.33	11.11	30.56	22.22	2.78
	IX	61.98	28.57	8.40	20.17	21.01	21.85
Depression	VII	19.27	64.86	21.62	8.11	5.41	00
	VIII	18.75	50.00	16.67	19.44	8.33	5.56
	IX	61.98	46.22	15.97	14.29	15.97	7.56

were found to be at normal levels on the DAS scale, while 53.78 per cent had reported symptoms of mental depression; 15.97 per cent had mild, 14.29 per cent had moderate, 15.97 had severe, and 7.56 per cent had extremely severe mental depression. Thus, the analysis showed a high prevalence of depressive symptoms among school students across grades at mild, moderate, severe, and extremely severe levels (Figure 4).

Differential Analysis of Stress, Anxiety, and Depression in Terms of Students' Grades

To test the prevalence of stress, anxiety, and depression among school students across the grades, the researchers have executed an independent sample Kruskal-Wallis H test. Table 3 showed that there was no statistically significant differences in the pair score between school students of different grades on mental stress, X2(2) = 2.076, p=0.354 (>05), with a mean pair score of 84.78, 97.81, and 91.75 for grade VII, VIII, and IX students, respectively. So, the formulated null hypothesis, '$H0_1$: There is no statistically significant mean difference in the prevalence of stress among school students based on their classes' was accepted as researchers failed to reject it at 95 per cent confidence levels (Figure 5).

As shown in Table 3, the performed independent samples Kruskal-Wallis H test confirmed a statistically significant difference in pair scores between school students of different grades on anxiety, X2(2) = 7.149, p=0.028 (<0.05), with a mean pair score of 78.65, 88.18, and 104.57 for grade VII, VIII, and IX students, respectively. So, the formulated null hypothesis, '$H0_2$: There is no statistically significant

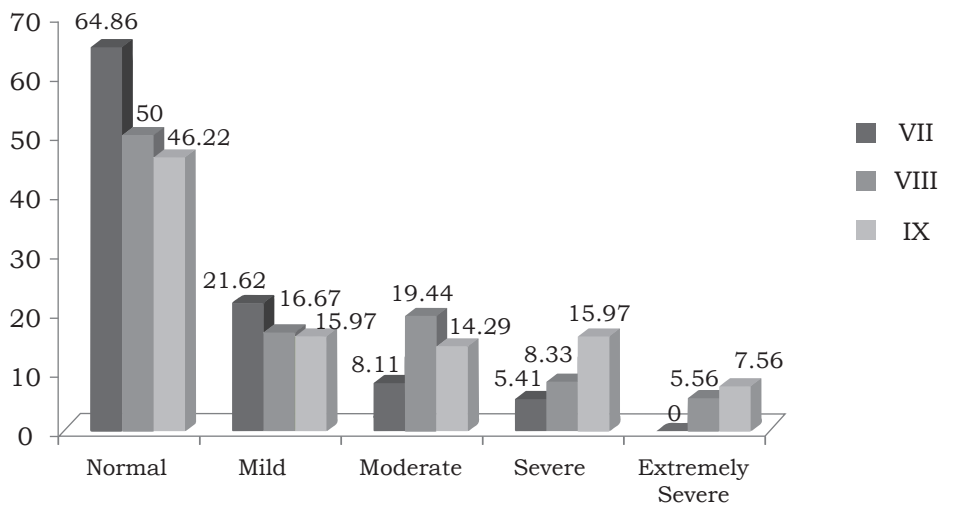

Fig. 4: Level of depression among school students across grades (%)

mean difference in the prevalence of anxiety among school students based on their classes' was rejected at 95 per cent confidence levels, and thereby an alternative hypothesis, that is, 'There is a statistically significant mean difference in the prevalence of anxiety among school students based on their classes', was accepted (Figure 5). Further, a pair-wise analysis using a Mann-Whitney U test (in a post-hoc manner) showed a significant difference in anxiety only between students of grade VII and IX, p=0.015, while no significant difference was recorded between the students of grade VII and VIII, p=0.362 and students of grade VIII and IX, p=0.105.

Likewise, Table 3 also showed that there was a statistically significant difference in pair scores between school students of different grades on depression, X2(2) = 9.666, P=0.008 (<0.05), with a mean pair score of 71.76, 96.36, and 104.24 for grade VII, VIII, and IX students, respectively. So, the formulated null hypothesis, '$H0_3$: There is no statistically significant mean difference in the prevalence of depression among school students based on their classes' was rejected at 95 per cent confidence levels, and thereby an alternative hypothesis, that is, 'there is a statistically significant mean difference in the prevalence of depression among school students based on their classes', was accepted (Figure 5). The further pair-wise analysis, using a Mann-Whitney U test (in a post-hoc manner) showed a significant difference in depression only between students of grade VII and IX, p=0.002, while no significant difference was recorded between students of grade VII and VIII, p=0.054 and students of grade VIII and IX, p=0.448.

Table 3
Mean Comparison of Stress, Anxiety, and Depression among School Students across Grades

Mental health dimensions	Grades	N	Mean	df	X^2 value	Sig. (p) value	Decision
Stress	VII	37	84.78	2	2.076	0.354	H_0 retained
	VIII	36	97.81				
	IX	119	99.75				
Anxiety	VII	37	78.65	2	7.149	0.028	H_0 rejected
	VIII	36	88.18				
	IX	119	104.57				
Depression	VII	37	71.76	2	9.666	0.008	H_0 rejected
	VIII	36	96.36				
	IX	119	104.24				

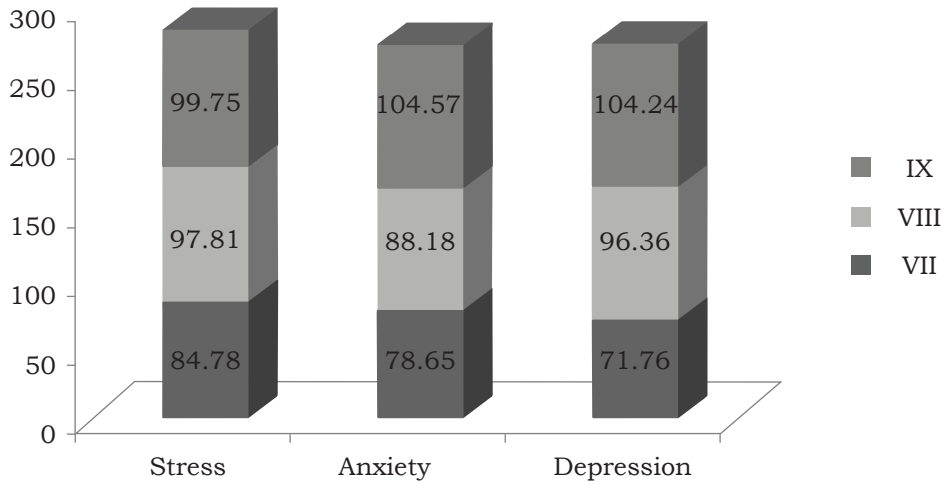

Fig. 5: Mean comparison of stress, anxiety, and depression among school students across grades

Discussions

The present study evidenced mental health problems as common mental illnesses and psychiatric disorders experienced by school-going students. It revealed a high prevalence of stress, anxiety, and depression among school students, 34.09, 65.9, and 45.97 per cent, respectively (Table 1). Similar findings have also been reported in previous studies, in which a substantial proportion of school-going students had various mental health problems (Pathak et al., 2011; Reddy et al., 2013; Labrague, 2014; Ranasinghe et al., 2016; Kumar and Akoijam, 2017; Sandal et al., 2017; Daya and Karthikeyan, 2018; Alahmadi, 2019; Nawaz and Vandana, 2020). These studies identified stress, anxiety, and depression as the most common mental health problems found among school students. Also, it evidenced the prevalent of these mental health problems among urban school students in a higher proportion as compared to rural school students. Thus, it can be inferred that stress, anxiety, and depression are the most commonly found mental health problems among school-going students. And the high prevalence of these mental health problems may be attributed to academic pressure, as there is a burden on students to do well and decide their future career goals. Unavailability of guidance and counseling services in schools aggravates these mental health issues leading to harmful behaviours among the affected students.

Further, the present study showed that among all students, 21.62, 59.64, and 34.14 per cent of grade VII; 36.11, 66.67, and 50 per cent of

grade VIII; 44.54, 71.43, and 53.78 per cent of grade IX reported having stress, anxiety, and depression at mild, moderate, severe and extremely severe levels (Table 2). An identical finding was reported by Kaushal et al. (2018), which evidenced a high prevalence of educational stress among school students, with 43, 56.6, and 0.4 per cent having mild, moderate, to severe levels stress, respectively. Thus, it can be inferred that the prevalence of these mental health problems among school-going students ranged from mild to severe levels. Henceforth, it suggested to necessitate a prompt action to minimise students' mental health problems at earliest possible time.

The present study also found an increasing trend of stress, anxiety, and depression with increasing levels of study grades education, which indicates that issues of mental health among students increase with an increase in their level of school education. It was found that the prevalence of stress, anxiety, and depression was higher among IX grade students, followed by the VIII and VII grades. An increase in students' mental health problems may be attributed to the increasing academic pressure with higher classes. Also, these students face rapid physical and psycho-social changes, which go unattended in the Indian society. Overall, the increased burden of educational, psychological, and societal expectations on school students leads to increased mental health problems, which worsen due to a lack of awareness and access to mental health services in school and society. Similar findings were also found in the previous studies, wherein the association of the prevalence of mental health problems with individuals' chronological age was empirically evidenced (Wahab et al., 2013; Eva et al., 2015). In their study, Wahab et al. (2013) reported a significant association of students' age with the prevalence of stress and depression. Similarly, Eva et al. (2015) evidenced a significant association of age cohort with a prevalence of mental stress among students. However, Merchant et al. (2018) examined the association of students' mental health with their ages, wherein no significant association of prevalence of stress, anxiety, and depression among students with their age groups was found.

Further, regarding the increasing trend of mental health issues associated with age, Hasumi et al. (2012) reported that adverse mental health (anxiety, depression, sadness, loneliness, and hopelessness) worsens with the worsen age of school students. Khanehkesh (2012) found that the prevalence of stress among students increases with their increasing age and educational level. Besides, it was also reported that the prevalence of mental stress among higher secondary students of XI and XII was higher than the secondary school students in IX and X Classes (Kaushal et al., 2018). Van

Droogenbroeck et al. (2018) reported that mental health problems increase with age. It was found that young adults (20–25 years of age) had more distress, anxiety, and depression than adolescent (15–19 years of age). Hakamy et al. (2017) found increasing trends in the prevalence of negative emotions with increasing age. It was identified in their study that older students >18 years of age reported having higher stress, anxiety, and depression, followed by the students of 16–17 years and <16 years of age. However, Zafar et al. (2017) reported a significant association of age with students' depression, but in their study, the 20–23 years age group reported having higher mental depression than the 24–25 years of age–group, indicate a decline in health issues with increasing age for adults. Similarly, Singh et al. (2017) found decline in the prevalence of depression, anxiety, and stress among students of 17–31 years of age with an increase their age. Thus, based on empirical evidence, it can be inferred that the symptoms of stress, anxiety, and depression increase among school students with an increase in their level of school education. However, there patterns may differ in adult populations (Singh et al., 2017; Zafar et al., 2017).

Also, the present study evidenced a significant difference in the prevalence of anxiety, $X2(2) = 7.149$, $p=0.028$ (<0.05), and depression, $X2(2) = 9.666$, $p=0.008$ (<0.05) among school students across different classes. In contrast, no significant difference was found in mean stress, $X2(2) = 2.076$, $p=0.354$ (>05) (Table 4). There was no study that researchers came across that supported or refuted the present study's findings establishing the differential in mental health prevalence in students based on their grades. However, since mental health problems are related to age, so it may be concluded that there is a significant association between these mental health issues, particularly anxiety and depression, and students' classes.

Delimitations and Suggestions

The present study was delimited to understand the mental health problems, specifically stress, anxiety, and depression, prevalent among students in Shillong city. Students only from the VII, VIII, and IX classes were considered as population samples. The present study was again delimited to provide descriptive research inputs from non-representative samples of school students. Henceforth, according to the study's findings, as it evidences a higher prevalence of stress, anxiety, and depression in students, the same study can be further taken to include the larger size of representative samples to gather sufficient information on the status quo of students' mental health. The present study found the classes of students correlated with the students' mental health. Researchers can further study if other socio-demographic,

individual-specific, psychological, family, and institution-related factors affect students' mental health. The present study found that mental health issues among students increased with an increase in their level of school education. Future researchers can explore the pattern of mental health issues in students from different age groups, i.e., children, adolescent, and adults using the same cross-sectional research design.

Recommendations

Mental illness is an outcome of multiple factors that induced psychological problems, which is critical for school-going students in northeast India. Therefore, stakeholders are urged to prioritise students' mental health and spread awareness among stakeholders about mental health and its impact on students. Educational institutions must provide guidance and counseling to students who are vulnerable to health-risk behaviours such as drug abuse, tobacco consumption, and alcohol abuse. The resilience factors need to be fostered among students to better adjust to adverse situations and recover from mental illness through family and social support, inculcating a sense of purpose in life and helping them in conflict resolutions. Teachers and parents need to work together through the 'home-school partnership' to minimise mental health issues. Teachers should establish a 'spontaneous collaboration' with parents to regulate students' activities and psycho-social behaviour. Schools should also encourage students to engage in extracurricular activities at home and school, as several studies have shown that indoor games, yoga, and physical exercises positively influence the mental health and well-being of individuals.

Conclusion

The present study assessed the prevalence of stress, anxiety, and depression among school students. It was found that a significant proportion of the school student population experienced mental health problems. Anxiety was much more prevalent among students, followed by depression and stress. Further, the study examined the vertical pattern of the prevalence of mental health problems, and the results indicated that these problems increased among students with an increase in their classes. The same pattern was observed for all the three dimensions, i.e., stress, anxiety, and depression. The findings of the study provide valuable information about the prevalence of mental health problems among students in northeast India. The relationship between the prevalence of mental health problems and their classes is alarming. A detailed, in-depth study may be carried out to explore the programme of the prevalence of mental health issues and causes of poor mental health among school students. The high prevalence of mental health problems

among students requires urgent intervention and strategic planning to combat the adverse impact of these problems on students.

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A Study of Perceptual Skills in Arabic-speaking School-aged Children

Eman Haidar Almoussabi* and Brajesh Priyadarshi**

Abstract

The auditory and visual perceptual skills (AVPS) are looked at as essential components in the progression of early reading skills (ERS) that form the basis for later academic success. The current study aimed at examining the sequential acquisition of the continuum of perceptual skills in Arabic-speaking school-aged children ranging from grade I to grade VIII. An overall number of 480 typically developing children were equally selected from the government and private schools. The descriptive analysis revealed that both male and female participants of the two schools showed same performance across all the sections. Results revealed that statistically significant differences existed in the performance of children of government school (lower socioe-conomic status— LSES) compared to children of private school (higher socioe-conomic status— HSES). Results also revealed a significant difference in the performance of students of different grades. The performance of children improved from the lower grades to the higher grades across all the sections.

Introduction

Reading is known as a developmental cognitive process through which meaning can be inferred from a written text. The reading process comprises two main elements: decodings, the ability to recognise familiar words, and comprehension, the capability to simultaneously extract and construct meaning from

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a written text (Shaywitz, 2003). The reading skills or literacy experiences children acquire earlier in their life have been described as the 'doorkeeper' towards attaining later competency and proficiency (Snow et al., 2007).

The process of identification and explanation of knowledge possessed through vision is called visual perception (VP). VP is a process in which we gain more awareness and comprehend our surroundings better. It is crucial to know how to join letters to make up words. The process of identification and explanation of knowledge possessed through the sense of hearing is called auditory perception (AP). AP is defined as the capability to recognise, arrange and interpret knowledge received via the sense of hearing.

Review of Literature

Auditory and Visual Perceptual Skills (AVPS) are considered significant components in the evolution of ERS in young learners (Dechant and Smith, 1961). A vast number of studies have manifested that inadequate sensory-perceptual growth of children joining school yearly may lie behind their learning disabilities that hinder their success later in their academic progression (Oakland et al., 1973). Ample number of studies have shown that young learners undergoing reading deficits face trouble with the essential cognitive reading skills related to VP and assured its remarkable influence on academic performance in young learners (Çayir, 2017; Stokes et al., 2015). It has been viewed that there is an obvious correlation between AP and early reading performance (Rosner, 1972). A study performed on the relationship between AP and reading achievement in preschool children revealed that AP is a strong predictor of future reading competency among students (Burrows and Neyland, 1978).

Keeping these facts in mind, the current study was conducted in the Sana'a district of Yemen to discover some of the issues pertaining to the reading skills of the Arabic-speaking children of Yemen. Basic education in Yemen consists of nine years of obligatory education for students aged 6 to 14. Education in Yemen is provided by the public sector (government schools, i.e., the schools run by the government of Yemen) as well as the private sector (private schools, i.e., the schools run by private organisations or individuals).

Arabic is spoken by nearly 420 million people worldwide (Gordon, 2005). Arabic is categorised as a Semitic language with an abjad script based on consonants. It has all the consonants in addition to three long vowels (a, u, and i). Whenever Arabic writing is totally vowelised, the grapheme-phoneme connection is extremely regular, and it has been known as transparent orthography. In contrast, it has been said that partly vowelised Arabic writing that lacks short vowels, is non-transparent and 'extremely opaque' (Saiegh-Haddad

and Henkin-Roitfarb, 2014). Arabic is a language with a diglossic structure (Ferguson, 1959). Modern Standard Arabic (MSA) can only be acquired through formal education and is used solely in official contexts such as textbooks, schooling, and official speech. In informal contexts, the Spoken Arabic Vernacular (SAV) is the primary mode of communication.

Need for the Study

In the evolution of the majority of academic abilities, it is widely supposed that the earlier it was, the better it will be (Jordan et al., 1985). Reading is one of the ultimate significant academic processes that children learn earlier in their academic life. Learning how to read is extremely difficult. Nearly about 10 per cent of the children are suffering from a developmental deficit called dyslexia (Gabrieli, 2009). It is generally assumed that children who encounter difficulty in the AVPS earlier as young learners will suffer later to be skilled readers; thus, their educational performance will not be as per the estimated levels (Duru, 2008).

In order to address these issues, few attempts have been made based on the Informal Diagnostic Test of early reading skills proposed by Rae and Potter (1973). Some assessment tools were developed to assess early reading skills for the identification of children with reading deficits (Joshi, 2016; Priyadarshi and Goswami, 2012). However, these tools were translated and adapted into languages other than Arabic.

Aim of the Study

The main aim of the current study is to examine the sequential acquisition of the continuum of perceptual skills in Arabic-speaking school-aged children of Classes I to VIII. In this direction, an attempt was made to answer the given questions:

1. Do auditory-visual perceptions levels differ in terms of gender?
2. Do auditory-visual perceptions levels differ in terms of the type of school?
3. Do auditory-visual perceptions levels differ in terms of the student's class?

Method

Sample

For the current study, Arabic-speaking children living in Sana'a district of Yemen of Classes I to VIII, with an age range between 6–13 years were recruited. An overall number of 480 Typically Developing Children (TDC), i.e., the normal healthy children without any deficits linguistically or/and neurologically, participated in the study.

Another important requirement was that children should not have changed their school since the beginning of their schooling years. Moreover, children should not have failed in only clean throughout their schooling years. At the time of conducting the study, students

should have completed nearly six months in the running academic year. The participants of this study were selected from the government schools and private schools, 30 students from each grade (15 males and 15 females). And the participants in these two groups to some extent depict a Low Socios economic Status (LSES) and a High Socio-Economic Status (HSES) respectively. The Kuppuswamy scale criteria by Kumar et al. (2012) were used to measure the participants' SES.

Instrument

The basis of this study is the section on the perceptual skills development from the Informal Diagnostic Test of early reading skills proposed by Rae and Potter (1973) Informal reading diagnostic in *A Practical Guide for the Classroom Teachers* republished in the year 1981. The stimulus was adapted to Arabic culture and language. It included AVPS as the main content; it was further divided into two subsections: AP and VP. The AP section was further divided into auditory identification level (AIL), auditory recall level (ARL), and auditory discrimination level (ADL). The VP section was further divided into two separate levels: Visual Discrimination Level 1(VDL1) and Visual Discrimination Level 2 (VDL2).

Procedure

Prior to the assessment, participants were informed regarding the purpose of the study in order to follow the ethical considerations, and informed consent was also obtained from the principals of the schools.

The stimulus was applied to 480 TDC. Each child was introduced to the stimulus alone in a quiet room for about 20 minutes. The stimulus was given to the child in a particular order and all the sessions were audio-video recorded. For the sake of obtaining homogeneous data socio-demographically, children who attended schools in the same geographical area in Sana'a Yemen were included in the study.

Scoring

A general scoring method was applied and a score of one was designated for every correct answer. The ultimate result for each subsection depended upon the number of elements in it.

Results

The collected data was decoded in SPSS version 26.0. For statistical analysis, $p < 0.05$ level was considered as the level of significance. To test normality, Shapiro-Wilk test was performed. The descriptive analysis of the data set revealed that some of the parameters were normally distributed and some were not, so non-parametric tests have been used for descriptive statistics. The Mann–Whitney U test was performed for gender comparisons. Findings revealed that there was no statistically significant difference in terms of gender ($p > 0.05$). Therefore, gender was combined for further analysis. Moreover, the Mann-Whitney U test was performed to find

out the significant difference between the private and government schools. The non-parametric Kruskal Wallis test was done for the comparison of different. Results revealed a significant difference between grades; therefore, a Mann-Whitney U test was performed to see the pairwise significant difference between grades.

It is apparent from the descriptive analysis in Table 1 that children in the higher grades performed better than the lower grades' children, i.e., the performance of the children gradually improved from lower to higher classes across all AVPS tasks.

It is apparent from Table 2 that children in the higher grades performed better than the lower grades' children. The performance of the children gradually improved from lower to higher grades. The comparative analysis of the mean (μ) and standard deviation (SD) values of TDCG and TDCP, as shown in Table 1 and Table 2 revealed that TDCP outperformed TDCG almost across all AVP sections. However,

Table 1
Mean and Standard Deviation of TDC of the Government School

AVPS											
		AP						***VP***			
		AIL		**ARL**		**ADL**		**VDL1**		**VDL2**	
Grade	**Gender**	**μ**	**SD**	**μ**	**SD**	**μ**	**SD**	**μ**	**SD**	**μ**	**SD**
I	M	20.73	6.319	22.73	3.693	18.73	5.203	12.13	1.598	11.87	2.295
	F	21.33	6.758	21.73	5.133	18.93	5.612	12.73	1.710	12.13	2.669
II	M	24.13	3.758	24.20	3.005	23.27	4.992	13.67	1.175	13.00	2.000
	F	24.93	4.543	24.67	2.870	23.53	5.222	13.67	2.193	13.40	2.640
III	M	26.67	2.257	26.53	2.066	24.47	3.502	14.93	0.884	14.13	1.885
	F	26.87	2.264	26.80	1.656	25.67	4.577	14.87	1.246	14.53	2.503
IV	M	27.53	0.915	27.60	0.737	26.20	3.590	15.27	1.033	20.00	2.299
	F	27.73	0.704	27.80	0.414	26.33	3.994	15.33	0.816	20.47	2.748
V	M	27.80	0.561	27.80	0.561	27.53	3.292	15.40	1.549	21.87	2.850
	F	27.87	0.516	27.93	0.258	27.93	3.918	15.53	0.915	22.27	2.017
VI	M	27.93	0.258	27.93	0.258	28.93	1.387	15.67	0.816	23.47	0.743
	F	27.93	0.258	27.93	0.258	29.40	0.910	15.73	0.458	23.73	0.594
VII	M	28.00	0.000	28.00	000	29.67	0.617	15.80	0.414	24.00	0.756
	F	28.00	0.000	28.00	0.000	29.73	0.458	15.87	0.352	24.47	0.516
VIII	M	28.00	000	28.00	000	29.93	0.258	15.93	0.258	24.87	0.352
	F	28.00	0.000	28.00	0.000	30.00	0.000	16.00	0.000	24.93	0.258

Note: μ = Mean, SD= Standard deviation, M= Male, F= Female

Table 2
Mean and Standard Deviation of TDC of the Private School

AVPS											
		AP						*VP*			
		AIL		ARL		ADL		VDL1		VDL2	
Grade	Gender	μ	SD	μ	SD	μ	SD	μ	SD	μ	SD
I	M	25.33	6.218	22.87	3.420	18.07	3.751	12.93	2.492	13.00	2.390
	F	25.47	2.696	23.13	4.324	19.13	5.235	13.33	2.059	13.33	2.469
II	M	27.60	0.737	25.87	2.997	23.53	2.100	14.20	1.656	14.07	1.944
	F	27.13	2.134	25.93	2.017	23.93	4.992	14.40	2.444	14.20	3.052
III	M	27.87	0.352	27.87	0.352	25.47	3.044	14.73	1.486	14.87	1.807
	F	27.87	0.352	27.87	0.352	25.87	2.615	14.80	1.897	14.93	1.870
IV	M	27.93	0.258	27.93	0.258	27.60	1.993	15.47	0.516	20.67	2.440
	F	27.93	0.258	27.93	0.258	27.93	1.223	15.73	0.458	20.73	2.282
V	M	28.00	000	28.00	0.000	29.87	0.352	15.67	0.617	22.73	1.387
	F	28.00	0.000	28.00	0.000	29.87	0.352	15.73	0.458	22.87	1.552
VI	M	28.00	000	28.00	0.000	29.87	0.352	15.87	0.352	24.13	0.516
	F	28.00	0.000	28.00	0.000	29.93	0.258	15.80	0.414	23.93	0.799
VII	M	28.00	000	28.00	0.000	30.00	0.000	15.93	0.258	24.73	0.458
	F	28.00	0.000	28.00	0.000	30.00	0.000	15.93	0.258	24.87	0.352
VIII	M	28.00	000	28.00	0.000	30.00	0.000	16.00	0.000	25.00	0.000
	F	28.00	0.000	28.00	0.000	30.00	0.000	16.00	0.000	25.00	0.000

Note*:* μ = Mean, SD= Standard deviation, M= Male, F= Female

TDCG outperformed their TDCP counterpart in the ADL for the 1st students (male) and VDL1 for the 3rd students (male and female). As was the case in the descriptive analyses, TDCP outperformed TDCG with children of the private school scoring a maximum score by about two grades earlier than their government school counterparts did. Children of the government school performed equivalent to their private school counterparts approximately in the Grades VII and VIII.

Table 3 clarifies the level of significance between the government and private schools. It is apparent that in case of Class I, a statistically significant difference was found in the AIL (p<.0.05, sig=001). For Grade II, significant differences existed in the AIL (p <0.05, sig=000) and ARL (p< 0.05, sig=033). In case of Grade III, significant differences existed in the AIL (p< 0.05, sig=038) and ARL (p< 0.05, sig=001). For Grade IV, there were no statistically significant differences across all parameters. In case of Grade V, there were no statistically significant differences across all parameters except that for ADL (p< 0.05, sig=002). In the case of Grade VI, there were statistically significant differences

Table 3
Government School vs Private School within Grades

Grade	Level of Significance Between the Government and Private Schools				
	AIL	***ARL***	***ADL***	***VDL1***	***VDL2***
I	0.001*	0.542	0.870	0.098	0.104
II	0.000*	0.033*	0.624	0.089	0.54
III	0.038*	0.001*	0.812	0.596	0.150
IV	0.109	0.066	0.481	0.338	0.540
V	0.078	0.078	0.002*	0.863	0.370
VI	0.154	0.154	0.002*	0.489	0.009*
VII	1.000	1.000	0.003*	0.232	0.000*
VIII	1.000	1.000	0.317	0.317	0.078

*Indicates significance at p< 0.05

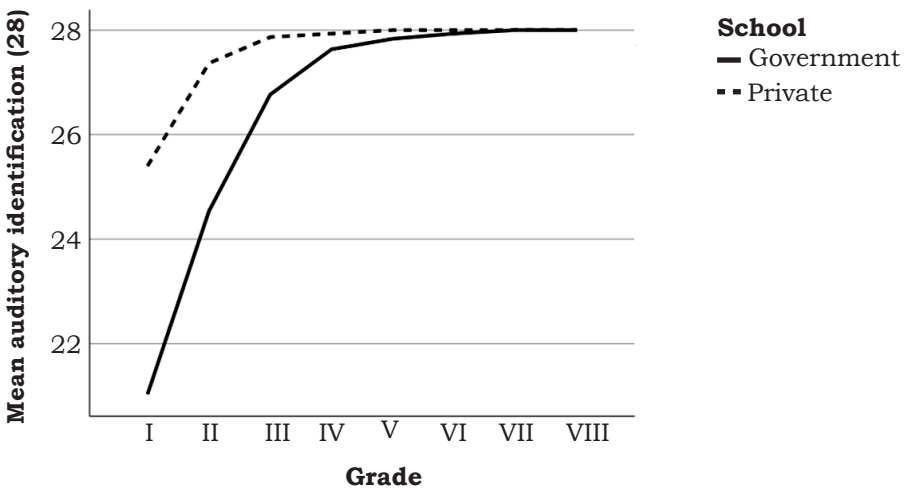

Fig. 1: Pairwise Comparison of Grades for TDCG and TDCP in the AIL

between the two schools in the ADL (p< 0.05, sig=002) and VDL 2 (p< 0.05, sig=009). For Grade VII, there were statistically significant differences in the ADL (p< 0.05, sig=003) and VDL 2 (p< 0.05, sig=000). In case of Grade VIII, significant differences were found across all the sections, statistically.

The independent samples Kruskal-Wallis test was carried out across grades (pairwise comparison of grades). Results revealed an overall grade significant difference (p<0.05).

Figure 1 shows the comparative performance of TDCG in the AIL, a significant difference between grades existed ($x^2(7)$ =133.101, p<0.05). The pairwise comparison of grades for TDCG revealed that there was no significant difference between the

Grades I and II (p >0.05). A significant difference was found between Grade I and all the other grades except the Grade II. Grade II was significantly different from all the other grades except the Grade I. No significant differences were observed between the Grades III, IV, V, VI, VII and VIII (p>0.05). Figure 1, also shows the comparative performance of TDCP in the AIL; a significant difference was found between grades ($x^2(7) = 56.592$, $p<0.05$). The pairwise comparison of grades showed that the performance of Grade I was different from all other grades except Grade II. The performance of Grade II was different from all other grades except Grades I, III, and IV. No significant differences between Grades I and II, Grades II and III, and Grades II and IV were observed. Statistically significant differences were observed between Grades I and II and other grades. Grade I performed differently from the Grades III, IV, V, VI, VII and VIII. Grade II was different from Grades V, VI, VII and VIII. No significant differences among the Grades III, IV, V, VI, VII and VIII were found.

With respect to the ARL, the comparative performance of TDCG in Figure 2 indicates a significant difference between grades ($x2(7) = 140.530$, $p<0.05$). The pair-wise comparison of grades showed that the performance of Grade I was different from all other grades except Grade II. The performance of Grade II was significantly different from all other grades except Grades I and III. The performance of Grade III was different from Grades I, VI, VII and VIII. No significant differences between the Grades IV, V, VI, VII and VIII were found (p>0.05). In Figure 2, the comparative

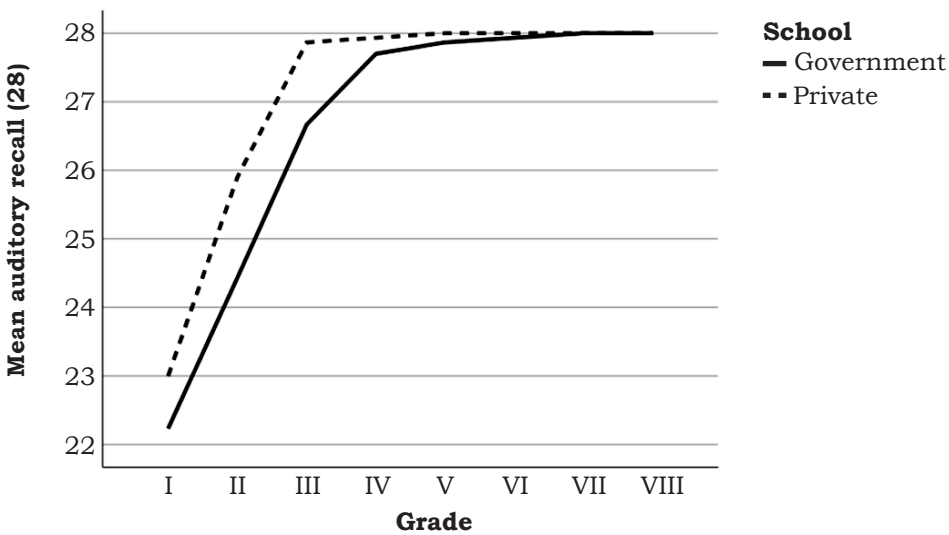

Fig. 2: Pairwise comparison of grades of TDCG and TDCP in the ARL

analysis of the private school children's performance in the ARL indicates a significant difference between grades ($x^2(7) = 150.924$, $p<0.05$). The pairwise comparison of grades showed that there was no significant difference between the Grades I and II. The performance of Grade I was different from the Grades III, IV, V, VI, VII and VIII. Further, significant differences between Grade II and Grades III, IV, V, VI, VII and VIII were observed. For the Grades III, IV, V, VI, VII and VIII, no statistically significant differences were found ($p>0.05$).

In case of ADL, Figure 3 shows the comparative performance of TDCG; a significant difference existed between grades ($x2(7) = 130.880$, $p<0.05$). The pairwise comparison of grades showed that the performance of Grade I was different from all other grades except Grades II and III. No significant differences between the Grades I, II and III were found. Grade I was different from the Grades IV, V, VI, VII and VIII. Grade II was different from Grades V, VI, VII and VIII. Grade III was statistically significant different from the Grades VI, VII and VIII. Further, the Grade IV was different in the performance from Grades I, VII and VIII. No significant differences were observed between Grades V, VI, VII and VIII. With respect to TDCP, It is clear in Figure 3 that the comparative performance of grades in the ADL showed significant differences between grades ($x^2(7) = 197.312$, $p<0.05$). The pair-wise comparison of grades revealed that there was no significant difference between Grades I and II. No significant differences between Grade II and Grades I, III and IV were observed. The Grade III was

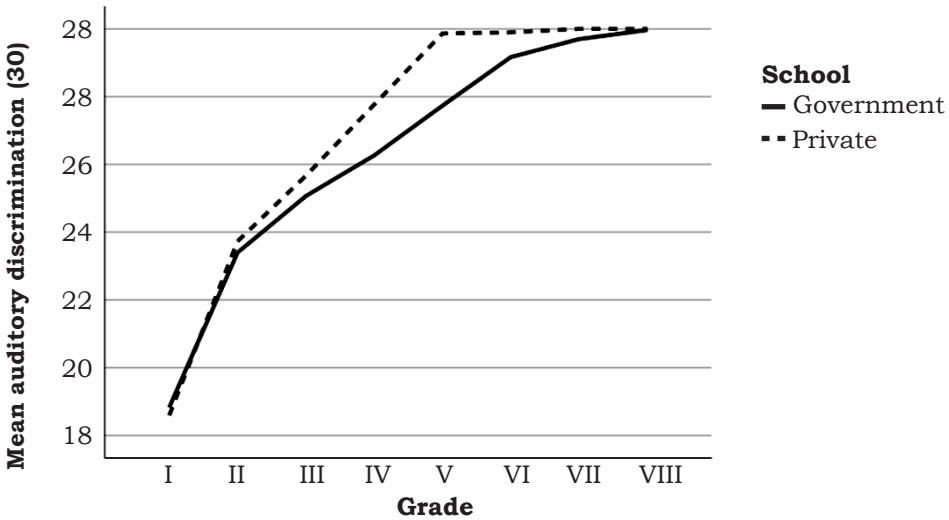

Fig. 3: Pairwise comparison of grades for TDCG and TDCP in the ADL

significantly different from all except the Grades II and IV. The Grade IV was different from Grades I, V, VI, VII and VIII. For the Grades V, VI, VII and VIII no significant differences were found ($p>0.05$).

For the VDL1, the comparative analysis of the TDCG in Figure 4 indicates a significant difference between grades ($x^2(7) = 121.731$, $p<0.05$). The pairwise comparison of grades showed that Grade I was significantly different from all grades except Grade II. Grade II was different from all other grades except Grades I and III. The performance of the Grade III was significantly different from the Grades I, VII and VIII. For the relation between the Grades IV, V, VI, VII and VIII no significant differences were observed. In case of TDCP, the comparative performance of grades in the VDL 1 as shown in Figure 4, clearly showed significant differences between grades ($x^2(7)=91.563$, $p<0.05$). The pairwise comparison of grades showed that there was no significant difference between Grades I and II. No significant differences between the performance of Grade II and Grades I, III and IV were found. The performance of Grade I was significantly different from Grades III, IV, V, VI, VII and VIII. Grade II was different from Grades V, VI, VII and VIII. The performance of the Grade III was different from the Grades I, VII and VIII. For the relation between the Grades IV, V, VI, VII and VIII, no statistically significant differences were found.

In case of VDL 2, Figure 5 shows the comparative analysis of TDCG. It is apparent that there was a significant difference between grades ($x^2(7) = 205.794$, $p<0.05$). The pairwise

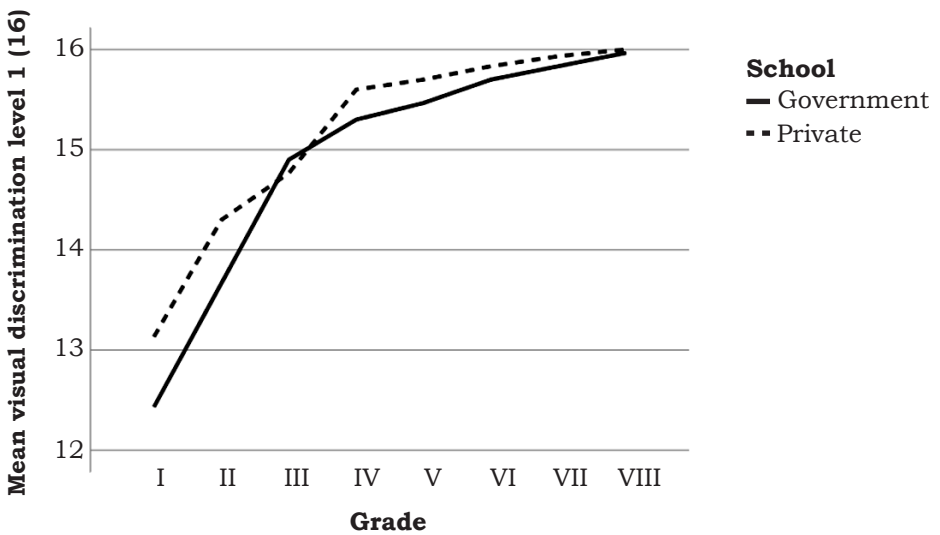

Fig. 4: Pairwise comparison of grades for TDCG and TDCP in VDL1

comparison of grades showed that Grade I performed differently from all the grades except Grades II and III. Grade II was different from all the other grades except Grades I and III. Grade III was different from all grades except Grades I, II and IV. Grade IV was different from Grades I, II, VII and VIII. Grade V was different from the Grade VIII. For VDL2, the comparative performance of the TDCP as shown in Figure 5, shows that there was a significant difference between grades ($x^2(7) = 212.202$, $p<0.05$). The pairwise comparison of grades also showed that Grade I was different from all other grades except Grades II and III. Grade II was different from all except Grades I and III. The performance of Grade III was different from all other grades except Grades I and II. There were no significant differences between the Grades I, II and III. For the Grades IV, V and VI no significant differences were found. Further, for the Grades VI, VII and VIII, no significant differences were found.

Discussion

The descriptive analysis for the data set revealed that the collected data was symmetrical in the system of developing the perceptual skills. Looking at the means and standard deviations of the AVPS, a developmental pattern for the performance of children across all the sections was noticed. The performance of children in the higher grades was better than the performance of children in the lower grades. This is in line with the previous studies that reported that children acquire the fundamental literacy skills and behaviours in a

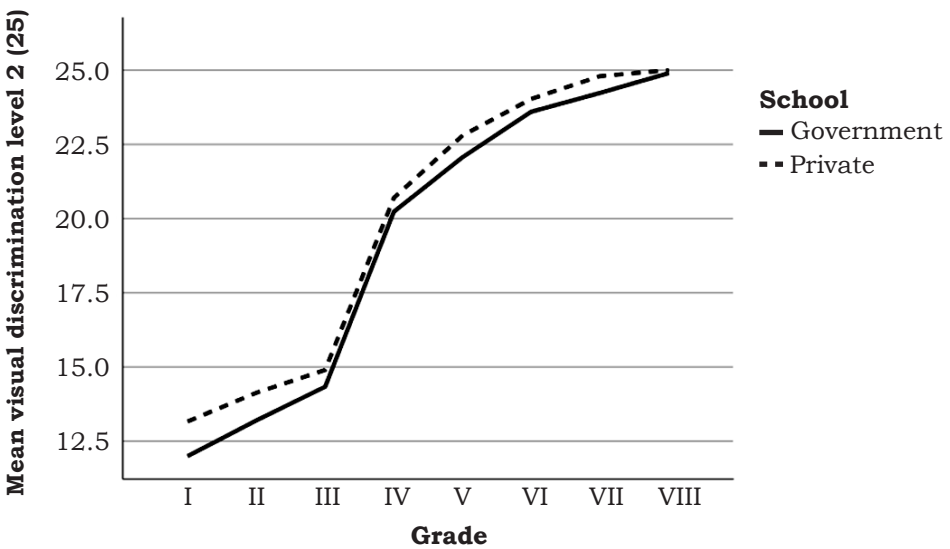

Fig. 5: Pairwise comparison of grades for TDCG and TDCP VDL2

homogeneous pattern (Cheung et al., 2006). This can be attributed to the education they get throughout their schooling.

As was the case in the descriptive analysis of the data set of the TDCG and TDCP schools separately, gender was found to be a non-significant variable. This is in accordance with a study done by Önder et al. (2019), which reported that students' VP levels do not differ based on gender. However, Van Wyk et al. (2020) found less to middle significant differences in the learners' VP abilities with respect to gender.

Whereas there was no statistically significant difference with regard to gender, a statistically significant difference was observed with regard to the type of schools. In this study, the differences between the type of schools (private and government) are assumed to be the impact of SES. As was the case in the descriptive analysis, TDCP outperformed TDCG. This clarifies the significant differences noticed in their performance across all sections; with private school (HSES) children scored maximum in Grade VI in all sections, whereas the government school (LSES) children scored a maximum of approximately two grades lower than their private school counterparts. Children from both government and private school performed as well as their private school counterparts approximately. In the Grade VII and VIII performed well. This is in agreement with a study conducted by Priyadarshi et al. (2012) that concluded that the differences in the performance of children studying in the English medium school, and the performance of children studying in the Hindi medium; with English medium children outperforming their Hindi medium counterparts, may be considered as being the impact of HSES and LSES respectively. A study done by Deutsch (1964) confirmed that children belonging to HSES are good in visual skills compared to LSES children, who showed clear visual-perceptual disorders. Havaei' et al. (2009) proposed that children's AVPS are influenced by their traditions and schooling background. A person's SES is affected by his/her health, relation with the community (Şeker, 2015); thus life kind this may be the reason behind this divergence. Children belonging to HSES may have been exposed to a wealthy visual environment throughout their childhood period. This assists in developing their visual working memory that highly relies on their perceptual progress.

Findings showed that statistically significant differences were observed approximately across all parameters between grades ($p < 0.05$). However, no significant difference was found between the Grade I and II. Results showed a stable improvement in the achievement of the learners from grade I onwards. This is in contrast with a study conducted by Ku and Anderson (2003) that has inspired that variation in the children's performance at the AVPS mirrors individuals' variations

in reading abilities. The progressive increasing pattern across all grades of both private and government schools reaching nearly similar scores in the higher grades as noticed in the current study, is in consonance with a study conducted by Hoien et al. (1995), which reported a stable improvement in the performance of students from the lower to the higher grades. Additionally, Priyadarshi and Goswami (2012) proposed that the total achievement in reading is connected with the age of the learner. The progressive increase in the learners' achievement noticed in this study can be attributed to their ages and years of schooling.

Limitations

There are some limitations concerned with this study which must be highlighted in order to generalise the results. First, the sample size of the subgroups was small for a population. It is assumed that further research with a bigger and more varied sample may increase the possibility to get a more typical distribution of the target group. This may permit to generalisation and transferring of the findings. Another limitation that cannot be ignored was the cross-sectional nature of the current study design. It is highly recommended to conduct a longitudinal study to examine such relationships, noticing and recording the sequential development in the children's performance.

Implications

It is generally assumed that perceptual skills are strong predictors of future reading success. This calls attention to the value of early identification and assessment of AVPS in young learners with learning difficulties. Assessing the AVPS may bring forward the efficiency of early intervention and assistance to provide diagnostic lessons in order to help children to overcome their difficulties earlier in their academic life and become successful learners. The results of the current study led to various dimensions for further research in this direction. It also leads to the need for a longitudinal study to evaluate the diverse unconstrained variables that may play a role throughout data collection such as parental impact, educational instructions, teachers' attitudes, and the learners' maturity.

Conclusion

The current study sought to understand the sequential acquisition of the AVPS as a crucial factor for later academic achievement. This sheds light on the value of early identification and assessment of the perceptual skills in school-aged children with learning difficulties, in an attempt to provide a quick intervention to help the children overcome these difficulties and become successful learners.

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Socio-emotional Competence and Adjustment of Students in COVID-19
Rethinking School-based Learning

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Abstract

The COVID-19 pandemic has created an unprecedented mental health crisis, posing a unique challenge to global psychological resilience. In this context, this study focused on understanding the significance of socio-emotional competencies on students' mental health and wellness during COVID-19. Validated instruments measuring emotional competence, social competence, life satisfaction and adjustment were used to collect data from 210 adolescents (13–14 years). Results showed that during the pandemic, nearly one-third of the students reported inadequate social, emotional and educational adjustment. The ability to manage difficult emotions, which is critical for work and life success, had the lowest score on the emotional competence dimension. Regression analysis showed the significant role of social and emotional competencies in explaining the variance in adjustment. This study strengthens and outlines the need to include socio-emotional learning interventions into educational programmes at school, especially in the context of COVID-19 pandemic.

Introduction

During the pandemic and lockdown restrictions in India, about 33 per cent of 5 to 13 year olds and 50 per cent of 14 to 18 year olds had poor or very bad mental health (UNICEF report, 2021). The well-being of students, which is a major problem, became even more pressing in light of the COVID-19 pandemic crisis.

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Like various other aspects of personality, emotions play a vital role in the manifestation of individual's behaviour. The emotional growth happens to be rapid during early years and decreases throughout life. Basic emotions reflect adaptive demands of key environmental situations to achieve control over different kinds of events related to survival (Plutchik, 1980).

To accomplish and preserve a feeling of efficacy, every individual has to develop workable inferences about the world. Emotional competence is the efficiency that an individual requires to deal with emotional situations adequately. These organised abilities work as a productive force in moulding human behaviour, while disorganisation may lead to severe ramifications in the dynamics of human behaviour.

Emotional competence is a blending of five competencies (Coleman, 1970), which are listen below:

(a) Adequate depth of feelings— A feeling of being able to deal with all reality assumptions. It is closely correlated with potent judgement and personality integration ensuring fervent participation in living.

(b) Adequate expression and control of emotions— It refers to the natural dynamic stability of an individual to express and control emotions spontaneously as demanded by the situation

(c) Ability to function with emotion— It refers to distinctive pattern of emotional awareness, which assists an individual to an optimal level of functioning. This helps in achieving the tasks of daily routine adequately.

(d) Ability to cope with problem emotions— It refers to understanding the detrimental effects of problem emotions by a person and developing an ability to resist the harmful effects later

(e) Encouragement of positive emotions— It refers to the ability of a person to develop a prominence of positive emotions to ensure a meaningful and well-integrated life

The functionalist approach to emotion suggests that emotions represent an attempt by an individual to 'establish, maintain, change or terminate the relation between the person and the environment on matters of significance to the person' (Campos et al, 1994). Research on the systemic interaction between affect and behaviour shows that individuals who have mastery over managing their emotions and expressions are less susceptible to anger outburst than individuals who are unsuccessful at doing so (Eisenberg et al., 1996). Literature strongly supports the contribution of socio-emotional competence to life success, work performance and academic performance (Juvonen and Wentzel, 1996).

COVID–19 and Emotional Competence

During the COVID-19 epidemic, special attention had to be devoted to teenagers' emotional competency for two reasons. Firstly, to achieve as advocated by academic success Oberle et al., 2014 and also for effective adult functioning (Kotsou et al., 2011) mentioned is the study of this emotional competency is attained by an adolescent through sociolisation (Valiente et al., 2020). Also adolescents have been shown to be less aware and accepting of their own emotions as a result of the inescapable social isolation that was created by COVID-19 (Valiente et al., 2020) and found severe difficulty in regulating their emotions (Casey et al., 2019). Several early studies on COVID-19's immediate effects in adolescents and young adults (Janssen et al., 2020) found an increase in low emotional competence-related mental health difficulties in adolescents and young adults.

Second, adolescents must be emotionally competent to deal with the additional emotional distress caused by COVID-19, such as illness, loss of relatives, and financial difficulties during the pandemic, as well as feelings of anxiety, depression, and sadness (Li et al., 2021). Students with strong emotional competence will be better able to control and regulate their grief, sadness, and stress in order to cope more effectively with the new online learning environment (Moron and Biolik-Moron, 2020).

COVID-19 and Social Competence

Social competence has been defined as the social ability and interpersonal skills (Eisler, 1976) of an individual in effectively meeting a person- situation interaction or successfully dealing with individual environment factors. It is defined as an individual's ability to respond effectively or adequately to the numerous problematic situations. White (1963) coined the term 'social competency' to describe a person's interaction with the social environment and to enable him to gain knowledge through successful experiences of other persons to achieve disliked outcomes and effects. One of the components of social behaviour is social competency.

Adolescents' learning experiences are shaped by their social relationships with teachers, peers, and others (perret-Clermont et al., 2004). As a result, without the motivation of in-person interactions with teachers and classmates, kids struggle to be cognitively engaged in class (Kim and Frick, 2011).

Concept of Subjective Well-being (SWB)

The SWB concept is a three-part set of phenomena that comprises emotional responses (e.g., joy, optimism, etc.) and negative affects (e.g., sadness, anger, etc.), domain satisfaction (e.g., work satisfaction, relationship satisfaction, etc.), and global judgments of life satisfaction (LS) (Diener et al. 1999). LS is a subjective assessment of overall quality of life

that is considered a key indication of SWB (Diener et al. 1999). Scores on LS measures are frequently used to suggest pleasure or dissatisfaction.

How did the pandemic affect student well-being in India?

In March 2020, the Indian government proclaimed an early countrywide lockdown in response to COVID-19 emergence. COVID-19 related mental health issues, such as bereavement, social isolation, and increased stress and anxiety (Hamza et al., 2020), made students' academic lives even more difficult. As previously stated, adolescence is a developmental stage marked by a particularly sensitive 'social brain' (Blakemore, 2008), and it is a crucial time for the development of emotional competence (Booker and Dunsmore, 2017). As a result, any interpersonal and social-emotional suffering experienced by adolescents is amplified when compared to people at other stages of development. Students at this developmental stage must have a higher level of emotional competence in order to effectively manage with emotional pain, allowing them to be more robust to the COVID-19 pandemic's obstacles and do better academically (Bao, 2020). For example, the ongoing uncertainty around examinations and school re-openings over the previous two years has harmed the mental health of pupils already on the wrong side of the digital divide.

Mental health for children must take into account the age-specific and life-course markers. A good sense of self, the ability to control thoughts and emotions, the ability to form connections, and the ability to study and acquire education are all parts of being mentally healthy. According to a UNICEF report (2021), the pandemic's aftershocks will take its toll on the happiness and well-being of children, adolescents, and caregivers for years to come, putting their mental health at danger. Such organisations, as well as the Indian government, concur that the COVID-19 pandemic is only the tip of the iceberg when it comes to children's poor mental health.

These forecasts are already coming true. Schools serve as a safe haven: they are a microcosm of the world into which kids are preparing to enter. Students are deprived of not only academic chances, but also of an ecosystem, in which connections and relationships are built. According to the UN the report *The State of the World's Children* (2021), over 1 in 7 (15 to the 24-year-olds) in India reported feeling depressed or having little interest in doing things.

The Current Study

Students' well-being and adjustment are a pressing concern, which has become even more urgent in the context of the current crisis. Understanding adolescents' well-being and adjustment during COVID-19 requires an understanding of the role of their social and emotional competencies. There are a few studies that have explored this in the content of Indian high school students. The current study thus

aimed to explore how the pandemic affected high school students' social and emotional competence and consequently affected the adjustments of adolescents to the COVID-19 related obstacles and their learning environment.

Method

Participants

Participants in this study were 210 students from the schools in Pune city, Maharashtra. The sample included 110 girls and 100 boys. Their age range was 13–14 yrs. Their mean age was 13.6 yrs.

Measures

The Emotional Competence Scale designed by Sharma and Bharadwaj (1995) was used to assess the emotional competence of the subjects. It is a 30-items instrument with the response format ranging from strongly disagree to strongly agree. The scale has separate scores for five sub-components of emotional competence: adequate depth of feelings, adequate expression and control of emotions, ability to function with emotions, ability to cope with problem emotions, and encouragement of positive emotions. High score on the scale indicated high emotional competence. The test-retest reliability of the scale was 0.73 and split half reliability was 0.75. The concurrent validity with 16 personality factor (PF) questionnaire was found to be 0.69.

To assess the adjustment of the participants, Adjustment Inventory for School Students by Sinha and Singh (1993) was used. It is a 60-items scale with the responses of 'yes 'and 'no'. Typical items on the scale include: (1) Do you pay attention to the lesson being taught in class, and (2) Do you often quarrel with your classmates. The split half reliability is 0.95, the test-retest reliability is 0.93 and the K-R formula-20 reliability is 0.94. For each response indicative of adjustment, '0' is given otherwise '1' is given. The inventory was validated by correlating inventory scores with ratings by hostel superintendent and for this product moment, coefficient of correlation was found to be 0.51. High scores on the inventory indicate poor levels of adjustment while low scores indicate good adjustment.

To measure the social competencies, the Social Competence Scale developed by Sharma and Shukla (1992) was used. The scale consists of 50 items with responses ranging from very high to very low, on a 5-point scale. The scale measures pro-social attitude, social competition, social leadership, social tolerance and social maturity. The reliability employing Test-Retest method was 0.56, whereas the coefficient of inter-rater reliability has been found to be 0.67 and a predictive validity of r=0.72 was obtained.

To measure subjective well-being, the Satisfaction with Life Scale developed by Pavot and Diener

(1993) was used. The analysis of the reliability of the SWLS showed an internal consistency of 0.74 (Cronbach's alpha).

Procedure

The instruments were administered to participants in their respective schools. A survey was set up on Survey Monkey software. The head teacher first sent out the consent form to students' parents through email. Parents signed the form electronically and returned it to the head teacher. After obtaining consent from parents or guardians, the head teacher sent the survey link to students through email to be filled by students during their free time. The survey data were collected over a period of two weeks in August 2021. School teachers assisted the researchers and this facilitated the easy administration of instruments.

Statistical analysis

Descriptive statistics, correlational and regression analysis was employed to analyse the data.

Results

Descriptive statistics and zero order correlations for the variables under study are reported in Table 1, 2 and 3.

The highest mean score was for adequate depth of feelings and for adequate expression and control of emotions, signifying the knowledge and awareness of one's emotions. The lowest mean score in the perceived emotional competence dimensions by adolescents was for ability to cope with problem emotions.

Table 1
Mean scores and standard deviation (SD) for emotional competence, social competence, subjective well-being and adjustment

	N	Mean	SD
Emotional competence	210	259.71	22
Adjustment	210	17.98	6.81
Social Competence	210	157.53	22.52
Subjective Well-being	210	24.61	4.54

Table 2
Mean scores and standard deviations for emotional competence dimensions

Emotional Competence Dimensions	Mean	SD
Adequate depth of feelings	50.3	21.2
Adequate expression and control of emotions	51.8	23.4
Ability to cope with problem emotions	47.6	22.1
Ability to function with emotions	49.3	22.4
Encouragement of positive emotions	50.2	21.6

Table 3
Relationship between emotional competence, social competence, subjective well-being and adjustment

	SWLS	SCS	ECS	ADJ
SWLS	1	0.204**	0.206**	0.167*
SCS		1	0.083	0.238**
ECS			1	0.430**
Adj-Emotional			0.380**	
Adj-Social			0.396**	
Adj-Educational			0.310**	

SWLS: Satisfaction with life; SCS: Social competence; ECS: Emotional competence; ADJ: Adjustment
Significance levels *0.05 **0.01

Table 4
Regression outcomes for Variable Adjustment

	B	SE	T	P
Intercept	12.35	1.184	10.45	<0.001
Emotional competence	0.1820	0.018	10.37	<0.001
Social competence	0.0731	0.018	4.230	<0.001

R2 = 0.227

The correlational analysis revealed that social and emotional competence, well-being and adjustment are positively and significantly related, indicating that adolescents who have good emotional and social competencies tend to exhibit higher adjustment in educational, emotional and social domain.

A regression analysis was carried out to investigate whether adolescents' social and emotional competence explained the variance in adjustment. The two predictor model explains 22.7 per cent of the total variance in adjustment (R2 = 0.227) where both the predictors are significant.

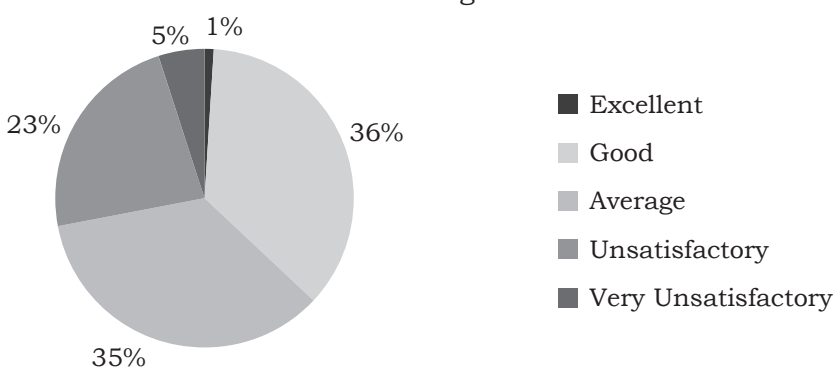

Fig. 1: Classification of adjustment in terms of Categories

28 per cent of the students fall in the combined category of unsatisfactory and very unsatisfactory adjustment.

Discussion

The purpose of this study was to examine the role of adolescents emotional competence, social competence, adjustment, and well-being during the COVID-19 pandemic. The data was evaluated on two aspects. One viewpoint looked at the adjustment profile and emotional competence of adolescents during the pandemic. The second perspective looked at the link between emotional competence, social competence, well-being and adjustment, with the goal of determining if these skills influence adolescents' adjustment.

The first aim of this study was to explore the status of adolescents' adjustment problems and emotional competence, in the context of COVID-19. According to the United Nations Children's Fund report (UNICEF, 2021), one out of every four children in India suffers from depression in some form. Our country also bears the unenviable distinction of having the greatest rate of teen suicide, with many students displaying violent tendencies, substance misuse, and other unpleasant feelings. The data for this study was gathered during the COVID-19 epidemic, which was a particularly difficult moment in the lives of adolescents. Nearly one- fourth (28%) of the students in the current survey said that their adjustment was inadequate. The findings are consistent with a recent study that found a higher prevalence of adjustment issues among teenagers, owing partly to pandemic prevention measures such as lockdown, social isolation, and quarantine, as well as school closure. (Cusinato et al., 2020).

The study also reflects a growing concern over students' emotional well-being, reports that they are more depressed, agitated, and lack enthusiasm to learn. The ability to manage difficult emotions, which is critical for work and life success, had the lowest mean score on the emotional competence dimension, in the current study. This could have an impact on how students deal with unexpected and challenging circumstances like school closures, as well as their motivation to return to the school and study. The results find support in earlier research that greater stress levels, depression, and anxiety disorders have been observed among adolescents, both during the early stages of the pandemic and over time. (Singh et al., 2020; Wang et al., 2020a, b).

The second aim of the study was to examine the associations between social and emotional competencies and adolescents' adjustment and well-being during the pandemic.

As expected, emotional competence was significantly associated with all the three sub-components of adjustment— emotional, social as well as educational, during COVID-19 ($r = 0.43$, $p < 0.01$). This association

found in the high school sample confirmed the findings from previous research that low emotional competence contributes to poor handling of failure and frustration, less creativity, more psycho-phobia and lower self-esteem. (Sjoberg, 2001). Similarly, the findings from the current study show a significant relationship between emotional competence and well-being ($r = 0.20$, $p < 0.01$), support for which is found in the work of Greenberg et al. (1995) and Eisenberg et al. (2000), which established that emotional competence contributes to well-being of individuals. This finding in the current study may be relevant for students returning to school and catching up on lost learning, but it may also be relevant in the context of future school closures. Emotional competence is thus, protective trait that aid teenagers in adjusting to the pressures and challenges in a healthy way. People who have a high level of socio-emotional competence, are more inclined to see neutral events as positive. As a result, emotional knowledge plays a crucial role in structuring interpretations of social events and controlling access to emotions, feelings and behavioural expressions.

The current study's findings also reveal a substantial link between social competence and life satisfaction ($r = 0.204$, $p < 0.01$) and adjustment ($r = 0.238$, $p < 0.01$). For people of all ages, social and emotional learning abilities are crucial in determining their quality of life. People with strong social and emotional sides are more successful in a variety of areas, including social problem solving, interpersonal connections, self-knowledge and self-understanding, and life happiness (Kabakc and Korkut, 2008). These results concur with the current study's conclusions that low competence in social situations is linked with poor well-being and adjustment, during COVID-19. The lack of interaction caused due to school closure may affect students' social skills in times of crisis, social skills may be crucial for eliciting assistance from others.

The focus of this research was also to look at the impact of social and emotional skills on adolescents, adjustment and well-being during the the pandemic. Regression analysis revealed that social and emotional skills explained variance in adolescents' adjustment, which is consistent with the earlier research (O'Connor et al., 2018). Adolescents will be better able to respond to the emotional, social, and educational demands of the learning environment if they can understand and manage their own emotions and actions, appreciate others' views, make responsible decisions, and effectively negotiate relationships.

As a result, the current study demonstrates that social and emotional competence skills have an impact on teenage adjustment and well-being in the setting of a severe pandemic.

The COVID-19 pandemic has emphasised the critical role that schools play in fostering children's development, beyond academic learning. The crisis has exposed fundamental flaws in education systems all across the world. More broadly, the COVID-19 pandemic forces us to reconsider the meaning and purpose of education, as well as the skills and competencies that we expect education and learning to provide. The purpose of education should be to prepare students to function well in a complex social environment both during and after the current epidemic. In the light of the findings of the current study, addressing social and emotional concerns should also be an important component of schooling and the schools as leading light should also extend their efforts and support in this massive educational mission.

Then how can we create a framework for adolescents to develop a strong identity as well as gain skills that will help them prepare for their future?

In this context, education institutions will have to address the challenge of training students to function well in a complex personal and work environment. It will be critical for school education to prioritise social and emotional competency as a major theme in the curriculum. Furthermore, emotional competence-related interventions are needed to address students' mental health difficulties, particularly for adolescents (Lau and Wu, 2012). To boost students' mental health and assist them navigate the volatile, uncertain, complex and ambiguous environment, schools and institutions should consider offering interventions and training on emotional competence (Hadar *et al.*, 2020). Online instructions and exercises, especially for high school students, should provide effective ways for identifying, comprehending, controlling, and utilising emotions.

The current findings have significant implications for the development of adolescent-focused socio-emotional learning interventions. In the last two decades, there has been a tremendous increase in studies in the area of socio-emotional learning. Academic achievement, peer relationships, adaptive life skills, drug misuse and high-risk sexual activity, violence, and other forms of maladaptive social behaviour have all been linked to social and emotional learning (SEL), Maurice et al., 1996). The National Education Policy 2020 has popularised the concept SEL. It emphasises the importance of social and emotional learning (SEL) in assuring children's holistic development and claims that the educational system should strive to 'create excellent human beings capable of logical thought and action as well as compassion and empathy.'

The NGO Pratham's Annual Status of Education Report (ASER) 2019: Early Years, title of the report released in January 2020, underlined

the critical need to include SEL in the school curriculum. This is the first large-scale study in rural India to collect data on a variety of learning-related developmental markers, including social and emotional abilities of young children aged four to eight years.

SEL, on the other hand, continues to receive little attention, despite the evidence that its benefits go far beyond academic achievement. SEL is yet to gain its appropriate place in the Indian education system, as it is usually found on the fringes of formal education. The need of the hour is for a comprehensive curriculum (for preschool and school) that integrates SEL activities with expected outcomes and a rigorous evaluation. Although concepts like self-regulation and conflict resolution are included in the National Council of Educational Research and Training's (NCERT) Learning Outcomes for Pre-schoolers, SEL is absent from the primary school curriculum. It is critical to ensure that the importance of SEL promotion is not overlooked while tackling the numerous concerns highlighted in NEP 2020. Early investments in SEL can go a long way towards making Indian residents more responsible community members. This should be a top priority for the entire country.

The Education Sustainable Development Goal (SDG 4), 2021 foresees countries developing education systems that not only support academic advancement but also give birth to the future civilisations of conscious humans. It is critical that learners 'be exposed to three types of interrelated learning experiences: cognitive, socio-emotional, and behavioural' in order to achieve this aim. As the third wave of the COVID-19 pandemic spreads over India, we must prepare to build a strategy to address children's and caregivers' fear and anxiety through an SEL framework adapted to India's needs.

Suggestions for School-based effective SEL: the Indian way forward

It is critical to hold open talks about mental health in order to establish a dedicated policy that focuses on social and emotional learning in order to improve students' mental health. This is particularly important in India, where, according to the *State of the World's Children 2021 Report* (*UN, 2021*), 'just a minority of young people agreed that those with mental health concerns should approach out to others.' Clearly, any national policy for SEL must emphasise the Indian government's awareness of mental and physical health of the people as well as the prevalence of social stigma linked with mental health disorders.

It is important to find an SEL framework that is specific to India: the education sector currently has a plethora of SEL frameworks. As a result, identifying a framework that caters to the spectrum of social and emotional competencies that varied Indian kids will need in order to manage school,

life, and work, is critical, according to the NEP's mission. Efforts should be undertaken to integrate the NEP's vision into a centralised, empirically-grounded curriculum that can be tailored to the needs of students at all levels, particularly those who move between rural and urban settings.

Teachers are crucial stakeholders in social and emotional learning because they play essential roles in the socialisation of students, hence SEL should be effectively implemented in schools. In order to effectively execute a programme, instructors must be trained to not only promote SEL, but also to identify the needs of their pupils. To attain this aim, school instructors have been entrusted to ensure that the SEL curriculum is implemented successfully under the NEP. Despite this, the government instructors have received little to no SEL training to help them understand the importance of their role. Teaching is unquestionably a difficult job, especially in schools with little resources or in conflict-affected areas. Therefore, teacher training for social and emotional learning must be planned with these constraints in mind in order to avoid the bottleneck situations related to implementation since it is the teacher who set a role model for students in the classroom by displaying social and emotional skills as well as competencies. This teachers' mental health is equally as important as students' mental health.

It is essential that we integrate SEL into the academic curriculum as we prepare for a pandemic-stricken world, we should focus on incorporating SEL into the teaching of formal academic topics, rather than considering it as a 'standalone subject'.

Implementing SEL programmes in a school setting is difficult because a variety of stakeholders are involved in the process, including school principals, staff members, instructors, students, parents, and government officials. The time has come to invest in each of these stakeholders while developing an easy-to-implement SEL policy framework.

SEL activities should be monitored and evaluated: The Happiness Curriculum in New Delhi does not use any quantitative, measurable, or defined approach to monitor or assess the work and progress achieved by students. Rather, it grants the teacher control to evaluate the students' development subjectively. Teachers' biases, prejudices, and belief systems may influence such individual evaluations. As a result, a chance to assess the impact of SEL and enhance current programme outcomes is lost. SEL programmes should have comprehensive accountability rubrics built in from the start to track programme efficacy.

Digital technology is being used to implement SEL programmes all around the world. For example, digital games centred on SEL competencies, have been released, and virtual teaching content for SEL programmes has been created.

Similar considerations can be made in India; however, the efficiency of such digital solutions would be heavily reliant on smartphone ownership, internet availability, and digital literacy. Enabling student ownership of SEL while helping them find a platform where they may think out loud to better manage their mental health struggles is an important aspect of developing long-lasting core competencies.

We increase our chances of creating healthy, responsible, and compassionate learners by incorporating socio-emotional learning into the life of our schools and homes. These programmes encourage specific socio-motional skills, understanding, and ideals, which are an important for life.

Implications of the Study

The importance of a systematic socio-emotional competency programme in improving adolescent competencies was thus demonstrated in this study. For many stakeholders in the education sector, the findings of this study would give useful and practical information. These statistics would allow teachers and other academics to justify the inclusion of emotional intelligence-related content and teaching in their instructional designs and delivery.

One of the challenges in this field is to conduct longitudinal research to determine developmental trajectories for students with emotional competence deficiencies. Another ongoing problem will be determining if the patterns of emotional competence are exclusive to a certain setting or represent a more generic or trait-like personality attribute. Given this difficulty, there is a pressing need to assess emotional competency in a variety of settings. It may be able to demonstrate a pattern of individual differences in competence by widening the evaluations of emotional competence to cover a variety of circumstances and contexts.

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Understanding Mathematics' Classroom Processes

What Makes a Class "Innovative"?

RUCHI GARG*

Abstract

This paper makes an attempt to study a mathematics class and analyse some of the classroom processes that make the class innovative. The data has been collected from an organisation named 'Digantar' in Jaipur. One class of this school was selected and mathematics lessons of this class were observed along with interviewing the teacher. Apparently, innovation is a subjective term and it is difficult to say whether something is innovative or not. However, it was observed that some of the practices made the class completely different in a positive manner for learning mathematics. This included multi-grade and multi-age teaching, providing students the power to decide what and how to learn mathematics, a unique way of giving feedback and most importantly the algorithm teaching. Some of these practices can be used in any class and by any teacher without being in an 'innovative setting'. The purpose is to make mathematics learning a meaningful activity for students.

INTRODUCTION

Mathematics, as a subject, is considered to be abstract in nature. It is mainly seen as a set of tools that includes certain facts, rules and procedures. Various teachers and educationists make an attempt to reduce this abstractness for young learners. However, the ultimate goal of acquiring mathematical abilities pushes students towards mathematics that hardly makes

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sense to them. It would not be wrong to say that only a few people perceive mathematics as an interesting and thoughtful subject. Dhankar (n.d.) further discusses the nature of mathematics as: 'The mathematical concepts form rather strictly defined hierarchies. A missing link in the hierarchy is sure to hamper the formation of all the concepts above it in that hierarchy'.

India is one of the countries where students receive education primarily in a school setting. Consequently, classroom processes cannot be overlooked while taking decisions about teaching any of the subject, specifically mathematics.

Classroom processes might include many aspects like class size, classroom culture, interaction between students and teachers, teacher's conceptions about students' learning and subject, etc. The quality of a dialogue taking place between teacher and student depends on how these processes are implemented in the class. Participating in the processes of a mathematical classroom suggests participating in a culture of using mathematics, or a culture of mathematising as a practice (Bauersfeld, 1993). Bernstein's (1971) idea of framing is quite meaningful to understand the classroom processes in a mathematics class. He discussed two types of framing: Strong Framing and Weak Framing. Strong frames reduce the power of the pupil over what, when and how one receives knowledge and increase the teacher's power in the pedagogical relationship whereas weak frames give power to students to take decisions about their own learning.

The idea of classroom process becomes even more necessary when we discuss innovation for a particular subject. Defining innovation or declaring any class as 'innovative' is really difficult. This term seems to be subjective and context-specific as a single initiative or classroom practice used by any teacher in her class can be called innovative. For example, if a teacher asks students to play a game of making rectangles of dimensions based on the numbers that appeared on two dice can be called innovative. However, one cannot be sure of calling the same classroom as innovative keeping the regular classroom processes in mind. Therefore, it is necessary to consider other aspects and the regularity of the same. Innovative pedagogy follows when the concept of innovation is nurtured in educational setups. Innovative pedagogy gives rise to innovation in educational context (Tyagi, 2018). Boaler (2002) discussed about innovation in mathematics classroom based on her study as: 'The students were engaged in activities and projects in which the need for certain mathematical method becomes apparent. This approach necessitates a relaxation of the control teacher has over the structure and order of the classroom.'

This paper presents a part of the research conducted to study

classroom processes in two contrasting schools. The study focused on many aspects including teachers' beliefs, classroom culture, students' work, etc. However, the data used in this paper discusses only the processes that take place in an innovative classroom. This data has been collected from 'Digantar' organisation, Jaipur. Digantar has been working in the area of providing quality education for approximately 35 years. It is involved in school education, publication, teacher education and many more. This paper tried to understand some of the classroom processes that make a class innovative and meaningful for learners.

Objectives

The main objective of this paper is to:

- study those classroom processes that can be kept in the category of innovation.
- analyse the reasons of calling them innovative practices.

Methodology

One group (called 'Samooh') was selected as a sample to study classroom processes in Digantar Vidyalaya. The rationale of selecting this school was based on the background of the students as all the students come from a lower socio-economic status and these students are unable to pay the fee. This study conducted qualitative inquiry of a mathematical class to understand what happens in a class that can be called mathematically meaningful. Classroom observations, interview schedule and students' work were used as the tools for data collection. Twelve lessons were observed and the class teacher was interviewed at the end of all the observations.

About the Class

This class had 25 students and all students came from lower socio-economic background. It was found that there was no fixed timetable for any subject. Teaching of all the subjects took place every day. The students called the teacher by name like 'Manoj ji'. Students used workbooks based on their level to study in the mathematics class. They could use material to understand the concept and to solve questions given in the workbook. The children were found sitting in groups of three to five along with their workbooks.

What Makes the Class Innovative?

As we have already discussed that innovation is a subjective term; however, we will be discussing some aspects that contribute in making the class innovative and meaningful in the context of mathematics teaching and learning. Here, those aspects will be supported with some instances from the class by using some pictures.

No Class-wise Distribution (Multi-grade and Multi-age aspect)

The most important point that makes any of this class in this school innovative is having no class division.

Group 1 selected for the study did not belong to any particular class grade. One cannot assign levels to the Classes III, V or I because all the students of various age groups studies together in one single room. The groups were given names as collectively decided by the students for their class for instance, a group was named as 'Aman Samooh'. There were other *samooh* (classes) also like 'Geet samooh', 'Asha Samooh', etc. The philosophy of giving chance to students to work on their pace was followed in this setting. Students could be seen sitting in different small groups and doing similar or different work appropriate for their level. No student is asked to be at par with one's counterparts. Their learning levels were assessed individually and compared with their own previous progress in different learning areas.

Students in these two pictures are working in groups. Picture 1 is of the class that was selected for the study. Picture 2 has been taken from internet.

The teacher of this class also had a positive view about this arrangement. He shared about his students' learning as follows:

"Ab jo baccha jis star ke anusar hai to uske purv gyan ko dekhte hue mere bacche ko pehle itna aa chuka hai uske hisab se ab kya aana chahiye usko dekhte hue use aage badhana chahiye.('Keeping in mind the present level of child and his or her previous knowledge of the subject, the child would be motivated to learn the concept accordingly').

'Pehle ye dekhna hoga ki hamne ab tk kya sikhaya aur iss target ke adhar se mera bacha kahan pahuch paaya aur phir us target ko dekhte hue main naya target tay karunga'. ('Firstly, we need to see what has been taught to children till now and where have they reached. Considering that, their current and future targets will be decided.')

(*Courtesy:* Digantar)
(*Source:* https://www.google.com/search?q=digantar&sxsrf=APq-WBvO6I9cEVIgyCLY0E2DtwjYNwOnKQ:1647425298108&source=lnms&tbm=isch&sa=X&ved=2ahUKEwie47-9scr2AhUoT2wGHe-QBAcQ_AUoA3oECAIQBQ&biw=1366&bih=617&dpr=1#imgrc=mQd8iqUM5vSndM)

These words clearly show that the teacher understands the importance of children learning at their own pace. Kyne (2004) in his article titled 'Teaching and Learning in Multi-grade Classroom: What Teachers say' stated that 'The multi-grade class, according to teachers, provides a wholesome and friendly classroom atmosphere in which the social and emotional development of pupils, as well as their academic progress, is promoted.' With reference to mathematics also, the idea of multi-grade seems important since mathematical concepts are hierarchical in nature and students reach the higher grades without understanding the basic concepts and face issues in mathematics at middle level. According to ASER (2016) report, only 43.3 per cent of Class VIII students can do a 3-digit by 1-digit division problem correctly. One of the reasons could be the compulsion of doing mathematics at par with other students even when the child is not able to achieve the basic understanding. This issue might not arise in a multi-grade class and students will get more time to study a concept depending upon their level.

Freedom to Learn and use Material

The second aspect contributing in a class being innovative is the freedom that is provided to students when they want to use material and choose their own way of learning. The following is the example of what was happening in that class on a specific day:

- A girl was holding workbook in her hand and counting with pebbles on the floor in order to solve addition sums given in the book.
- A boy was sitting in the centre and the teacher was discussing the concept of grouping, using the bundle of sticks.
- A girl and two boys were standing near the blackboard, whereas one boy was explaining the concept of multiplication to them.
- Three girls were measuring the parameter of the class and recording their observations in the workbook.
- A boy and a girl were debating over their solutions of multiplication calculated by using repeated addition and direct multiplication methods.

Similar kind of work could be observed occurring simultaneously in the class during mathematics period.

As we can clearly witness that students are freely doing their work and supporting each other, peer learning also becomes prominent in this class. Students' interaction with the material seems to improve their mathematical learning because students also noted the results they observed with material. The teacher was seen performing several roles while teaching like providing hints or prompting children. During observations, the teacher went to several students, discussed the concept with them and prompted

them in the direction of forming mathematical concepts. In another observation, the teacher asked students to bring fake currency and form the amount made by the child. The teacher also helped him in this process as follows:

Teacher: '*Achha jaise ismen hai ki baawan (52) rupees banao to kaise banaye*' (It is given to make rupees 52, so how will we do it?)

Student: '*Dus ke do note*' (Two notes of rupees ten)

Teacher: '*Achha nikalo ismen se*' ('Okay take it from the box')

The boy took out two notes of ten rupees.

Teacher: '*Ab*' ('Now')

Student: '*Ab Paanch paanch ke chhe note*' ('Now…six notes of five rupees')

Teacher: '*Wo bhi nikalo*' ('Take them out too')

The student took out six notes of five rupees and said

Student: (Keeping all the currency in hand) '*Ye ho gae pachas...aur ab ek ek ke do aur*' (Now it's fifty and we only need two coins of one rupee)

Teacher: '*Wo bhi karo*' (Do that)

Teacher: '*Yani 10* ₹ *ke do note, 5* ₹ *ke chhe note aur* ₹1 *ke do* (That means two notes of ₹10, six notes of ₹5 and two coins of ₹1)

Teacher: '*Kya kisi aur tarike se 52 bana sakte hain*' ('Can we make 52 using any other combination?')

Student: '*Haan*' ('Yes')

The given example shows that material like fake currency is being used in a meaningful manner and support children in visualising the mathematical concept of adding facts. Such experiences help children understand that there are multiple ways to reach the solution in mathematics which can be discovered by them. Boaler (2002) also shared in her study that when teachers teach mixed ability groups, they find various ways to differentiate materials using open-ended materials that enable students to work in different directions and levels. Therefore, when multi-graders interact with material in their own ways, it makes mathematics meaningful for them. The classroom discussed here has used Bernstein's idea of framing, and we can say that it has weak frame as students have the power to select what, when and how they want to learn. The teacher's role is mainly to facilitate students in that process. The given picture of the class demonstrates the free learning environment, where students and teachers both are focusing on their respective works.

The students are not facing towards the blackboard when the

teacher is writing, whereas in a regular classroom, one can hardly find this situation as students are expected to look at the board and follow the teacher writing each word. Here, students are involved in discussion with their friends.

Algorithm Made Meaningful for Students

The two aspects discussed about multi-grade teaching and freedom to use material were not only limited to mathematics but also used in all the subjects. In other words, we can say that these aspects were a part of the philosophy followed by the school. However, a aspect of algorithm teaching is very much specific to a mathematics class. Algorithm is basically known as the step-by-step procedure of doing anything like making a cup of tea or reaching another city. But why are we saying that this idea is specific to mathematics is because students in early grades start using algorithms to solve problems of various arithmetic operations. Almost every person has studied these algorithms in the school and chances are that they just memorised the procedure without visualising how the algorithm actually works. Algorithms are one of the reasons that make mathematics abstract in nature. The way of teaching algorithms in this class was developed by using the mathematical problem. The students were given a chance to visualise the problem and solution was provided in the form of algorithm, as done in the example given below:

The teacher wrote a problem of 28÷7= on the board and started explaining one student

Teacher: 'Maan lo 28 aam hain hamare paas..Kitne aam hain?' (Let's assume we have 28 mangoes. How many mangoes?)

Student: "Athaais" (Twenty-Eight)

The teacher drew 28 small circles on board for mangoes.

Student: "Saat saat baant do" (Distribute seven and seven)

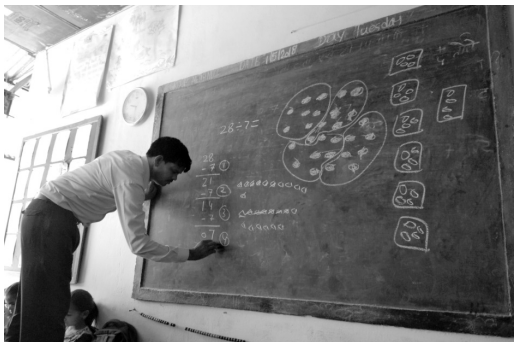
Teacher: "Ab kya karen 28 aam hain hamare paas kitne bacchon mein bantna hain saat mein" (What do we need to do if we have twenty eight mangoes. How many children are to be given it? Seven)

Student: "Saat mein" (In seven)

Then teacher drew seven boxes in one corner of the board and started distributing one by one every time saying "Kya aur bant sakte hain?" (Can we distribute more?) and also saying after distributing "Kya sabko barabar mile? (Did everyone get equal mangoes?)

Then he asked the student three times "Kya sabko barabar mila?" (Did everyone get equal?) and" Ek ko kitne mile?" (How many did one child get?). The student also responded to the questions with "Yes" and "Chaar" (Four).

Then the teacher explained the same problem using equal grouping and at the end, using repeated subtraction in vertical form of division, as shown in the picture given below.



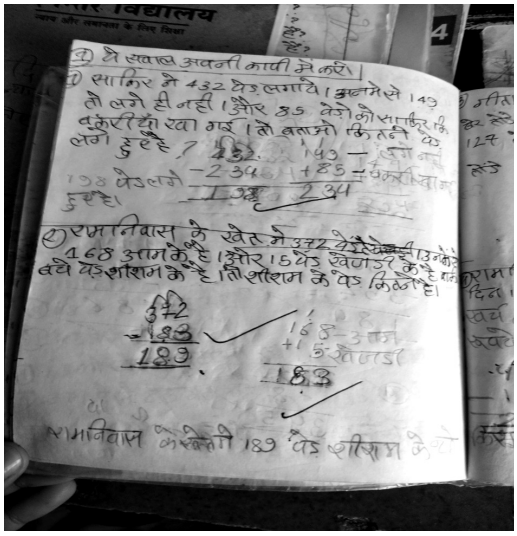
The teacher here provided three methods to solve a division problem and left it upon the child to choose any method or develop his or her own method. The possible methods of solving a problem were discussed by the teacher and the students were provided options to choose a method that suited them. In another lesson, the teacher discussed the reason of dividing with the left most number (Hundred's place in a three digit number) first in division algorithm with the help of fake currency. Carraher et al. (1987) analysed the oral practice in detail and described a general strategy of decomposition to solve addition and subtraction problems and repeated groupings for solving multiplication and division problems. Verbal methods to solve mathematical problems also give students the confidence to use mathematics in their day-to-day life.

Replacing cross sign with a dot for wrong solutions

Whenever it comes to solve a number of mathematics problems in the notebook, majority of students try to avoid using cross sign in their notebook for wrong solutions. Irrespective of grade or level, teachers check the mathematics notebook and put big cross signs with red pen for wrong solutions on every student's notebook. The psychological theories which put great emphasis on children's errors and mathematical errors could be treated as a great tool of learning students' mental processes but a student is always expected to write only correct solutions for the sums.

When students' notebooks were studied to analyse the feedback provided by the teacher, it was observed that the teacher had put only a check mark on the correct solution along with his signature on every page. There were no wrong answers in the notebook but a point could be seen marked in the notebook by the teacher to communicate that there was some problem in the sum and the student might correct it once found. One could see the solution erased by the child and correct solution rewritten on it. That might be the reason for having no wrong answer in the workbook. The following picture can be seen as an example of how the teacher put a dot on the incorrect solution and the child reviewed one's answer and provided the correct solution by oneself or with the help of the students or teachers.

The teacher's way of communicating that a student needs to review one's solution seems to be a great way of teaching mathematics



without creating any negative emotions about mathematics in children's minds. Schleppenbach (2007) discussed the importance of students' error in mathematics as: 'Some teachers sought to create such an environment by telling the students not to feel afraid of making errors and by acknowledging "good mistakes" that are useful in instruction.'

Conclusion

Classroom processes in a mathematics class become even more essential when studied in an innovative class where certain aspects like multi-grade and multi-age teaching, use of teaching learning material freely, deciding upon what and how to learn mathematics and communicating the error in a positive manner, play a key role. It is also important to look at any classroom with multiple perspectives as it has been done here, where we tried to understand the classroom processes from the perspective of innovation, mathematical capabilities, teacher and students' role, etc. Even though this was a single class, it tells us a lot about mathematically meaningful activities. Keeping some basic child developmental theories in mind, any class can be transformed into a completely different one like by using multi-grade teaching and giving freedom to use material in class enables students' individual capacities to grow at their own pace. Evidently innovation can take place in any class but it depends on the teacher, how he or she wants to deliver the concept when system provides them the freedom to use all the available and possible strategies.

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Book Review

An Alternative Perspective on Education

Author: Atul Kothari
Publisher: Prabhat Prakashan, India
Year: 2021

The book discusses the prevalent apathetic situation of education in India. It is an attempt to provide a holistic solution engraved in the *Bharatiya* roots for the prevailing problems and challenges of education. The author examines several provisions of the educational policies, committee recommendations, administrative structures and curriculum of the country's educational system that deals with the development of the individual, society and the nation holistically. Atul Kothari's careful and incisive analysis of different stages and aspects of education demonstrates how their discursive coordinates are actually set by the needs of a 'culture', which is inconsistent with the culture of *Bharatvarsh.* According to him, the majority of the country's problems stem from a fallacious education system. In independent India, it was anticipated that the nature and composition of the country's education will be in consonance with the social and national needs as guided by the *Bharatiya* principles, but this did not happen. Consequently, there is a dire need to bring a radical change. The book comprises short essays written in simple English language dealing with 'how to deal with struggles for lighting up the path of education'; puts forward a solution-based approach rather than listing problems and, thereby, persuades the reader to develop an alternative perspective which is far-stretching and farsighted with respect to the current scenario of education. According to the author the state of education in India is in such a mess that it cannot be redeemed by a differential approach towards policy execution. But it also needs a shift in pedagogy and attitudes compatible with indigenous

knowledge and traditions. The essays are based on the original experiences garnered through the innovative experimentations carried out in schools, colleges and universities for identifying the issues and problems that beleaguer education today.

The book is instrumental in understanding the problems and challenges of education in India; which deal with the public policies and allied fields. It is also helpful to those who seek to comprehend the Indian culture through education.

The book begins with the 'necessities' and the needed directional changes in education in Bharat (p.17.). Also, he identifies the grey areas present in the educational machinery. He underlines the fact that lacunas of educational initiatives in the pre-colonial era have not been adequately rectified in post-colonial era in terms of developing the goals and objectives of education. He holds that 'education is the key towards positive changes in the country' (p.7). This proposition along with its varied facets is elaborated throughout this anthology.

The book consists of 41 essays broadly dealing with: unified nature of education; commercialisation of education; value and spiritualism—based learning; issues of autonomy; education for development; the proposed 2020 education policy; educational thoughts of notable scholars; the power of Hindi language; environmental challenges; synthesis of the ancient and the modern; recasting curriculum; amongst others. The literature discloses the author's apprehension and thoughts concerning education, reinforcing the belief of the dictum— 'find out its solution, not only critique the problem'.

The narratives and frameworks of the text have been built upon the in-depth experimentation conducted in schools through the 'Shiksha Sanskriti Utthan Nyas'. The author emphasises the need to develop an education system for the country, consistent with its culture, disposition and progression, aiming towards the holistic development of students. The values impregnating every part of education is the central theme of this book. After critiquing the existing curriculum and pedagogy, he pleads for a curriculum, which maintains a balance between spiritualism and materialism and a pedagogy which employs experiential learning techniques. By deconstructing the chapters dealing with curriculum, it can be concluded that the author pleads for an alternative curriculum, entrenched in the past, capable of meeting the exigencies of the present, and keeps in its purview the prospects of the future. He calls for seriously revisiting the curriculum for helping address the existing discrepancies in terms of poor visualisation of the *Bharatiya* history, partisans, approach towards religions and vicious propaganda amongst others.

He holds the *Bharatiya* attitude to be highly proactive which believes in envisioning a future problem and devising ways and means to avert it from occurring. He states that certain practices like that of offering drinking water to birds, the practice of planting tree on birthdays, etc., are some of the practical means which propagates our cultural systems on the one hand and help mitigate environmental depletions on the other. The relevance of such experiences lies in the fact that if children receive these values and *samskaras* at an early age, they will spread them to their families and communities.

The book seeks to set and achieve the objectives of education, which according to the author have not yet been set by any policy. The author, through this book, provides a mechanism to forward his concerns regarding the need to develop an 'objective of education' consistent with the objectives of the nation. Some of the proposed objectives include fulfilling the needs of the society and the nation; having agency to resolve the challenges faced by the nation and society; promoting national integrity and unity and finally enriching the man's knowledge and sensitising for social and harmonious co-existence.

Another concern in this book is the sustainability of education. This sustainability is holistic, going beyond the conventional understanding of sustainability in terms of environment and economic development. It underlines the flaws in the current education system that deters the development of the thinking process in individuals, thereby, acting as a hindrance to the holistic development of the personality as well as the society. The very general mentality seen in India is considering people speaking English language as scholars and those speaking one of the Indian languages as Arcadians—is the beginning of the growth of a narrow and unsustainable thought process (p.153).

The author's work is praiseworthy for two reasons, first for his recognition that the transformation of education can be carried out only if guided by the constitutional principles of decentralisation and equitability. Second, for providing a practice solution to the existing problems churned out from the *Bharatiya* traditions.

While the book gives newer insights into education, it suffers on certain points: first, it assumes that the sense of India (which is called 'Bharat' in the book), which guides the curriculum framers and policymakers of 1968 and 1986/92 policies is almost entirely linked to the colonial legacy. This may be true with respect to official edifices of the education machinery. But, unlike the British who believed in a trickling down approach and wanted to consolidate their rule, the Republic of India has aimed at universal elementary education to produce men and women of character and strength. Secondly, the tribals

and aboriginals of the nation face a plight that is significantly different from the mainstream. The author overlooks this section of society which is vital for a nation's growth. Thirdly, he advocates for an increase in the expansion of the *Bharatiya* native languages or mother tongues by advocating a three-language formula comprising mother tongue, official language and Sanskrit. He has shelved the importance of English by making it an 'optional' or 'choice' language. In this globalised world, the knowledge of English opens up newer avenues for exploration and interaction. Hence, rather than making English an 'optional' language, advocacy should be for better quality English learning. Fourthly, the author provides for only qualitative solutions while ignoring the need of quantitative contours of the progress, growth and problems concerning education. These qualitative aspects are generally linked to well-integrated verses from the *Vedic* literature and *Upanishads*, and confines the reader to think that the majority of '*Bharatiya* culture' comes only from these *Vedic* scriptures and *Upanishads*. While the effort is laudable to integrate the past with the present to develop a better future, this balance created must be more diverse and inclusive in nature.

The incomplete task of the educational policies and committee recommendations, which include laying down the objectives of education and the framework of what an 'ideal education system' must be like, have been fulfilled by this book. Atul Kothari puts forward a practicable education system that could fulfil the needs of the society and nation, help in resolving national and international challenges, augment the nation's culture and ethos, and finally enrich the personality of humans and sensitise them for social co-existence. Thus, education must work for transformation and not regression.

The book covers a wide ground. It asks its readers to re-examine persistent questions of the composition of education and its purpose. At the same time, by engaging education in a broad historical, ideological and ethical context, it provokes the deliberations and discussion on educational practices currently prevailing in the country. The author through this book inspires its readers to visualise a system of education which is not a 'problem' but rather a 'solution'.

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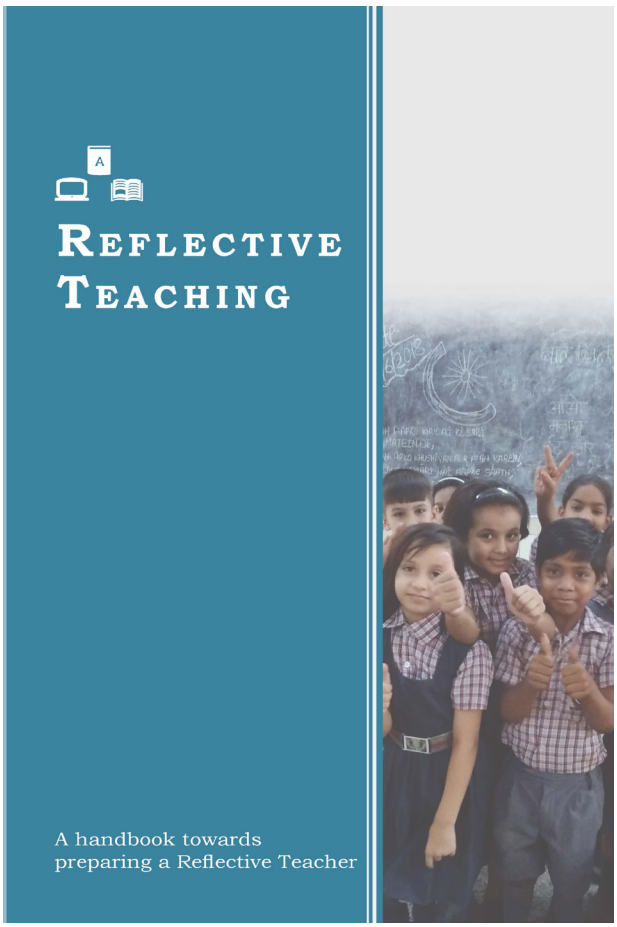

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