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Editorial

As the Faculty of Education, we are proud to introduce the second issue of XVIII volume of the National Journal of Education. This journal aims to provide a platform for scholars, researchers, and practitioners to disseminate their work in the field of education. Our goal is to create a space for dialogue and exchange of ideas that will contribute to the advancement of education at both the national and international levels. We believe that this journal will serve as a valuable resource for the education community and foster a culture of innovation and excellence in the field. We invite all education stakeholders to join us in this endeavour and contribute to the growth and development of the National Journal of Education.

We express our sincere gratitude to the reviewers who diligently examined the papers and made valuable contributions to this endeavour through their insightful suggestions and recommendations.

This volume of the journal features several papers on diverse educational issues that reflect the current landscape of education research and practice. It is amazing to have papers on students' educational expectations, academic anxiety, cyber loafing, quality management, education voucher scheme and SDGs to name a few.

Drawing on both theoretical and empirical evidence, Dube and Kushwaha's paper on students' post-secondary educational expectations provides empirical evidence regarding the relationship between social identity structures, caste, class and gender and students' educational expectations in Indian social context. Students' post-secondary educational expectations are shaped by a range of social identity structures, including caste/race, ethnicity, gender, and socioeconomic status. The authors conclude that it is important to recognize and address the ways in which social identity structures intersect with students' educational expectations and experiences to promote equitable access and outcomes in post-secondary education.

This issue features two papers that shed light on the critical issue of stress and anxiety faced by students and teachers in education. The Sachdeva's paper examines the occupational stress level among teachers of working in private and government schools in Punjab. The second paper by Ganai and others explore the prevalence of Mathematics anxiety among secondary school students of Kashmir enrolled in provincial as well as central board in relation to personal variables like, gender, parental education, residential and non-residential schooling.

Positive psychological capital refers to an individual's positive psychological resources, such as optimism, hope, self-efficacy, and resilience. These resources can help individuals thrive in challenging situations and achieve greater success and well-being. A review paper on the positive psychological capital in educational context by Tripathi and Singh summarizes valuable studies done in this area. Another paper on

study habits of first and subsequent generation learners in relation to school environment by Thapa and Devi and Thokchom's paper about cognitive ability and academic achievement in science highlight the role of psycho-social variables in education. Together, these papers offer valuable insights into the complex and multifaceted nature of stress and anxiety in education and highlight the importance of adopting a holistic and proactive approach to addressing these issues.

Gender has been found to have a significant impact on students' academic behaviour, including cyber loafing and attention network task performance. Studies have shown that male students are more likely to engage in cyber loafing, a behaviour that involves using technology for non-academic purposes during class time, while female students tend to be more attentive and focused on their academic tasks. Furthermore, research has demonstrated that gender differences exist in attention network task performance, with male students showing a better ability to sustain attention over time, while female students excel in tasks that require inhibitory control and conflict resolution. Two papers in this issue; Malla's on cyber loafing and Anamika Singh and others on attention network task performance shed important light on these phenomena in Indian educational context.

Innovation in educational practices is the need of hour and will have significant impact on our ability to deal with future challenges in constantly changing educational scene. Archana and Bajpai's paper on Body schema as an educational tool and Majid and Lakshmi's paper on artificial intelligence in education are important contributions.

Two papers on critical issue of 'quality in education' are included in this volume. Singh and Swain's paper on quality management strategy in Indian teacher education institutions highlights that it is essential for teacher education institutions to adopt quality management strategies in order to ensure the effective preparation of educators who can meet the demands of the 21st-century classroom. The second paper is on SDG and education. Quality education is at the heart of the Sustainable Development Goals (SDGs), serving as a catalyst for human development, economic growth, and social progress. Jaiswal and Kumar's paper describes the historical trajectory of quality education in ensuring SDGs and have some reflections of future endeavour.

Citizenship education is the process of educating individuals about their rights, responsibilities, and roles as citizens of a particular nation or community. It aims to foster informed and engaged citizens who can actively participate in democratic decision-making and contribute to the betterment of society. Pandey and Bhardwaj's paper explored the teachers' perception towards this critical area.

Ullah's paper on education voucher scheme in India gives a detailed account of educational voucher scheme followed in the world and explores the critical question whether this scheme would lead to more equitable choices of schools for their children to Indian parents and consequently to the universal education or not.

Two scholarly papers, set in remote regions of our country, enrich this issue by bringing to light some critical concerns in education. Amutha and Sartaaaj's paper titled 'Self-efficacy as a Determinant of Teacher Competency - A Study on Prospective Teachers' examines the role of self-efficacy among future educators, exploring ways to improve their teaching abilities based on data from Anantnag and Srinagar districts in the Union Territory of Jammu and Kashmir. Similarly, Lokman Ali's research, titled 'Self-Concept of the Students Studying in Secondary Schools of Tinsukia District of Assam,' delves into the self-perception of Class IX students in Tinsukia, Assam.

We extend our sincere gratitude to all the authors who have contributed their valuable research and insights to our journal. We greatly appreciate their efforts in advancing the knowledge and understanding of various fields. We also invite our readers to provide feedback and suggestions to help us improve the quality and relevance of our publications. Your suggestions and feedback are highly valued and will enable us to provide more informative and engaging content in the future. Thank you for your continued support and interest in our journal.

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Students' Post-Secondary Educational Expectations in relation to Social Identity Structures

Divya Dube Madhu Kushwaha***

Abstract

It is no longer questioned that ensuring egalitarian expansion of higher education in a society is associated with ensuring a lot of positive outcomes, i.e., employment security, dignified and better life chances to its citizens. Following the ideal of a democratic and welfare state India has also shown its commitment to this goal. But, as we know, many students drop out at secondary level, thus the target of increasing attainment rate at higher education remains unfulfilled. In this context, by utilizing sample of 620 students of class 12th, this study tried to examine the relationship between students' post-secondary educational expectations, which is a significant predictor of educational attainment, and their social identity structures. Further, this study attempts to analyze the students' reason for not expecting to pursue post-secondary education. The findings of this study confirm that the differences in students' post-secondary educational expectations exist in terms of their caste, class and gender. The analysis of students' reason for not expecting to pursue post-secondary education suggests that many stereotypical socio-cultural beliefs and financial constraints are still responsible for negatively influencing post-secondary educational expectations of students situated at lower strata of Indian society.

Introduction

Modern democratic societies concerned with human welfare put due emphasis on equalization of educational opportunities (henceforth, EEO). But the ideal of equalization of educational opportunity has always been the subject to various interpretations. With time, interpretations of EEO have become more demanding regarding the changes that are required in the modern education system to be egalitarian. Initially the concept of EEO was limited only to the removal or absence of formal barriers but successive research in the field of Sociology of Education suggested that equal educational opportunities cannot be studied only in terms of the formal

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features of educational system, instead it should be analyzed in terms of the psycho social traits of the students which are differently shaped by their different social realities they belong to. Thus from 1960 onwards most of the research in the field of Sociology of education shifted their focus on the impact of psychosocial traits that has on education and how these traits were being shaped by social structures.

Students' educational expectation is such a significant intervening variable that explains students' educational attainment (Looker, 1997) and generally it facilitates educational attainment and success (Sewell, et al. 1969). Educational expectation is defined as what one realistically expects to achieve. Educational expectation is closely related to students' social reality and emerges as a concrete value out of reality (Mickelson, 1990).

Review

As we know Indian society is stratified on the basis of caste, class and gender, and the issue of students' unequal access to higher education has been long standing question for researchers in India. A study conducted in 2020 by Mittal & Patwardhan tried to find the rate of transition from senior secondary to post-secondary education. In order to find the transition rate, they calculated the difference between eligible enrolment ratio, EER (number of students who passed grade 12th) and Gross enrolment ratio (GER) of higher education (percentage of student who successfully enrolled themselves in higher education) and found that a huge gap (37.4) exists between EER (63.7) and GER (26.3). Put it another way, 63.7% of students successfully completed their 12th grade, but only 26.3% of them were able to make it to higher education. Some other research has shown that this problem worsens further with the differences in attainment of higher education across different social groups. Social positions like caste, class and gender play important role in educational discrepancies in Indian higher education system (Deshpande, 2006). Sometimes these discriminatory patterns are present in very subtle form and demand detailed exploration of that issue. As female enrolment in higher education has increased rapidly but when it comes to their participation in STEM disciplines like science, technology, engineering and math and they are under-represented in comparison to their male counterparts (Chanana, 2000). Gautam (2015) tried to explore the process of decision making regarding the subject choice of female students at undergraduate level and found that gender plays a decisive role in deciding a women's' subject choice and educational institution. Proximity of institution to home, and availability of attached

hostel becomes the primary issue of concern and availability or interest in a discipline becomes a matter of less importance. Having different cultural beliefs from upper castes puts the members of lower castes in a marginalized position and negatively affects the reach of scheduled castes' access to formal education. Ghettoization and the subsequent deprivation have a significant impact on their exclusion from formal education.

The reviews of existing research conducted in the area of access to higher education reveal that there is a difference in the enrollment in higher education across social groups. A few studies which have tried to explore the causes of these differences have been mainly conducted on college students when they have already entered into higher education. Findings of such studies are based upon the retrospective recall of the students. As we know, many students of marginalized and backward group drop out at secondary level, conducting research with college students exclude these students from reach and their issues remain unaddressed. Thus, in order to address the issue of students from vulnerable strata, collecting information regarding their expectations of post-secondary attainment, prior to graduation stage becomes important. Above sought gap raised a demand to study the students' post-secondary educational (henceforth, PSE) expectations in relation to their social identity structures.

In this backdrop this study intends to assess the students' post-secondary educational expectations in relation to their social identity structures.

This study mainly dealt with the following research question.

- i) What is the intersectional relationship between students' post-secondary educational expectations and social identity structures, i.e., caste, class and gender?

Objectives

1. To study the relationship between students' post-secondary educational expectations and social identity structures, i.e., caste, class and gender.
2. To study and analyze the students' reason for not expecting to pursue post-secondary education.

Data and Sample

In this study data came from the sample of 620 class 12th students, studying in government and private schools of Varanasi district in session 2019-20. For collection of data from government schools multistage random sampling technique was used while for obtaining data from privately managed schools convenience sampling technique was employed. Distribution across the sample

of 620 students highlights that 57.41% of the respondents were male and 42.58% of respondents were female.

Table1. Caste -wise distribution of respondents

Caste	UC	OBC	SC	ST	Total
Number (%)	175 (28.22%)	385 (62.09%)	40 (6.45%)	40 (6.45%)	620

The students of Scheduled tribes' category make up the smallest part with 3.22%, while scheduled caste comprised 6.4%. The OBCs constituted the largest part with 62.09% of students and Upper castes compose 28.22%.

Table 2. Class -wise distribution of respondents

Class	Upper Class	Middle Class	Lower Class	Total
Number (%)	127 (20.48%)	188 (30.32%)	305 (49.19%)	620

Distribution across class highlights that students belong to lower class composed 49.19% of total respondents. While students belong to middle class make up 30.32%-, and upper-class students account for 20.48% of total students.

Measures and Methods

In this study a self-constructed partially opened questionnaire was used as a tool for data collection. The questionnaire was administered on class 12th students who were about to finish their senior secondary education and were on the verge of entering into higher education. This questionnaire was divided into two parts, the first part was meant to collect the information regarding demographic details of students, while in the second part questions were asked to assess the educational expectations of students, like, students' intention to further the study, to terminate the study, their rationale behind terminating the study, and their course preference etc. Researcher administered and collected the data in person. This study was conducted in the month of November and December 2019 when the students were about to complete their secondary education and they were expected to have a crystallized plan regarding their post- secondary education. Since this study is descriptive in nature, descriptive statistics like cross tabulation, frequency and percentage were used for the interpretation of findings.

Findings and Discussion

Objective 1: To study the relationship between students' post-secondary educational expectations and social identity structures, i.e., caste, class and gender.

Table 3. Students' expectations in terms of pursuing post-secondary education.

Negative expectations	Undecided	Positive expectations	Total
47 (7.58%)	69 (11.12%)	504 (81.29%)	620 (100%)

In this survey, class 12th students were asked to indicate their educational expectations regarding pursuing or not pursuing their post-secondary education and three categories were formed on the basis of their responses. As table 3 shows, students (7.58%) who didn't expect any kind of post-secondary education for themselves, were in the first category, the second category consisted of those students who were undecided (11.12%) regarding continuing their post-secondary education and students who had clear and positive expectations (81.29%) regarding pursuance of their post-secondary education, constituted a third category.

Table 4. Post-Secondary educational expectations in terms of caste and class

	NE	UND	PE
Upper class	.78	1.57	98.42
Middle class	9.23	4.10	86.66
Lower class	9.39	20.13	70.46
Up. Caste	1.14	1.71	97.14
OBC	8.31	15.32	76.36
SC+ST	21.66	11.66	66.66

PE: Positive expectations, NE: Negative expectations, UND: Undecided

Table 4 depicts that out of total 175 Upper caste students only 1.14 percent expected to terminate their study in comparison to their OBC (8.31%), and SC, ST (21.66%) counterparts. Among 504 students who had positive expectations regarding entering into higher education, a major proportion of them expected to pursue non-professional courses, followed by professional and vocational courses. The distribution across caste highlighted that majority of upper caste students

(52.35%) expected to enter in professional courses, while a few students from OBC (21.08%), and SC, ST (15%) category had similar expectations. Getting admission in non-professional course was most expected destination for OBC, SC and ST students. Similarly, of all the four caste categories, SCs and STs (10%) were most likely to expect to pursue some sort of vocational courses, followed by OBCs (3.74%) and UCs (1.76%).

As table 4 shows, the majority of the students who expected to further their study belong to upper class (98.42%), followed by middle (86.66%) and lower class (70.46%). This data shows a huge gap of 20.78 percentage points between students' PSE expectations of upper and middle class and of 34.64-point gap between upper and lower class. Students who had no expectations to attain PSE (9.18%) or were undecided (19.67%), mostly situated at lower class position. (Table 4) The impact of class was obvious, in terms of types of courses, students of different class positions expected to attain.

Table 5: Students' expectations of pursuing different types of courses (caste and class)

	Professional %	Non-Professional %	Vocational %
Upper class	65.6	34.4	0
Middle class	30.17	66.86	2.95
Lower class	11.42	82.38	6.19
Up. Caste	52.35	45.88	1.76
OBC	21.08	75.17	3.74
SC+ST	15	75	10

As is evident from table 5, the majority of upper-class students expected to get enroll in professional courses (65.6%) in comparison to non-professional course (34.4%). Contrarily, students of middle (66.86%) and lower (82.38%) class were overrepresented in having expectation of pursuing non-professional courses in comparison to professional courses (30.17%) and (11.42%) respectively. In terms of vocational courses, students of lower-class position were on the top with (6.19%) followed by middle class (2.95%), no student from upper class expected to attain vocational course.

Table 6: Students' expectations regarding pursuing post-secondary education (in terms of gender)

Male Students			
	PE	NE	UND
Upper class	97.36	1.31	1.31
Middle class	84.46	9.70	5.82
Lower class	65.53	14.12	20.33
Up. Caste	97.02	1.35	1.98
OBC	71.88	11.05	17.05
SC+ST	60.52	28.94	10.52
Female Students			
Upper class	100	0	0
Middle class	89.13	8.69	2.17
Lower class	77.68	2.47	19.83
Up. Caste	97.29	.99	1.35
OBC	82.14	3.68	13.09
SC+ST	77.27	9.09	13.63

PE: Positive expectations, NE: Negative expectations, UND: Undecided

Table 7: Students' expectations of pursuing different types of courses (in terms of gender)

Types of courses	Male (277)	Female (227)	Total (504)
Non-professional	(167) 60.28%	(162) 71.36%	(329) 65.27%
Professional	(94) 33.93%	(63) 27.75%	(157) 31.15%
Vocational	(16) 5.77%	(2) 0.88 %	(18) 3.57%

As table 6 depicts more female students irrespective of their caste and class identity expected to pursue post-secondary education than their male counterparts. In other words, more female students (85.98%) expected to enroll themselves for graduation courses than male students (77.80%). Females were overrepresented in having expectations to get enrolled in non-professional courses (71.36%) in comparison to male students (60.28%). However, they had fewer expectations to pursue professional courses (27.75%) in comparison to their male counterparts (33.93%). Both

male (60.28%). and female (71.27%) students were overrepresented in terms of their expectations of getting enrolled in non-professional courses (Table 7). But the separation between these two genders was of 11.02 percentage point as female students had high expectations to get enroll in non- professional courses in comparison to their male counterparts. Whereas male students showed high expectations of getting enrolled in some sort of professional courses (33.93%) and vocational courses (5.77%) in comparison to female students, (27.75%) and (0.88 %) respectively (Table 7).

Objective 2: To study and analyze the students' reason for not expecting to pursue post-secondary education.

Outcome

As Table 4 depicts, not having expectations for pursuing PSE was a class and caste contingent phenomena, as (9.39%) students from lower class and (21.66%) students from SC and ST category were expecting the same in comparison to their upper class (.78%) and upper caste counterparts (1.14%). The most cited reason by class 12th students for not expecting to go to college was financial constraints (46.80%). After financial concerns, reasons like, family responsibilities (31.91%), college situated farther from home (25.53%), lack of interest (19.14%) and not considering PSE beneficial for themselves (14.89%) were the most reported reasons. 8.5% students (all female) cited marriage as a reason for not expecting to pursue post- secondary education.

Conclusion

This study makes it clear that students' post-secondary educational expectation, which is considered as a significant predictor of their PSE attainment, gets influenced by their social identity structures. Caste, class and gender identities work as decisive factors in shaping students' PSE expectations. Upper class and upper caste students are in advantageous position in terms of having positive expectations regarding pursuing PSE when compared to their lower class and OBC, SC and ST counterparts. They also supersede in terms of having expectations of pursuing professional courses that enable students to have a head start in getting good salary yielding jobs. The new trend that several recent studies have also shown has emerged through this study, that female students outnumber their male counterparts in terms of having positive expectations regarding pursuing PSE but when it comes to nature of courses they expect to pursue, more female students tend to go for non-professional courses that has been traditionally considered women's forte.

Further this study exhibits that cost or financial constraint is still the most important factor for not pursuing the PSE. Other social cultural factors like marriage, distances from home to college are also at play, especially for female students. Disinterest in pursuing PSE specially cited by male students situated at lower class and caste position is relatively a new problem that seeks special attention of policy makers.

Thus, it is clear that, though at policy level, new goals regarding increasing enrollment rate of higher education are being set but the persisting systemic problems are still at play and creating hindrance in achieving the goal of egalitarian expansion of higher education. Hence, paying attention to these obstacles, and to eradicate them is urgently required.

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Comparative Study of Occupational Stress Level among Private and Government School Teachers of District Fazilka (Punjab)

*Neha Sachdeva**

Abstract

Work related stress is still a major challenge to teacher's health in the institutions. While few investigations have evaluated stress as a positive factor in motivating teachers, most of the research see stress as potential risk to both teachers' wellbeing and institutions. Over burden of the teachers causes ineffective attitude and dysfunctional behavior due to negative influences from stress affect their performance in the institution. This research attempts to study the occupational stress among govt. and private school teachers and to identify the measure by which teachers can avoid and cope with stress as they are the nation builder of our country. The sample for present study was selected from teachers of private and government schools of Fazilka District. A random sampling technique was used for the selection of the sample. A sample of 120 teachers were taken for the study out of 120 teachers (60 teachers from private school and 60 teachers from government) were taken. It was found that there is no significant difference in the occupational stress level among private and government school teachers.

Keywords: *Occupational stress, Private and government school teachers*

Introduction

The teacher is an employee of an institute where the future of the nation is being shaped. According to the First P.M. of India Jawaharlal Nehru" The Future of the nation is being shaped in the classroom. Teachers play an important role in nation building. If a teacher is mentally fit & free from all stress and strain, he will teach effectively in the classroom. But modern life consists of many problems, anxieties and complexities which affect the teaching efficiency of the teachers. Teachers can teach effectively only if they are free from all anxieties and worries. They suffer from so many problems which lead to depressive behavior and relicts a shade of anxiety on their

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faces. Thus, the teacher must be free from all anxieties and worries as it affects the students directly or indirectly.

Teachers are the central factors in any education program. Then love, affection, character, competence and commitment towards their profession affects the students. But teachers are not able to cope with the expectations of parents as he has to face stress in the occupation. Moreover, teachers being members of Modern society have to play diverse roles to meet their various needs, obligations and expectations of their students. In doing so, they suffer from occupational stress.

Occupational stress is associated with an increase in negative work-related outcomes, such as Job dissatisfaction, ill- health, absenteeism, higher turnover and lower productivity (Jones & Bright, 2001). The negative effects of occupational stress include impaired performance or a reduction in productivity, diminishing levels of customer service, health problems, absenteeism, turnover, industrial accidents, alcohol and drug and purposeful destructive behaviors (Owich, Quick Nelson & Hurrell, 1997). Wright & Smye, 1996). Research by Winslow (1998) confirmed that those reporting high occupational stress and depression had health costs that were 2.5 times higher than those who were not with such evidence mounting it, is not surprising that civil lawsuits and warblers compensation claims for work stress-related disabilities are increasing.

Mental Health helps the teachers to Motivate and inspire the students. Effective teaching requires a feeling of satisfaction. On the other hand, feeling of dissatisfaction affects efficiency. Once thinking and emotional reactions affect adjustment level, we can say that if there is complete balance between her potentialities and occupation, then a teacher can give her best to the students. He/She can enjoy all the comforts of life.

Stress

Stress is derived from the Latin word 'stringer'. It was popularly used in 17th century to mean hardship, strain diversity of affliction. In 18th and 19th centuries, it was used to denote force, pressure, strain or strong efforts with reference to an object or person. Stress is the "Wear and tear" our bodies experience as well as adjust to our continually changing environment. It has physical and emotional effects on us and can create positive or negative feelings. So, stress is a common occurrence among people causing health hazards, laziness, disinterest and lack of physical and vitality. Hand Selya (1956) described stress 'the non-specific response of the body to any demand

made upon it". Farmer; Monahan and Heakeler (1984) "stress consists of any event in which environmental demands, internal demands or both, tax or exceeds the adaptive resources of the individual, social system or tissue system".

Occupational stress

Occupational stress can be defined as the harmful physical and emotional responses that occur when the requirement of job does not match with the capabilities, resources or needs of the work. Occupational stress can lead to poor health and even injury all stress is that stress in which the main source of stress is Occupational stress is that the occupation of the person. Coplan, Cobb and French (1975) "Occupational stress may be as any characteristics of job environment that poses a threat to the individual". Cooper and Marshall (1976) "Occupational stress is a negative environmental factors or stressors associated with a particular job".

According to Sckwab and Iwanlacki (1982) Occupation stress in teachers can lead to variety of negative outcomes, including emotional exhaustion feeling of depersonalization, and a sense of failure with one's personal accomplishment a condition the author refers to "Burn out".

Teaching is regarded as a very stressful occupation. Increasing consciousness for education dueto increasing competition among students for achieving their goals added more pressure and stresson teachers.

Justification of the study

Today is the era of modernization. In a rapidly growing and dynamic environment, the role of teacher is becoming more and more complex. The teachers are being challenged with the task of increasing workload, research responsibilities and continuous improvement in skill set. The performance demands have increased tremendously. Stress badly affects their physical and mental health.

It is the first priority to identify the measure by which teachers can avoid and cope with stress. Hence in this particular, to get somewhat more definite results a systematic study needs to be conducted. The study will go a long way to help the authorities to organize guidance and counselling programs in which the teacher can discuss their mental tension. So, the aim of study isto compare occupational stress levels among school & college teacher.

Statement of the problem

The problem under investigation is entitled as "**Comparative study of occupational stress level among private and government school teachers of district Fazilka (Punjab).**"

Objectives of the study

1. To compare occupational stress level among private and government school teachers.
2. To compare occupational stress level among male private and government school teachers.
3. To compare occupational stress level among female private and government school teachers.
4. To compare occupational stress level among private and government school teachers working in rural area.
5. To compare occupational stress level among private and government school teachers working in urban area.
6. To compare occupational stress levels among aided private and government school teachers.
7. To compare occupational stress levels among young private and government school teachers.
8. To compare occupational stress level among aged private and aged government school teachers.

Hypotheses of the study

1. There is no significant difference in occupational stress level among private and government school teachers.
2. There is no significant difference in occupational stress level among male private and government school teachers.
3. There is no significant difference in occupational stress level among female private and government school teachers.
4. There is no significant difference in occupational stress level among private and government school teachers working in rural areas.
5. There is no significant difference in occupational stress level among private and government school teachers working in urban areas.
6. There is no significant difference in occupational stress level among aided private and government school teachers.
7. There is no significant difference in occupational stress level among young private and government school teachers.
8. There is no significant difference in occupational stress level among private and government school teachers.

Method and procedure

In this investigation, the investigator employed the survey method in order to collect the necessary data for present study. The survey method to education is one of the most commonly used approach. Survey method, in its simplest form, is concerned with those techniques and procedures which are used to ascertain and establish the present status of thing, situations, communities, individuals, groups, systems, attitudes, objectives, trends, conditions or any other phenomena. The primary concern of the type of research is 'present' and not past or future. As far as the present study is concerned, it is an opinion survey of teachers to know about their occupational stress. In this survey, generally the researcher makes use of questionnaires or interviews to gather data from the selected groups by following appropriate sampling procedure.

Selection of the Sample

The sample for present study was selected from teachers of private and government schools of Fazilka District. A random sampling technique was used for the selection of the sample. A sample of 120 teachers were taken for the study out of 120 teachers (60 teachers from private school and 60 teachers from government) were taken. Out of 60 private school teachers from 30 are male (15 from rural and 15 from urban area) having 5, private, 5 government and 5 aided private schoolteachers. And 30 are female teachers (15 from rural area and 15 from urban area having 5 private, 5 government and 5 aided school teachers. Out of 60 government teachers 30 are male teachers 15 from rural area and 15 from urban area having 5 private, 5 government and 5 aided government teacher and 30 are female teachers (15 from rural area and 15 from urban area having 5 private, 5 government and 5 aided government school teachers were taken for the study. For the problem entitled "Occupational Stress level among private and government school teachers". The major tools used "the occupation stress index prepared by Dr. A.K. Shrivastva & A.P. Singh

Testing of hypotheses

The results have been discussed in the light of the study on one hand and previous research findings on the other. For testing the hypothesis, t-ratio was calculated being in the formula:

$$t = \frac{M_1 - M_2}{S.E_D}$$

Where SE_D is the standard error of difference between Means.

Hypothesis 1

There is no significant difference in occupational stress level among the private and government school teachers.

Table 1: t- ratio for occupation stress level among the school and college teachers.

S.No.	Groups	No. of Teacher	Mean	SD	SE _D	t- ratio	Level of Significance
1.	Private Teacher	60	137.86	17.55	3.03	0.39	Not Significant at 0.05 and 0.01 level
2	Govt. Teacher	60	136.65				

Table 1 shows that t-ratio for private and government school teacher is 0.39. Which is less than the table value 1.98 against 1/118 df, at 0.05 level and 2.62 against 1/118 at 0.01 level. It shows that school and college teachers as a single main variable does not differ significantly on occupational stress level. Thus, the hypothesis of no significant difference in the occupational stress level among private and government school teachers can be accepted.

Hypothesis 2

There is no significant difference in occupational stress level among male private and government school teachers.

Table 2: Occupation stress level among male private and government school teachers.

Sr. No	Groups	No. of Teacher	Mean	SD	SE _D	t- ratio	Level of Significance
1.	Male Private Teachers	30	139.83	15.45	3.86	.31	Not Significant at 0.05 and 0.01 level
2	Male Govt. Teachers	30	138.63				

Table 2 shows that t-ratio for male private and government school teachers is .31. Which is less than the table value 2.00 against 1758 df at 0.05 and 2.66 against 1758 df at 0.01 level. It shows that Male private and government school teachers as a single main variable does not differ significantly at occupational stress level. Thus, the hypothesis of the no significant difference in the occupational stress level among male private and government school teachers can be

accepted.

Hypothesis 3

There is no significant difference in occupational stress level among female private and government school teachers.

Table 3: Occupation stress level among female private and government school teachers.

Sr. No	Groups	No. of Teacher	Mean	SD	SE _D	t-ratio	Level of Significance
1.	Female Private Teachers	30	135.9	19.6	4.9	.25	Not Significant at 0.05 and 0.01 level
2	Female Govt. Teachers	30	134.60				

Table 3 shows that t-ratio for female private and government school teachers are 0.25. Which is less than the table value 2.00 against 1/58 df, at 0.05 level and 2.66 against 1/58 df. at 0.01 level. It shows that female private and government school teachers as a single main variable does not difference significantly at occupational stress level. Thus, the hypotheses of the no significant difference in the occupational stress level among female private and government school teachers can be accepted.

Hypothesis 4

There is no significant difference in occupational stress level among private and government school teachers working in rural areas.

Table 4: Occupation stress level of private and government school teachers of rural areas

Sr. No	Groups	No. of Teacher	Mean	SD	SE _D	t-ratio	Level of Significance
1.	Private Teachers in Rural area	30	144.13	18.08	4.52	2.96	Significant at 0.05 and 0.01 level
2	Govt. Teachers in Rural area	30	130.73				

Table 4 shows that t-ratio for private and government school teachers in rural stress is 2.96 which is more than the table value 2.00 against 1/58 df. at 0.08 level and 2.66 against 1/58 df. at 0.01 level. It shows that private and government school teachers in rural areas as a single main variables shows significant difference at occupational stress level. Thus, the hypothesis of the no significant difference in the occupational stress level among private and government school teaches in rural areas cannot be accepted.

Hypothesis 5

There is no significant difference in occupational stress level among private and government school teachers working in urban areas.

Table 5: Occupation stress level of private and government school teachers of urban area

Sr. No	Groups	No. of Teacher	Mean	SD	SE _D	t-ratio	Level of Significance
1.	Private Teachers in Urban area	30	131.6	17.35	4.33	2.53	Significant at 0.05 level and Not Significant at 0.01 level
2	Govt. Teachers in Urban area	30	142.56				

Table 5 shows that t-ratio for private and government school teacher in urban area is 2.53. Which is more than the table value 2.00 against 1/58 df at 0.05 level and less than the table value 2.66 against 1/58 df. at 0.01 level Its shows that private and government school teachers as a single variable shows significant difference at 0.05 level and does not differ significant at 0.01 level. So, the hypothesis of the no significant difference occupational stress of private and government school teachers working in urban area can be accepted at 0.01 level and cannot be accepted at 0.05 hypothesis is partially accepted.

Hypothesis 6

There is no significant difference in occupational stress level among aided private and government school teachers.

Table 6 shows that t-ratio for aided private and government school teachers is 2.7 which is more than the table value 2.02 against 1/38 df, at 0.05 level and more that table value 2.71 against 1/38

df, at 0.01 it shows that the aided private and government school teachers as a single main variable shows significant difference at 0.05 level and does not differ significant at 0.01 level.

Table 6: Occupation stress level among aided private and government school teachers.

Sr. No	Groups	No. of Teacher	Mean	SD	SE _D	t-ratio	Level of Significant
1.	Aided Private School teachers	20	146.8	10.3	3.19	2.70	not Significant at 0.01 level and
2	Aided Govt. School teachers	20	138.15				Significant at 0.05 level

Thus, the hypothesis of non-significant difference in the occupational stress of aided private and government school can be accepted at 0.01 level and cannot be accepted at 0.05 level. So, hypothesis is partially accepted.

Hypothesis 7

There is no significant difference in occupational stress level among young private and government school teachers.

Table 7: Occupation stress level among young private and government school teachers.

Sr. No.	Groups	No. of Teachers	Mean	SD	SE _D	t-ratio	Level of Significance
1	Young private Teachers	30	139.13	16.21	4.05	0.04	Not significant at 0.05 and 0.01 level
2	Young government Teachers	30	139.3				

Table 7 shows that t-ratio for young private and government school teachers is 0.04. Which is less than the table value 2.00 against 1/58 df. at 0.05 level and 2.66 against 1758 df. at 0.01 level. It

shows that young school and college teachers as a single main variable does not differ significantly at occupational stress level. Thus, the hypotheses of no significant difference between the occupational stresses level of young private and government school teachers can be accepted.

Hypothesis 8

There is no significant difference in occupational stress level among aged private and government school teachers.

Table 8: Occupation stress level among aged private and government school teachers

Sr. No	Groups	No. of Teacher	Mean	SD	SE _D	t-ratio	Level of Significance
1.	Aged Private School teachers	30	137.3	19.47	4.86	1.008	not Significant at 0.05 and 0.01 level.
2	Aged Govt. School teachers	30	132.4				

Table 8 shows that t-ratio for aged private and government school teachers is 1.008. Which is less than the table value 2.00 against 1/58 df. at 0.05 level and 2.66 against 1/58 df. at 0.01 level. It shows that the aged private and government school teacher as a single main variable does not differ significantly, at occupational stress level. Thus, the hypotheses of no significant difference between the occupational stress level of Aged private and government school teachers can be accepted.

Delimitations of the study

1. The sample was confined to private and government school teachers of Fazilka (District) only.
2. The sample was delimited to 120 teachers only.
3. The study measured only one variable:-The occupational stress level among teacher of private & government school.

Statistical Techniques Used for Data Analysis

For analysis and interpretation of data used the following statistical techniques.

- a) Computation of Arithmetic mean (M)
- b) Standard deviation

c) t-test

Main findings of the study/ conclusion

1. There is no significant difference in the occupational stress level among private and government school teachers.
2. There is no significant difference in the occupational stress level among male private and government school teachers.
3. There is no significant difference in the occupational stress level among female private and government school teachers.
4. There is a significant difference in the occupational stress level among private and governmentschool teachers working in rural area.
5. There is a partial significant difference in the occupational stress level among private andgovernment school teachers working in urban area.
6. There is partial significant difference in the occupational stress level among aided private and government school teachers.
7. There is no significant difference in the occupational stress level among young private and government school teachers.
8. There is no significant difference in the occupational stress level among aged private and government school teachers.

Education implications

1. This study will be of great help to know the occupational stress level among the private & govt. school teachers& based on this & we suggest some measures to reduce the occupational stress.
2. It is common to believe that teachers are the makers of future of children. The teachers feel stressthen he will not be able to give hundred percent for the betterment of child so with the help of this study we can suggest the measures to reduce the stress among the teachers so that he can make better future for country.
3. From this study, we come to know about the O.S. level of teachers in different school types as the general phenomenon that in private schools, the teachers are more stressed while work as compared to govt. schools. So, some better measures will be suggested to reduce this stress.

Suggestion for the future study

1. The present study was confined to Fazilka district. The study can be conducted on the other districts & state also.
2. In the present study, a sample of 120 teachers has been taken up which consists of 60 school (30 male & 30 female) & 60 Govt. & 60 Private Teachers. Similar study can be conducted on large sample and employers of other profession.
3. For the present study, only six private & six government from urban & rural areas has been taken. Similar study can be conducted by taking more private and government school from rural & urban areas.
4. The study can be conducted by taking other more demographic factor in consideration.

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Mathematics Anxiety among Secondary School Students with reference to Parental Education, Type of School and Gender

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Abstract

It is observed that most people experience anxiety towards mathematics at some stage of life, especially during their later schooling. Success in school-mathematics becomes a deciding factor in selecting a math-based subject stream at the college level. Studies reveal that most students are not inclined towards mathematics due to mathematics anxiety experienced by them during their school years. This study is intended to investigate the effect of parental education (of both mother and father separately), type of school (central board and provincial board affiliation), residential nature of the school, and gender on students' math anxiety. A sample of 504 10th grade students in the age group of 14-16 years was chosen randomly from different schools affiliated with the provincial-board (JKBOSE) and central-board (CBSE) in Kashmir, India. Null-hypotheses were tested using t-test and ANOVA. Results reveal that there is no significant difference in mathematics anxiety of students based on their gender and parental education, but a significant difference is seen in their math anxiety based on affiliation and the residential nature of schools.

Keywords: *math anxiety; gender; parental education; residential school; math performance.*

Introduction

Mathematics education represents a base for modern scientific methodology, and it is one of the most important sources of the thinking process. It represents a common language for all sciences and other human activities (Dejic & Mihajlovic, 2014). Good mathematical knowledge is the requirement demanded by contemporary life conditions (Hodaňová & Nocar, 2016). It finds its applications in all walks of life. There is not a single area where the need for mathematics is not realized. Areas like technology, agriculture, architecture, industry, and health care, from road-to-rail-to-airplane, - meaning none of the areas of life are free from the applications of mathematics education. This implies that quality mathematics education delivered in the classrooms is directly proportional to growth and development. It has been observed that countries have succeeded to

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change their destiny by laying impetus in their education systems with an emphasis on mathematics education.

Teachers find it difficult to make their students understand mathematical concepts especially those experiencing mathematics anxiety (Handal & Bobis, 2004). A huge portion of the human population on earth suffers certain levels of mathematics anxiety. Nearly 93% of people in America possess some degree of mathematics anxiety (Blazer, 2011). Indian classrooms possess a much larger number of students who are susceptible to mathematics anxiety which is evident as India has finished very poorly in the Program for international student assessment (Walker, 2011).

Mathematics Anxiety

Anxiety is an emotional manifestation of tension and worried thoughts accompanied by physical changes like high blood pressure, stomach uneasiness, dizziness, sweating, or rapid heartbeat (Kazdin, 2000; APA, 2021). Mathematics Anxiety (MA) is a feeling of tension and fear when encountering mathematical situations like numerical solving, mathematics puzzle solving, and mental calculations in different situations. It is “a feeling of tension and anxiety that interferes with the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary life and academic situations” (Richardson & Suinn, 1972, p. 551). Students with mathematics anxiety suffer from nervousness, lack of concentration, blank-mindedness, and feelings of sickness in a math test situation (Woodard, 2004). Regardless of anyone’s mathematical ability, he or she can become the victim of mathematics anxiety at any stage of life (Rossnan, 2006). Most students face cognitive or emotional difficulties, or both in mathematics (Hopko et al., 2002). Two reasons for the failure of students in mathematics have been reported. One is mathematics learning disorder (Dyscalculia) and the second, is emotionally guided disturbances like mathematics anxiety (Caviola et al., 2019). It has both physiological components (increased heart rate, clammy hands, upset stomach, and lightheadedness) and psychological components (helplessness, worry, disgrace and not being able to cope). People with mathematics anxiety perform poorly in numeracy though their performance in most thinking and reasoning tasks is normal (Maloney & Beilock, 2012). Mathematics anxiety reduces the performance of students in mathematics (Ashcraft & Moore, 2009). Moreover, procrastination and the math-avoidance approach has been found among math-anxious students who finally exhibit poor performance in mathematics (Akinsola et al., 2007).

Mathematics Anxiety and Cognition

Working memory is that part of the mind that deals with the execution of various arithmetic procedures required in problem-solving. Math anxiety affects working memory which has a prominent role in math performance (Ashcraft & Kirk, 2001; Ashcraft & Moore, 2009). Utilization of Visual-spatial working memory by worried thoughts reduces math performance (Ganley & Vasilyeva, 2014). Working memory is finite and it can only be expanded to a limited amount of attention and information processing (Ashcraft & Krik, 2001; Miller & Bichsel, 2004). Math anxiety occupies working memory resulting in reduced math performance (Beilock & Willingham, 2014). Cortisol, the stress hormone, is a biological indicator of anxiety. Math anxious students show increased cortisol secretion and perform poorly in mathematics (Mattarella-Micke et al., 2011). However, Klados et al. (2015) reveals that increased self-reported math anxiety is linked to reduced cortical activation while performing simple arithmetic calculations.

Mathematics Anxiety and Gender

Gender has been always a debatable issue before researchers, especially when talking about mathematics. Female folk usually hesitate in taking a mathematics course in comparison to boys in most societies. Girls are more susceptible to mathematics anxiety than boys (Luttenberger et al., 2018; Hill et al., 2016; Hembree, 1990). Mathematics anxiety of parents (especially of mothers for their daughters) plays a prominent role in developing mathematics anxiety in their children (Casad et al., 2015). Mathematics anxiety of female teachers is observed to have negative consequences on the mathematics performance of female students. Girls develop anxiety towards mathematics over time, being taught throughout the year by math-anxious female teachers. This is not evident in the case of boys (Beilock et al., 2010).

Mathematics Anxiety and Social Environment

The social environment is equally responsible for the development of mathematics anxiety among the students. Society compels children to believe that mathematics is important for the future without explaining how which tends to high societal expectations resulting in overburden and anxiety. Most students believe that their math anxiety gets developed because of their teachers (Bekdemir, 2010; Rosnann, 2006; Shields, 2006). Teachers play an important role in transmitting negative attitudes and emotions towards mathematics to their students (Fritz, 2019). Further, parents exert pressure on their wards to make them work hard with the belief that success in

mathematics is more dependent on effort than ability, which results in the development of mathematics anxiety (Stankov, 2010). However, Szczyciel (2020) reveals that the mathematics anxiety of adults is not a social source of math anxiety but a source of low mathematics achievement in children. Math anxiety and the math attitude of parents, work as a predecessor for the math anxiety and math attitude of their children (Soni& Kumari, 2017). It gets boosted by ineffective teaching practices, textbooks lacking continuity and cohesion, projecting mathematics as an abstract and alien thing devoid of utility connection, the myth about the mathematical mind, and bad learning experiences.

Objectives of the Study

1. To compare students on the basis of gender with respect to their mathematics anxiety.
2. To study the effect of mothers' education on the mathematics anxiety of their children.
3. To study the effect of fathers' education on mathematics anxiety of their children.
4. To study the effect of affiliation of schools (with central board and provincial board) on mathematics anxiety of students.
5. To study the effect of residential and non-residential schools on the mathematics anxiety of students.

Hypotheses

1. There is no significant difference between boys and girls with respect to their mathematics anxiety.
2. There is no significant difference in mathematics anxiety among students having mothers with different education levels.
3. There is no significant difference in mathematics anxiety among students having fathers with different education levels.
4. There is no significant difference between central-board students and provincial-board students with respect to their mathematics anxiety.
5. There is no significant difference between the students studying in residential and non-residential schools with respect to their mathematics anxiety.

Methodology

Modified Abbreviated Math Anxiety Scale (mAMAS) (Carey, et al. (2017), *Frontiers in Psychology*) was used as a data collection tool. An Information-Blank was developed by authors

for the collection of personal information of participants like gender, parental education, and school type. A sample of 504 10th grade students was selected from three districts, each from the north, south, and central regions of Kashmir province having a total population of around 65000 10th grade students. On average, there are 40 provincial-board (JKBOSE) affiliated and 6 central-board (CBSE) affiliated secondary schools in each district. 8 schools (5 JKBOSE and 3 CBSE) from each district were selected randomly for data collection. Out of 24 schools selected from three districts, 8 schools (3 from Anantnag, 3 from Srinagar & 2 from Kupwara) are residential in nature. 22 students were chosen by systematic random sampling technique from grade 10 of each school amounting to 528 students. After refining and removal of outliers, the final sample was reduced to 504. The required data was analyzed using SPSS 20.0.

Analysis and Results

Each student recorded his/her personal information in the Information Blank and noted their choices on the 5-point mAMAS likert scale. The scoring was done as follows: 5 for strongly agree, 4 for agree, 3 for undecided, 2 for disagree, and 1 for strongly disagree, were assigned to all positive items of the scale, and reverse scoring was done for all negative items.

Table 1: Statistic of overall Math Anxiety Scores (test variable)

Variable	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Student's Math Anxiety	504	9	42	25.49	6.457	-.069	-.499

A distribution with Skewness and kurtosis ranging from $-.25$ to $+.25$ are nearly normal and those ranging from $-.26$ to $-.75$ is slightly negative (Blanca et al., 2013). Good normality of data is the prerequisite for any parametric test (Kerlinger, 1966). Table 1 shows that the student's math anxiety scores with mean = 25.49 and SD = 6.457 are nearly normally distributed since skewness and kurtosis are both closer to zero (Cain et al., 2017).

Table 2 indicates statistic of group variables including gender (mean diff. = 0.31), school type (mean diff. = 1.53), residential status (mean diff. = 1.38), father's education level [mean diff. (illiterate & intermediate) = 0.1]; mean diff. (intermediate and graduate & above) = 1.2] and

mothers' education level [mean diff. (illiterate & intermediate) = 1.17]; mean diff. (intermediate and graduate & above) = 0.55].

Table 2: Number, Mean and SD of group variables

Variable		Number (N)	Mean (M)	Std. Deviation (SD)
Gender	Female	185	25.69	6.481
	Male	319	25.38	6.450
Affiliation of Schools	CBSE	245	26.28	6.905
	JKBOSE	259	24.75	5.920
Residential Status of Schools	Residential	140	26.49	6.369
	Non-Residential	364	25.11	6.457
Father's Education Level	Illiterate	248	25.85	5.544
	Intermediate	126	25.75	6.814
	Graduate & above	130	24.55	7.583
Mother's Education Level	Illiterate	351	25.93	6.010
	Intermediate	80	24.76	7.028
	Graduate & above	73	24.21	7.632

Many studies show that female students suffer more math anxiety as compared to male students (Rahe, 2021; Wang, 2020; Xie et al., 2019; Goetz et al., 2013; Devine, 2012). But the current study with $t(1, 502) = .514$ at .05 level of significance confirms the studies denying significant gender difference in math anxiety (Peker, 2011).

This study is of its first kind, comparing CBSE and JKBOSE school students in India based on their math anxiety. Results indicate that there is a significant difference with $t(1, 502) = 2.672$ at .05 level of significance in CBSE and JKBOSE students with respect to their math anxiety. Further, a significant difference with $t(1, 502) = 2.166$ at .05 level of significance is observed between residential and non-residential students on math anxiety.

As per the results shown in table 3, residential school students are less anxious towards mathematics as compared to non-residential school students. Similarly, CBSE students are less prone to math anxiety in comparison to the JKBOSE students.

Table 3: Math Anxiety of Children of Residential schools Non-residential Schools.

Variable	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	t	95% Confidence Interval of the Difference	
						Lower	Upper
Female and Male	502	.607	.307	.597	.514	-.866	1.480
CBSE and JKBOSE	502	.008	1.529	.572	2.672*	.405	2.652
Residential and Non- Residential	502	.031	1.386	.640	2.166**	.129	2.643

Table 4 shows separately the effect of fathers' and mothers' education levels on the math anxiety of their children. The results show that the father's education level ($F = 1.868$,) does not affect significantly the math anxiety of children.

Table 4: Effect of fathers' and mothers' education levels on the math anxiety of children

		Sum of Squares	Df	Mean Square	F	Sig.
Father's Education	Between Groups	155.198	2	77.599	1.868	.156
	Within Groups	20814.770	501	41.546		
	Total	20969.968	503			
Mother's Education	Between Groups	229.489	2	114.744	2.772	.064
	Within Groups	20740.479	501	41.398		
	Total	20969.968	503			

There is no significant difference ($F = 2.772$, though close to the critical value of 3.01) in math anxiety of children based on their mother's education level.

But there is a slight negative correlation though not significant between mother's education level and children's math anxiety. i.e., to some extent, more literate mothers have low math-anxious children.

Discussion

The purpose of the present study was to investigate the role of gender, parental education, and school type (in terms of affiliation and residential nature) in students' math anxiety. The results of the study confirmed the first three hypotheses, whereas rejected the last two hypotheses. The present finding on gender and parental education support the findings of Peker (2011) but are inconsistent with previous studies like Xie et al. (2019) & Luttenberger et al. (2018) advocating the existence of gender difference in math anxiety. The disappearing gender gap in math anxiety may be the result of gender equality, increasing opportunities & reservations for females (Ringrose, 2007). Although mother's education level shows a slightly negative relationship with children's math anxiety. It may be because highly educated mothers having high educational aspirations inculcate a positive attitude in their children towards mathematics and other subjects as well (Spera et al., 2009). On the other hand, JKBOSE school students and non-residential school students are more susceptible to math anxiety than their counterparts enrolled in CBSE schools and residential schools. One of the causes for it may be that CBSE schools focus equally on different co-curricular activities which help students in reducing their anxieties related to their study and hence perform better as revealed by Batool & Ahmad (2020) and due to creative pedagogy practices and different co-curricular activities performed in residential schools, residential school students perform better in creative thinking skills as compared to their non-residential school counterparts (Mohanty, 2015).

Conclusion

The current study supports the view that boys and girls do not differ significantly on math anxiety than, and also parental education level does not show significant influence on children's math anxiety, however highly educated mothers are expected to have low math anxious children to some extent. Moreover, CBSE students are less anxious about mathematics as compared to JKBOSE

students. Similarly, students of residential schools suffer less math anxiety in comparison to non-residential school students.

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Understanding Positive Psychological Capital in Educational Context: A

Review

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Abstract

Today, from organizational context to educational scenario, impact of positive psychological capital is well-known. For performance enhancement, PsyCap is a person's psychological capability that can be assessed, developed and supervised. This construct is constituted by psychological features e.g., confidence, resilience, optimism and hope. In educational context, psychological capital is linked with a broad range of academic related variables such as performance, engagement, motivation, achievement goals, and preferable psychological constructs like satisfaction, flourishing, flow, happiness, positive emotions, etc. The aim of this paper is to provide a detailed view of studies conducted on PsyCap in an educational setting. The findings are analyzed, and research gaps are also identified for future directions to broaden the existing literature on PsyCap in educational context. We have closed this paper by concluding remarks.

Keywords: *Positive psychology, psychological capital, Predictive, Mediating, Correlational, Subsequent role of PsyCap.*

Introduction

Martin Seligman can be considered as father of positive psychology movement who proposed this new field of psychology, when he was elected as president of the American Psychological Association (APA) in 1998. In the words of Seligman (2000), positive psychology is the scientific study and application of optimal human functioning in all areas of life, in contrast of traditional psychology which is solely focused on mental illness, pathology and negative experiences. Peterson (2008a) has defined positive psychology as “*scientific study of what makes life most worth living*”. According to Peterson (2008b), positive psychology can be defined as an empirical viewpoint to appraising the people thoughts, emotions and behavior through the positive lens. This approach is focused on making people's lives up to great extent rather than helping them to manage

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their normal lives. Martin's positive psychology movement has motivated the scholars and researchers to give contribution in this field through their ideas, concepts and works. Constitution of positive psychological capital was one of them which has enriched this field.

Psychological capital has its origin in positive organizational behavior (Luthans et al, 2007; Nelson & Cooper, 2007) which has drawn from the works based on positive psychology (Seligman and Csikszentmihalyi, 2000). In their book, "Psychological Capital", Luthans, Youssef and Avolio (2007) presented their psychological capital theory with a captivating view of elements crucial to work motivation and performance. They defined that a variable should be positive, state-like, distinctive, assessable, open to development, and can influence performance to be included in the construct of PsyCap (Nolzen, 2018). On the basis of these criteria, the psychological state-like capacities that were measurable and developable and comprised the construct of PsyCap were **hope, efficacy (self), resilience, optimism (HERO)**. It is state-like construct mainly focused on "who we are becoming?" instead of "who we are?"

Self-efficacy or Confidence- Self-efficacy has been defined as individuals' beliefs, thoughts, and feelings about their own capacities that affect how they work and which further impact their performance (Bandura, 1997). So, it can be said that self-efficacy is one of the factors which determines individuals' performance.

Optimism- It refers to making a positive attribution about succeeding present and in the future (Luthans et al. 2007). It can be defined as the expectation that the future will be good and positive, regardless of current situations.

Hope- Hope includes two things- first is energy towards goals, and second is taking different ways to achieve those goals (Cavus & Gokcen, 2014). Hope is different from optimism, as hope includes targets and ways for their attainment while optimism is just as explanatory style to anticipate a positive outcome.

Resilience- Resilience is the capacity to rebound or bounce back from adversity, conflict, failure and focusing on the targets and success (Luthans et al, 2007).

Review procedure and structure

After being rigorously researched in organizational settings (Donaldson and Ko, 2010), researchers from various disciplines have started paying attention to study PsyCap

in educational context (Wang, Ng, & Siu, 2022). By searching, collecting, and analyzing literature from different journals and websites, this paper provides a comprehensive view on PsyCap and its role in educational context. Further, this paper reflects on the findings of the previous studies executed on PsyCap. For searching articles/papers, we applied the term PsyCap or psychological capital in education to match our target. There were certain criteria on which paper/articles were selected for review.

Table 1: Criteria for selection of studies

Aspects	Inclusion criteria for studies	Exclusion criteria for studies
1. Context	Education	Organizational context other than education
2. Sample	School students, College/university students, Teachers	Employees from non-education sectors
3. Types of journal	Peer-reviewed	Non-peer reviewed
4. Types of paper	Research papers/articles based on empirical evidence	Conceptual papers
5. Duration	2012 onwards	Before 2012

Since, PsyCap as a construct has been studied in different ways, so after selecting and thoroughly reading the papers/articles, we categorized PsyCap as predictor, mediator, correlational and as subsequent construct. In the next section, we have presented a brief summary of reviewed studies by categorizing PsyCap in four separate groups. Mostly research have used PsyCap as whole core construct with its powerful elements, some studies have focused on its elements distinctly. In spite of the fact, the notable influence of PsyCap on academic constructs is more as whole psychological resources rather than its elements solely (Kang, Wu & Li, 2021).

Brief summary of reviewed studies

3.1 PsyCap as predictor/effect variable

Past research highlights the predictive role of PsyCap in the prediction of academic and psychological resources. Wen & Lin (2014) examined the effect of PsyCap constructs on college students' learning and adaptive stress through survey and found that overall PsyCap strongly predicted the learning and adaptive stress than its elements i.e., self-efficacy, hope, optimism and resilience. Although, there are some researchers (Galla et al, 2014; Jiang et al, 2014) who proved the importance of confidence to predict the students' performance. Not only confidence, but optimism (Feldman and Kubota, 2015; Icekson et al., 2020) and resilience (Kotze & Kleynhans, 2013; Ayala & Manzano, 2018) are also proved to be predictive effects for academic performance. PsyCap as antecedent construct is used not only in the prediction of academic and cognitive resources but emotional aspects too. In Turkey, teachers' emotional labor competencies were studied with their PsyCap in a causal-comparative manner by Tosten & Toprak (2017). Cause and effect relationship was established between PsyCap as independent variable and emotional labor as dependent variable and found a positive correlation between them. Likewise, Afzal, Atta & Malik (2016) used PsyCap as predictor variable in their study to see its role in the prediction of students' positive and negative emotions and subjective well-being. This study highlighted PsyCap as positive and inverse predictor of positive emotions and negative emotions respectively. Subjective well-being was positively predicted by optimism, hope and resilience.

In some studies, like Du and King (2013), hope is used to predict emotional adjustment and positive emotions (Khodarahimi, 2013). Datu, King & Valdez (2016) explored PsyCap as predictor variable estimating the relationship between academic motivation, engagement and achievement. This study was executed in two ways- study 1 as cross-sectional design and study 2 as longitudinal design. Autonomous and controlled motivation, achievement and academic engagement were predicted by PsyCap concurrently and prospectively. Selvaraj & Bhat (2018) examined the predictive effect of PsyCap on the mental health of college students and found a positive relationship between the variables. Martinez et al. (2019) examined the PsyCap and academic engagement as antecedents for Spanish and Portuguese university students' academic performance. It was found that variables were positively correlated to each other.

PsyCap also mediated the association between students' academic performance and engagement. PsyCap as a whole construct was found to be a strong predictor of students' high level of flourishing and low level of anxiety and depression in the study of Finch, Farrell & Waters (2020). In a cross-sectional study, effect of PsyCap and human capital was examined on post-secondary students' academic stress by Lisnyl et al., (2022). In their findings, they demonstrated that students' with high human and psychological capital were having less stress influencing their academic performance.

3.2 PsyCap as mediator variable

Rather than the antecedent nature of PsyCap, there were some studies interested to explore PsyCap as mediating construct. Nielsen et al. (2017) studied the mediation of PsyCap in between family and instructor support with subjective well-being of postgraduates. Further, this study also explored the relationship among these variables. The result showed the mediation of PsyCap between proposed support and well-being of students. Also, positive and direct association between these variables was observed. Academic procrastination was predicted with emotional intelligence and PsyCap as mediator variable among medical students by Jafari & Khorasani (2018) in Iran. This study showed the positive prediction of PsyCap and its components by emotional intelligence. Procrastination was found to be negatively significant with EI and PsyCap. Nambudiri, Shaik & Ghulyani (2020) performed their work to explain the relationship between students' personality and academic achievement along with the mediating role of PsyCap among post-graduate students. This study claimed the positive impact of PsyCap on achievement and also PsyCap as a mediator between students' personality traits like agreeableness, extraversion and openness with their academic achievement. Carmona-Halty, Salanova & Schaufeli (2020) conducted a longitudinal study to see the students' relationship with their parents and their academic performance mediated by academic PsyCap. The analysis of data revealed the positive and strong relationship between students' academic performance and their parent-child relationship. Also, academic PsyCap completely mediated the relationship between these two variables.

In a Chilean school student sample, Carmona-Halty et al., (2021) examined the mediating role of PsyCap and academic engagement in between the relationship among academic performance and positive emotions. Result showed the positive association between positive

emotions and academic performance mediated by academic engagement and PsyCap. Luthans et al., (2019) demonstrated the highly mediating role of PsyCap in the relationship between students' grit and academic performance. Mediating role of PsyCap between the students' outcomes and social support was studied by Siu, Yee Lo, Kin Ng & Wang (2021). Along with PsyCap, problem-focused coping and study engagement were used as mediator for this proposed relationship. The impact of social support on academic performance, behavioral conduct and well-being was significantly mediated by PsyCap. This possible relationship was also mediated by study engagement and problem-focused coping.

3.3 PsyCap as correlational Variable

PsyCap is used as correlational construct to see the association or interrelation with other factors. In their survey-based study on university students' sample, Nooredinvand, Yeilagh, & Sharifi (2014) explored the association between different factors like PsyCap, adaptive learning, achievement goals and academic performance and found the notable and positive interrelation between these factors. Wang, Zheng, & Cao (2014) executed their study on PsyCap (gratitude was included as fifth element) and perceived social support. No significant difference appeared among students on the basis of their gender. Students who were a single child and high academic achiever were demonstrated higher level of PsyCap than their correlative. Naotunna (2015) examined the impact of PsyCap on the elements of commitment to change i.e., continuance, affective and normative. Affective and normative elements of commitment to change were found in a positive and notable relationship with PsyCap while PsyCap showed negative impact on continuance commitment. Datu & Valdez (2016) found the positive association of PsyCap with variables like academic engagement, happiness, flourishing and well-being.

Teachers' sample was used in the study of Ganotice, Yeung, Beguina, & Villarosa (2016). This study examined the association between job performance and psychological well-being with PsyCap and established a positive and notable association between them. A comparative study was conducted on high school adolescents (Khasi from Meghalaya & non-khasi from West Bengal) to assess their PsyCap and perceived parenting style by Karmarkar (2016). Result showed the high level of PsyCap among non-khasi adolescents than their contrast. Khasi adolescents perceived higher parental control than non-khasi adolescents. In his survey-based study among the Korean college students, You (2016) established the positive affiliation between PsyCap,

engagement and learning empowerment. Kirrikanat and Soyer (2018) executed a multifactorial predictor correlational design among university students' sample to set up the relation between PsyCap, academic confidence and academic coping as mediator variable. Age, gender, departments, class level and GPA score were some demographic factors in this study. Result revealed the remarkable relationship between studied variables.

Highlighting the influence of PsyCap in educational context, Ortega-Maldonado & Salanova (2018) executed their work on possible association between academic achievement, satisfaction, meaning-focused coping and PsyCap among college students. Path analysis of obtained data revealed the direct relationship between PsyCap and academic achievement and indirect association to academic achievement mediated by satisfaction and meaning-focused coping. Adil, Ameer & Ghayas (2019) performed a cross-sectional correlational survey research on undergraduates to see the association of PsyCap with underlying variables- flow, self-handicapping behavior and academic achievement. Academic achievement was found direct and positively connected with PsyCap and flow and negatively connected with self-handicapping behavior. In a cross-sectional study directed by Gautam, Ningthoujam & Singh (2019), a positive and notable relationship was seen between PsyCap and well-being in post-graduate management students. In survey-based research conducted by Ortega-Maldonado, Salanova & Martinez (2021) on college students, direct relationship was revealed between the explored variables i.e., learning goal orientation with performance and academic satisfaction and indirect relationship with PsyCap.

3.4 PsyCap as subsequent variable

Different studies have examined the predictors/antecedents of PsyCap. There is increasing evidence that academic and work-related resources influence the level of PsyCap. Although most of the studies have highlighted the antecedents of PsyCap in organizational setting, there are few studies focused on academic context. Among Chinese school teachers' sample, well-being as affective construct and growth mindset as cognitive construct were considered as predictors of PsyCap in the study conducted by Chen et al. (2019). In SEM result, positive and noteworthy relations were found among variables. PsyCap was influenced by WB and growth mindset. Clarence, Viju, Jena & George (2021) explored the antecedents of PsyCap among school teachers in rural area of Jharkhand. Since, this study was descriptive in nature, respondents' response were

collected through different scales to assess their PsyCap, emotional intelligence, proactive personality, servant leadership, and meaningful work and revealed that all these factors constitute PsyCap significantly. PsyCap and academic performance of business school students were partially mediated by their level of self-regulation in the study of Luthans et al., (2022). In other words, their findings demonstrated that positive psychological capacities can be strengthened by self-regulation to get desirable academic performance.

Other studies on PsyCap

There are some studies which have explored PsyCap in qualitative manner for comprehensive understanding. Contribution and damaging factors towards PsyCap among teachers were studied by Cimen & Ozgan (2018) qualitatively. They divided data into themes and conducted a deductive content analysis. They found that positive traits of principals and their support in profession were contributing towards teachers "PsyCap while fault-finding attitude and authoritative behavior of principals were some damaging factors for teachers" PsyCap. Healthy work environment was contributing while negative organizational climate was damaging factors for teachers" PsyCap. In theme of nature of profession, teachers" PsyCap was enriched by positive outcomes of teaching while on the other hand insufficient salary, process of appointment and workloads were damaging factors for their PsyCap.

Mixed-method research was conducted on teachers" PsyCap development by Kalman & Summak (2017). The purpose of their study was to analyze teachers" perceptions on PsyCap development intervention. After receiving treatment, teachers" were interviewed and their responses were found to be positive towards intervention program. In their opinion, this program was helpful to enhance their awareness and develop PsyCap. Another intervention was conducted by Katajisto et al., (2021) on ninth grade students to enhance their level of PsyCap through strength-based intervention and found encouraging findings. Test group students" scores in PsyCap, strength, resources and experience of guidance were positively enhanced after intervention than the control group students.

Discussion

This paper has outlined a detailed view on the present-day state of empirical understanding of PsyCap in educational background. After its emergence, scholars from different disciplines have confirmed its theoretical foundation and proved practical importance for PsyCap. There are

numerous studies that have examined the role of PsyCap as mediator construct, predictive effect construct, correlational construct and its antecedents (or PsyCap as subsequent construct).

Several studies have found PsyCap to be an influential predictor of students' learning, adaptive stress, academic motivation, emotional labor, positive emotions and other academic outcomes. The research on predictive effects of PsyCap has predominantly centered on academic performance, engagement and well-being of students. However, PsyCap has also been indicated to be negatively associated with undesirable psychological state including negative emotions and academic stress. The studies on the mediating role of PsyCap have been concentrated on academic as well as social constructs. PsyCap has significantly mediating (whether direct/indirect or both) the academic constructs like academic engagement, performance, subjective WB, emotional intelligence, positive emotions and personality of students and social constructs like family support, instructor support and social support. PsyCap has also expressed negatively associated with procrastination.

The reviewed papers/articles on PsyCap included various factors associated with this higher-order construct. Multiple academic factors like academic learning, achievement goals, performance, commitment to change, engagement, learning empowerment, academic confidence, meaning-focused coping, learning goal orientation and many more are found to be positively related with PsyCap. Other psychological resources like happiness, flourishing, flow, satisfaction is demonstrated by researchers in association with PsyCap. Furthermore, on the sociological level, students" who have higher social support and less parental control are having higher level of PsyCap. Last, there is some research which has focused on the antecedents of PsyCap among students and teachers.

Growth mindset and self-regulation as cognitive aspect and wellbeing as affective aspect are some antecedents of PsyCap in students and proactive personality, emotional intelligence, servant leadership and meaningful work belonged to antecedents of PsyCap among teachers. Although, these existing research on PsyCap in educational setting have explored this construct with other variables as PsyCap's antecedents, correlates, predictive effects and mediating role, there are still significant knowledge gap and possibilities, which can be investigated for further research.

Knowledge gap for future study

Taken together, these existing literatures on PsyCap within academic organization are still new and in early stages. Although scholars have used PsyCap as predictor, mediator and correlational construct but there is scarcity of works on antecedents of PsyCap. Extensive literature has demonstrated antecedents of PsyCap in an organizational context but in educational setting, they are scarce. Further, the findings of these literatures are limited to quantitative data only. Qualitative studies are very finite in educational organization. We have found only a few studies (Kalman & Summak, 2017; Cimen & Ozgan, 2018) which were based on qualitative data analysis. However, these studies are restricted to the teachers' sample at most. Also, the current literatures on PsyCap have included just teachers and students in their sample. Further research should vary their sample to the administrative level and focus on inclusion of principals and higher-level educational staff. Diverse samples will proceed research towards better and detailed understanding for PsyCap. In addition, most of these research studies are restricted to western context. So, we are suggesting that more studies in Indian educational setting should take into the consideration. **Concluding remarks**

This paper has reviewed the available literature on PsyCap within educational context. We have covered the background and meaning of PsyCap, current status of PsyCap in academic context like predictive effects of PsyCap, its mediation in between other variables, correlational roles of PsyCap and its antecedents. Further, we analyzed the findings from reviewed literatures and provided knowledge gap to expand the current knowledge on PsyCap. Results from these studies provide appreciable information that PsyCap positively and significantly predicts, mediates, and correlates with other useful academic and psychological constructs and in contrast, it is negatively associated with undesirable constructs. Antecedents of PsyCap are also discussed in this paper. A plethora of studies have been conducted on PsyCap from its beginning and many more scientific works are needed to maximize its benefit for academic field.

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Study Habits among First and Subsequent Generation Learners in Relation to their School Environment

*Chetna Thapa**

Abstract

The present study was conducted to assess the influence of the school environment on the study habits of first and subsequent-generation learners. In the present study, a representative sample of 200 secondary schools (class tenth) students has been selected based on convenience sampling from Government secondary schools located in the district Dehradun of Uttarakhand state. Among the 200 secondary school students, 100 are first-generation learners and 100 are subsequent-generation learners. Tools for collecting data include Dr M. Mukhopadhyay and Dr D. N. Sansanwal's Study Habit Inventory (SHI), and Dr K.S. Mishra's School Environment Inventory (SEI). It was found from the data analysis of the study that study habits of first and subsequent-generation learners vary as there is a significant difference in the mean scores. While it was found from the study that the school environment of first and subsequent-generation learners does not vary as there is no significant difference in the mean scores. There is a correlation between the Study habits and the school environment of first and subsequent-generation learners. The results revealed that the study habits of the first and subsequent generations have a dependency on the school environment.

Keywords: *First-generation learners, Subsequent generation learners, Study Habits, School Environment.*

Introduction

“Study habit” is the pattern of behaviour through which students learn and usually adopt in the regular act of studies. “Study habit” reflects the degree to which a student studies regularly. These regular acts of study include study and observation of books quickly, correctly and with full attention; and completion of the work related to the study in a planned and systematic manner in a

short duration of time. It also includes the frequency or regularity of studying sessions. An important element of a student's success in education is good study habits.

Nowadays, one of the major problems among adolescents is good study habits. With so many distractions around like the usage of the internet, social media, TV, peer pressure and physical & emotional changes within, resulting in the depletion of study habits among adolescents. Moreover, many adolescent learners are first-generation learners; they are the very first ones from their families to get a formal education. Since their parents are illiterate, they find it difficult to get proper guidance in areas of study and job selection. In the development of the overall personality of a student, the environment of the school plays a very important role. The perfect climate of the school helps in moulding the behaviour, study habits and also the personality of the learners. In the case of first-generation learners, the teachers play an important role in directing the studies, motivating and supporting the students thus enabling and paving their way towards the goals of achievement and making their future bright.

Review of Related literature

Iqbal, H. M. & Shehzadi, S (2002) conducted research with the objective to study the study habits of female students at the university. 400 female students at the university were included in the sample. It was found that female students in all the departments lacked effective study habits.

Suda, S. and Sujata, K (2006) conducted a study on high school children in order to find out the relationship between academic performance and study habits. The study was confined to the state of Himachal Pradesh and 200 students were included in the sample. The tools used in the study included the Self-handicapping questionnaire by Sujata (2003), a text anxiety inventory (TAT-H) by Sud & Sud (1997), and a Study habits inventory by Palsane & Sharma (1989). It was found that the boys were poorer in study habits than the girls.

Rajakumar, M and Soundararajan, M. (2012) conducted a study on higher secondary students of Tirunelveli district which focused on finding out the study habits of these students. It was revealed from the study that there is no significant difference existed between male and female students, rural and urban students.

Rani, R. (2013) conducted a study on the students studying in the science stream of senior secondary school. The main aim of the study was to find out the relationship between the home

environment and the study habits of the students. It was found that a significant positive relationship exists between the home environment and the study habits of boys.

Singh, B. and Mahipal (2015) conducted a study on secondary school students. The main aim of the study was to find out the relationship between academic achievement and the study habits of students. The study revealed that there exists a significant relationship between government and private, male and female secondary school students.

Upadhayay, S.K. (2017) conducted a study on senior secondary students. The main objective was to find out the relationship between academic achievement and study habits. It was found that there is no significant difference in the academic achievement of male and female senior secondary school students.

The review of the related literature shows that there exists an inconsistency in the result of the earlier research. This has forced the researcher to carry on this study to ascertain the relationships and differences between the variables at hand. Is there a difference in the study habits of first-generation learners and subsequent-generation learners? Is there any relationship between the study habits and the school environment of first-generation learners and subsequent-generation learners? The present study will fill the pitfall in this area. To seek the answers to the above-mentioned questions the researcher has framed the following objectives of the study.

Objectives of the study

1. To study and make a comparison of the study habits of first-generation learners and subsequent-generation learners.
2. To study and make a comparison of the school environment of first-generation learners and subsequent generations learners.
3. To find out the relationship between study habits and the school environment of the learners (first-generation learners and subsequent-generation learners).

Hypotheses

1. There is no significant difference between first-generation and subsequent-generation learners with respect to study habits.
2. There is no significant difference between first-generation learners and subsequent-generation learners with respect to the school environment.

3. There is no significant relationship between the study habits and the school environment of first-generation learners and subsequent-generation learners.

Research Method

The research method adopted for the present study is descriptive survey research.

Population

The students of class Tenth of Government Secondary schools located in the district Dehradun of Uttarakhand state are included in the population of the present study.

Sample

Through the convenience sampling method, a representative sample of 200 students which included 100 first-generation learners and 100 subsequent-generation learners were selected in the sample.

Research tool for data collection

For data collection, the following tools were used.

- 1) Dr. M. Mukhopadhyay and Dr D. N. Sansanwal's Study Habit Inventory (SHI).
- 2) Dr. K. S. Mishra's School Environment Inventory (SEI).

Analysis and Interpretation of Data

Hypothesis 1 –

1. There is no significant difference between first-generation and subsequent-generation learners with respect to study habits.

Table 1: Comparison of Study Habits of First and Subsequent-Generation Learners

Variable	Respondents	N	Mean	SD	SED	DF	t Value
Study Habits	Subsequent Generation Learners	100	171.02	18.24	2.0821	98	6.5656*
	First Generation Learners	100	157.35	10.04			

*Significant at 0.05 level of significance

Table 1 shows the mean which is found to be 157.35 and the SD which is 10.04 for the study habits of the first-generation learners. While the mean is 171.02 and the SD is 18.24 for the study habits of the subsequent generation learners. The t-ratio between the two groups is 6.5656, which is

significant at a 0.05 level of significance. It shows that there is a significant difference between first-generation learners and subsequent-generation learners in respect of study habits.

The literate parents of the subsequent generation learners and their awareness towards education are the reason for good study habits among the subsequent generation learners as compared to the low study habits among the first-generation learners.

Hypothesis 2

2. There is no significant difference between first-generation learners and subsequent-generation learners with respect to the school environment.

Table 2: Comparison of School Environment of First and Subsequent-Generation Learners

Variable	Respondents	N	Mean	SD	SED	DF	t Value
School Environment	Subsequent Generation Learners	100	161.02	28.24	3.4628	198	1.0598*
	First Generation Learners	100	157.35	20.04			

*Not significant at 0.05 level of significance.

Table 2 shows the mean which is found to be 157.35 and the SD which is 10.04 of the school environments of the first-generation learners. While the mean is 161.02 and the SD is 28.24 for the school environment of the subsequent generation learners. The t-ratio between the two groups is 1.0598 which is not significant at a 0.05 level of significance. It shows that there is no significant difference between first-generation learners and subsequent-generation learners in respect of the school environment. The apparent difference in the mean scores of the two groups (first-generation learners and subsequent-generation learners) may be attributed due to the chance factor of sampling fluctuations. Thus, the finding of the study indicates that the school environment of subsequent-generation learners exhibited a higher level than that of first-generation learners.

Hypothesis 3

3. There is no significant relationship between the study habits and the school environment of first-generation learners and subsequent-generation learners.

The coefficient correlation between study habits and school environment is 0.62. Thus, hypothesis 3 “There is no significant relationship between the study habits and the school environment of first-generation learners and subsequent-generation learners” is rejected. The variables i.e., study

habits and school environment of the learners are correlated with each other. It can be interpreted that the study habits of the learners have a dependence on the school environment.

Table 3: Correlation between Study Habits and School Environment

Variable	Mean	SD	Coefficient Correlation	Level of Significance
Study habits	164.185	14.7224	0.62*	0.01
School environment	159.185	24.4857		

*Significant at 0.01 levels.

It is the teacher in the classroom who with his encouragement, through the usage of an innovative and effective method of teaching and also by teaching according to the interest of the child can inculcate good study habits among the students. It is the efficiency of the teacher to arouse curiosity and interest in the students. Generally, the students learn from their family, parents, sibling and neighborhoods. First-generation learners are often unsupervised and are left unguided. Thus, they do not get an opportunity to learn from their elders and near and dear ones. Here the school environment plays a very improving role in impairing the study habits of students and also developing the potentialities of the students through encouragement, motivation and guidance.

Findings of the study

It was found from the study that the study habits of first-generation learners vary from subsequent-generation learners. The study habits of first-generation learners are below the subsequent generation learners. Every learner knowingly or unknowingly follows the method of study as it is done by their near elders, parents, and siblings. Since lack of literacy among the parents is reflected in the study habits as the first-generation learners are left without any guidance and supervision. Thus, they face more problems both at school and in home.

The school environment of first-generation learners and subsequent-generation learners does not vary. First-generation and subsequent-generation learners' responses were quite proximate to each other. The maximum number of student scores related to the school environment was categorized as the above-average level of the school environment. Often it is the teacher who

positively impacts the learning environment (the physical, psychological as well as in situational setting). A positive school environment is conducive to better educational growth among students. It was found from the study that the study habits and school environment of the learners are correlated with each other. The school environment of the first-generation learners and the subsequent-generation learners plays a significant role in developing good study habits among the learners. It is the teacher who inculcates good values among the students which ultimately develops good study habits among the learners. The teacher is the one who impacts positively the learning environment in many ways. The teacher is the one who motivates, guides and encourages the learners to inculcate good study habits among the students.

Conclusion

The present study is important not only for teachers, parents, and students but also for school administrators, educational planners and various financial agencies and boards etc. Administrators should organise various guidance programmes to improve the study habits of students and develop this interest in learning. The various financial agencies should provide funds for reading materials, educational guidance and library facilities etc. so that the learners are motivated and eventually will improve their study habits. In comparison to the subsequent generation learners, the first-generation learners face more problems and lack supervision and guidance at home. So here the teacher's help is required out of the classroom also. Thus, the guidance services of the teacher can help the students to overcome their weaknesses/shortcomings and would help them to proceed ahead and inculcate good study habits.

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Cognitive Ability and its Relationship with Academic Achievement in Science among Secondary School Students

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Abstract

It is important to study the relationship of various psychological variables with academic achievement in science so that new methods/strategies which bring more development in science education can be devised. The present study is about academic achievement in science and its relationship with cognitive ability among secondary school students. The dimensions of cognitive ability considered in this study are – awareness, memory, understanding, reasoning ability, and problem-solving ability. Two standardized tools – Science Achievement Test (by Ali Imam, Gyan Pratap Singh and Shiventra Pratap Singh, 2017), and Cognitive Ability Test (by Madhu Gupta and Bindiya Lakhani, 2018) – published by National Psychological Corporation, Agra, have been used. The population of the study consisted of male and female secondary school students studying at secondary schools of Thoubal District, Manipur. Selection of the samples has been done by adopting the Simple Random Sampling Technique (Lottery Method) in such a way that it consisted of 307 students (166 male and 141 female students). The study has found that the female students perform better in science academically than the male students: and the female secondary school students have higher cognitive ability than the male students. It has also found that the secondary school students have average academic achievement in science and below-average cognitive ability, and that academic achievement in science of secondary school students is positively very lowly correlated with their cognitive ability.

Keywords: *Academic Achievement in Science, Cognitive Ability, Secondary School students.*

Introduction

The development of knowledge and intellectual skills is carried out in the cognitive domain of an individual. Through this domain, an individual carries out all his/her mental functions and

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processes. In short, every individual has an ability called 'Cognitive Ability', which encompasses all the mental processes such as perceiving, knowing, understanding, memorizing, categorizing, applying, imagining, judging, inference drawing, logical reasoning, problem-solving, decision making, etc. All these processes are required for achieving a good knowledge of science since science is the systematic study and application of all the knowledge and understanding of the natural world. It is, therefore, required to measure academic achievement in science and cognitive ability of students so as to find out the relationship between each other. Since the study is about secondary school students, the dimensions of cognitive ability considered in this study are – awareness, memory, understanding, reasoning ability, and problem-solving ability.

Academic achievement of a student is generally decided by the marks obtained in his/her school examination. It gives information about the student whether he/she has achieved the learning objectives which are expected at his/her grade level. In order to examine a student's achievement, one needs to test his/her abilities such as – ability to be aware of something, ability to memorize, ability to understand, reasoning ability, problem solving ability, and many more abilities. But these abilities are subsets/dimensions of cognitive ability. Therefore, there should be a relation between academic achievement of students and their cognitive ability.

Again, most students feel that science is a difficult subject which leads to a high failure rate. Nowadays, scientific knowledge is inevitable for this modern world as well as exploration of the universe. Therefore, science achievement is of much interest not only for the students, parents, and teachers but also for the whole society.

Some reviewed studies in the chronological order are as follows:

Ferrer *et al.* (2004) examined the dynamics of academic achievement and cognitive abilities for the period between childhood and early adulthood. Predictions about time-dependent "coupling" relations between cognition and achievement based on R. B. Cattell's (1971, 1987) investment hypothesis were evaluated using linear dynamic models applied to longitudinal data (N=672). A second set of findings provided support for the original predictions and indicated that fluid ability was a leading indicator of changes in achievement measures (i.e., quantitative ability and general academic knowledge).

Frey & Detterman (2004) studied the relationship between the scholastic assessment test and general cognitive ability for undergraduate students. They used Armed Services Vocational

Aptitude Battery for measuring the general cognitive ability, and school grades for measuring scholastic achievement. They were able to establish the relationship and predict general cognitive ability based on the scholastic assessment.

Rohde & Thompson (2007) tried to predict academic achievement with cognitive ability for undergraduates. They used Raven's Advanced Progressive Matrices and the Mill Hill Vocabulary Scales for measuring cognitive ability; and Grade Point Average, Wide Range Achievement Test III Scores and SAT scores for measuring academic achievement. They were able to predict academic achievement with cognitive ability.

Vock, *et al.* (2011) analyzed the interplay of four cognitive abilities--reasoning, divergent thinking, mental speed, and short-term memory--and their impact on academic achievement in adolescents in grades seven to 10 (N = 1135). Their findings support the notion that mental speed and short-term memory, as ability factors reflecting basic cognitive processes, exert an indirect influence on academic achievement by affecting reasoning and divergent thinking (total indirect effects: $\beta = 0.22$ and 0.24 , respectively). Short-term memory also directly affects achievement ($\beta = 0.22$).

Hofer *et al.* (2012) studied to predict achievement based on cognitive ability. The better predictors of achievement were personality variables, but cognitive ability also displayed greater variance with the students' achievement. The suggestion of the study included that the students need proper training of their cognitive ability to keep away distractions from students' study.

Taub *et al.* (2014) investigated the effects of general intelligence and seven specific cognitive abilities on college-age students' mathematics achievement. The investigation went beyond previous research by employing structural equation modelling. The specific areas of intelligence demonstrating direct effects on the mathematics achievement dependent variable were Crystallized Intelligence and Fluid Reasoning. The effects of general intelligence were found to be "indirect" in the college-age sample.

Chong (2016), aimed to identify academic achievement and cognitive ability of undergraduates in University of Technology, Malaysia. In this study, cognitive ability is a combination of critical thinking, creative thinking, metacognition, and knowledge. A total of 336 undergraduates participated in this study. Inferential analysis was used to identify the relation between the two variables of the respondents mentioned above. The findings showed a significant relationship between all cognitive abilities except knowledge and academic achievement. The multiple

regression results showed that critical thinking, creative thinking, and metacognition has significant predictive power on undergraduates' academic performance with $F(3,332) = 185.909$, $p < 0.001$. Critical thinking has the highest predictive power ($\beta = 0.491$) while creative thinking has the lowest predictive power ($\beta = 0.221$) on academic achievement.

Nithya (2018) conducted a study on the relation of cognitive ability with academic achievement of eighth standard pupils. She adapted, modified and validated Lohman & Hagen (2003) newline Cognitive Ability Test Battery for measuring cognitive ability. She also used Average marks of 3 semesters of Language and Mathematics for measuring academic achievement. She was able to find a significant correlation between cognitive ability and academic achievement of the pupils.

Nesayan et al. (2019) studied the cognitive profile of children and also the relation of it with academic performance. It was found that all the cognitive components were significantly correlated with academic performance ($p < 0.001$). Among cognitive components, processing speed (coding) and perceptual organisational ability (Rey test) have weak correlation with children's performance.

Peng & Kievit (2020) conducted a meta-analytic study on the bidirectional perspective between academic achievement and cognitive abilities. The results were (a) reading/ mathematics and cognitive abilities (i.e., working memory, reasoning, and executive function) predict each other in development, (b) direct academic instruction positively affects the development of reasoning, and (c) the bidirectional relations seem weaker among children with disadvantages (e.g., those with special needs or low socioeconomic status).

Tikhomirova et al. (2020) conducted a cross-sectional study of predicting academic achievement from the cognitive abilities across school education (i.e., classes I-XI). The result showed that a single model can describe the nature of the correlation of cognitive abilities with academic achievement at every schooling level. This model suggested that the components of cognitive abilities can be predicted with the help of information processing speed, and it will also help in students' academic success.

The researcher has found out the following knowledge gaps from the above reviews of related literature:

- i. Most of the studies have focused on the overall academic achievement of students, and not on the academic achievement in science.

- ii. It is again seen that few such studies have been conducted only on students at the secondary level.
- iii. And, no such studies have been done before in the state, Manipur.

Moreover, the knowledge of the relationship between cognitive ability and academic achievement in science is of vital importance from sociological, psychological, and educational points of view. Thus, the lack of research in the present area provoked the researcher to take up the present topic. The novelty and validity of the present problem justify the time to study and explore the unknown relationship (between academic achievement in science and cognitive ability) so that students' science achievement can be accelerated.

The following operational terms are used in the present study:

1. Academic Achievement in Science: It refers to the students' marks obtained in the examination which are conducted based on their school science subjects (i.e., physics, chemistry and biology). Here, the science achievement test is based on major educational objectives like knowledge, comprehension and application.
2. BSEM: Board of Secondary Education, Manipur. It is the state board that conducts the High-School Leaving Certificate Examination in Manipur.
3. Cognitive Ability: It refers to the mental capability that includes all the processes involved in acquiring and understanding knowledge. Since the study is measuring the cognitive ability of school students at the secondary level, therefore the cognitive ability consists of five dimensions – awareness, memory, understanding, reasoning ability, and problem-solving ability.
4. Gender: According to the present study, it refers to female and male school students of secondary classes.
5. Secondary School Students: According to the present study, they are the students studying in classes IX and X of schools affiliated to BSEM in Thoubal District, Manipur.

Objectives of the study

1. To compare the Academic Achievement in Science of female and male secondary school students.
2. To compare the Cognitive Ability Scores of female and male secondary school students.
3. To find out the relationship between Academic Achievement in Science of secondary school students and their Cognitive Ability.

Hypotheses of the study

1. There is no significant difference in the Academic Achievement in Science of female and male secondary school students at 0.05 significance level.
2. There is no significant difference in the Cognitive Ability Scores of female and male secondary school students at 0.05 significance level.
3. There is no significant relationship between Academic Achievement in Science of secondary school students and their Cognitive Ability at 0.01 significance level.

Methods and procedure

Type of the Study

The present study has adopted Descriptive Survey Method. It is a Cross-sectional Study.

Area of Study

The present study is under the broad area of research interest – “Science Education”.

Population

This study’s population consisted of the students of classes IX and X studying at the secondary schools affiliated to BSEM in Thoubal District, Manipur.

Sample

The sample consisted of 307 students (166 male and 141 female students) from both government and private schools of Thoubal District.

Sampling Technique

Simple Random Sampling Technique (Lottery Method) was employed for sample selection. Five secondary schools (two government and three private secondary schools) were selected in which the total number of secondary students was 614. Lottery Method was used to select 50% of the total number of students in each school; and this method of selecting sample was carried out by the researcher herself by randomly picking up Roll No. of students from a jar containing all the Roll No. of students in each classroom until the selected number of students reaches 50% of each classroom’s total strength.

Tools and Administration of the study

For the present study, two standardized questionnaires have been used which are:

- (i) Science Achievement Test developed and standardized by Ali Imam, Gyan Pratap Singh and Shiventra Pratap Singh (2017), and

(ii) Cognitive Ability Test developed and standardized by Madhu Gupta and Bindiya Lakhani (2018),

published by National Psychological Corporation, Agra.

The Science Achievement Test was constructed based on the major educational objectives like knowledge, comprehension and application. This test consisted of 75 objective type questions (carrying 1 mark each) having four alternative answers each with only one correct answer. Equal weightage was given to the different branches of science (i.e., Physics, Chemistry & Biology). The reliability of the test was computed by using Test-Retest Method on a sample of 300 students after a gap of 15 days. The coefficient of correlation was +0.87 which is significant at 0.01 level of significance. The content validity is based on a careful comparison of the items to the definition of the domain being measured (Allen & Reyan, 1979). And the construct validity of the items of this test was ensured through rational logical analysis of some science teachers and experts in test construction and in item analysis.

Table 1: Norms for Interpretation of the Level of Achievement in Science:

Sl. No.	Range of Raw Scores	Level of Science Achievement
1.	74 & above	Extremely High
2.	64 to 73	High
3.	55 to 63	Above Average
4.	43 to 54	Average
5.	34 to 42	Below Average
6.	24 to 33	Low
7.	23 & below	Extremely Low

The Cognitive Ability Test was constructed based on five dimensions – awareness, memory, understanding, reasoning ability, and problem-solving ability – which was used to measure the cognitive ability of secondary school students. This test consisted of 40 objective type questions (carrying 1 mark each) having four alternative answers each with only one correct answer. The reliability of the test was computed by using Test-Retest Method on a sample of 100 students studying in secondary and senior schools after a gap of 4 weeks. The coefficient of correlation was 0.701 (significant at 0.01 level) which is fairly high measure of intrinsic consistency of the test.

The face validity and the content validity of this test were assessed by experts, after which the construct validity was measured, and it was found to be significant at 0.01 level.

Table 2: Norms for Interpretation of the Level of Cognitive Ability:

Sl. No.	Range of Raw Scores	Level of Cognitive Ability
1.	38 & above	High
2.	31 to 37	Above Average
3.	23 to 30	Average
4.	16 to 22	Below Average
5.	15 & below	Low

Due to the Covid-19 Pandemic and resulting Restrictions in the state of Manipur, the researcher visited nearby schools and requested permission and required arrangements for the data collection process. Five such schools accepted the researcher's request and arranged the required process of collection of data by following proper SOP norms. The data have been collected from 22nd September to 5th November 2021. All the students of the sample have been interacted personally.

Statistical Techniques

To analyze and interpret the data collected, statistical techniques like Mean, Standard Deviation, Standard Error Difference, t-Test, p-Test and Pearson's Correlation Coefficient have been used.

Delimitations of the Study

The study is delimited to:

1. The secondary school students of Thoubal District, Manipur;
2. The secondary schools affiliated to Board of Secondary Education, Manipur (BSEM).
3. The data is obtained only through standardized questionnaires.

Data analysis and interpretation

Hypothesis-I: There is no significant difference in the Academic Achievement in Science of female and male secondary school students at 0.05 significance level.

The mean academic achievement in science for female is 49.92 marks (out of total 75 marks) and that of male students is 40.90 marks (out of total 75 marks). It indicates that the mean score of the

female students is higher than that of the male students. The calculated value of **p** is $0.002 < 0.05$ (significant). Therefore, the first hypothesis is rejected.

Table 3: t-value and p-value of Academic Achievement in Science of Female & Male students

Gender	Sample Size (N)	Mean	Standard Deviation (SD)	Standard Error Difference (SED)	t-Value	p-Value	Remarks
Female	141	49.92	15.41	3.14	2.87	0.002	Since p-value < 0.05 (Significant)
Male	166	40.90	15.97				

Hence, there is a significant difference in the Academic Achievement in Science of female and male secondary school students at 0.05 significance level. That is, the Academic Achievement in Science of female students is found to be more than that of male students.

Hypothesis-II: There is no significant difference in the Cognitive Ability Scores of female and male secondary school students at 0.05 significance level.

Table 4: t-value and p-value of Cognitive Ability Scores of Female and Male Secondary Students.

Gender	Sample Size (N)	Mean	Standard Deviation (SD)	Standard Error Difference (SED)	t-Value	p-Value	Remarks
Female	141	18.77	6.61	1.36	3.63	0.0002	Since p-value < 0.05 (significant)
Male	166	13.83	4.74				

The mean cognitive ability score for female students is 18.77 marks (out of total 40 marks) and that of male students is 13.83 marks (out of total 40 marks). It indicates that the mean score of the female students is higher than that of the male students. The calculated value of **p** is $0.0002 < 0.05$ (significant). Therefore, the second hypothesis is also rejected. Hence, there is a significant difference in the Cognitive Ability Scores of female and male secondary school students at 0.05

significance level. That is, the Cognitive Ability of female students is found to be more than that of male students.

Hypothesis-III: There is no significant relationship between Academic Achievement in Science of secondary school students and their Cognitive Ability at 0.01 significance level.

Table5: Pearson’s Correlation between Academic Achievement in Science and Cognitive Ability.

Variable	Sample Size (N)	Mean Scores	Pearson’s Correlation Coefficient
Academic Achievement in Science	307	45.41	0.282
Cognitive Ability		16.30	

The overall mean academic achievement in science is 45.41 marks (out of total 75 marks) and the overall mean cognitive ability score is 16.30 marks (out of total 40 marks). The mean academic achievement in science indicates that the students have average science achievement score (based on Table-I). Also, the mean cognitive ability score indicates that the students have below-average cognitive ability scores (based on Table-II). The Pearson’s Correlation Coefficient between academic achievement in science and cognitive ability is 0.282. This indicates that the two variables are positively very lowly correlated (since $0.282 < 0.3$). So, the third hypothesis is also rejected. Hence, there is a very low positive correlation between Academic Achievement in Science of secondary school students and their Cognitive Ability at 0.01 significance level.

Results

The female students score higher than the male students in Science Achievement Test, and the difference is significant (at 0.05 significance level). That is, the female students perform better in science than the male students academically.

1. The female students score higher than the male students in Cognitive Ability Test, and here also the difference is significant (at 0.05 significance level). That is, the female students have higher cognitive abilities than the male students.
2. The secondary school students have average academic achievement in science (according to Table-I) and below-average cognitive ability (according to Table-II). And it is found that

academic achievement in science and cognitive ability of secondary students are positively very lowly correlated (at 0.01 significance level).

Discussion

The following recommendations can be made:

1. Since female students score better in both CAT and SAT than the male ones, extra attention to male students' learning must be given in order to improve their performance in both the tests.
2. All the stakeholders in the field of education should work collaboratively to increase the cognitive ability scores of students, which in turn will increase their academic achievement in science.
3. The teachers should try to improve and vary their ways of teaching-learning processes so that these ways enhance the cognitive ability of their students.
4. The curriculum framers and textbook writers should try to include more and more effective activities and practices in the curriculum and textbooks of students that help in improving students' cognitive ability.
5. The administrators and policymakers should take up lots of innovative policies and programs in this respect in addition to the existing ones.
6. The researchers in this field also should try to find out new and innovative ways of enhancing students' cognitive ability.
7. Finally, the parents should also pay attention to their children's learning processes and contribute their best in improving their children's cognitive ability by collaborating with the above-mentioned stakeholders, particularly the teachers.

Conclusions and implications

It is found that significant differences (at 0.05 significance level) can be observed among secondary students on the basis of their gender, regarding academic achievement in science and also, regarding cognitive ability. That is, the female students perform better in science academically than the male students; and have better cognitive ability than the male students. Again, it is found that the above two variables are positively very lowly correlated (at 0.01 significance level). These imply that enhancing cognitive abilities of students results in improving students' achievement academically in science. These also, imply that learning is easy and fast when cognitive abilities are high. It is, therefore, required to provide high-quality education and

schooling to students in their early years of schooling so that they can acquire the required cognitive ability at the right time and at the right age. Providing quality education and early childhood care and education again, recently got emphasized on NEP 2020. Therefore, this study's research findings and recommendations of NEP 2020 are in agreement with each other.

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Cyber-Loafing among Senior Secondary School Students: Does Gender and their Academic Stream make any Difference?

*Hilal Ahmad Malla**

Abstract

The proliferation of ICTs in the learning environment leads to greater necessity of meticulous planning in the integration process. The present study attempts to understand the issue of cyber-loafing among the students based on gender and stream subjects. Cyber loafing behaviors can be disruptive and tending to hinder the academic environment. The present study is quantitative in nature, with descriptive survey type research design. 300 senior secondary school students were recruited as the sample of the study. The results of the study revealed that cyber-loafing is influenced by gender, male students were found more prone to cyber-loafing as compared to their counterparts. And it was also found that stream (science and social science) does not have any significant influence on cyber-loafing.

Key words: *Cyber-loafing, ICTs, Gender, Stream Subjects*

Introduction

Cyberloafing is one of the most disturbing tech-trends in today's workplaces and schools (Akbulut et.al 2016), it is the deliberate use of Internet access for personal reasons while at work or in lectures. In the present era of "connectedness", it is hard to keep students detached from technology. Nowadays, we enter classrooms brimming with laptops, cell phones, and Ethernet hook-ups used for their educational requirements, despite having the potential benefits of using technology in the classroom, many pupils constantly succumb to use it for non-class related activities throughout lesson, thereby negatively affecting their learning. Many learners also utilize technology to accomplish tasks that have less or no relevance to, what is being taught in the class (Ragan et al., 2014; Ravizza, Hambrick, & Fenn, 2014), is commonly referred to as cyber-slacking or cyber-loafing in the teaching-learning environment (Gerow, Galluch, & Thatcher, 2010). It diverts away learners attention from the course related accomplishments (Gerow et al., 2010), and can be disruptive and tending to hinder the academic environment (Malla, 2022). It can prompt

learner's detachment to class, absence of enthusiasm and discipline problems (Arabaci, 2017), it has also detrimental effects on students' academic performance (Dursun, Donmez, & Akbulut, 2018; Wu, Mei & Ugrin, 2018) as well as on effective learning (Sana, Weston & Cepeda, 2013).

Theoretical framework

Theory of planned behavior:

The theory of planned behavior (TPB) has been extensively applied in a variety of fields to better explain person's interests-based behaviors. The proximal determinant of a behavior, according to TPB, is an individual's intent to do the action, which is influenced by one's disposition, individual norms, and perceived behavioral control over the behavior (Fishbein & Ajzen, 1975). Intention has been proven to be a reliable predictor of real behavior in much research (Ozler & Polat, 2012). Therefore using "TPB" as theoretical background, we focus on students' intents to cyber-loaf in teaching learning scenario. Thus "Theory of Planned Behavior" (TPB) may be utilized as a comprehensive model to explore crucial aspects influencing cyber-loafing intention among the learners.

Literature review

Nowadays cyberloafing is a new phenomenon tending to educational settings (Özcan, Gökçearslan, & Yüksel, 2017; YildizDurak, 2019). It can be disruptive and tending to hinder the academic environment. Scholarly evidence on cyberloafing in education, conferred that cyberloafing behavior in the teaching-learning setting is related to demographic factors, personal variables, and the usage of information technology. (Akbulut, Do" nmez, & Dursun, 2017; Gerow, Galluch, & Thatcher, 2010). Gender was found to be a prominent variable of interest in recent analyses. Males were frequently found to exceed females (Akbulut et al., 2016, Baturay&Toker, 2015; Karaoglan-Yılmaz, Yılmaz, Oztürk, Sezer, & Karademir, 2015). Baturay and Toker (2015) investigated the possible predictors of cyberloafing with 282 high school learners, figuring that male, and regular users are more likely to cyberloaf as compared to their counterparts. Wu et al. (2018), revealed that, cyberloafing has a negative impact on classroom performance and academic success. When utilized effectively, technology may enhance education and promote learning; yet, when used incorrectly, may impede learning (Sana et al., 2013). It has been frequently observed that during the classes' students use web for reasons other than course content, like sending and receiving messages, surfing in news and sports sites, downloading music, playing web-based

games, and surfing social networking sites (Ugrin, Pearson, & Odom, 2008; Ugrin & Pearson, 2013). Utilization of ICTs out of purpose in the learning environment, distracts the learner and undermines his or her motivation for in depth learning (Ravizza, Uitvlugt, and Fenn 2017). So, it is conceivable that youngster today, who have been known as the “Wired Generation” (Barnes, 2009), may misuse their electronic devices that may led to social, personal and academic problems. (Gökçearsan, Mumcu, Haşlaman, & Çevik, 2016).

Objectives

1. To find and compare cyberloafing among senior secondary school students on the basis of gender.
2. To find and compare cyberloafing among senior secondary school students on the basis of stream.

Hypotheses

1. There is significant mean difference between male and female senior secondary school students on cyberloafing.
2. There is significant mean difference between Science and social science students on cyberloafing.

Methodological framework

i) Research design

Quantitative in nature, the present study adopted descriptive survey type research design. Best and Kahn (2016) stated that “descriptive research is concerned with the conditions or relationships that exist, practices that prevail, beliefs, points of view or attitudes that are held, processes that are going on, effects that are being felt or trends that are developing (p.106)”.

ii) Participants / Sample

The current study was carried out on senior secondary school students of “South Kashmir” (N = 300). The sample subjects were selected by utilizing simple random sampling technique.

iii) Instrumentation

The following standardized tool was used to extract the necessary data:

Cyber-loafing scale by Y. Akbulut et al. The scale is consisting of 30 items with five dimensions, viz i) Sharing ii) Shopping iii) Real-time updating iv) Accessing online content and v) Gaming/Gambling. The Cronbach's Alpha internal consistency coefficient values of the factors

were reported to be between 0.79 and 0.94 (Akbulut, Dursun, Dönmez, & Şahin, 2016).

Analysis and Interpretation

Descriptive analyses were carried-out to find out levels of cyber-loafing among senior secondary school students. In order to examine whether cyber-loafing is varied by gender, and stream background independent sample **t-test** was used.

i) Prevalence Analysis

Table 1: Prevalence of Cyber-loafing among senior secondary school students

Levels	overall sample
High level	21.33%
Moderate level	51.34 %
Low level	27.33 %
Total	100%

The results acquired in Cyber-loafing scale by Y. Akbulut et al disclosed a moderate level of cyber-loafing among the senior secondary school students. Majority of the students were located at moderate level i.e. **51.34%**, while as **21.33%** and **27.33 %** students were found at high and low level of cyber-loafing scale respectively.

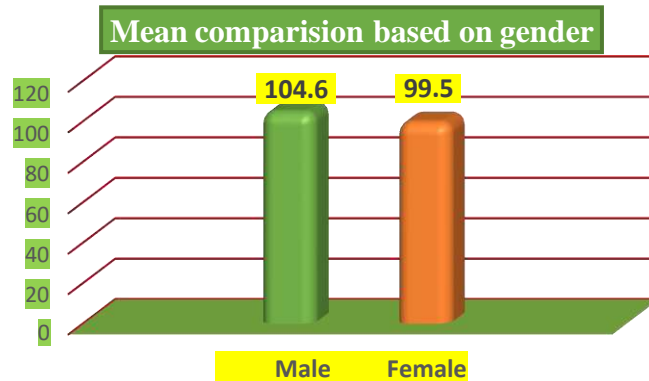
Comparative analysis:

ii) Test of significance on the basis of gender.

Table 2: Comparison based on Gender.

Gender	N	Mean	SD	t-value	Sig.level
Male	150	104.6	6.031	8.58	
Female	150	99.5	4.087		

A perusal of table 2 displays that the calculated t-value (**8.58**) was found to be significant at the 0.01 level of significance. Which means that there is a significant mean difference between “male and female” students on cyber-loafing. Male students were found more prone to cyber-loafing as compared to female students. Therefore, hypothesis number 1st, which is stated as “There is significant mean difference between male and female senior secondary school students on cyber-loafing” has been accepted. The results were further elaborated with the help of a figure.

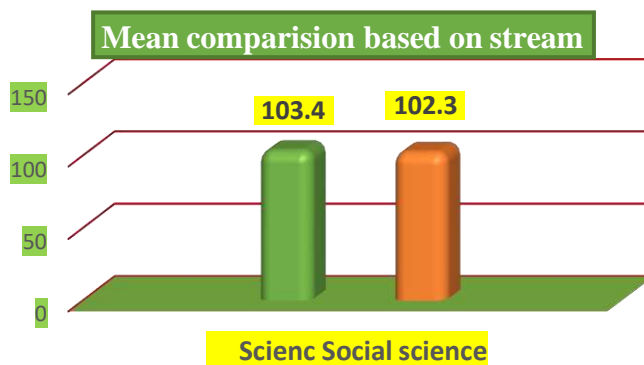


iii. Test of significance on the basis of stream subjects.

Table 3: Comparison of Streams on the basis of Subjects

Stream	N	Mean	S.D.	t-value	Sig-level
Science Students	150	103.4	5.049	1.89	0.01
Social Science Students	150	102.3	5.034		

A perusal of the table 3 displays that the calculated t-value (**1.89**) was found to be insignificant at the 0.01 level of significance. Which means that there is no significant mean difference between science and social science students on cyber-loafing. It means that stream back ground does not have any significant influence on cyber-loafing. Therefore, the hypothesis number 2nd, which is stated as “There is significant mean difference between Science and Social science students on cyber-loafing” has been rejected. The results were further elaborated with the help of a figure.



Discussion

The present study is comparative in nature, intended to study the effect of gender and stream subjects on cyberloafing among the “senior secondary school students”. The results acquired in Cyber-loafing scale by Y. Akbulut et al disclosed a moderate level of cyber-loafing among the senior secondary school students. Majority of the students were located at moderate level of cyber-loafing i.e., 51.34%,the finding was also supported by Yılmaz, F. G. K et al. (2015), they found that the students' levels of cyberloafing were generally at a medium level. Coming to the results of comparative analysis, it has been indicated that there exists a significant mean difference between the “male and female senior secondary school students” on cyber-loafing. Male students were more prone to cyber-loafing as compared to their counterparts. The results were supported by Akbulut, Donmez & Dursun (2017), they revealed that males exceeded females in terms of total cyberloafing scores. Yılmaz, F. G. K et al. (2015) also revealed that male students were found to have higher levels of cyberloafing than female students. Additionally, Blanchard and Henle (2008) also found that males exhibit more serious cyberloafing behaviors than females. The results of test of significance based on stream subjects suggests that there exists no significant mean difference between science and social science students on cyber-loafing. No such scholarly evidence is , neither supporting nor rejecting the present finding, so therefore it is concluded that the influence of stream subjects on cyber-loafing is somewhat in conclusive and therefore requires further attention.

Conclusion

Utilization of ICT instruments and web-based services are regarded as an important way of permitting the students to have significant outcomes in teaching learning processes (Baker, Lusk & Neuhauser, 2012). Nevertheless, interdiction of technology is not a panacea, because technology has the potential to improve learning outcomes, when utilized appropriately. It is therefore essential to understand why learners cyber-slack/loaf in the classroom, in order to reduce this behavior and promote successful learning transactions in the classroom. Determining the intentions and repercussions of utilizing information technology for non-educational purposes in educational settings will have significant implications for student achievement.

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Attention Network Task (ANT) Performance: Role of Gender

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Abstract

Selective attention offers preferential processing of specific information during cognitive functioning. Gender differences associated with attentional processes exist, yet relatively little explored. The current study assessed the efficiency of attentional networks – alerting, orienting, executive control and the associated gender differences among healthy participants using attention network task (ANT). The participants (N = 41; 20 males and 21 females; Mean age= 27.25 years; Age range=18-30 years) were recruited from the BanarasHindu University. Results revealed significant gender effect on overall mean reaction time performance (RT) ($t=2.35, p < .01$). Furthermore, significant gender effect was also found on overall correct detection (accuracy) measure where males perform better in comparison to females ($t =1.79 p < .04$). In Sum, the findings reveal that significant role of gender was found for reaction time and accuracy performance measures on overall basis, however no effect of gender was found across attention networks task measures i.e., alerting, orienting and executive control. The findings of the present work substantially contribute to discover the gender-based differences in attentional performances.

Keywords: *selective attention, attentional network task, accuracy, and reaction time.*

Introduction

Gender differences do exist in pain perception, anger proneness, aggression, and sexual motivation, anxiety, sadness, disgust, and discrimination, chemosensory attention, happiness, and identification, cerebral lateralization, socio-political attitudes, visual selective attention, and a wide range of other cognitive tasks. (Gang, Hu, Jin and Kai, 2013). The attention network test (ANT) including emotional cuing in trait anxiety was created by Fan, Mc Candliss, Sommer, Raz, and Posner (2002) to explore the elements of visual attention. The ANT has been beneficial in decomposing the attentional system into three separate attentional networks - alerting, orienting, and executive networks (Posner & Petersen, 1990). This simple task combines two others widely

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used attention research tasks: the cuing task (Posner, 1980) and the flanker task (Eriksen & Eriksen, 1974).

Attention may be considered as an umbrella term for a variety of psychological characteristics. Posner and Petersen (1990) classified the human attention system into three distinct networks based on multiple neuropsychological and neuro anatomical studies: alerting, orienting, and executive control networks. These networks have discrete neuro anatomical components and at cognitive levels as well. Based on the flanker and exogenous cueing paradigms, the Attention Network Test (ANT) can concurrently assess the functioning of all three networks and examine their interrelationships, and the test results may be obtained within 30 minutes. ANT has been widely used to study attentional processes in both healthy people and individuals with characteristic features of Alzheimer's disease, schizophrenia, and borderline personality disorder (Gang, Hu, Jin & Kai, 2013). In a recent longitudinal study, the performance on ANT has yielded significant improvement for those practicing Surya namaskar (Singh et al, 2022).

Attention and Gender

In experimental psychology, the concept that selective attention is important for human performance has a long history (Posner & Peterson, 1990). In addition, gender differences among males and females have also been established in terms of performance measures (Halpern, 2000). A documented advantage for females in verbal and episodic memory tests (Herlitz, Nilsson, & Beckman, 1997), and a demonstrated advantage in visual-spatial activities (Collins & Kimura, 1997) exist. As females have been revealed to struggle in sustained attention tests (Giambra & Quilter, 1989), the scant empirical studies on gender in selective attention so far suggests that this might be a significant component of cognitive gender differences (Bayliss, di Pellegrino, & Tipper, 2005; Merritt et al., 2005). Gender differences in selective attention may reduce or lead to reported individual differences in other tasks, if there exist sex differences in selective attention. For example, females may have an advantage on episodic memory tests due to their ability to suppress information (Hasher, Zachs, & May, 1999; Merritt, Hirshman, Wharton, Stangl, Devlin & Lenz, 2007).

Antecedents and current work

Considering the importance of the relationship between sex differences and attentional processes, and the fact that there are several research comparing attentional processes on the basis of gender

differences, the present study aims to investigate the relationship between gender (female and male) and attentional network functioning. As attention is a multi-network system with different networks being affected in characteristic ways, the ANT-I task (Callejas, Lupiáñez, & Tudela, 2004) might be the ideal tool to investigate the effect of sex differences on the functioning of various attentional networks. It has been proposed that ANT gives a valid assessment of three major components of attention processes, namely alerting, orienting, and executive control, all within one procedure (Fan, McCandiss, Sommer, Raz & Posner, 2002).

The ANT, though a valid tool, has not been used to investigate the relationship between sex and attention in healthy individuals (Gang, Hu, Jin and Kai, 2013). However, based on the above account, it is well observable that gender differences and cognitive performances can relate. The objective of the present study was to examine the gender differences in attention network task performances i.e., alerting, orienting, and executive control, in healthy male and female participants in terms of reaction time and correct detection (accuracy). We hypothesized that there would be a significant difference in the functioning of attentional networks system among male and female healthy participants in terms of reaction time and correct detection (accuracy) performance.

Method

Participants

Forty-one college students (20 males and 21 females) belonging to Banaras Hindu University between the age ranges of 18-30 years old (Mean age= 27.25) participated in the study. They all had normal speaking, writing, language expression and cognitive skills. The Participants with education level at least undergraduate, basic knowledge of computer, normal (6/6) or corrected to normal visual acuity (6/9) were selected for the experiment. The participants with any known psychiatric or chronic illness or medication were excluded from the experiment.

Procedure

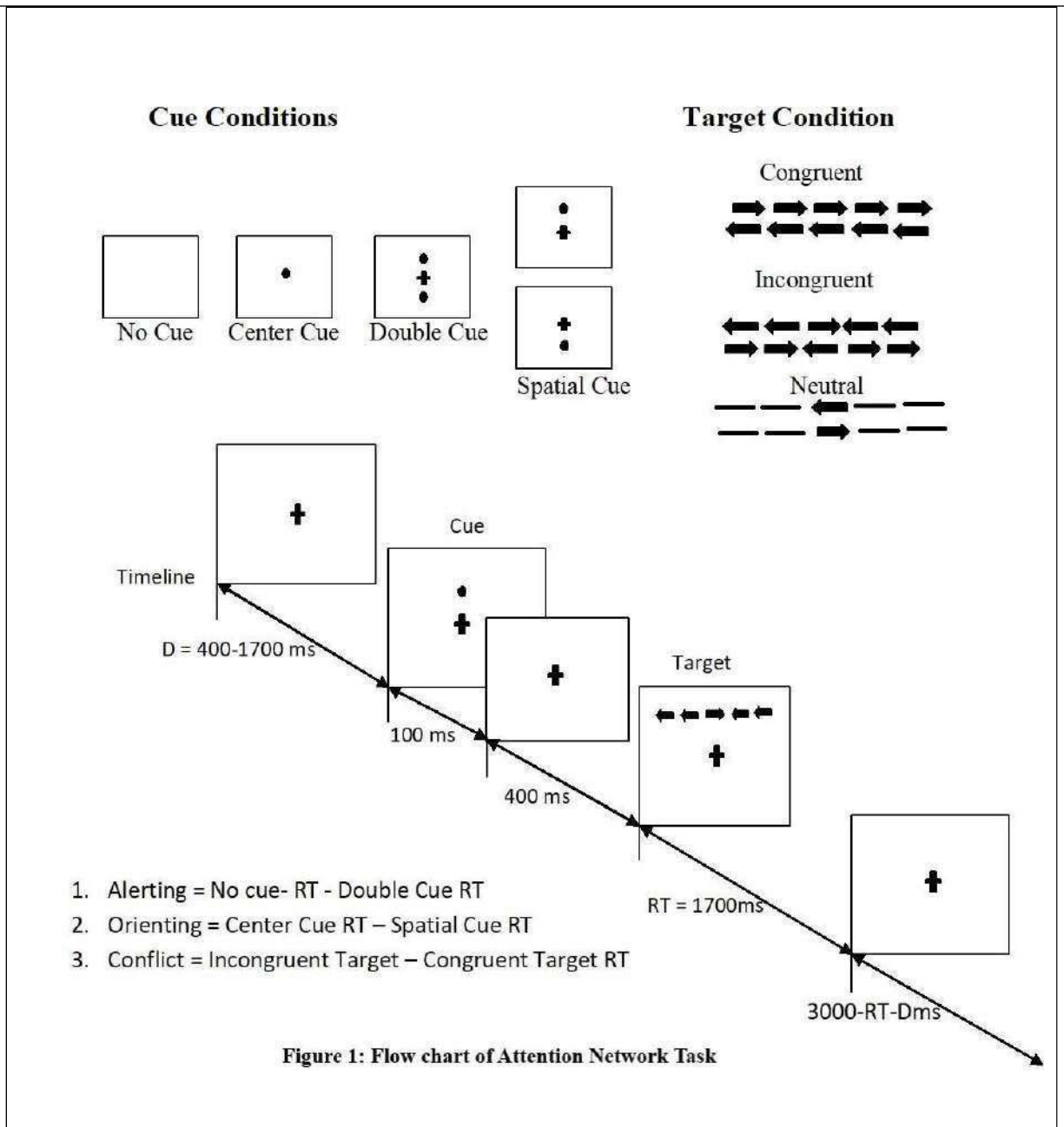
All of the experimental procedures were conducted in accordance with study protocol approved by the Department Research Committee of the Department of Psychology, Faculty of Social Sciences, Banaras Hindu University. A written informed consent was also obtained from the participant prior to performing the procedure. Participants were given written and oral instructions. Demographic and socioeconomic details were also taken. Participants were asked to complete the

attentional network task developed by Fan et.al, 2002 using Inquiist[®]4.0.10.0 (Millisecond, 2016) software running in a Dell Inspiron laptop with a 13.3 full HD display. After completion of the task, participants were debriefed and thanked for giving their time.

Experiment task

The experimental task contained a two-minute practice session followed by the main trail for five minutes each. The total task was completed in 15-20 minutes. After 20 trials of the practice session, the participants entered into the main session of three blocks consisting of 96 trials. The experimental task consisted of one 2-minutes practice session and three 5-minutes blocks on the main trail. After completing 20 trials in the practice session, participants entered into the main session, which consisted of three blocks with 24 trials in each block thus 96 trials in total.

Performance feedback was offered to the participant in terms of reaction time and correct detection during the practice session only and no summary or feedback was offered after completion of 3 blocks of the main session. A single trial contained a variable interval, ranging from 400-1700 ms, followed by a fixation cross at the center of the screen. Then, a cue could be presented for 100 ms depending on the cue condition followed by a central fixation cross for 400 ms, and a target flanker, presented either above or below fixation for 1700 ms. The different cue conditions (4) and targets (3) were presented randomly within each block (Figure 1). Reaction time and error scores, both were computed as performance measures. The participants were instructed to press the “E” button for the left direction of the central target and the “I” button for the right direction of the central target. A short break of a few minutes was given between two blocks of the experimental task.



Calculation of attention network efficiencies

To assess alerting, orienting, and executive control networks, the ANT examines differences in response time (RT) resulting from different experimental settings. Alerting scores were calculated by subtracting the mean RTs of the conditions with double cues from those of the conditions with no cues, the alerting effect was computed. Higher alerting scores show that greater alertness to respond to a coming stimulus. Orienting scores were calculated by subtracting the mean RTs of

the conditions with spatial cues from those of the conditions with center cues, the orienting effect was computed. Faster covert orienting of attention to a spatially cued region is reflected in higher orienting scores. The subtraction of the mean RTs of congruent conditions from those of incongruent conditions offered the executive control scores. Lower executive control attention scores suggested lower costs of inhibiting irrelevant flanker information.

Statistical analyses

The statistical significance of the differences between males and females was evaluated by an independent samples t-test, and the threshold for significance was set at $p < 0.05$.

Results and Discussion

There was significant difference observed in overall mean RT ($M_F=449.12$, $SD=44.33$; $M_M=504.17$, $SD=96.90$; $t=2.35$, $p > 0.01$) and correct detection (accuracy) ($M_F=87.48$, $SD=1.86$; $M_M=98.39$, $SD=1.35$; $t=1.79$, $p > .04$) between male and female groups. Specifically, our result explained that gender difference exists in terms of overall reaction time and correct detection on the performance of Attention Network Task (see Figure 2 and 3).

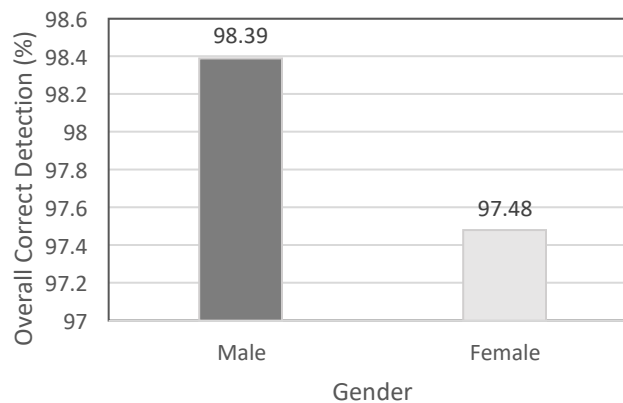


Figure 2: Overall Correct detection (%) performance during Attention network task as a function of Gender

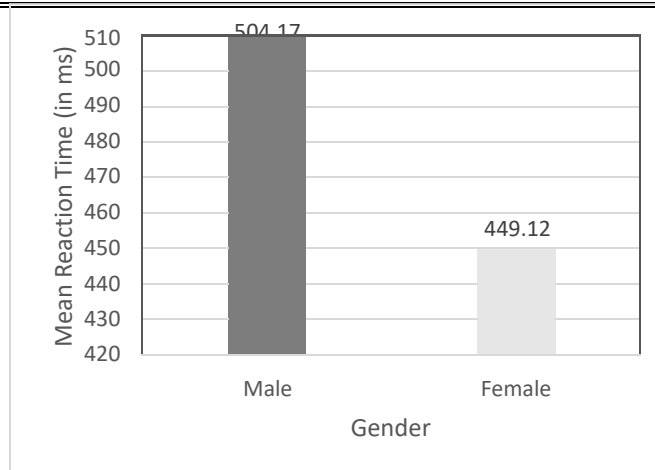


Figure 3: Mean reaction time performance during Attention network task as a function of Gender

However, on the attention network test measures, no significant difference was observed between male and female on alerting measure ($t=-.607, p>.27$). Also, the executive control effect comparison indicated a non-significant difference between the two groups ($t=.079, p>.46$). Further, no significant difference was observed between male and female for the orienting effect ($t=.729, p>.23$) although females performed better ($M=23.78, SD=13.74$) than males ($M=27.09, SD=15.27$) in terms of mean scores on orienting measure. The findings are graphically depicted in Figure 4.

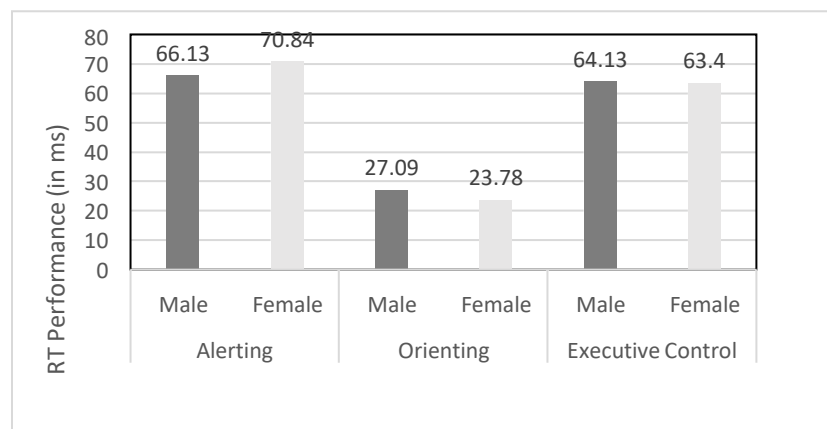


Figure 4: Mean reaction time performance as a function of alerting, orienting, executive control and Gender.

The findings of the present study indicated that the male participants generally responded with better accuracy and delayed response times on ANT in comparison to female participants. Contrary

to our hypothesis, there was no significant gender difference between males and females related to the alerting network (Gang, Hu, Jin, & Wang, 2013; Miró, Martínez, Sánchez, Prados, & Lupiáñez, 2015). The alerting network is involved in the capacity of an individual to sustain a tonically alert state and produce a phasic response to a warning signal. In the ANT, a greater alerting score suggests that attentional resources are mobilized more quickly in preparation for the upcoming target.

There was no significant gender difference in terms of orienting between males and females who were part of the orienting network. Higher orienting scores in the ANT indicate quicker covert attention orienting to a spatially cued place. In a spatial orienting experiment, Robinson and Kertzman (1995) found that females had higher costs associated with an ambiguous cue than with a good cue. According to Bayliss, Di Pellegrino & Tipper (2005), females have stronger validity effects for symbolic signals. On the other hand, Males were shown to be superior in visuospatial activities by Collins and Kimura (1997), and other research revealed that men outperformed women in visuospatial ability tests.

The capacity to monitor and resolve conflicts during conflicting information is referred to as executive control of attention. Regarding the executive network, there was no significant gender difference in the executive control network between males and females. Similar findings were also reported by Bayliss et al. (2005) who compared endogenous vs exogenous signals and found no evidence of gender differences when external cues were used. However, Merritt et al. (2007) found a significant difference between males and females for an endogenously cued task, while Urbanek et al. (2009) was using the ANT to explain gender-specific executive function abnormalities in schizophrenia. However, our result showed that in healthy participants, there was no gender difference in the executive control network. Since the participants were university students, and the results may be related to their young and high education levels as well. In sum, significant results were obtained for overall correct percent, correct mean reaction time (RT) but not obtained for alerting, orienting and executive control. Although differences in reaction time were observed in their mean RTs between male and female, the difference was not found statistically significant for the three distinct forms of attentional processing - alerting, orienting, and executive control attention networks.

Conclusion and Future Directions

No gender differences observed on the parameters of attention network performance, confirm the established view that gender differences are not consistent with alerting and executive control. However, the earlier evidence of gender differences in terms of orienting leaves the scope of exploring the gender based specific factors (e.g., personality), which might have contributed to mitigate the gender differences in terms of orienting, which is otherwise in the favor of females, facilitating their spatial attention performances. Further, given the fact, that ANT has been very recently introduced to the study the associated gender differences, if any, the findings of the present work substantially contribute to discover the gender-based differences in attentional performances. The findings also affirm the conception that selective gender differences do exist in terms of ANT performances, thus discovering the hindsight of orienting in terms of ANT performances. Additionally, the obtained findings may also serve as a mark to explore and extend the said findings towards specific populations and related psychological constructs as well.

Acknowledgment

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Conflict of interests

The authors declare no conflict of interest.

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Body Schema as a Tool of Education: A Multi-Dimensional Analysis

Archana Amita Bajpai***

Abstract

There has been a latest and dramatic increase of pastime in the psychological and neural mechanisms of multi-sensory integration between unique sensory modalities. Much of this latest research has targeted especially on how multi-sensory representations of schema components and of the 'peripersonal' space right now round them, are constructed. Research has additionally targeted on how this can also lead to multi-sensorially decided perceptions of schema parts, to motion execution, and even to attributions of organization and self-ownership for the schema components in question. Converging proof from human research suggests that the primate brain constructs an arrangement of body-part-centered representations of space, based totally on the integration of visual, tactile and proprioceptive information. These representations can plastically exchange following energetic tool-use that extends reachable space and additionally modifies the illustration of peri private space. These new effects point out that a cutting-edge cognitive neuro science strategy to the classical thinking of the 'body schema' may now be within reach of teachers.

Keywords: *Body Part, Education, Physical Activities, Mental Structure, Mental Rotation, Body Schema, sensori motor, psycho motricity, somato sensory*

Introduction

Have you ever been upset by way of how rapidly students appear to neglect what you've taught them? Or by means of their struggles to use what they've realized no context in a new, however associated context? When we deliberately assist students construct schema, we can clear up each problem. Body schema is a device of sensory-motor capacities that feature barring cognizance or the necessity of perceptual monitoring. This schema can be developed via non-stop mastering and repetition of activities. For example, when a toddler sees a crow for the first time then he is no longer capable to understand what it is. But, when the mum or dad of the toddler tells him every and each time on seeing the crow that it is a crow and additionally exhibit the toddler the photo of the crow and inform him that it is a crow. Due to this repetition of things to do the infant is capable

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to join the photo of crow with the title “crow” and one very occasion a crow seems in the front of him, the toddler mechanically makes use of to say that it is a crow. The equal method is used in gaining knowledge of walking, running, talking, grabbing and different more than a few activities. Young toddlers have interaction in repetitive movements on their body-schema and discover visual- proprioceptive correspondence. One can additionally examine the genuine dimension of one’s schema on the groundwork of the sensory comments that one receives whilst acting. For example, failing to attain the chocolate on the shelf shows that one’s arm is now not lengthy enough. Or hitting the shelf with one’s head suggests that one is taller than the top of the shelf. Arguably, the sensory remarks that one receives when appearing is taken into account now not solely through the schema, however additionally with the aid of the schema image. This performs a key function at some point of childhood and early life when the schema is nevertheless developing in measurement and the long-term schema representations want to adjust. But the contribution of sensory motor statistics is now not confined to positive intervals in life. Each time one actively makes use of a tool, one adjusts the illustration of the schema metric sea chat the perceptual and the sensory motor levels. Take the instance of the blind man with his cane. He makes use of it to get statistics about its surroundings and he feels sensations at its tip. Schema is an intellectual shape to assist us apprehend how matters work. It has to do with how we prepare knowledge. As we take in new information, we join it to different matters we know, believe, or have experienced. And these connections shape a kind of shape in the brain (Gregory Kevin Auhl, 2019).

The grasp of our very own schema is a vital requirement for our everyday interplay with the outdoor world and may also additionally make contributions to self-consciousness. In day-to-day life, we take for granted our potential to discover the region of our limbs in space across many special postures, and to manipulate our spatial movements therefore (for the disabling consequences of pathological deafferentation). However, this belies the complexity and sophistication of some of the underlying psychological and neural mechanisms that are worried in setting up and preserving our scheme are presentation (Peter DeWitt's, 2019). It is already nicely recognized that proprioceptive and kinaesthetic data about joint angles play a necessary position in signal ling posture and executing movements. However, has emphasized the extent to which these modalities interact with the different senses, such as imaginative and prescient and touch,

in the grasp and manage of the body's comportment. The requirement for some inner representation(s) of the body's modern-day posture and spatial extension has lengthily been stated by means of the classical idea of the 'body schema'. Body schema is about experientially exploring the nature of schema and mind, basically it is an exploration of your schema and your mind. However, the 'body schema' has regularly been invoked as an explanatory concept, when it must possibly alternatively be viewed as a label for a set of issues none the less requiring explanation. For instance, it has been claimed that our schema (Shago Tanaka, 2021). Some way permits us to be aware of whether or not a precise object is in sider each, or whether or not we have to duck similarly below a doorway when sporting a hat with a feather, and soon. It has additionally been proposed that sure neurological or psychiatric issues may additionally contain pathological distortions of the schema. But such assertions have rarely, if ever, characterised precisely what the putative schema (or schema) consists of, nor precisely how it (or they) may be generated or represented in the brain. However, current look up suggests that actual development on such mechanistic troubles regarding bodily illustration may additionally now be, metaphorically speaking, inside our grasp. For ease of exposition, we centre of attention specifically on the hand and arm, although comparable standards are probably to observe to different body schema parts, for instance the head. While regular sensory motor looks up studied man or woman senses in isolation, to ns latest growth stems from inspecting interactions between unique sensory modalities, especially in the building of beneficial representations of space. Moreover, single-cell research in primates have published populations of multisensory cells in numerous talent areas that have some terrific spatial properties.

The concept of body schema

Even except for our targeted interest our body appears to be capable to make use of itself pretty well. It is aware of the place our limbs are situated, it is aware of how to keep away from an impediment and it is aware of the place on the body schema we are being touched. The Body Schema serves as a continuously up to date coherent mannequin of our body. The Body Schema is spatially coded, modular, up to date with movement, adaptable, supermodel, coherent and inter body. It is additionally established on various sensory structures such as proprioception, kinesthetic and the capability to experience touch. If one of these structures fails us, body schema is additionally compromised (Christopher Pappas, 2016). Several areas are concerned in

monitoring the posture and motion of the body. Both most desirable parietal lobes, Area 5 as nicely as different cortical areas appears to play a vital position for the body schema. The Body Schema includes records about how kinesthetic, proprioceptive, tactile and visible statistics is blended so that we continuously have an up-to-date mannequin of our body. The time period body schema is additionally used throughout various disciplines such as neurology, philosophy and psychology. For example, it is used for distinctive kinematic fashions in robots.

Activating student schema

Schema displays show people identify the world, and the matters round them. It implies that a person's prior understanding is necessary in order for him or her to wholly understand a concept. Byconnecting getting to know to a student's prior knowledge, college students are enabled to name upon their own, special pathway to gather new information. According to Roe, Smith, and Burns (2008), *"Schema are a person's prepared clusters of ideas associated to objects, places, actions, or events. Each schema represents a person's understanding about a unique thinking and the interrelationships amongst the regarded portions of information."*

When students are stressed via a concept, their gaining knowledge of and boom is hindered, we want to have interaction them as a lot as viable in order to aid their development. Activating student schema capacity inserting matters in context, and with the aid of doing so, you will motivate your students' exploration of the material. Student engagement requires mental involvement with the content material or energetic building of understanding. When student schema is activated, students are extra probably to end up invested individuals successful of broad, deep thinking (Pascual-Vera B, 2017). There are 4 conditions that are generally encountered when instructing a concept. Let's use the instance of opening readers to illustrate everyone.

1. A student has the concept, however, desires the label. (The student is aware of what an elephant is, however, he wants to assist decoding the word.)
2. A student has the label, however, wishes the concept. (The student has phonetically labored out and efficiently stated the phrase "interview," however she does not understand the meaning of the word.)
3. A student has the label connected to the incorrect concept, and the false impression need to be corrected. (A student is aware of that the phrase "spring" potential something that is wound up to electricity his toys, however, is care worn when the story mentions the deer sipping from the

spring.)

4. A student has neither the concept, nor the label. (The student does not comprehend the phrase or its meaning and want assist to outline the idea and connect it to the label.)

Understanding schema principle is beneficial when choosing fantastic resources. If students do not longer have adequate prior understanding or schema for a unique story or subject, they will now not be capable to relate to the material. When students are capable to relate to the learning, they are higher in a position to discover content material and mentally have interaction in rigorous, significant thought (American Psychiatric Association, 2013). Before introducing new material to your students, query them to discover out what they understand about the subject. Then assist them construct the imperative schema and engage in discussion. Encourage them to provoke or adapt things to do and tasks that well and enhance their understanding. According to The Nation's Report Card in 2019, 45% of 4th grade students except disabilities carried out at or above expert on arithmetic assessments, in evaluation to solely 17% of students with disabilities in fourth grade who carried out at or above proficiency. This is a 28% discrepancy. This discrepancy can be decreased via offering students with disabilities new strategies to use in order to resolve math problems. One method that can be used is schema-based preparation (SBI). SBI is figuring out the kind of phrase hassle primarily based on the shape of the trouble or the schema. Several research have been performed on the effectiveness of SBI for students at chance or recognized with a disability. A side from searching at SBI in contrast to General Study Instruction (GSI), SBI can be mixed with different strategies (Seneca LA, 2008).

It has been discovered that schema-based phrase trouble interventions do enhance students' grasp of phrase problems, and SBI was once extra tremendous when it embedded language practice about phrase problems. Besides combining SBI with language comprehension instruction, there are additionally research that have targeted on modified SBI for students with greater big assist needs. In these studies, it has been discovered that the student's capacity to clear up one-step addition and subtraction troubles improved, and the consequences additionally confirmed the pupil was once higher capable to generalize this ability even after the intervention had been completed. Further lookup is required to be performed to make certain that SBI can be utilized to increase self- assurance in students struggling with autism. As most of the lookup surrounding schema-based practice pertains to combine, compare, and alternate problems, there is restricted lookup on

the hassle sorts in my view as they are historically taught together. Teaching these issues collectively limits the potential to look at how a method for one kind of trouble generalizes to different hassle types (David De Chenn, 1993). Much research mix the SBI with some different elements such as embedded language comprehension training or digital and concrete manipulative. To overcome the troubles in SBI, we need to center of attention solely on SBI for second-grade students at threat for or with getting to know disabilities. SBI has to be used to coach the students on how to clear up evaluation distinction problems.

Developing spatial and body schema orientation in preschoolers and primary school through physical activities:

For developing spatial and body schema orientation in preschoolers and primary school through physical activities we must focus on studying, out of the content of psychomotricity, spatial orientation and their cognition of the body schema, which is basic in the extracurricular physical activity of normal children (Mircea Ion Ene, 2016). It has been found that after going through physical activities with the proposed objectives, spatial orientation and bodily scheme had improved significantly, establishing the fact that there is a relationship between games of movement within the program of physical activities and the level of acquired skills on the orientation in space and body scheme.

Motor anthropology is a department of utilized anthropology, which offers with motion as an impact of bio-psycho-social activity. Motor anthropology explores the impact of motion on the improvement and schooling of human beings. A milestone in motor anthropology is constitutional typology soma to sensory physiological, motor and psychic, correlated to sports activities endeavor requirements. From this perspective, it is viewed that the children's psychomotor competencies and the potential to enhance them, via bodily activity, fall inside the human anthropology domain. In the coaching exercise with preschoolers and main school, there are frequently instances when they exhibit sure inabilities, setting them in an inferior function in assessment with their peers. Even if these inabilities are no longer made a fuss over and these youth generally ignore for "clumsy" or "un-talented" for sure activities, these youngsters steadily strengthen an inferiority complicated in relation to others. Some location significance on the difficulties they experience, and as they strive to overcome, dispose of or disguise them, they develop bigger. They turn out to be extra and greater apparent in faculty activities, the place overall

performance is continuously assessed and in contrast to different children. In general, these inabilities belong to the psycho-motor place and take place in the problem or impossibility of effecting well-coordinated moves at some point of video games or faculty activities, which require mobility, attention, and self-control. As a rule, preschoolers and most important faculty teens are worried with instructing the motor competencies worried in writing, their bodily self-awareness, localization in relation to themselves or others, and organizing their very own actions into environment friendly actions. Tolerating psychomotor difficulties in preschoolers or principal college adolescents in the hope that they will ultimately disappear in time, as the toddler grows older is a big mistake. With the passage of time, difficulties expand taking into account the more and more complicated things the baby has to perform. The training of psychomotricity beginning from a very younger age must be one of the important issues of dad and mom and teachers, being additionally very essential for older age groups. The motor improvement of teenagers offers mental, social and character development. Children increase in a predictable way, from complete dependence to adult, to private autonomy and bodily and social independence (Starobinski J., 1990). The pace and rhythm of development, motor peculiarities and language peculiarities of all youngsters are different, however the improvement mode is similar, with any one going thru the equal predictive stages. Some adolescents go via this evolution in another way to their peers, and these variations take place themselves via delaying the formation of habits, which then obstruct socialization and integration of the baby in the group. Montessori claims that motor schooling is section of the very existence of children, linking it to the everyday things to do and video games of children, via introducing training of motion in a single and indivisible entire of the education of baby (Becton Loveless, 2022). The infant is in non-stop motion, and in childhood, the baby feels continuously the want to move, and this state of affairs is blurred with the improvement of inhibition potential that, collectively with motor impulses, starts to construct equipment for listening to the will. The psychomotor training of the toddler is a transdisciplinary action, pedagogical and bodily education, the reason of which is the systematic training of exclusive behaviors, beginning from residing the motility, bodily scheme and main to function with notions (Besharati S, 2016). The thought “psychomotricity” carries the “psycho” term, which refers to the psychological undertaking at the cognitive and affective levels, and the “motricity” term, which refers to movement. Psychomotor improvement includes seven factors whose improvement is

interrelated. These are gross motor skills, quality motor skills, bodily scheme, laterality, perceptive organization, spatial organization, time administration and the evolution of rhythmic sense. Motor skills coaching is established on the evolution of psychomotor components, which collectively represent the degree of psychomotor development. Despite the requirement that the infant must move, his motor capabilities regularly are now not explored all through childhood, inflicting modifications in their psychomotor development, which will be mirrored in adulthood. These instances are due to lack of exercise, having a sedentary lifestyle, such as a static lifestyle in front of the laptop or television. Children no longer run out in the open, no longer play more than a few video games of childhood on the avenue in the front of the residence and on ow not exercise Children in kindergarten have an academic software in which the focal point is no longer on psychomotricity, however simply on the acquisition of language, communication, drawing, music, with the bodily work outs having a share of simply ten percentageof the weekly instructional program (Reigeluth, C. M., 1979). All these shortcomings of academicthings to do for kindergarten children, however additionally these enrolled in fundamental college(sedentary lifestyle, computers, television, and gadgets) lead to poor psychomotor improvement attheir age. Given these records noted involving kindergarten and main school, one can say that bodily inactivity, sedentary lifestyles and widespread way of life impact the motor improvement of children. Thus, it is the regarded that by using understanding the degree of psychomotor improvement of children, one can advocate and enforce applications of motor improvement that meet the desires of exceptional organizations of young people (kindergarten, primary, secondary). These packages need to be designed to permit kids to operate essential motor things to do at some stage in life. Individualization comes to capitalize the variety of identities mental, bodily and experiential of children, respecting the infant in the instructional process (Kollee I, Schieber K, de Zwaan M, Svitak M, Martin A.,2013).

Difficulties in body schema may also additionally happen in young people with everyday bodily and mental development, however who are disadvantaged of a splendid sensorial stimulation and education or have sure afflictions (not viewed as distinctive needs) stopping their most advantage our sensorial operation. The body schema is fashioned and consolidated as the baby features manage over his/her body, and by way of capability of this body, over the surrounding objects and environment. A collection of factors of the child's intellectual

development relies on the acquisition of the schema amongst which is the improvement of psychomotricity, a toddler with a well-integrated schema will stroll harmoniously, have certain, company movements, be capable to raise his/her schema with grace and ease, so that his/her motor conduct will now not be affected by way of clumsiness, hesitation or slowness. In addition, she/he will now not have an inharmonious, asynchronous bodily appearance, and the velocity and amplitude of his/her actions will be ordinary and natural). On the different hand, teens who have now not but absolutely built-in their body schema will show slowness or clumsiness in movements, lack of coordination in easy bodily things to do (for example, in ball video games focusing on adroitness), uncertainty in gestures and poor interpretation of successive sequences in easy actions or activities. As a result, these teenagers will have situation in mastering easy dance steps, in reproducing bodily undertaking movements, easy brief successions of actions or gestures, even via on-the-spot imitation which evaluated the psychomotor analysis motor age of preschool adolescents have proven that the kindergarten application category is no longer continually true planned. In bodily schooling things to do the researchers have been in a position to locate many motions video games however these have been now not tailored for the age or particularities of every class. This ought to no longer appear due to the fact special things to do require extraordinary ranges of teaching. Because of this, instructors no longer make a contribution to the general improvement of their students. In Spain, a learn about run by way of Teixeira and co-authors determined the more and more low psychomotor ability tiers in pre-school aged teenagers (Marková IS, Berrios GE, 2011). They have proven that young people who do no longer acquire enough motor talent directions and exercise might also exhibit an improvement extend in their capabilities and advocate growing the time of bodily exercise engagement and enjoying time for pre-school youth in early mastering settings. Researchers have observed the equal issue in this look up about the degree of motor improvement of preschoolers. Previous look up has tested that reducing the bodily pastime is vital element in growing obesity and is related with the cognitive characteristic of young people and faculty performance. According to quite a few studies, the stage of bodily undertaking is minimal at an early age; So, teens who do now not boost their psychomotor competencies might also journey a prolong in cognitive and social development. It is consequently in dispensable to get rid of the normally typical not ion regularly sustained with the aid of instructors that young people are spontaneously active (Sahoo A, Josephs KA, 2017).

How to use the schema theory in e-learning

Although the origins of the Schema Theory can be traced at the work of the psychologist Frederic Bartlett lower back in 1932, it has been popularized through Jean Piaget. The Schema Theory suggests that human beings save recollections in the shape of schema, which provide us the intellectual buildings we want to process, understand, and consider statistics. When we acquire new information, we both relate it to pre-existing information or discover a combat between new and ancient concepts, at which factor we would consider each unit of information. In essence, schema is a series of know-how that we stow away in our long-term reminiscence banks for later use. An e-Learning ride that strengthens these schematic bonds is extra in all likelihood to enhance understanding retention and recall. Here are 6 precious recommendations for the use of the Schema Theory in eLearning direction design.

Provide Pre-Assessments: An important element of the Schema Theory is pre-existing expertise or intellectual schema. You ought to determine your target audience in improve in order to decide their previous experiences and modern-day cognitions. These diagnostic assessments can additionally serve as "advance organizers", which provide online in experienced persons a preview of what's to come. Their Genius starts off evolved to detect associated standards in their long-term memory, which makes it less complicated for them to take in the new statistics. In different words, the thought begins cleansing residence and making ready for the new in habitants, the clean ideas. This is why it is essential to center of attention on a unique difficulty when you are growing the diagnostic assessments, as a substitute of exploring each and every nook of their pre-existing expertise base.

Develop Real World Associations: The most significant eLearning experiences are private and relatable. Online in experienced persons can make an extra significant connection when a real-world story or instance aspects a topic, they're acquainted with. For example, if you are making an attempt to carry the significance of protection on-line coaching you would possibly ask them about the protection practices in their body home, such as stopping cross-contamination in the kitchen. Online beginners will robotically see a hyperlink between (Randy Tan, 2022).

Encourage Online Learners to Reevaluate Existing Schema: Your online learners already have hooked up cognitions and experiences that they are bringing with them to the e-Learning course. In some cases, these intellectual schemas can also be behind erring as a substitute than helping.

For example, if they preserve a self-defeating faith that is stopping them from reaching their potential or have dedicated improper records to their reminiscence. Collaborative e-Learning things to do supply them with the potential to see matters from a sparkling perspective, which places their present- day cognitions into question. You can additionally ask thought-provoking questions or use controversial imagery to assist them reevaluate their current schema. Just make certain that the e- Learning content material is none the less gorgeous and now not culturally offensive (Morin C, Thibierge S., 2006).According to the Schema Theory, "disequilibrium" happens when online learners' contemporary beliefs are in warfare with new information. This forces them to reexaminetheir intellectual schema to see which understanding units are factual and true.

Use Branching Scenarios and e-Learning Simulations to Build e-Learning Experiences:

Building schema is a lifelong process. Online beginners sought to be capable to journey new matters and immerse themselves in the challenge count number to develop their intellectual schema. Branching eventualities and e-Learning simulations provide them the hazard to accumulate actual world advantages in a secure environment. They can construct cognitions or enhance upon present ones and strive out new problem-solving approaches. More importantly, branching eventualities and e-Learning simulations are emotionally centered, and the talent responds to emotional stimuli. The facts they acquire at some stage in these e-Learning things to do is going to stick with them, due to the fact the thinking acknowledges that it is significant and relevant (Silverman JA. RobertWhytt, 1987).

Rely on a Self-Paced Learning Approach:

Online learners don't seem to be in a position to simply study if they are rushed through the e-Learningexperience. They have to have the strength to goat their very own tempo and discover the thought sat size earlier than transferring onto the subsequent module. Thus, a self- paced studying strategy is commonly the fantastic solution. Schema Theory is additionally quint essential in Piaget's Theory, which pertains to the degrees of cognitive development. According to Jean Piaget, the brain is all about "readiness" and intellectual maturity. A non- line learner should be equipped to boost to the subsequent level, or else they may not have the schema to construct on. Provide your online new comers with an e-Learning motion map, permit them to pick out their very own e-Learning activities, and go away the completion time table up to

them. Those who are struggling can use supplemental e-Learning substances to fill the gaps, whilst these who excel can use them to develop even similarly and keep away from boredom.

Put Information into Context:

According to the Schema Theory, facts are chunked and grouped into intellectual units. Our intelligence organizes records based totally on its relationship to pre-existing knowledge. Putting records to purposeful context makes it simpler for on-line rookies to save the facts and prevents schematic mistakes. For example, when they are gaining knowledge of a new task, they will accomplice the steps worried with this particular process, as a substitute of connecting them to a totally distinctive procedure. Make certain that associated objects are in shut proximity on the display and that every subject has its very own part to keep away from any confusion (Qinxue Liu, 2022).

Conclusion

The fundamental targets of bodily endeavor contain a harmonious coexistence of body schema and mind, the stability between what the body schema expresses and what the thought believes. Unfortunately, the goals of bodily schooling in public schooling at preschool and college are no longer properly defined. Physical training is taught in an inappropriate manner, barring critical involvement and barring supplying adequate interest to every student. Physical endeavor in early childhood schooling often entails patterns of repeated conduct which permit youngsters to discover and categorically create thoughts and ideas through their play and exploration. These repeated movements are strongly linked to early cognitive development and are embedded inside our early years practice. The potential to discover schemas will enhance kid's cognitive talent structures and assist them improve new neurological pathways. A schema is a sample of repeated actions, which will later strengthen into learnt concepts. Schema's use the 'trial and error' approach of learning and are adopted by way of young people as an effort to make feel of the world round them. They might not always occur the equal way with every child and will be generally based totally on their non-public pursuits and herbal curiosity. Children use a schema sample of conduct to hold attempting out their ideas and trying out their current knowledge. They start to regulate these schemas primarily based on their new-found understanding and skills. The position of early childhood training is necessary in the improvement of the child. At this stage, educating practices have to stimulate children, given their person traits and their needs, to aid in the acquisition and

improvement of greater abilities and competencies crucial in day-to-day lifestyles. The commencing of college existence entails some fundamental modifications in the schema due to the fact the traits of the new surroundings fluctuate in an overwhelming share from the one interior the family. During this period, there is a thirst for expertise which, due to variations in perception, will generate conflicts, minor however repeated, with the parents. Because one's body schema is no longer synchronized with the actual one, private opinions do now not correspond to these of the teacher, hence triggering a mechanism of involuntary reassessment of know - how already accumulated. Schemas are a crucial section of baby development. It is essential to skillfully become aware of these schemas (Taylor, 2022), and scaffold these correctly offering youth with the vital grown-up reinforcement. Once more than a few schemas are identified, it ought to be ensured that the putting gives an 'enabling environment' which offers adolescents sufficient possibilities to discover and refine them. Many elements affect the evolution of body schema, such as genetics, family, entourage, education, etc. Highlighting the relation between Body schema and brain represents a beginning factor for future research.

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Artificial Intelligence in Education

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Abstract

Artificial Intelligence (AI) is one of the disruptive technologies which is being used to customize the experiences of various learning groups, instructors, and tutors. It is considered the most in-demand technology in today's education system. It is expected that AI will enhance the education system worldwide. Educational institutions are nowadays facing various challenges like high dropout rates, unavailability of smart content, lack of customized content as per the textbooks, lack of personalized learning systems, rigid examination patterns etc. The use of AI brings hope to overcome these challenges. It helps to create personalized learning experiences, develop smart content, expand the range of education, and facilitate the management & administration of education by integrating information and disseminating data as per the needs of the target group. With AI, teachers/instructors can identify the learning styles and hard points of students and provide new avenues of teaching and support to students. The current study discusses about AI in various areas of education and its application in Indian education. AI has the potential for enabling students to achieve their goals and streamline the process of education. It can analyze the students' previous learning history, identify their weaknesses, and improve the upcoming learning opportunities for personalized learning experiences. AI can be used effectively for transcription of faculty lectures in local languages which can thus become a good educational resource to students of technical education. The AI tools and programs are inclusive which makes the classrooms accessible to all irrespective of language or any other disabilities.

Keywords: *Artificial Intelligence (AI), Artificial Intelligence in Education (AIED), Artificial Intelligence in Technical Education, Artificial Intelligence in Indian Education*

Introduction

Information and communication technologies (ICT) have become a common place entity in all aspects of our daily lives. Over the last few decades, ICT has nearly transformed the procedures

and practices of all sorts of business and governance. It has begun to make an impact in education, although not to the extent that it has in other disciplines (Kamal & Banu, 2010). The main purpose of using ICT in education is to introduce new teaching and learning practices and to develop 21st century thinking and learning skills. Its use in education ensures the proper implementation of all the technologies and makes students and teachers proficient in using these technologies. Its use in the classrooms by the teachers increases the student's motivation to learn efficiently. The National Education Policy (NEP), 2020 the first education policy of India in the 21st century has rightly acknowledged the future role of disruptive technologies in education system. In such a technology driven knowledge environment, it becomes inevitable to become familiar with various disruptive technologies like “Artificial Intelligence, Block Chain Technology, Machine Learning, Data Science etc.”. These disruptive technologies are going to impact equally all the areas of education like technical education, teacher education, vocational education, professional education, adult education etc. In India, technical education plays an important role in development of human resource by creating a skilled manpower, enhancing the industrial productivity and improving the quality of life of the people. It covers various programs which includes “engineering, technology, management, architecture, town planning, pharmacy, applied arts & crafts, hotel management and catering technology”. The NEP 2020 also calls for imparting professional education in higher education. It also advises that the technical universities in India should aim to become multidisciplinary institutions to offer holistic and multidisciplinary education. The policy further mentions that India must take the lead to prepare the professionals in areas like “Artificial Intelligence (AI), 3-D machining, big data analysis, and machine learning”. Thus, AI is becoming the key driver of development and innovation not only in various industries but also in various areas of education. In the next three years, the Learning Management Systems will be empowered with AI capabilities (Gautam, 2019) and AI driven applications, and will collaborate more closely to improve quality of education system. As a result, artificial intelligence software would become increasingly intelligent in the day-to-day world.

Artificial Intelligence (AI)

In recent years, AI has brought major developments and represents an emerging technology that will transform how human beings live (Lucena et al., 2019). Since 1950, the experts on regular intervals predicted that the world would have to wait a few more years to reach to Artificial General

Intelligence. A system that will show behavior which will be indistinguishable from humans in every aspect with cognitive, emotional, and social intelligence (Haenlein & Kaplan, 2019). In 1955, the first AI system was designed by Allen Newell and Herbert A. Simon which was called Logic Theorist. The system was implemented by J. Clifford Shaw (Flasiński, 2016). The term was first used by John McCarthy in 1956. The term has been defined by various researchers. Baker & Smith (2019) define AI as “Computers that can perform cognitive tasks that are normally associated with human minds”. The researchers further explain that AI isn’t a single technology but rather an umbrella term that describes a wide range of technologies such as machine learning (ML), data mining and natural language processing. AI can be defined as the creation of smart machines that possess human behavior and response (Ahmad & Ghapar, 2019). It also refers to the potential of computer-controlled machines for executing tasks in an almost similar way as human beings (Shabbir & Answer, 2015). Popenici & Kerr (2017) believed that the definitions in the existing literature largely focus on cognition and ignore the various other aspects like political, psychological, and philosophical aspects of the theory of intelligence. The researchers define AI as “computing systems which are capable of engaging in human-like processes such as learning, adapting, synthesizing, self-correction, and use of data for complex processing tasks”.

AI has the potential for enabling students to achieve their goals and streamline the process of education. It provides students access to the right course, improving their communication with faculties and helping them to lay their focus on other aspects of life by saving their time. A key aspect of AI is personalization which helps students to have a personalized approach to learning based on their unique abilities, preferences and experiences. AI adapts itself to the students' level of knowledge, their pace of learning and preferred goals so that students receive maximum benefits from their education. Besides this, AI can analyze the students' previous learning history, identify their weaknesses and improve the upcoming learning opportunities for a personalized learning experience. It empowers faculties as well by automating different tasks like administrative work, paper grading and assessment of learning patterns. According to South worth (2019), the faculties devote 31% of their time in planning their future lessons, grading the tests and in doing various administrative work. The use of AI and automation tools will help faculties to automate their work and allows them to use saved time in other teaching core competencies (Karandish, 2021). The AI use can help in providing constructive feedback to faculties by helping them improve their

instruction and make the learning more fun and interesting. It will also help students in understanding their mistakes and to learn how to do better by rectifying the mistakes.

The rapid growth of computing technologies has made the application of AI in Education (AIED) easier. The use of AI technologies or application programs in educational settings to aid teaching, learning, or decision-making is referred to as AIED (Hwang et al., 2020). AI also possesses the ability to respond to various educational needs of students. AI and ML are technologies that not only enhance the safety of institutions but also improve the efficiency of an educational system by contributing to the teaching and learning process (Kuleto et al., 2021). Thus, AI is believed to play a considerable influence in supporting educational reforms. It will provide educational institutions with new intelligent teaching tools, create new teaching and learning modes, and encourage innovation in teaching assessment and management systems (Liu et al., 2021). It helps teachers in creating smart content for students which facilitates learning and makes it comfortable. Smart content can change and adapt dynamically, depending on who is reading it. It helps in generating and updating the content of the lessons and keeping the information up to date. It also makes the content customized for different learning curves. It also empowers them to access knowledge with a single click and makes their knowledge more in-depth and broader for keeping themselves in line with the students of the 21st century. The AI-powered chat bots are available for students for their queries round the clock. It helps them to get answers to their queries without waiting for the teacher in the physical classroom. The use of chat bots in education is to empower teachers and not to replace them. It decreases the burden of repetitive and low cognitive level tasks which are carried out by the teachers and thereby increases their productivity (Vijaya Lakshmi & Majid, 2022). The chat bots allow the colleges to answer the queries of students at a lightning-fast speed which builds the motivation and interest among the students in learning.

AI in Education (AIED)

The discussion paper of NITI Aayog's "Responsible AI" (2021) has highlighted Education as one of the sectors where AI has a high potential for solving societal needs. It further highlights the potential use of AIED and claims that AI could enhance the learning experience of students through personalized learning and help in predicting the need for interventions for decreasing the dropout rate (Kuleto et al., 2021). The educational institutions are using various AI technologies like chatbots, adaptive learning platforms and virtual teaching assistants for improving their

efficiency and effectiveness. There exists a link between AI and education which mainly involves three areas 1) “learning with AI which involves the use of AI-powered tools in classrooms, learning about AI (which lays the main focus on AI technologies and its techniques and Preparing for AI” which enables citizens for better understanding the potential impact of AI on the human lives (UNESCO). The use of AIED makes learning universally accessible to all students. It is considered a blessing for students who are residing in remote areas and for those students who are unable to attend physical classes due to any illness or injury. It overcomes the geographical barriers to learning and empowers students to learn from the best teachers in the world while sitting at home. It helps teachers to identify gaps in their teachings and their content material. Coursera a MOOCs platform has already put this into practice. Adaptive learning is considered one of the most potential uses of AIED. It helps in tracking the progress of every student and provides the necessary information to teachers if students face any difficulty in the learning content. Additionally, adaptive learning also modifies the learning content as per students' need which helps them to learn at their own time and pace. In higher education institutions (HEIs), AI-powered systems are being used to decrease human bias during the process of admission. It enhances the credibility of the admission process by giving specific criteria to select applications in admissions. AI tools helps in making global classrooms available to all students irrespective of their language that they speak (Marr, 2021). The AI tools and programs are inclusive which makes the classrooms accessible to all irrespective of language or any other disabilities.

AI in Indian Education

There are several academic institutions in India that have adopted AI. These institutions include “Centre for Excellence in AI (CAI) in IIT Kharagpur, the Centre for AI and Robotics (CAIR) associated with DRDO, the Robert Bosch Centre for Data Science and AI (RBC-DSAI) in IIT Madras, AI Group (AI@IISc) at IISc Bangalore and the Department of AI at IIT Hyderabad”. The Ministry of Education (MOE), Govt. of India launched “AI for All” in cooperation with the Intel and CBSE in August 2021. The main purpose of this program was to create awareness of AI among Indian citizens. The “AI for All” is a self-learning online program that aims at creating awareness about AI. The self-learning program aims at developing all individuals like students, professionals, and senior citizens. The program wants to attract those users who want to have a ‘Digital First Mindset’. In a survey conducted by Analytics Insight

(Artificial Intelligence: A Technology Bridging the Education Gap, 2022), 46% of the respondents believe that AI could predict school dropout rates in India while 24.4% do not believe it is a feasible choice. Among the participants, 29.3% were neutral. 65.9% of participants believed that AI could enhance the efficiency of individualized education and 31.7% of participants believed that 31.7% believed that the models of AI could enhance personalized education while 2.4% of participants didn't believe that AI could enhance personalized education. About 34.1 % of the participants believed that the educational apps of AI help in covering the syllabus in their homes. However, 65.9% of participants don't use the educational apps of AI.

In yet another survey by Analytics Insight (What do people in India think about AI in education? Are they ready for implementing AI ?, 2022) for understanding the thought process of Indian people about AIED and whether they are ready to implement it. Around 241 participants participated in the survey. About 90.2% believed that parents and students are aware of AI and 9.8% are unaware of it. Around 39% of individuals believe that AI will have a significant influence on education because it would bring new insights into educating children and adults. Only 4.9 per cent of people are fully negative, believing that AI would have no impact on the advancement of AI. When the participants were asked about the AI tools and technologies, around 46.3% of participants described the usage of AI as low. However, 2.4% of participants believed that AI use was extensive. Regarding AI use in schools, 12.2% of participants believed that there was low usage of AI in schools and 31.7% of participants were neutral.

The recent technological breakthroughs based on AI have made it clear that AI will continue to play a major role in the education system and may even become more prominent. The AI-powered solutions have encouraged schools and Universities to adopt the technology-driven front in imparting education. It has also become a new instrument for teachers which assist them in carrying out administrative tasks. To investigate the future of AI in Indian education, a study was conducted by Analytics Insight (The Future of Indian Education with Artificial Intelligence, 2022). About 41.5% of participants were unsure whether AI can replace a teacher in future. 36.6% of participants believed that AI would never replace teachers in future and 22% of participants believed that AI would replace a teacher in future. The participants were asked whether AI can become the future of Indian education. Around 46.3% of the participants believed that AI would be the primary technology driving the Indian education sector in the near future. Around

41.5% of participants were unsure about the AIED implementation. Around 12.2% of the participants believed that AI would never take over the Indian education system anytime soon.

AI in Technical Education

Like AIED, AI will improve the quality of education in technical education as well. The statutory body of technical education, “All India Council for Technical Education (AICTE)” has suggested the educational institutions in the country to offer AI as elective in B. Tech. course and to start offering B. Tech. in AI and Data Science. The AICTE in a report has revealed that since 2019-20, at least 127 diploma institutes and 663 UG colleges across India have opted for courses on “AI, Data Science & Analytics, block chain, machine learning and robotics”. The 127 institutions consist of 222 institutes for AI and machine learning, 186 institutes for AI and data science (Bhandary, 2021). Not just offering the course on AI in technical education but AI can help in education management and delivery. It can be used to empower the teaching and teachers and also be a helpful tool in improving learning and learning assessment practices. It also has a strong potential for providing opportunities for lifelong learning (UNESCO). Further, the NEP 2020 puts emphasis on developing teaching learning material in local languages and AI can be used effectively for transcription of faculty lectures which can thus become a good educational resource to students of technical education. Chat bots can also be used in technical education monitor the enrolment and retention of students and also to analyze students’ success matrices (Report on 43 Examples of Artificial Intelligence in Education).

Conclusion

The future of AIED is not fully defined but it is estimated that in future almost all areas of education be it technical, professional, non-technical will depend more on technologies and tools for creating a holistic learning environment for students and faculties. Day by day new and innovative tools of AI are being developed and it is expected that these tools will help students to plan their career paths with clarity and work in achieving their goals. AI has begun to demonstrate its benefits and potential in various educational settings, and it remains to be seen how the technology will empower and improve overall learning outcomes of students.

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Quality Management Strategy in Indian Teacher Education Institutions

Babita Singh S.K. Swain***

Abstract

Quality management is an approach or strategy, which educational institutions attain through long period of planning by the formulation and execution of institutional quality program, which substantially moves towards the accomplishment of the vision of the institutions. The purpose of this study to analyze the implementing strategies for the quality management practices in teacher education institutions and identify those challenges which may impede the implementation of quality management in the institutions in India. Qualitative method followed by exploratory approach is used in this study. It is revealed that quality management is an effective managerial strategy for continuous improvement, stakeholder satisfaction and institutional excellence. But the institutions have to face many challenges in its implementation, which are need to improvement. Some suggestions for successful implementation of quality management are also given in the end of the study.

Keywords: *Quality Management, Teacher Education Institutions, Implementing Strategies, Challenges*

Introduction

Today, quality has become synonymous with everything. Such as good and service, standard of the products, examination success, school and institutional performance, economic growth, latest political parties, quality living standard of people etc. This new consciousness of quality has now reached in education sector. The knowledge resolution has brought about rapid advance in technology. It has changed the way of work and think and its changing learning. To cope with the information and technology age every person requires high standard of education. Quality education is a great concern across the world. In highly competitive education sector, the success of academic institutions depends on quality of education. Therefore, to achieve every student need to have a quality education. Every educational institution is being required to develop their own approach to improve quality and need to demonstrate publicly that they can also deliver a consistent quality service. Improving and maintaining quality can be done only through quality

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management. Quality management as a managerial strategy with its emphasis on leadership strategy, teamwork, rigorous analysis and self - assessment has a universal approach to improve and consistent the quality of education. It also increases value-added knowledge, standard of institutional globally, quality system etc. (Sallis, 2002)

In India, it is very important to have qualified and efficient teachers for a good and quality education system. At present, making the Indian education system advanced and quality is a contemporary problem and challenge. Many suggestions and policy efforts have been made from time to time to prepare qualified and skilled teachers and to increase their quality in the education system, but still it has not been completely successful. For the professional development and proficiency of teachers, it is necessary that the various resources of teacher education institutions should be properly managed. The teaching-learning process should be upgraded, the standards set by the institution should be improved and they should be improved keeping in mind the global level. Therefore, proper quality management of teacher education institutions should be considered as an essential strategy.

Objectives: The main objectives of this study are to analyze the implementing strategies for the quality management practices in teacher education institutions. At the same, this study tries to identify those challenges which may impede the implementation of quality management in the institutions in India.

Methodology: In this study qualitative methodology has been used. The exploratory approach gives an opportunity to understand and clarify the objectives of the study. Data and information for the study are collected through related books, extensive related literatures review, subject experts, internet or websites and personal experiences.

Teacher Education in India

The American Commission on Teacher Education rightly observes, *“The quality of a nation depends upon the quality of its citizens. The quality of its citizens depends not exclusively, but in critical measure upon the quality of their education, the quality of their education depends more than upon any single factor, upon the quality of their teacher.”*(IGNOU, Teacher Education)

An educational institution performs a significant role of providing learning experiences to lead their students from the darkness of ignorance to the light of knowledge. The main function of these institutions to play an important role to bring about this transformation are teachers. NCTE (1998)

stated in Quality Concerns in Secondary Teacher Education — ‘The teacher is the most important factor in any educational program. It is the teacher who is mainly responsible for implementation of the educational process successfully at any stage.’ This shows that it is imperative to invest in the preparation of teachers, so that the future of a nation will be secure.

The quality and achievement of a learner are primarily determined by teacher competence, sensitivity and teacher motivation. For a knowledgeable, skillful, and competent teacher, there is a need for an effective quality teacher education program. Teacher education is a program which aims to the development of teacher proficiency and competence that would enable and empower the teacher to meet the requirements of the profession, face the challenges and repudiate the obstacles in their field. The National Council for Teacher Education defined teacher education as – A program of education, research and training of persons to teach from pre-primary to higher education level. Teacher education encompasses teaching skills, pedagogical theory and professional skills. (Joshi, 2012)

In the Vedic India, the teacher had a special status and position. The Guru or the teacher was an embodiment of best qualities, sources of knowledge and an abode of spirituality. The selection and preparation of a teacher was done with much rigor. But Buddhism education system required that each novice on teacher selection should place himself under the supervision and guidance of a preceptor. He was to offer spiritual help and promote learning through religion among the disciples by teaching, putting question, exhortation, instruction to him. The teacher was to seem after the disciple fully. In the medieval period, Education is urged as a requirement and education was held in high esteem.

In the British period of teacher education, by the close of the 19th century some essential things in teacher training had been established. Pedagogical courses had replaced general education, examinations and certificates in teacher training institutions and practical aspects in planning and teaching were emphasized. In 1906-1956, the teacher preparation program was called teacher training. It prepared teachers as mechanics or technicians. It had narrow goals with its focus being only on theoretical knowledge or skill training. The perspective of teacher education was very narrow, and its scope was limited.

The development of teacher education has been traced to the post-independence period. Important suggestions and recommendations have been made since the time of independence. From the

University Education Commission (1948) to the decade of 2000 importance has been given to teacher education, its development and enhancement. The establishment of UGC, NCERT, NCTE and NAAC have substantial impact on teacher education.

Despite of all this, the teacher education in India is not ensured and sustains quality education due to many demographical, sociological, political and economic reasons which need to improvement. The aspects that need greater emphasis in teacher education are.

- the length of academic preparation,
- the level and quality of subject matter knowledge,
- the repertoire of pedagogical skills that teachers possess to meet the needs of diverse learning situations,
- the degree of commitment to the profession,
- sensitivity to contemporary issues and problems and
- the level of motivation.

This is not possible if teacher preparation focused only on either knowledge providing or training. Therefore, Holistic teacher building is necessary and teacher education needed more emphasis on developing quality knowledge, positive attitude towards teaching profession and competency building than mere training.

Quality Management: Concept and Components

Quality management is the composition of two words – quality + management. Quality means *‘degree of excellence of a product or service provided’*. The Oxford Dictionary defines ‘Quality as the standard of something as measured against other things of a similar kind or the degree of excellence of something. ‘Quality in higher education is a multi-dimensional, multi-level, and dynamic concept that relates to the contextual settings of an educational model, to the institutional mission and objectives as well as to specific standards within a given system, institution, program or discipline.’(UNESCO, 2007)

Management means empowering everyone in the organization to achieve excellent or high-quality result. ‘Management is to forecast and plan, to organize, to command, to co-ordinate and to control’ (Henry Fayol, 1916). According to Deming, Juran and Crosby, quality is a measure of how closely things confirm to specific standard relating to material performance, reliability and

time. Quality should enable as to the required specifications. Quality has to be nurtured consciously through proper means (Sallis, 2002). “Quality management implies an operating practice where all the transactions of the company are accomplished completely and where relationship with employees, suppliers and customers are aimed at making those successful”. (Philips B. Crosby, 1979).

In education, quality management is a cluster of all techniques and strategies for improving quality of educational organization to achieve their goals or excellence. Quality management is an integrated organizational approach is delighting customer (both internal and external) by meeting their expectations on a continuous basis through everyone involved with the organizations, working on continuous improvement in all products, service and process along with proper problem - solving methodology. To increase the quality of educational institutions, it is necessary that the institutional resources available there should be properly planned, organized and managed. These resources are mainly as follows: Physical Infrastructure Facilities (building, library, labs, playgrounds, etc.), Manpower (students, faculty / teachers, governance / administration, supportive staffs, technical staff), instructional materials (textbooks, reference books, ICT based instructional materials, etc.) Financial resources (tuition fee, public budget, endowments, research funds, recurring and non-recurring income etc.).(Prasad,& Kumar,R,2010)

Thus, In the process of quality management in education, there are many components involved in it such as admission procedures, Educational System Model, Infrastructure Data management, Vision and leadership, technical curriculum, Learning community, interaction with other institutions and educational Training centers, curriculum design and curriculum implementation, faculty and staffs, students, employability, evaluations etc. These components are categories into four main parts of management in educational institutions: Input, process output and environment.

Table 1: Managerial Components in Educational Institutions

S.N.	Parts	Components
1	Input	Student , teachers, faculty & staffs, infrastructures, financial resources, etc.
2	Process	Management support and leadership, teachers training, curriculum and teaching method, quality council impact

3	Output	Students' achievement & placement, employable graduates, research publications, institutions' grade or rank
4	Environment	Internal environment in which the institution is working the social culture including home environment of student, their parent and teachers. External environment in which the teaching-learning process is consider inside the institution.

(Sallis, 2002; Crosby, 1979)

Quality Management strategy used to attain excellence in every aspect of the institutional activities, attempts are being made to create its systems' right process and use right means to produce right products and services to maximize customer satisfaction and increase the growth of the nation. Quality Management involves an ongoing cycle of planning measurement, evaluation, and improvement. Therefore, is to be viewed as an integrated approach where the institutions strive to ensure for improving the quality of education as well as productivity or excellencies continuously at all stages, at all levels. it ensures examining everything critically in an institution to establish baseline measures of performance and then striving towards improvement.

The best institutions, whether public or private, understand quality and know its secret. Seeking the promoters of quality is an important quest. Education is also recognizing the need to pursue it, and to deliver it to students. There are some basic quality promoters which are determining the quality in education and excellence of the educational institutions at national level as well as globally. These are:

- High moral values and vision of the institute
- Talented students
- Outstanding teachers
- Excellent examination results
- The support of parents, business and the local community
- Plentiful resources and best allocation of the resources
- The application of the latest technology
- Strong and purposeful leadership

- The care and concern for pupils and students
- A well-balanced and challenging curriculum
- Financial resources and support system

Challenges in Implementing Quality Management

Quality Management has full potential to serve education. But there are many challenges or barriers in implementing Quality Management in teacher education institutions in India. Some educators believe that philosophy or principles of quality management which is developed for business may not be appropriate for service organization like educational institutions. The schools or other type of academic institutions are very much different with a different ethos and characteristics made difficult or even impossible to implement a philosophy which has been derived from industry (Seymour, 1991; Brinbaum, 2000; Massy, 2003 & others; Kenchakkanavar, 2015).

Indian teacher education system is facing several challenges in implementing quality management in the institution. Such as:

- The implementation of QM challenges the traditional teaching practices. It involves change not only in teaching methodology but also in administration and culture. Before going for QM, it is mandatory to examine culture, ethics, management style and organization structure of the institution to find out pitfalls of the existing education system and try to remove it.
- There is a long debate about the definition of quality in education. Quality can have multiple meaning in higher education and this variety has considerable influences on the development of methods and instruments of measuring quality and this variety also can create different stakeholders for the higher education institutions. (Sarrico et al., 2010).
- There are difficulties in meeting rising demand to admit more students, difficulties in meeting outcome quality in relation to work force needs, and difficulties in securing and sustaining more resources. There are inadequate educational resources with a loss of the best talented faculty to the outside world. There is a need to improve and provide a more flexible educational system for students. There is lack of top management commitment, resistance to change, lacking administrative commitment, high time investment due to personal training, and difficulty in applying Quality Management tools to higher education institutions.

- Insufficient experience of team leaders and staff in teamwork, ineffective leadership, obstruction to change, contradictory policies, inappropriate organizational structure, the anxieties of higher education institutions have with their own results not being sufficient enough affects quality management efforts negatively.
- There is a number of barriers in implementing TQM in education: the absence of effective communication channels, the problem in measuring, higher education institutions results, the co-existence of multiple purposes and objectives for higher education institutions, the emphases in the individualism and significant degree of internal competition, the bureaucratic decision-making process and the lack of a strong leadership, highly committed to the ideas and principles it needs to apply and capable of involving all the institution's members.(Rosa & Amaral,2007)

Discussion

Determining quality in education is a monumental exception considering the underlying beneficiary is us, Humans. It is the quality of education that shapes incessant wealth and security of both societies and the individuals. Quality management is a powerful strategy for the improvement of higher education in almost all countries and all over the world. The higher educational system was proven effective in producing remarkable professionals to rule the spontaneous growth of the nation in the future.

With continuous growth of population over the years, basic needs to support this growth have significantly gone up both in terms of quantity and quality. The new economic order and globalization of the market place in India have opened doors for the international companies to participate in the economic activities of the country. The rapid progress in the information and communication technologies in recent years also led to the increased demand for technical manpower. Large scale industrialization was needed to be brought into existence requiring large number of knowledgeable, talented, skillful, productive and potential manpower. This manpower can be increased only through quality education followed by quality management.

Quality management originally developed for industrial management and business enterprises needs to be adapted to suit educational institutions. Quality Management in education believes in the foundation of an educational institution on a system approach - implying a management system, technical system and social system-all based on principles of quality, to be implemented

throughout. It aims to satisfying the needs of the various stakeholders through the design of a system based on certain principles and practices. It includes the quality of inputs in the form of students, faculty, support staff and infrastructure, the quality processes in the form of the learning and teaching activity and the quality of outputs in the form of the enlightened students that move out of the system.

Nowadays, the institutions perform well but they cannot get better results as they do not follow quality strategy. Quality of the education and learners are impossible without the quality of the institution. So, they must focus on every aspect of quality practices in which it involves input, process, output and environmental components of the institutions. But excellence in the teacher education institutions is not an easy task. This can be achieved through implementation of quality management strategies with proper planning, organizing, directing and controlling the quality promoters of the teacher education institutions. Many institutions are conducting development programs to enhance quality awareness and change the attitudes of their employees. These efforts are towards understanding, adopting and promoting Quality Management in the institutions. In view of these discussions, the following aspects should be visualized for Quality Teacher education program by implies quality management strategy in India:

- Emphasizes learning as a self-learning participatory process taking place in social context of learner's as well as wider social context of the community to nation as a whole.
- Puts full faith in self-learning capacity of school children and student teacher and evolving proper educative program for education.
- Views the learner as an active participative person in learning. Their capabilities or potentials are seen not as fixed but capable of development through experiences.
- Views the teacher as a facilitator, supporting, encouraging learner's learning.
- Does not treat knowledge as fixed, static or confined in books but as something being constructed through various types of experiences. It is created through discussion, evaluate, explain, compare and contrasts i.e., through interaction.
- Emphasizes that appraisal in such an educative process will be continuous, will be self-appraisal, will be peer appraisal, will be done by teacher educators, and formal type too.

Conclusion

From the discussion, it is clear that quality management strategy is very essential in the field of education. It is relevant and matches higher education. It can be said that in order to make quality management successful, it is essential to create a quality culture, i.e., a shift is needed from traditional management culture to a total and customers satisfaction-oriented quality culture. A quality culture is a system of shared values, beliefs, and norms or standards that focuses on delighting customers and continuously improving the quality of services in institution. Quality management strategy can foster the principles like continuous improvement, open communication, fact-based problem - solving and decision making, etc. In addition, educational institutions should adopt a more customer-oriented approach in dealing with their students. But the process toward to quality management is a slow and steady because there are many challenges facing by the institutions in implementation of quality management strategy. This strategy can be applied with patience, cooperation, and assistance. Furthermore, each institution should be a learning organization focusing on the individual development of the learner, as well as the empowerment of all staff and make the institution excellence at national and the global level.

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Quality Education for Sustainable Development Goals: Past, Present and Future

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Abstract

It is widely acknowledged that high-quality education, which can be implemented in both formal and informal settings, is one of the most potent and well-documented drivers for ensuring sustainable development. Given its importance, this paper employs a bibliometric retrospection of 326 documents extracted from Scopus to outline the trends in scientific output concerning quality education in the pursuit of Sustainable Development Goals(SDGs). We highlight the annual scientific output, top publishers, sources with the most contributing author(s), networks of author collaboration, academic institutions, nations, and periodicals that have advanced research between 2016 and 2022. Given that higher education has become increasingly important in managerial education and the development of leaders, and that students need to be made aware of the long-term implications of the actions they will take throughout their careers, the article was inspired by a need to understand how education can disseminate the best practices of implementing SDGs. The bibliometric method, it is concluded, is essential for grasping the actual state of scientific production on the topic and for identifying, recommending, and pursuing research avenues that will push the field forward.

Keywords: *Sustainable Development Goals (SDGs); Quality Education; RStudio Biblioshiny; Education Management; Bibliometric review*

Introduction & Background

The 2030 Agenda for Sustainable Development proposes an international framework to reroute humanity towards a sustainable path (SDG, 2030). The focal point of the 2030 Agenda is the achievement of the 17 Sustainable Development Goals (SDGs). The most significant challenges to human progress are outlined in the Sustainable Development Goals (SDGs), which are universal, transformative, and inclusive. The goal of the 17 Sustainable Development Goals (SDGs) is to ensure that people everywhere can live a life that is sustainable, peaceful, prosperous,

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and equitable on earth, both now and in the future (Clemente-Suárez et al., 2022). The goals center on issues that, for humanity to continue existing, absolutely need to be resolved. They determine environmental restrictions in addition to crucial thresholds for the utilization of natural resources. The goals recognize that efforts to end poverty must coexist with those to promote economic growth. These two sets of goals are not mutually exclusive. They address a wide variety of social needs, such as those relating to education, health, social protection, and employment opportunities, in addition to addressing climate change and protecting the environment. The Sustainable Development Goals (SDGs) aim to address significant institutional deficiencies, patterns of consumption that are not sustainable, and environmental degradation as structural barriers to sustainable development. In order to achieve sustainable development, it is imperative that all nations that have endorsed the 2030 Agenda coordinate their respective national development initiatives with the goal of fostering prosperity while simultaneously preserving the environment. As a result, when it comes to the Sustainable Development Goals (SDGs), every nation can be considered to be in the developing stage, and every nation needs to make rapid progress. For sustainable development to happen there must be a paradigm adjustment in how we currently live. One must become a change agent in sustainability if they are to contribute to a more sustainable world and address the issues raised by the SDGs (Ferrer-Estévez & Chalmeta, 2021). They need to be equipped with the information, abilities, values, and beliefs that will allow them to make a lasting contribution to growth. Additionally, the educational attainment of a society's leaders has a direct impact on whether or not it will be successful in achieving the goals of sustainable development; the educational standards of a society will determine how successful it will be at addressing complex problems in order to advance sustainable development (SDGs). Education is a means of achieving all other SDGs as well as a goal in and of itself. It is not only a crucial component of sustainable development, but also one of its main enablers. That is why pursuing the SDGs through education is a crucial strategy (Kolb et al., 2017). The United Nations made education the center piece of its plan to advance sustainable development. Because educators and business leaders can influence future leaders' attitudes and behaviors, the process of developing leaders through education can be seen as one that should be based on the SDGs (Singer-Bronowski et al., 2019; Waltner, Rieß, & Brock, 2018). In managerial education, the significance of acquiring, assimilating, transforming, and utilizing the business environment, especially in

terms of how leadership is and will be formed, is emphasized. Therefore, it is critical for HEIs to provide management education in order to nurture leaders with strong moral convictions who will work to advance sustainable development (Chiang & Chen, 2022). Sustainability must be incorporated into higher education's pedagogical, research, and extension activities through subject-focused pedagogical proposals that aim to influence student behavior and perspective. An interdisciplinary approach is necessary to foster collaboration and mutual understanding between academic fields and, by extension, between individuals as they work to create interactive methodologies (Avelar, Farina & da Silva Pereira, 2022). The field of education for advancing the achievement of the Sustainable Development Goals is examined and mapped in this study, which also helps to identify relevant researchers and their contributions to the field of study. Thus, by emphasizing the value of adopting an interdisciplinary approach to education for sustainable development and acknowledging various perspectives and sustainability approaches, this article fills a research gap. It examines the SDGs' overarching objectives and surveys the literature on interdisciplinarity's use in education. Scholars are increasingly using bibliometric analysis as a technique to identify trends and groupings in the literature, thanks to recent advancements in information that have made indexing and searching for scientific research more systematic and repeatable (Van Eck & Waltman, 2014). Bibliometric analyses differ from traditional research methods in that they employ software to assist in categorizing research into distinct categories and/or clusters based on data from bibliographical records. The following research questions are proposed to be addressed by this work using a combination of bibliometric analysis:

- What classification system is used for publications on education that promote SDG implementation?
- Which publications, writers, institutions, and nations have the greatest sway in the industry?
- Which research co-authorship networks and themes do experts in the field priorities?

Research Methods

Scopus, the largest abstracting and indexing database in the world, is continually updated on a daily basis. Scopus is more up to date on the most recent developments in trending topics in comparison to the Web of Science, which is updated once per week (Tong and Li, 2022). Scopus is used for bibliometric analysis by the majority of high-quality publications. In this paper, we use the Scopus database to collect bibliographic information on articles about Quality Education for

Sustainable Development Goals. According to the Scopus database, studies on SDG goals began after 2015. In literature, the phrases "Sustainable Development Goals" or "SDG" generated 25504 entries, "2030 Agenda" produced 2468 and "Quality Education" produced 5386 entries. The search for these concepts, especially when limited to the allotted time for the search, returns a large number of results that are unrelated to the SDG topic area in which our work primarily resides; this is why we have chosen to sample from such a broad population. Therefore, as we had to find the quality education in context of SDGs, refined query (Table 1) produced only 509 entries containing the keywords abstract, title, and author. We further narrow down to 348 articles for articles and further narrowed down the search and only included English-language articles. To enhance the accuracy of the data set, the authors utilized content analysis to eradicate unrelated articles from the author's keywords, abstract, and title. A total of 326 articles makes up our final sample. To ensure that the bibliographic meta-data used in analysis is accurate, author(s) clean the data and fixed any mistakes.

Scientifically examining the bibliographic meta-data is what bibliometric retrospection does (Dima et al., 2022). The two stages of bibliometric analysis are network analysis and descriptive analysis. In contrast to the publication pattern, average number of citations, and citation frequency provided by the descriptive study, the network study draws attention to the relationships between authors, institutions, and countries. The creation of networks and clusters of co-citation, coupling, and word co-occurrence in the literature is an additional benefit of network analysis that aids in the identification of research themes. Since R studio offers a thorough and reliable method for performing science mapping (Aria and Cuccurullo, 2017). In addition, the VOS viewer makes visualization analysis effective and sophisticated while also making it simple to interpret (van Eck and Waltman, 2010). In addition, the author(s) utilized a hybrid of R Studio and VOS Viewer to conduct analyses and present results.

Table 1: Search criteria and article selection.

Filtering criteria	Exclusion	Inclusion
Selection Criteria		
Search engine: Scopus		
Search date: 02 August 2022		

Search Criteria: (Include articles “Titles, abstracts, and keywords” only)		
Search period: 2016- August 2022		
Search term: ((“SDG” OR “2030 Agenda” OR “Sustainable development goals”) AND (“quality education”))		509
Document type: “Articles”	160	349
Article selection		
Filter the erroneous records: Only documents with valid author(s)	1	348
Language filtration: Include only English-language documents	22	326
Tools: VOS Viewer, Bibliometrix R package		

Results and Discussion

Publication output and growth trend

The descriptive analysis of Quality Education focusing to achieve Sustainable development goals between 2016 to August 2022 reveals the publications of 326 articles. There were only 5 articles published in 2016, 15 articles in 2017, 23 articles in 2018, 37 articles in 2019, 74 articles in 2020, 99 articles in 2021, and 73 articles in 2022 (august 2022). According to these statistics, the publication of quality education for the SDGs has been quite a phenomenon in recent years.

Top Sources for Quality Education (SDG Goal-4) based on total publications.

Table 2 lists the leading sources that produce articles related to SDG Goal#4 i.e., Quality Education. Sustainability (Switzerland) has published a total of 93 documents: six in 2018, eight in 2019, twenty-five in 2020, thirty-four in 2021, and twenty in 2022 having H-index as 15 and G-index as 23. Education Sciences and Journal of Cleaner production has published total eight documents overall.

Table 2: Top 10 sources based on total publications.

Sources	2018	2019	2020	2021	2022	TP	TC	H index	G index
Sustainability (Switzerland)	6	8	25	34	20	93	756	15	23
Education sciences	0	1	1	5	1	8	14	2	3

Journal of cleaner production	3	0	4	1	0	8	484	8	8
International journal of environmental research and public health	0	0	1	3	3	7	13	3	3
International review of education	2	3	0	1	0	6	97	5	6
International journal of educational management	0	0	1	1	2	4	13	2	2
World development	1	1	1	1	0	4	60	4	4
Children and youth services review	0	0	3	0	0	3	17	2	3
International journal of emerging technologies in learning	0	1	2	0	0	3	9	2	2
International journal of sustainability in higher education	0	1	1	0	1	3	66	3	3
Note(s): TP= total publications, TC=total citations									

Top organizations, authors and country of Quality Education (SDG Goal#4) research

Table 3 lists the author, organizations, and countries that have received the most citations for SDG Goal #4. When you look at country, Spain has got maximum citations of 409 followed by United Kingdom (391) and India (388). In terms of affiliations, Carrera de Economia Unl, IIM Indore and Goa Institute of Management have got 142 total citations while Beijing Institute of technology, Shenzhen University and Comsats University Islamabad each got 126 citations. Top authors whose work is getting cited by most include Sengupta, T. (322 citations), and Sinha, A. (322 citations) followed by Alvarado, R.(142 citations) and Qin, Q.(126 citations).

Table.3: Top authors, countries and organizations based on total citations.

Author	TC	Country	TC	Affiliations	TC
Sengupta, T.	322	Spain	409	Carrera de Economia Null, Ecuador	142
Sinha, A	322	United kingdom	391	Indian institute of management Indore, India	142
Alvarado, R.	142	India	388	Goa institute of management, India	142
Qin, Q.	126	United States	297	Beijing institute of technology, Beijing, China	126
Shahbaz, M.	126	China	267	Shenzhen university, Shenzhen, China	126
Zafar, M.W.	126	Ecuador	208	Comsats university Islamabad, Pakistan	126
Tran, T.	85	France	200	University of Foggia, Foggia, Italy	80
Owens, T.L.	83	Pakistan	158	University of Salento, Lecce, Italy	80
De Pascale, G.	80	Canada	139	Leuphana university of Luneburg, Germany	68
Ndou, V.	80	Australia	116	Vietnam academy for ethnic minorities, Hanoi, Vietnam	67
Note(s): TC= total citations					

Top publications on the basis of total Global citations

This section lists (Table 4) the most-cited publications. Up to this point, the most citations (142 total) have been given to a single paper: "Interplay between technological innovation and environmental quality: Formulating the SDG policies for next 11 economies" by Sinha, A(2020). The technology policies of 11 nations have been revisited in this study, and they have attempted to address the issue of environmental degradation as well as the issues of sustained economic growth, clean and affordable energy, and high-quality education. In this effort, they have created two indices for technological development and environmental degradation, and we have then examined the relationship between them using the Environmental Kuznets Curve (EKC) hypothesis.

Table 4: Top publications based on total Global citations(GC)

Authors & Year	Title	Journal's	Publisher	GC
Sinha, A. 2020,	Interplay between technological innovation and environmental quality: Formulating the SDG policies for next 11 economies	Journal of Cleaner Production	Elsevier	142
Zafar, M.W. 2020,	How renewable energy consumption contribute to environmental quality? The role of education in OECD countries	Journal of Cleaner Production	Elsevier	126
Owens, T.L. 2017,	Higher education in the sustainable development goals framework	European Journal of Education	Wiley	83
Secundo, G. 2020,	Sustainable development, intellectual capital and technology policies: A structured literature review and future research agenda	Technological forecasting and social change	Elsevier	80
Bürgener, L. 2018,	Sustainability competencies in teacher education: Making teacher education count in everyday school practice	Journal of Cleaner Production	Elsevier	68
Giangrande, N. 2019,	A Competency Framework to Assess and Activate Education for Sustainable Development: Addressing the UN Sustainable Development Goals 4.7 Challenge	Sustainability	MDPI	60
Buenaño-fernández, D. 2019,	Application of Machine Learning in Predicting Performance for	Sustainability	MDPI	54

	Computer Engineering Students: A Case Study			
Sinha, A. 2020,	Technology policy and environmental quality at crossroads: Designing SDG policies for select Asia Pacific countries	Technological forecasting and social change	Elsevier	54
Alonso-garcía, S. 2019,	Systematic Review of Good Teaching Practices with ICT in Spanish Higher Education. Trends and Challenges for Sustainability	Sustainability	MDPI	47
Boeren, E. 2019,	Understanding Sustainable Development Goal (SDG) 4 on “quality education” from micro, meso and macro perspectives	International Review of Education	Springer	43

Conceptual Structure Map for Quality Education

The author's keywords are typically clustered with ‘Quality Education’ research with each other borrowing network sciences (Barabási, 2013) comprehension, followed by the result of topic grouping from clustering, resulting in topic dendrogram (Silva et al., 2016). Using the factorial analysis feature of RStudio Biblioshiny on the author's keyword, the multiple correspondence analyses (MCA) method generates two dimensions and four clusters (Fig. 1). Included in the blue-highlighted Cluster 1 represents ‘Educational Environment’ are foreign direct investment, the textile industry, international trade, laws and legislation, and economic conditions, among others. On this cluster, a significant number of studies have been conducted. In contrast, cluster 2 in blue contained trade liberalisation and agricultural policy. Cluster 3 is colored green and includes export-led development, multivariate analysis, and economic growth. The last cluster (4) contains trade policy and studies on developing countries.

The SDGs are crucial for developing programs and policies that ensure all children have equitable access to quality education and healthcare, as demonstrated by Cluster 1 (the Educational Environment) and Cluster 3 (the indicators). This necessitates that the parents of these kids

understand the program and can work productively on it (Zenchanka et al., 2022; Almuqel, 2022). The collaboration of management education to accomplish the SDGs is discussed in Cluster 4 (Management Education). The articles highlight how higher education institutions (HEIs) that have signed the Principles for Responsible Management Education (PRME) have helped to verify and elucidate students' understanding of sustainable development and the SDGs. The use and/or creation of indicators, indexes, and models to gauge the SDGs' implementation and the degree of sustainable development are discussed in Cluster 2 (Policies). Scholars in the field placed a particular emphasis on exalting the SDGs for sustainable development and demonstrating the contribution of HEIs to SDG implementation among all the themes and approaches listed within these cluster. This led to a perception of the significance of using education and its studies to advance the implementation of the SDGs.

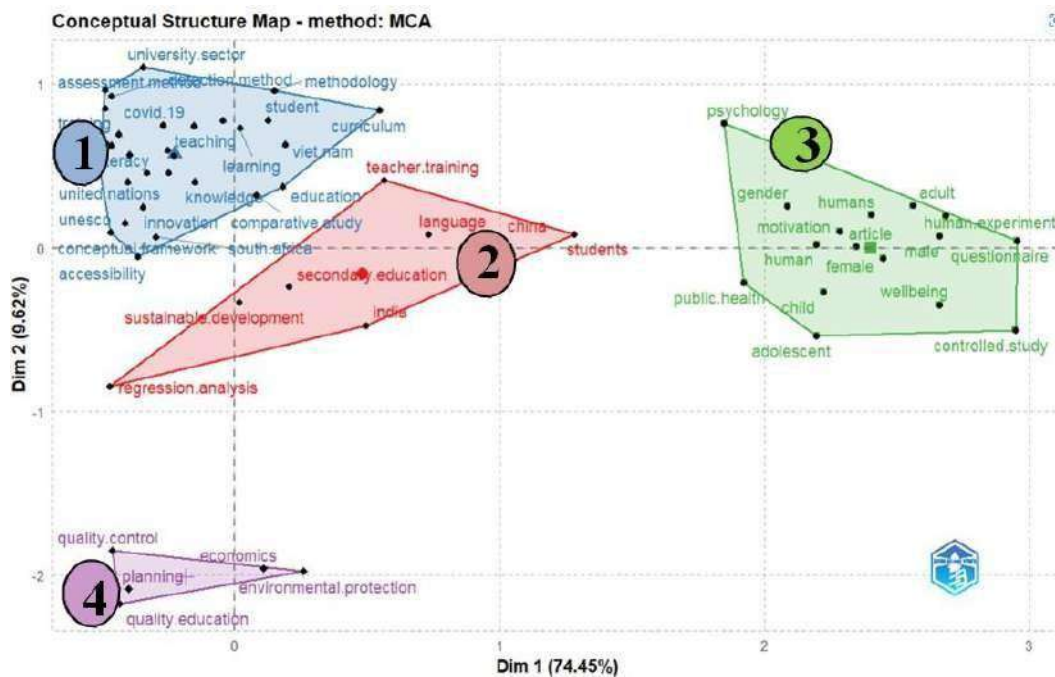


Fig. 1: Conceptual structure map for Quality Education research

Word cloud for Quality Education

According to Parashar (2020), word clouds filtered according to various criteria can perfectly capture the topic of research articles. By analyzing data with various filters (Keywords Plus, Author's Keywords, Title, and Abstracts), we used the VOS Viewer and R Studio to identify the themes that are most frequently associated with high-quality education (Fig. 2). The term

education, analyzing the importance of its role; and in early childhood, both to reduce infant mortality and to improve platforms dedicated to attending consultations on early childhood development were common themes among the most influential publications with regards to achieving high standards of education within the SDGs. Focusing on important elements like improving teacher preparation programs, raising public awareness of the value of sustainable development, bettering school conditions worldwide, and narrowing the gap with developing nations, these publications are dedicated to achieving quality education for all (Wright et al., 2022). To that end, it will be necessary to invest in things like teacher training, new school construction, financial aid, and increased infrastructure like running water and electricity in classrooms (Tsapara & Bratitsis, 2022). To achieve these goals, efforts are needed from the political, economic, and educational sectors to enhance the current social and environmental conditions (Wang et al., 2022). In line with previous research on educational quality and sustainable development, the emphasis that should be promoted and further strengthened at the scientific level is on the development of competencies, skills, and abilities in students that will enable them to improve their own reality and safeguard that of tomorrow's societies (Krstikj et al., 2022; Crawford & Cifuentes-Faura, 2022; Figueiró et al., 2022).

Last but not least, it is important to recognize that the current study has some limitations, such as the use of Scopus sources of publications, which may have led us to omit potentially relevant publications that were not found in this source but were related to SDG Goal 4 - Quality education. Other databases, such as Web of Science, Dimensions, Google Scholar, IEEE, and others, may be considered in future bibliometric research.

Conclusion

It is important to note that the study's motivation was to serve as a springboard for future research on the topic from a variety of perspectives; we believe this study is valuable for providing information about the effects of publications on educational quality in the context of the 2030 Agenda and the Sustainable Development Goals. This study opened the door for sustainable development knowledge, awareness, analysis, and action. The most crucial one for the country is the path to quality education for sustainable development and sustainable development. The nations that accept this challenge and thoughtfully seize the opportunities will be able to meet the needs of their current populations. At the same time, they leave their offspring a world that will

enable them to meet their needs by maintaining a balance between the economy and the environment. In recent years, universities have assumed a pivotal position in the development of sustainable practices (Moratis & Melissen, 2022). To accomplish this and maintain their focus on providing a high-quality education, universities will need to adapt their roles, organizational structures, and leadership to meet the new demands of sustainability. If they don't, they won't be able to maintain the required level of dedication and social responsibility (Bareghehet al., 2022). In light of the new environment, educational institutions such as universities are going to need to undergo transformations in order to remain relevant; specifically, they will need to become more flexible and innovative (Fia et al., 2022).

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Teachers' Perceptions towards Citizenship and Citizenship Education: An Exploratory Study

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Abstract

Present paper is part of a major project entitled 'Education for Citizenship: An analysis of policy and its implications' funded by ICSSR under IMPRESS scheme of Ministry of Education, Government of India. For many decades researchers of education have focused on the variables that influenced academic performance. However, understanding the importance of non-scholastic arenas, particularly for preparing our learners for life after school, researchers had expanded their focus towards non-cognitive variables. Citizenship education is one such area that focuses on development of citizenship competencies and schools. The present study was designed to examine the teachers' perception towards citizenship as well as towards citizenship education by adopting survey methods for collecting the data. An open-ended questionnaire was prepared by the researchers. Data were collected from 54 teachers teaching in 12 schools and their responses were analyzed qualitatively by extracting units of meanings. These units were condensed and coded and later organized into categories based on closeness to each other and further utilized to synthesize the patterns. Findings revealed that teachers perceive citizenship as a value and represent it in terms of behavioral as well as non-cognitive aspects misusing the cognitive aspects of values. It is also revealed that the majority of teaching learning practice falls in the category of value instruction rather than value clarification which includes the process of reasoning. Implications of finding were discussed and suggested for classroom practices.

Key words: *Citizenship, citizenship education, democratic values, patriotism, obedience, value clarification and qualitative data analysis.*

Introduction

There is an unending list of researches that focus on variables influencing academic performance (Powell,1973; Moran and Crowley, 1979; Allik and Realo, 1997; Farsides and Woodfield, 2003;

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Jayaprakash *et al.*, 2014; Komarraju and Nadler, 2013; Nandagopal and Anders, 2012), but these research mostly restricted themselves on measures of cognitive ability (Cassidy, Roche and Hayes, 2011) and ignored non-cognitive factors (Heckman and Rubinstein, 2001). However, educational research, nowadays has expanded its focus towards non-scholastic arenas (Garcia, 2016) and purports that these aspects are equally important along with scholastic areas, particularly for preparing our learners for life after school. One such area is citizenship education which focuses on the development of citizenship competencies. In fact, schools have been considered as a major place for producing good citizens (Macedo, 2000; Merry, 2018 a, b). However, there are considerable debates among various stakeholders of education that schools are failing continuously at this aspect of schooling.

Defining Citizenship

Though profoundly discussed and studied, there is no consensus over the definition of citizenship because of contesting perspectives among the researchers. These perspectives are not only due to different fields of study like political science, polity, history, geography etc., but also due to various focus variables for investigation like characteristics, efficacy, sustenance, engagement, criticality etc. For example, researchers like Verba *et al.* (1995) perceive it as a sense of efficacy, interest and knowledge in the political process. These domains are part of psychological constructs. On the other hand, Putnam (1995) conceptualized citizenship as '*people's connections with the life of their communities, not merely with politics*', an aspect of building social capital or network actors for social engagements. Further, the nature of engagements is categorized into two types: Choice based engagements and structural based engagements. The former elaborates the choices one makes and its costs and benefits. Instead, structure-based engagements explain the engagements on the basis of norms, values and behaviors regulated by norms exercised by social institutions (Whitely, 2005). Diverse to these views, Nie *et al.* (1996) perceives it as '*developing the autonomous and rational learners efficient in identifying and pursuing their political interests and articulating these in the public realm*'. However, in Asian countries two aspects of citizenship are more prevalent i.e., the meaning of membership of a community and what sort of action is congruent with the status of citizen. Researchers also purport that there is a symbiotic relationship between individual and the state where one can also enjoy the support from the state and in turn contributes to the state. However, these views differ in terms of criteria of proposed

membership; the nature of the political and legal institution to which a citizen belongs; the content of their rights and duties; and the character of the norms and attitudes citizens require to exercise and fulfill these civic entitlements and obligations. However, there is a common agreement that citizenship is a political and legal artifact that creates a condition of civic equality among those who possess it with regard to the prerogatives and responsibilities it bestows and requires (Bellamy, 2008). McLoughlin (1992) relates citizenship with the nature of political belief and interpretations of democracy of the particular state. He argues that citizenship can be mapped on a continuum ranging from minimal to maximal conceptions. This can be better understood in reference to four key characteristics of citizenship that are:

- The nature of identity conferred on an individual by citizenship.
- The virtues that are required to be a citizen.
- The extent of political involvement
- Social prerequisite necessary for effective citizenship

Teachers' role in citizenship education

The Social function of education is to shape the society, but it largely depends upon the way it is defined. This aspect becomes more important for democratic societies. Therefore, the responsibility of teachers increases as they play a significant role in not only imparting the information but also providing direction and determining the democratic citizenship (Huddleston, 2005). Moreover, the fundamental basis of social justice also lies in education for democracy and citizenship by '*critical and participatory aspiration*' (Schugurensky, 2010; Haste et al., 2017) and therefore teachers' role become more critical towards the formation of just society.

However, as it is difficult to define citizenship, so is citizenship education as its components are context bound and change over time. This problem became more complex as differences among the teachers were reported in terms of depth and breadth of knowledge and its application for citizenship education. These teachers facilitate the development of understanding about complex concepts and issues by engaging the learners in process of reflection and participation (Brett, Mompoin-Gaillard, & Salema, 2009; Pike, 2007) to promote the consolidation and extension of the individual and democratic rights. *Therefore, an education geared towards democracy cannot be conceived separately from an education of and for citizens* (Freire, 2004, cited by Zungia et al, 2019). And therefore, instead of transmitting the passive knowledge about the political,

institutional system and citizenship through *civic education*, an active learning process is required that builds knowledge as well as skills and attitudes for citizenship practices through autonomous action and participation (Haste et al., 2017; Kerr, 2002).

However, it is equally important to note that there are very few studies on pedagogical application of citizenship education (Hahn, 2016), specifically of what happens inside the classroom.

Objective of study

The objective of the study was:

- *To explore the perceptions of teachers regarding the concept of citizenship, and*
- *To explore the perceptions of teachers regarding the concept of citizenship education.*

Methodology

In the present study survey method was adopted for collecting the data. For this purpose, an open-ended questionnaire was prepared by the researchers having questions related to concepts of citizenship like- its aspects, difference between good and critical citizen, aspects of democratic attitudes and patriotic attitudes, obedience etc.

Further, the questionnaire also includes the questions related to citizenship education like- how teachers teaching subjects can be helpful in teaching the aspects of citizenship, democracy, patriotism, etc. and what kind of practices can be helpful in inculcating these values.

Data were collected from 54 teachers teaching in 12 schools and their responses were analyzed qualitatively.

For analysis of data, units of meanings were extracted and condensed from the teachers' responses. Condensed units of meaning were then multiple coded. These codes were later organized into categories on the basis of closeness to each other. Both similarities and differences were considered during this process. These categories help to synthesize the patterns.

Data analysis and findings

Regarding the teachers' perspective towards the aspects that they think are necessary for elementary grade students to learn to be a responsible citizen it is reported that teachers were more concerned with the traits that indicate character of an individual. These traits are majorly dispositions that are non-cognitive in nature (Wong, 1986). For e.g., self-dependency, honesty, bravery, diligence, discipline, obedience, trustworthiness, patriotism etc. Teachers were also equivocal that responsible citizens follow rules.

Further, how teachers perceive the notion of *good citizen* and a *critical citizen*, to a larger extent teachers opine that these are two different notions. They categorize good citizens on the basis of some traits like honesty, trustworthiness, just, nonviolent, helpful, guide others for good doings, and look at the positive side of any events or condition. These traits belong to the category of dispositions and are non-cognitive in nature. They further added that those who fulfill their duties, follow instructions and are also obedient. Contrastingly, they reported that critical citizens focus on the merit and demerits of any events or situation. They raise their voices against the wrong.

However, some of the teachers stated that critical citizens criticize every aspect and look only for flaws and for the negative side and demoralize others. This shows that though they differentiate between good and critical citizens, they conceptualize it erroneously. Secondly, for the majority of teachers the construct of a good *citizen* revolves around the non-cognitive dimensions of human behaviors that may be regarded as dispositions. Contrastingly, they manifest the aspects of cognitive dimensions for *critical citizens*.

Regarding the teacher's perspective towards whether students should have democratic attitudes, teachers largely conceptualize it as an essential quality for all round development of children. However, they didn't elaborate their conceptualizations. Some of the teachers considered students as citizens of the future therefore they must have democratic attitude as it is determined in our constitution. Subject specificity was also observed as many of the mathematics teachers didn't elaborate their conceptualizations.

Further, what aspects that falls under democratic attitude, majority of teachers responses falls under the categories like- living together, non-discriminatory, cooperative, speaking and doing right, celebrate diversity and ensures equality, equity, fraternity, integrity. They also stated that a person having the attributes that represents the aspects given in the preamble of constitution is democratic in his/ her attitude. For example, having attributes like equity, fraternity, equality, expression of feelings, giving opportunity to make their own decisions etc.

Moreover, it was also revealed that teachers conceptualize the concept of democracy in the realm of form of political and government system.

Further, regarding the teacher's perspective towards how their subject facilitates the development of democratic attitude among learners, teachers' responses were limited to the

contents provided in textbooks. Some teachers also stated that content related to our political system in social science textbooks helps to develop democratic attitudes among learners. This aspect, as stated above, reveals that teachers perceive democracy in the realm of the political system primarily, in contrast to the idea that democracy is a philosophy as well as way to live life (Rawling and Catlaw, 2011).

Regarding whether elementary grade students should develop patriotism, there was unanimous response that students must develop a sense of patriotism. It makes students aware of their country and its culture, lifestyle, duties towards nation and society. Some teachers responded that nation is above all, and patriots work for nation to keep it safe. This connotation regarding patriotism is quite narrow and the underpinning of patriotism is wider and extensively manifest in different walks of life.

Further, for the perspective regarding how their subject facilitates the development of patriotic attitude among learners, arts and humanities teachers responded that stories, biographies of freedom fighters, poems pictures that are given in textbooks are helpful in development of patriotic attitude among learners. Many of them also suggest that activities like drama, debates, speeches etc. that have content of India's struggle for independence will also be helpful.

Regarding the teacher's perspective on whether democracy and patriotism can go together, the majority of teachers stated that both can go together. Our government system is based on democratic aspects and patriotism is the best way to give back what is given by the constitution. Some teachers also responded that both are interdependent.

Teachers' perspective towards the extent students must be obedient, there were mixed responses for this theme. Many teachers were unanimous that students must be fully obedient. However, an almost equal number of teachers responded that elders sometimes are wrong and therefore students could be non-obedient at that time. They stated that students must follow right and truth.

For rating the students for obedience on a 1 to 5 scale, the majority of ratings by the teachers were at points 2 and 3 on a 5-point scale. Teachers responded that nowadays there is value degradation and therefore students are not obedient. On asking the reason for their rating they state that rating is based on self-discipline, cleanliness.

For which two aspects teachers think that are most valuable for the development of citizenship, teachers responded for understanding the basic concept of rights and duties, understanding the differences in the context of social structure and non-discrimination and understanding the basic concept of justice and equality.

Regarding how teachers try to incorporate these aspects in their teaching and learning process, the majority of teachers relied on the content provided in the text books. Apart from it some teachers responded for group activities, discussions etc.

Of the three values that teachers think are most important for the development of citizenship among the learners at elementary level, the majority of teachers responded for self-discipline, trustworthiness, co-operations, responsibility, patriotism and stated that these are required for success and development and for becoming a good citizen.

Discussion

Findings revealed that the majority of teachers perceive citizenship as disposition having attributes that are related to non-cognitive dimensions of learning and development (Wong, 1986). However it is well known fact that cognitive and non-cognitive dimensions are highly interrelated to each other (Boekaerts, 2001; Robbins *et al.*, 2004; Turner & Paris, 1995; Pintrich & De Groot, 1990; Brown, 1978; Duckworth, Quinn, & Tsukayama, 2012; Durlak *et al.*, 2011; Garcia, 2016) and there are areas for e.g. conceptual system related to democracy and citizenship, cognitive processes that are to be used to compare and contrast, analyze, and critique the various concepts and processes related to various forms and practices of citizenship from both past and present. These aspects need to be considered because behaviors and practices related to values are rooted in a solid foundation of cognitive process (Piaget, 1968; Simon, Howe and Kirschenbaum, 2009). In fact, these processes ensure that the individual as a citizen would be well informed and in turn participate in citizenship processes.

Further, it was reported that teachers were bounded by rhetorical adjunctions of *good* grounded in moral hierarchy. Though it is equally true that notion of good citizenship includes the aspects of values, virtues and qualities (Villalobos *et al.*, 2021), teachers must understand that there are also the dimensions of *justice-oriented citizenship* (Westheimer and Kahne, 2004) and therefore certain set of ideas require constant analysis along with their moral and political implication and circumstances where they get imposed in everyday social relation and discourse (Jaeggi, 2017 &

2018) inheriting the misconception of effectiveness of norms. But in fact, they are deficient and contradictory and generally abrogate the norm of citizenship rights(Costa, 2021). Further, that critique does not means the *dilution of reality based on external normative criteria* but to comprehend the problems and contradictions of reality that confronted us so that we can transform the situations in the form of rehabilitative overcoming (Jaeggi, 2018) and that teachers are the agents of this transformation (Friere, 2004).

Like other dimensions of education for citizenship, teachers perceive patriotism as a value also and represent it with various virtues and qualities that are behavioral in nature. Further, for the question of democracy and patriotism findings revealed that the majority of teachers consider the mutual relationship among both the concepts. This is obvious as patriotism revolves around special devotion towards one's country and defining oneself through country, and sacrificing for country's welfare (Nathanson, 1997) and as Dewey (1916) purports that patriotism develops the sense of shared interest and a purpose to act thus providing a balance between personal interest and broader societal interest by integrating both.

Contrary to this previous research also presents the contesting findings and provide caution towards the loose conceptualization of both the terms. Guibernau (2007) quoted Durkheim that homeland *plays a key-role in the moralization process since it controls an existing society from the highest level of organization*. This may lead to denying the value of critique and analysis and generally emphasizing allegiance and symbolic behaviors (Schatz, Staub, and Lavine, 1991) that may result in extreme nationalism that asserts one's nations superiority (*good or bad- my country, love it or leave it*) and dominance over other countries (Feshbach, 1991).

Further, as previous research suggests that students tend to be less interested in contents related to education for citizenship, primarily due to emphasis on memorization of contents (Zungia et al., 2019). This is evident from the findings of present study that teachers primarily rely on text books for the transaction of contents of citizenship. To realize the objectives of education for citizenship require ample emphasis on reflection as well action grounded in sound reasoning and participation. In fact, values can't be taught, rather they can be caught. And for this whole schooling process should serve as a model to be followed as well as agency for transformation.

Conclusion

Present study reveals that teachers perceive citizenship as a value. However, the aspects that were

construed by teachers to represent the construct of citizenship were behavioral and non-cognitive in nature. Moreover, it is also revealed that the majority of teaching learning practice falls in the category of what Cumming *et al.* (1988) stated as *value instruction* rather than *value clarification* which includes process of reasoning. It is just like as Dewey (1939) stated that *head and heart unite in the direction of action*. It's very peculiar feature is self-examination or self-reflection (Rogers, 1989; Maslow's, 1994). In fact, the value clarification paradigm envisages that classroom practices must be rooted in active and reflective processes where one's conceptualization should not only be developed but also challenged in order to get refined so that learners must be able to apply them by critically examining the situation and the context. After all values are the human preferences and choice and if these preferences are grounded in rationality individuals would be able to differentiate between right and wrong preferences and choose the right one which is called as *moral* (Ryan, 1991) that is the prime goal of the whole educational process (Morris and Morris, 2000).

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Education Voucher Scheme in India: Would Lead to School Choice and Universal Education?

*Athar Ullah**

Abstract

To remove obstacles in the path of 'Education for All', the government of India launched several programs, Sarva Shiksha Abhiyan (SSA) being one of them. Despite several attempts, the government has failed to be successful in providing education to all students and the impact of such schemes has not been very good at the ground level. In India, children are not absent from school owing to a lack of demand; rather, low quality of government education delivery is a major cause for their absence. There is a need to redefine the Indian education system or policy to a new level as government schools are unable to fulfill the growing demand for high-quality education. Direct government funding to children or parents rather than schools can provide parents or children with the ability to select the school of their choice, whether it is a government or private school. This may be accomplished through the education voucher scheme. Governments do not need to spend any additional public funds on vouchers to implement this approach. The education voucher scheme deserves an effort among the several approaches that are being pursued to improve school education.

Keywords: *Education voucher, quality education, educational choice, education to all, schools.*

Introduction

Education is the bedrock of any person on earth. It is being observed that education is necessary not only for humans but also for the success of the whole nation. Education to all is one of the major concerns of the government. To remove obstacles in the path of 'Education for All', the government launched several programs, Sarva Shiksha Abhiyan (SSA) being one of them. The government intends to provide universalize elementary education through community ownership of the school system under the SSA scheme. The SSA also strives to provide opportunities for all children to improve human abilities (<http://ssa.ap.nic.in>). Despite many efforts, the government

has not yet been able to provide education for all. To ensure 100 percent accessibility of education, the government has enacted the 'Right to Education' bill but systemic changes are needed for grassroots impact. More than 90 percent of the country's population is able to reach the primary school, which is located within a kilometer radius, but the conditions of our government schools are deplorable and not conducive to learning (Singh, 2010).

Every nation has its unique education system in some way and each country tries to fix its problems in its own way. Not only India but also the whole world is facing the problem of the poor performance of government schools. Most people are unhappy with the performance of government schools in their countries. The US spends the highest amount per student in the world, yet after the economy, education is the second major issue of the people in the US (Shah, 2009).

The government of India is running various programs to improve quality education and enrollment rate, but still, the impact of all the schemes has not been very good at the ground level. Some recent surveys and data reveal that there is a big difference between our aspirations and actual achievements. In this process, the two-tier system of school education is working in our society. Those parents who can pay high fees, send their children to private schools and those parents who cannot afford, send their children to government schools. Our current approach to education creates a wide gap in equal schooling opportunities for all (Shah, 2009). It is necessary to restructure education policies and redefine the roles of education stakeholders (government, schools and families) in the delivery of education because the educational demands of society have not yet been met by a centrally managed education monopoly (Weidrich, 2003).

A study of United Nations Educational, Scientific and Cultural Organization (UNESCO) stated that the Indian literacy rate is one of the lowest literacy rates in Asia, while India spends around four percent of the gross domestic product (GDP) on education which is also higher than the Asian average of 3.6 percent (Singh, 2010). The problem is not in the budget but in its inefficient implementation and corruption. One of the main reasons for the poor effectiveness of government spending on school has been the government's inability to provide targeted assistance to needy students in India. The government is funding schools in place of children's funding. There is a requirement for appropriate changes in the policy framework, without which an increase in public expenditure of six percent of GDP will not help in correcting the current state of poor education and reducing illiteracy (Singh, 2010).

One thing that has been common in many reforms is the empowerment of parents and it gives them more voice in the system. There is also a reform required in the education system which makes schools accountable to education authorities as well as parents (Shah, 2009). Provision of direct government funds to children or parents instead of schools can provide parents or children power to choose the school they prefer, whether it is a government, private or non-government organization school. This can be done through the education voucher scheme, which transfers purchasing power to needy students instead of schools. We can also say that aid goes to providers who prove themselves better than others through competition but only through parents/ children and not directly. Public expenditure would be more effective in increasing both quality and accessibility if it was to produce competition, choice and enhanced quality through the demand side. It provides additional purchasing power to parents, to compete for funds flowing into the system of all schools through additional educational expenses by parents (Singh, 2010).

The quality of education depends on the family's income - the rich are able to use better quality education and more expensive education, but the poor are unable to access it (Singh, 2010). Quality education increases the demand for different quality schools. Different quality schools increase the demand for educational choice. The voucher scheme emerged based on the demand for quality education to all. Many researchers suggest that the voucher scheme can be one of the major schemes which can help to improve quality education, school choice and provide equal opportunities for education to poor students (Gomathi and Sudhakar, 2014).

Educational Voucher System

a) Origin of Educational Voucher Scheme

The idea of voucher education was given by 'Milton Friedman' in '1955'. It was given with the idea that it would be able to improve educational outcomes. He described the education vouchers as a tax-funded certificate (Singh, 2010). Economist Milton Friedman conceptualized the Modern Education Voucher Program in 1962 for government support of education to encourage the development of a stable and democratic society (Dixon et al., 2019). The voucher empowers parents to pay for schooling and to choose schools for their children.

Friedman (1995) said that *“Our elementary and secondary educational system needs to be radically restructured. Such a reconstruction can be achieved only by privatizing a major segment*

of the educational system [...] that will provide a wide variety of learning opportunities and offer effective competition to public schools. The most feasible way to bring about such a transfer from government to private enterprise is to enact in each state a voucher system that enables parents to choose freely the schools their children attend. The voucher must be universal, available to all parents, and large enough to cover the costs of a high-quality education.”

Since then, the debate has been started the use of vouchers to improve choice, efficiency, and equity. Usually, all or most of the school’s tuition fees are paid by education vouchers. Through the education vouchers, parents are free to spend the liquidity embodied in government schools as well as private schools. Education voucher involves all schools in the competition, whether government or private. This forces schools to improve their quality to attract students (Singh, 2010). School performance will depend upon the students' success and able to redeem many vouchers. Schools will have to improve or close under the performance (Weidrich, 2003).

b) *Basic Objectives or Principles of Educational Voucher Scheme*

The main objective of the education voucher is to increase the opportunity for parents to choose the school for their child's education. Education vouchers specifically focus on low-income families, minority groups, and deprived section of the society so that they can access private schools. Education vouchers create competition among every eligible school, and it will increase the quality of education.

West (1997) suggested that the educational voucher system relies on four principles: “*consumer choice, personal advancement, school competition, and promoting equity in an already unequal system*”.

First, ‘Consumer choice’ describes the parental choice through parental authority. Parents are the decision-makers for their child's school selection and try to choose the best school for the child to provide quality education (Weidrich, 2003 and Gomathi & Sudhakar, 2014). Second, ‘Personal advancement’ suggests that human wants to shape their own life through this. It provides an opportunity to choose and therefore promotes interest, participation, and dedication to decision making (Weidrich, 2003). Third, ‘School competition’ argues that the purpose of the voucher scheme is to challenge government schools to compete with each other and also with private schools. This occurs through quality enhancement, cost reduction and the beginning of innovation

as it depends on the parental school choice decision (Weidrich, 2003). Fourth, 'Promoting equity or Equality of opportunity' aims to increase the opportunity to access private schools for low-income families and/or minority groups. Voucher scheme provides the opportunity for students to get the education in private schools so the student from low-income families can also go along with the mainstream in the society. The education voucher system is a way in which low-income parents can move forward for better education of their children and can also get equal educational opportunities in their society (Weidrich, 2003 and Gomathi & Sudhakar, 2014).

c) *Models of Educational Voucher Scheme*

There are various models of education voucher schemes. Here we discuss the voucher model of Friedman and Jenk –

“Friedman’s (1962) proposal advocates freedom of choice for both parents and schools, i.e., parents should be given freedom to spend vouchers allocated to them on any school and schools should be free to choose their intake and organization.”

Topping of vouchers by parents, even if they do not fully cover school fees, is still permitted under this model. This model also said that the value of each voucher is decided according to the average cost of schooling or a proportion of this average cost (Singh, 2010).

On the other hand, Jenk’s (1970) proposed a liberal view and more concern about equity. He said that

“while topping up should be allowed, the value of vouchers allocated to parents should be dependent on income - lower income households should get larger vouchers, implying that schools catering to a larger extent to financially disadvantaged children would receive extra resources.”

d) *Design of Educational Voucher Scheme*

Levin (2002) suggested three categories of building voucher design decisions that can be taken to systematically evaluate any voucher program: (a) finance, (b) regulation, and (c) support services. It included freedom of choice, productive efficiency, equity, and social cohesion. Finance suggests that the overall value of the voucher, whether it is allocated equally or differently and whether or not the schools can require co-payment from parents, other than vouchers. The regulation suggests that the government regulates program participation by eligible families and voucher-accepting

private schools. Support services refer to funding for school transportation and mechanisms for the provision of information to parents about school programs, effectiveness, philosophy, and practice.

e) *Types of Educational Voucher Scheme*

In a broader way, education vouchers provide funds to parents by the government rather than the school chosen by the parents. The education voucher covers the most or all of the tuition fees and it is tax funded. The Foundation, Trust or philanthropists also sponsored education vouchers which we called private suppliers of vouchers (Weidrich, 2003).

Education voucher systems are flexible, and it depends on the particular problems of a country, region or state. Three types of education voucher system are working in society –

First, ‘Tax-funded’ voucher systems are found fundamentally where education is mandatory up to the school-leaving level. Parents are allowed to choose among the alternative of compulsory service. We also can say that parents can choose any eligible school. Second, the ‘Funds-follow-the-child’ voucher system,

“in which government funding is directed to the chosen school in exact proportion to enrolment has been the most popular in developing countries, e.g., Bangladesh, Belize, Chile, Colombia, Guatemala, and Lesotho” (Weidrich, 2003).

Third, the ‘Universal’ voucher system, the government provides vouchers representing a certain amount to all individuals in a certain age group (Weidrich, 2003).

Globally Experiences of the Educational Voucher Scheme

The education voucher scheme is in vogue not only in principles but also on the ground level. There are various countries that are running voucher schemes such as the US (Milwaukee, Wisconsin, Cleveland, Vermont and Ohio), UK, Spain, Colombia, Chile, Sweden, Netherlands, New Zealand, Poland, Czech Republic, Bangladesh, etc. Here we are focusing on the voucher scheme of different countries.

Bangladesh

Bangladesh's Female Secondary School Assistance Project (FSSAP) is not a specific example of an education voucher, but it can be the basis of a voucher scheme. The main objective of the FSSAP project is to encourage an increase in enrollment of girls in secondary schools. The first

component of the project was to provide stipend to the girls. Grade 6 girls received US \$ 12 and Grade 10 girls received US\$36 as a stipend, who enrolled in secondary schools in 118 targeted districts. The stipend addressed the direct cost of education and personal expenses (school fees, tuition, transport, books, stationery and uniforms). It covered the 30-54 percent of direct school expenses and paid directly to the account of each girl, in a nearby commercial bank. In addition, FSSAP paid tuition fees directly to the schools where the girls were enrolled (Weidrich, 2003).

The project was surely called successful because it had a positive effect on enrolment, attendance, drop-out rates and (partly) on student's performance (Weidrich, 2003).

Chile

After the introduction of the voucher scheme in 1980, the number of students in private schools was increased. The voucher program was funded by the government and applicable to all school-going children (public and private schools). Both public and private vouchered schools were treated equally by the system. In the beginning, the government did not allow schools to charge any additional tuition fees but due to the rise in inflation and no modification in the value of vouchers, the government allowed private voucher schools to charge tuition fees from parents. On the other hand, public schools did not charge any additional tuition fees. The research revealed that private schools got higher academic achievement than public schools in the middle-class area, but it was the opposite in low-income areas. This increased competition among private schools and improved overall achievement at the district level despite higher disparities (Singh, 2010).

Colombia

The voucher program was initiated in 1992 and by 1994 the education voucher program was implemented in 1,789 schools, serving 90,807 low-income students in Colombia. It was targeted those children from low-income families who have completed their middle schooling but did not get admission to public secondary schools. Students entering the sixth grade were given vouchers worth approximately \$ 143. Primarily, it was introduced to solve the problem of shortage of places in public secondary schools in Colombia, where 40 percent of the secondary schools were privately owned. The government and municipalities financed the vouchers on 80:20 sharing, and municipalities conducted the program. As intended, Vouchers help poor students access to private schools; together, vouchers benefit to reducing overcrowding in public secondary schools. Elite

private schools did not participate in the program. After the introduction of vouchers, the number of commercially oriented schools increased and enrollment in secondary schools also increased and overall academic achievement also improved (Weidrich, 2003 and Singh, 2010).

Sweden

The Swedish legislature granted the power to parents, municipalities, and independent schools from the central government in 1991. For the first time, parents were free to send their children any government school within their municipality or to an independent school. Independent schools got 85% cost of educating a student in municipal schools. In 1994, the school choice and benefit of the voucher already became evident. This was realized not only by the student but also by those who were in the education system. The first independent school was started in a low-income immigrant suburb of Stockholm. It was focused on the individual student responsibility, familial involvement, and efficient use of technology. It had over 2000 students in 240 places. In 1997, the voucher amount was increased to 100 percent of the per-pupil of the Municipal School funding (Weidrich, 2003). The Sweden voucher system was a major step towards decentralization, but still, all schools were regulated by the central government.

UK

An education voucher scheme was established in 1981. In England and Wales, the voucher scheme differed from other countries, it covered only public schools and provided the opportunity to poor but able students. The voucher scheme had little effect on competition between public and private schools due to the non-inclusion of private schools thus public schools did not have the motivation to improve their quality of education. Research also shows that after the introduction of the voucher scheme, factors other than education were also responsible for improving educational achievement (Singh, 2010).

As of 1995 in England, around 29800 students in 294 specified independent schools were using the voucher scheme. Around 5000 new students aged eleven or thirteen entered the voucher program every year. The voucher principle also extended in higher education colleges which reestablished as autonomous institutions independent of the local governments. In 1995, the Department of Education announced that its objective was to provide free quality education for all four-year-old students in private schools as well as public schools and nursery education. Under the scheme, low-income parents could receive assistance with educational fees for any eligible

independent school. Under the scheme today, low-income parents can get assistance with tuition fees for any eligible independent school (Weidrich, 2003).

USA (Cleveland, Milwaukee and Vermont)

Cleveland

Cleveland Scholarship program was the first publicly funded American voucher program. It included both secular and parochial (also called local & rural) schools. The voucher provided up to 90% of student tuition fees (maximum US\$2,250). It was equivalent of just over a third of the cost of a school going child to Cleveland government schools. The Cleveland plan was based on students' academic tests and interviews with parents of low-income families. There were two main reasons for parents apply for an education voucher: "*first, parents looked for 'improved academic quality' in their children's education (85 percent); second, they wanted 'greater safety' in their school environment (79 percent)*" (Weidrich, 2003). All voucher recipients were 'far more satisfied' with independent schools than families attending government schools (Weidrich, 2003).

Milwaukee

In the USA, the voucher scheme was driven by high dropout rates, low marks, and high disparities in educational opportunities between low and middle-income households. The Milwaukee Parental Choice Program (MPCP) was privately sponsored in 1990, the voucher program was started in six private schools for 300 students. At that time, there was some restriction on the voucher scheme, in which the number of voucher students was 49 percent of the total strength, and the selection was based on the lottery method. Voucher scheme can be used in private schools, and it chooses recipients from low-income applicants. It did not charge any additional tuition fees from the students (Singh, 2010). The cost of the voucher was less than half the cost of a child going to a government school. Research teams of different universities conclude that parents were more satisfied with the school chosen (independent or private) as compared to public schools. It also suggests that high parental involvement and high parental satisfaction with the program increased learning and discipline. The Milwaukee voucher program is one of the most powerful examples of a successful voucher system for the poor (Weidrich, 2003).

Vermont

Vermont had an experience of Colombia, where voucher systems were introduced to reduce the problem of shortage of places in public secondary schools. About 95% of the state's 246

communities had no public secondary schools in Vermont. Parents in these communities preferred to send their children to private high schools or public high schools in other cities to give tuition. The scheme was established to provide communities with access to high school education to students without the expense of building their own public schools. The Vermont voucher experience indicated that cities, parents, and private schools could work creatively together (Weidrich, 2003).

Globally experiences embark to suggest that direct support to children can benefit them in terms of quality and emphasis public schools to improve their quality. Through the voucher scheme, children can be offered the choice between government and private schools. Private schools in rural areas may be encouraged to open after the expansion of the voucher scheme (Singh, 2010).

Education Voucher Initiatives in India

PAHAL in Uttarakhand

The scheme was launched in Dehra Dun City in 2007. It was an innovative PPP (Public-Private Partnership) program that offered education vouchers for children aged 6-14 years. Programmed included those children who are rag-pickers, scavengers, snake-charmers, or orphans. The eligibility criteria are that children have never enrolled or have been a drop out for at least one year and there is no government school / EGS center (Education Guarantee Scheme) within one kilometer of residence. Based on its progress, the program was extended to Nainital and Udham Singh Nagar after one year with a total of 651 students (Shah, 2009).

Delhi Voucher Project

The Center for Civil Society (CCS) launched an education voucher program in 2007. It was a privately funded program. The worth of CCS vouchers was up to Rs. 3600 per year and it provided vouchers to 408 students in 68 wards of Delhi. More than 50 school choice activists reached out to more than 12 lakh parents in these 68 wards. All those students who were studying in class 5 or below in government schools were eligible for the voucher program. More than 1.2 lakh parents applied for voucher program. CCS applied lottery methods in each ward. For the selection of students, the local ward councilor picked the 12 students- 6 for the first list and 6 for a buffer list. More than 2.5 lakh parents who could not win the CCS voucher lottery submitted a

petition to their respective ward councilor demanding school vouchers from the government (Shah, 2009)

Gyanodaya Yojana, Rajasthan

The main objective of the scheme is to provide the facility of opening new schools from class 6th to 12th under public-private partnerships on the basis of the BOO (Build, Operate and Own) scheme. In the first phase, the scheme will establish a maximum of five schools in each district and fifty percent of the seats would be sponsored by the state government through the school voucher in these schools. Yojana provides the preferences to girls and underprivileged children, and it also has inbuilt monitoring and evaluation mechanisms (Shah, 2009).

Shikshak Ka Apna Vidyalaya, Rajasthan

Special attention has been given to the role of trained unemployed teachers under this scheme. It aims to increase the reach and quality of primary schools by enabling these teachers to adopt government-run one-teacher primary schools in rural and backward areas of the state or to open new schools in public-private partnership (PPP). With government-sponsored vouchers, all children in an area of 3 km can attend these schools. These students will make up 50% of the school strength and while the remaining students will pay their school fees (Shah, 2009).

The Rumi Education Foundation

The program was running by the Rumi education foundation also known as Rumi Bright Futures (RBF) Voucher Programmed. The organization is based on Hyderabad. The organization has been running education vouchers for school dropouts since 2009. The organization includes students who have dropped out of school for not less than one year and more than two years. The organization does not support leaving existing schools to avail the scheme to existing students. The basis of the selection is eligibility test those who have performed well in the exam then they avail the benefit of the voucher and continue to their study. The organization calls the parents of selected students for the session to explain more about the process and functioning of the voucher system (Gomathi and Sudhakar, 2014).

RBF has covered 151 students under the scheme. There have been 110 families who have participated in this program, which have more than one child, who have got the benefit of education vouchers. There were 18 schools in REF vouchers that provided education for dropout children.

Education Voucher was valid till class 10th. All schools were located far from each other. Education vouchers and school choice were a new concept for the parents in Hyderabad. REF created awareness for the voucher scheme among the community through various sources like; door-to-door canvassing, through print media (leaflet), word of mouth through schools, teachers and parents. Schools' managers played a vital role in the awareness of voucher schemes. They spread the voucher information through word of mouth to the student, who dropped out of schools due to the financial crisis. REF provided their services in a few areas of Hyderabad (Gomathi and Sudhakar, 2014).

Almost 50% of parents have considered the REF voucher as a kind of scholarship and financial support for child education. Parents did not experience the other benefit of the voucher system which was school choice. REF could not spread the voucher information to the target population. When we focus on other countries such as Milwaukee, Colombia and Chile, education voucher encourages school choice and also help in financing child education. The REF voucher could not be able to provide information to the community about school choice, but it encouraged parents to educate their children (Gomathi and Sudhakar, 2014).

Most parents prefer to send their children to private schools which reduces the strength of government schools. If education vouchers would work on a wider scale, then it can increase the educational level of government schools. The majority of parents stated that education voucher can lead to universal education. When children are frustrated with government schools and cannot afford to pay the fees of private schools then they have the option of education vouchers to continue their studies (Gomathi and Sudhakar, 2014).

The ENABLE School Voucher Program

'Absolute Return for Kids (ARK)', a London-based charity organization, formed a think tank in collaboration with the Center for Civil Society (CCS) in Delhi, India, to implement a school voucher program— Ensure Access to Better Learning Experiences (ENABLE) in 2011. It was concentrated within a 20 square kilometer radius of Shahdara known as a highly urbanized slum area, situated in East Delhi on the banks of river Yamuna. It was focused on underprivileged children between the ages of five to seven years living in families with an income below 8000/per month as per below the poverty line (BPL). The program considers students who had not

previously attended schools or were currently enrolled in a government school. 1618 children applied for the voucher program and 835 children were selected through the lottery, with the remaining 783 children being served as experimental groups. Organization provided four vouchers to lottery winners- 'tuition costs', 'books funding', 'uniforms', and 'meals. Tuition costs are covered by a yearly voucher of Rs. 4800, books covered Rs. 900 voucher, school uniform covered Rs. 600 voucher, and meals covered Rs. 1000 voucher. The total cost of the combined annual voucher was Rs.7300 which was to be provided on an annual basis for five years. The organization provided the certificate, parent handbook, and school preference forms to lottery voucher winners. It provided the list of 110 private unaided schools for parental preference that had signed a Memorandum of Understanding (MOU) with ARK. Handbook helped parents to make an informed decision (school choice). It provided information about the facilities offered by the participating schools in their area and guidance on what families should do after receiving their vouchers. Organization used traditional and cultural communication activities to deliver key messages about the program. The organization consisted of banners, posters, field offices, leaflet drummers, puppet shows, and community members who explained the program, also used cycle rickshaws equipped with public address systems, toured the local areas to encourage participation and community engagement (Dixon et al., 2019).

ENABLE sees the impact of ARK vouchers of the last three years for attending private schools on student outcomes in three academic disciplines – 'English, Hindi and Mathematics'. The organization found a positive and large impact on 'English' after three years voucher program. The organization found a negative impact on 'Hindi' outcomes, it raises the major question because it is our native language. After three years of the voucher program, no significant difference has been found in 'Mathematics'. The overall ENABLE voucher program has been found to have a positive effect on the students of Shahdara, Delhi as the students do not usually get English language instruction in government schools (Dixon et al., 2019).

When we focus on all the initiatives of education vouchers, we can easily see that all the programs have been successful at their level. We saw that Voucher basically focuses on the dropout or underprivileged children who were not able to reach the schools. It provided an opportunity for low-income children to choose schools for themselves and to get quality education. It has increased the education level of the underprivileged children and has provided the benefit of girls' students

to get education in private schools easily. Voucher can also lead the universal education and promotes the school choice among parents.

Potential Voucher Model for Country

As Friedman stated, vouchers must be universal, this means that all parents should be given the opportunity to choose schools independently for their children. Second, the voucher amount should be sufficient to cover students' high-quality education.

Policy Design of Voucher Programs

There is a need to redefine the Indian education system or policy to a new level as government schools are no longer able to meet the demand for quality education. The fact is that facilities and equipment of government schools are deteriorating or become outdated is mainly a sign of mismanagement, not a shortage of funds. Per-pupil spending in government schools is on average twice that of private schools. Catholic studies have also shown that low-income students can learn more at a lower cost in the private sector (Weidrich, 2003).

The design of the voucher program depends to some extent on how policymakers value the different endorsed voucher results.

First, policymakers should ensure that voucher schools will be 'academically and economically impressive' and that a sufficient number of autonomous schools will be available. Second, policymakers should ensure that autonomous schools will provide the opportunity to 'low-income and special needs students. Third, there is also a possibility in the policy that the 'systemic impact' on students without vouchers will be positive. Fourth, policymakers must set up communication between schools and ensure that voucher schools will actually 'socialize their students' to become responsible citizens of India's democracy (Weidrich, 2003).

Voucher Distribution Parameters

A voucher can be given- to low-income families students of all groups, to the random selection of large group through lottery method, to under-achieving students of a small and specific group such as dropout children, migrant children, out of- school children, street children, girl children (on the basis of gender primarily for girls.), ST/SC/OBC, differently-abled children (to provide special need children), orphans, children from economically backward families, children of refugees,

migrating tribes, prisoners, those living in peri-urban areas (e.g., resettlement colonies), on the basis of caste, class or regional disparities, to students of minority groups which primarily means Muslims, and to provide the students of 'specific areas' (Shah, 2009 and Weidrich, 2003).

To qualify for a voucher, applicants must enter the Indian primary school cycle, and age should not be less than six years, which is when compulsory education starts in India. The voucher must be given both public and private schools and within private schools, both non-profit and for-profit schools must participate. Each municipality will decide how many vouchers to fund, subject to a maximum allocated to the areas by the central government (Weidrich, 2003).

Voucher Amount

The voucher amount could be given on the basis of family income, there should be also a special focus on the female children within each group or also could be given a separate voucher program to support them. The voucher amount can also be given by the government on the basis of the amount spent per student (Weidrich, 2003). Voucher amounts can be also given through different pattern percentages, dividing the total amount e.g., 70% pay by the government, and 30% pay by the parents.

Country Would Gain to Apply Voucher Scheme

In the present scenario, the Government of India provides funds to schools, higher institutions, colleges and universities to improve the quality of education, but much evidence shows that private schools, institutions, colleges and universities are more efficient as compared to government schools. For the improvement of 'quality education', 'education for all', the government of India must apply the education voucher scheme. If the government would implement it, then there are some factors that will help us to improve the condition of our current education system.

School Accountability

Education voucher is an instrument to change the finances of governments, especially the education of the poor. This is a coupon offered by the government. The government pays the full or partial cost of schooling that a student chooses to study. Education voucher provides the opportunity for the poor students to choose schools for their education. If the schools are unable to meet their requirement so they can change their schools through vouchers. Education voucher

promotes equality and provides equal opportunity to all students instead of caste, cost or creed (Shah, 2009).

In the current education system, schools are accountable to the government but in the voucher system, schools are accountable to students and parents because they pay for their education through vouchers. In the current education system, 'money follows schools' but in the voucher system, 'money follows students. In this way, the schools collect the vouchers from the students and deposit them to the government and the government sends the same amount of the vouchers to the school account. So, the route only changes, money remains in the same hand and vouchers go from students to schools and schools to the government (Shah, 2009).

Educational Gap

In the present scenario, rich parents have the power of educational choice who can easily select private schooling. On the other hand, rural and urban poor students get trapped in government school buildings and neither have the power to choose schools nor are they able to get quality education (Weidrich, 2003).

When we focus on the education voucher program, it provides the opportunity to low income or other at-risk students. Eligibility depends on the student's family income and performance of the student or local public school. In this way, it would be increased the range of educational choices of low-income families and reduces the educational gap (Weidrich, 2003).

Status Quo

When we focus on socio-economic factors, private schools lead to qualitatively higher output in verbal, mathematical and cognitive abilities. Private schools have a high degree of accountability because they operate according to market mechanisms but on the other hand, the level of accountability in government schools is very low (Weidrich, 2003).

Children in India are not out of school due to lack of demand, poor quality of government education delivery is an important reason for their absence from school. One objective of education voucher is to improve the quality of education without increasing the cost. Schools can also be made accountable through rewards and punished by allocating funds according to the performance of the school. It will provide the information to parents so they can optimize their school choice. The purpose of the voucher is to provide families with maximum choice within a decentralized and

competitive system of schools and directly support students or their parents rather than institutions (Weidrich, 2003).

Discussion

The experience of the Columbia, Vermont and USA voucher scheme suggests that it would be very appropriate to implement in India. Communities with small and geographically distant could provide vouchers to their students to attend either private schools or public schools in another town. As we saw in Cleveland and the USA, voucher schemes are able to increase parental satisfaction with schools and provide a healthier environment to students of different social and economic backgrounds than the current system of public schools (Weidrich, 2003). The experience of Milwaukee looks very useful for India because we are also facing the problem of high drop-out rates, disgraceful test scores and an unbearable disparity in educational opportunity between low-income and middle-income families. Several surveys and research suggest that the voucher program promotes diversity and provides opportunities, especially for poor children (Weidrich, 2003). Our country can take the idea of a Swedish voucher program that provides greater freedom from school administrators and ensures greater parental involvement. The Chilean voucher example shows us that public schools will also be able to compete with private schools when the government puts extra effort into improving curriculum, teaching quality, and managing education (Weidrich, 2003).

There is a need to innovate our education system which could be useful to increase maximum access to education to the people. In this way, the government should allow the PPP model (public-private partnership model) to start working with the education system, therefore the government should involve private and charity or non-profit organizations to work with the education system (Makwana, 2011). The introduction of education vouchers would provide a place for charitable and non-profit organizations to work for education to all with better quality education for the poor. CCS, a voluntary organization in New Delhi, outlined some of the benefits of the education voucher scheme and said that the education voucher scheme provides many advantages to parents, students, and academic achievement. First, students will have the power to select schools. Second, poor students will be able to get admission in private schools and the private school could not deny. Third, the government would be able to provide direct benefits to students rather than indirectly funding and managing schools. (<http://www.ccsindia.org>)

Education vouchers are entitled to an effort among many ideas, which are being done to improve school education. Numerous empirical and theoretical evidence suggests that education vouchers can be a weapon to improve the choice of the poor, able to put real pressure on state schools to perform and to create a system that will encourage to improve its quality education over time. The voucher could be used as a reward for better performance of the government schools. If government schools can be able to attract voucher students, who can choose private schools so the voucher amount could be given to the schools as an incentive. School vouchers can be consumed to confer a chance for principals/teachers to compete with the best in the industry. Through education or school vouchers, these principals/teachers can choose the option for greater managerial and financial autonomy with 100 percent funding. In this way, the government would provide an opportunity for a city or state to decide that all government schools would be funded through vouchers. The government would decide the voucher amount per student and the school would get money based on the number of students attracted and maintained (Shah, 2009).

After the introduction of education vouchers, the revenue of the schools will depend on the performance of the school. Schools that have high enrollment will get high amount and schools which have lower enrollment will get low amount so schools will improve the quality of their education and try to increase enrollment and retain students. It will create a performance-based payment in the education system. Education vouchers will improve the student-teacher ratio and it will help students to achieve better learning outcomes. In the present scenario, private schools compete for rich students but after the introduction of education vouchers, government schools would also compete for both poor and rich students so education vouchers would also create healthy competition among schools (Shah, 2009).

Weidrich (2003) suggests that the government should authorize an independent agency to smoothly run the program. For the purpose of a random selection of applicants in case of over-subscription, it should provide software and instructions to regional offices. For the purpose of determining the number of vouchers to be funded, the agency's regional office must work with individual municipalities to examine school requirements for participation and monitoring program implementation. If any student fails in class must be removed from the voucher program. After the successful implementation of the voucher scheme, we would be able to fulfill the country's basic motive that quality education to each and every one or universalization of quality

education. Parents would also have the power to choose the best school for their children and it would also increase the school choice. It would help those students who are facing financial problems and leave the schools. It would uplift the education level of underprivileged children and help them to go with the mainstream. Through the education voucher, poor students would compete with rich students at the same educational level because there would be no difference between their teachings. Especially it would provide equal opportunity to girls for better schooling. Minority parents would also get an equal chance to send their children to private or public schools.

Thus, education vouchers would be one of the important steps in improving the quality of education to poor students and increasing equality in provisions for rich and poor people receiving schooling. To implement this model, governments do not require to spend extra public funds on vouchers, but re-depositing money previously spent directly on government schools for education vouchers given to parents. Through the education voucher scheme, when parents choose the school then an amount equal to the voucher is deposited in the school. Thus, the education voucher scheme ensures that government funds are spent only on good quality schools (Singh, 2010).

So, education vouchers would be a powerful weapon thereby providing access to quality education as well as reducing segregation. Education vouchers would lead the universal education and school choice among parents and students. By successfully implementing education vouchers, the country would be able to achieve our basic motives such as “access to education for all, accountability, cost-effectiveness, equity, quality, and sustainability.

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Effect of Meta-cognitive Instructional Program on Performance of Primary School Students with Dyscalculia related to Time Concept

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Abstract

The use of innovative techniques and strategies which make the mathematical concepts concrete and help in memorizing the basic facts and also with inculcation of basic mathematical concepts and skills could be useful in improving mathematical ability. In the present study, the researcher investigated the effect of metacognitive instructional program on the time related skills of primary school students with dyscalculia so that they become more aware of their thought processes, during mathematical problem solving. The metacognitive strategies were introduced to the students with dyscalculia and were taught through metacognitive techniques. These techniques assist students with dyscalculia to determine what the best course of action would be while solving mathematical problems. The present paper aimed to find out the effect of metacognitive Instructional Program on the performance of students with dyscalculia in time concept.

Keywords: *Dyscalculia, Metacognitive Instructional Program, Time Concept.*

Introduction

The research literature estimated that 5%-10% of school children have learning disabilities of different types and characteristics, which affects the learning in mathematics (Mazzocco & Thompson, 2005). According to the cognitive approach, the characteristics of the disability are clearly related to learning difficulties in math. Visual processing, visual memory, and space awareness affect the acquiring of math skills, because they are significant parts of acquiring mathematical knowledge that includes conceptual knowledge and procedural knowledge (Kilpatrick et al., 2001). The characteristics of LD become more evident during school learning, yet its manifestations may occur earlier.

Children with learning disabilities in mathematics tend to respond impulsively, to fail, to verify or evaluate answers and to settle for the first answer in mathematics tasks (Bryant, et al. 2000). Moreover, these children use fewer metacognitive strategies and display more non-productive

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behaviors, while solving mathematics problems (Rosenzweig et al., 2011 & Montague et al., 1993). Desoete et al. (2001) argued that the students who had above average mathematical problem-solving abilities, did better on metacognitive knowledge. The students with learning disabilities either lack a strategy to complete an academic task, use ineffective strategies and use less complicated metacognitive skills. These skills are necessary to recognize when and where to use a strategy (Ellis & Lenz, 1996; Gersten et al., 2001; Graham & Harris, 2003; Pressley et al., 1989; Wong, 1996). Metacognitive strategies are more effective tools in helping students with dyscalculia to acquire the skills and methods to solve mathematical problems.

Teaching mathematics through metacognitive instructional program is an organized sequential process, which depends on knowledge of previous concepts and extends to new concepts. This is a set of metacognitive strategies to provide remedial teaching. A strategy is a systematic series of steps that students follow to reach the solution of a problem. Metacognitive strategies are tools and techniques that teachers use to make students understand and learn new material or skills, integrate this new information with what they already know in a way that makes sense, and recall the information or skill later, even in different situation or place. Keeping in the view the principles of remediation, the researchers in the present study, selected strategies e.g., cooperative learning, mnemonic, graphic organizer, advanced organizer and think aloud that proved helpful in providing instructions to learning disabled students in key area- 'Time Concept' of mathematics.

Objective of the study

The main objective of the present study is:

- To study the effect of the metacognitive instructional program on performance of primary school students with dyscalculia in Time Concept.

Hypothesis of the study

To achieve the objective of the study, following hypothesis was formulated:

- There exists no significant difference in performance of primary school students with dyscalculia of experimental group and control group in Time Concept before and after the implementation of metacognitive instructional program.

Population and sample

- **Population:** The population of the present study consisted of all the students of Grade III studying in CBSE affiliated English Medium Public Schools of Yamuna Nagar district of Haryana.

- **Sample:** In the present study, 14 CBSE affiliated English Medium Public Schools from Yamuna Nagar district were selected randomly at the first stage. Further, the purposive sampling method was used to identify the students with dyscalculia.

Tools used.

Following tools were used to collect the data:

- For the identification of students with dyscalculia, Teacher's Referral Form developed by the researchers, General Mental Ability Test for Children (GMATC, 1986) and Diagnostic Test for Learning Disability (DTLD, 1993) were used. Out of 88 identified students with dyscalculia, 70 students were then divided into two equal groups experimental group and control group.
- The Achievement Test for Numeracy Skills (Time Concept) was used to assess the performance of students with dyscalculia in money concept.

Design of the study

In the present study, the pre-test post-test control group experimental design was used.

Table 1: Pre-test Post-test Control Group Design

Experimental Group	Measures	Control Group
Pre-Test	ATNS (Time Concept)	Post-Test
Intervention	10 days Metacognitive Instructional Program related to Time Concept	No Treatment
Post-Test	ATNS (Time Concept)	Post-Test

Pre-testing stage

After identification of students with dyscalculia and formation of experimental and control groups, the performance of students with learning disabilities on 'Achievement Test for Numeracy Skills (ATNS) Sub-test - Time Concept' was compared. The scores on this test were obtained and considered as pre-test scores.

Table 2: Pre-Test of Achievement Test for Numeracy Skills (ATNS)

Group	N	Mean	S.D.	t-value
Experimental	35	5.34	2.87	1.049*
Control	35	4.71	2.07	

*Not Significant at 0.05 level of significance

The above table shows that the mean differentials of experimental group and control group with regard to pre-test of Achievement Test for Numeracy Skills (ATNS) [Sub-Test: Time Concept] are 5.34 and 4.71 respectively and the standard deviations are 2.87 and 2.07 respectively. The obtained 't'- value is 1.049 which is not significant at 0.05 level of significance. The calculated 't'- value for experimental and control group with regard to pre-test of Achievement Test for Numeracy Skills (ATNS) [Sub-Test: Time Concept] is less than table value which means that there is no significance difference between the mean scores of experimental group and control group related to time concept before the implementation of Metacognitive Instructional Program.

Intervention stage

After pre-testing stage, the investigators developed and implemented the 'Metacognitive Instructional Program' for improving skills of students with dyscalculia related to time concept. The duration of the whole program was 10 days. The experimental group was taught through this Metacognitive Instructional Program. This program was blend of different activities designed by the researchers keeping in view the various metacognitive strategies i.e., Mnemonic, Graphic Organizer, Think Aloud, Advanced Organizer and Co-operative Learning. Different types of hand-on activities, role play, games, study materials and animated videos were used by the researchers to make teaching and learning effective and to develop the time related concepts of students.

Post-testing stage

After the implementation of the Metacognitive Instructional Program, the Achievement Test for Numeracy Skills (ATNS), Sub-test- Time Concept was re-administered to the students of experimental group and control group to study the effectiveness of Metacognitive Instructional Program on performance of the students with dyscalculia in Time Concept. The results of this stage are analyzed in table nos. 3 & 4.

Table 3: Pre-Test and Post-Test of Achievement Test for Numeracy Skills (ATNS)

Experimental Group	N	Mean	S.D.	t-value
Pre-Test	35	5.34	2.88	4.22*
Post-Test	35	8.97	4.03	

*Significant at 0.01 level of significance

Table 3 shows that mean scores of experimental group in pre-test and post-test of sub-test ‘Time Concept’ of Achievement Test for Numeracy Skills (ATNS) are 5.34 and 8.97 respectively and standard deviations are 2.88 and 4.03 respectively. The calculated ‘t’- value is 4.22, which is more than the table value at 0.01 level of significance. Therefore, there exists a significant difference between the mean scores of pre-tests and post-test in sub-test ‘Time Concept’ related to Achievement Test for Numeracy Skills (ATNS). So, it is interpreted that the experimental group performed better in post-test as compared to pre-test in sub-test ‘Time Concept’ of Achievement Test for Numeracy Skills (ATNS) after implementation of Metacognitive Instructional Program.

Table 4: Post-Test of Achievement Test for Numeracy Skills (ATNS)

Groups	N	Mean	S.D.	t-value
Experimental	35	8.97	4.032	6.57*
Control	35	4.17	1.562	

*Significant at 0.01 level of significance

Table 4 shows that the mean scores of experimental group and control group with respect to post-test of Achievement Test for Numeracy Skills (ATNS), sub-test ‘Time Concept’ are 8.97 and 4.17 respectively. The standard deviations are 4.032 and 1.562 respectively. The t-value obtained is 6.57, which is more than the table value at 0.01 level of significance. Therefore, there exists a significant difference between the mean scores of experimental group and control group in the post-test of sub-test ‘Time Concept’ related to Achievement Test for Numeracy Skills (ATNS). It means that the performance of experimental group and control group differ significantly after the implementation of the Metacognitive Instructional Program. The performance of experimental group improved in post-test as compared to control group in time related concepts.

Conclusion

Based on the findings of the present study, it can be concluded that the effect of Metacognitive Instructional Program is significantly positive on the performance of primary school students with dyscalculia in ‘Time Concept’. The students with dyscalculia improved in basic areas of time concept i.e., Concept of time; estimation of time; reading and writing of time; conversion of time etc. after the implementation of Metacognitive Instructional Program (MIP).

The current study reported that difficulties encountered by the learners while learning and applying the concept of 'Time' were minimized by the instructional strategies viz. advance organizer, graphic organizer, think aloud and mnemonics. Butterworth, (2010); Zerafa, (2011); Beygi, et al., (2010) and Kaur, et al., (2008) studied various intervention strategies for numeracy, addition and subtraction, calculation and estimation of time. Their results indicated that these strategies have had tremendous effect on the achievement of dyscalculic children in mathematics. Thus, the findings of the present study emphasize that a well-developed instructional program can help students with dyscalculia in learning basic concepts of mathematics.

In Metacognitive Instructional Programme, the strategies were blended with various types of games, charts, flash cards, activities, dramatization, student's participation, audio-visual practices e.g., projector etc. which made teaching learning effective and help the students with dyscalculia in enhancing their time related skills. Thus, there should be a provision of these strategies in the school and awareness to make teaching learning meaningful and purposeful. The school authorities should make these things available to the teachers and students.

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Self-efficacy as a Determinant of Teacher Competency-A Study on Prospective Teachers

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Abstract

The investigators have tried through this study to access the extent of Teacher Competency (TC) and Self-efficacy (SE) of Prospective Teachers. The main aim of this study was to investigate the relationship between self-efficacy and teaching competence and to explore whether self-efficacy of prospective teachers contributes to their teaching competency. Data was collected from 227 prospective teachers through simple random sampling technique in J&K UT's Anantnag & Srinagar district. Investigators employed Self-efficacy Scale (SESPT) of Shouket and Iqbal and self-constructed Teacher Competency Questionnaire (TCQPT) for prospective teachers as instruments of data collection. Data was analyzed using descriptive and inferential statistics. The results revealed that statistically strong and positive relationship exists between self-efficacy and teacher competency.

Key words: *Teacher competency, Self-efficacy, Prospective teachers*

Introduction

Pedagogy is influenced by numerous factors, but quality teaching depends on the expertise of a teacher. A teacher needs to be professionally trained and devoted towards teaching profession for disseminating knowledge to the students. Also, to modify their behavior since teachers play pivotal role in the process of education. The quality of a teacher is greatly having an impact on effective and quality learning of the students. According to (International Board of Standards for Training, Performance, and Instruction, 1989) the competency are an integrated collection of skills, knowledge, and attitudes that enable the operations of a specific domain or function of the expected employment criteria's effective application. According to (Encyclopedia of Teacher Training and Education, 1998) teaching competency is a suitable or sufficient skill, knowledge and experience for teaching purpose Self-efficacy is one of the important factors that contribute towards teacher competency. The credit for developing the concept of self-efficacy goes to Albert Bandura (1977) who defines self-efficacy as the personal belief that one can perform in an appropriate and effective

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manner to attain certain goals. A teacher's self-efficacy belief is defined as a teacher's judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be tough to tackle or even unmotivated (Tschannen-Moran & Hoy, 2001). The concept of teacher's self-efficacy refers to teachers' beliefs in their capabilities to positively affect students' learning and success (Denzine et al., 2005). Teacher self-efficacy has been considered as one of the specific elements that influences teaching and academic achievement of students (Tschannen-Moran et al., 1998). Teacher self-efficacy has been strongly associated with constructive teacher attitude and effective student academic achievement. Teachers with high level of self-efficacy are supposed to be more competent, consistent, goal oriented and highly devoted towards teaching. Teachers with high self-efficacy are open minded, more willing to adopt new ideas and innovations, are less likely to experience burn-out, support pupils' autonomy to a greater extent, and are more attentive to low ability students (Brouwers and Tomic, 2003).

Objectives

To accomplish the goal of the present research study, the investigators formulated following objectives.

1. To access the extent of self-efficacy of prospective teachers
2. To access the extent of teacher competency of prospective teachers.
3. To investigate the relationship between self-efficacy and teacher competency.
4. To explore the influence of self-efficacy on teaching competency of prospective teachers.

Hypotheses

Based on the objectives following hypotheses were formulated.

1. **H0₁**: There is no statistically significant relationship between self-efficacy and teacher competency of prospective teachers.
2. **H0₂**: There is no statistically significant influence of self-efficacy on teacher competency of prospective teachers.

Insights gained from Reviews.

Pan (2014) investigated the relation between self-efficacy beliefs and teacher competence of madrasa teachers in West Bengal. The investigator considered gender and academic performance as demographic variables. The study was conducted with a sample of 200 madrasa teachers. The general teaching competency scale of Passi and Lalitha (1994) & Teacher self-efficacy scale of

Schwarzer and Jerusalem (1995) were used as tools to measure teaching competency & self-efficacy of teachers respectively. Mean, SD, t-test and correlation were the statistical techniques used in analysis. Findings of the study revealed that Self efficacy and professional competency of the teachers are positively correlated with each other. Teachers with a high level of self-efficacy possess a high level of teacher competency.

Kaur & Paramjot (2016) examined the relation between teacher self-efficacy and teacher competency. The study included gender and locale as demographic variables. 200 secondary school teachers from both rural and urban areas of Gurdaspur city in India was selected as sample for this study. Quantitative approach with Mean, SD, t-test and correlation were employed for analysis of data. The obtained results showed that there is a significant positive relationship between self-efficacy and teacher competency.

Rezaull Karim et al. (2021) undertook a meta-analysis to find out the interdependence between self-efficacy and teacher effectiveness. This study was done based on secondary data from article, journals, books and theses. This study reviewed, analyzed and discussed the research findings of different research studies related to teacher efficacy and teacher effectiveness. It concluded that the development of teacher self-efficacy improves instructional resources which in turn enhance the teacher effectiveness.

Habib (2019) carried out a research study with a sample of 100 secondary school teachers from government institutions of Ganderbal district of Jammu & Kashmir. Purpose of the study was to compare their self-efficacy with professional commitment and also to find out whether there is a relationship exists between their professional commitment and self-efficacy. Sample was chosen through purposive sampling. Statistical techniques used were Mean, SD, t-test and Pearson's correlation method. Results of the study revealed that there is no significant difference found among self-efficacy and professional commitment whereas there is a significant positive relationship was found between professional commitment and self-efficacy of secondary school teachers.

Himabindu (2012) studied the relationship between teacher efficacy and teaching competency. 129 college lecturers in Vizianagaram district were taken as samples in this study. Teacher efficacy scale of Peri (1983) and teaching competency scale of Pakalapati (1994) was

employed for collecting data. Results confirmed that teacher efficacy and teacher competency is interrelated.

The investigator found that research studies cited in previous reviews are mostly limited to college or schoolteachers and demographic variable like gender, locale and length of service were given but no research study talks about the extent or level of self-efficacy in relation to teacher competency. Through these studies researchers identified this research gap and decided to carry out this research study on prospective teachers which has not been investigated so far.

Methodology

Descriptive method was adopted in this study. A sample of 227 prospective teachers was drawn from different teacher training institutions of Jammu & Kashmir Anantnag & Srinagar district. Self-efficacy scale of Shouket and Iqbal (2012) for prospective teachers and self-constructed teacher competency questionnaire was employed to collect data from the selected sample through simple random sampling technique. Self-efficacy scale by Shouket and Iqbal consists of 25 items grouped into 4 factors viz, Locus of control, persistent behavior, classroom anxiety and professional mastery. The scoring was done on a 5-point Likert type scale, i.e., strongly disagree-1, disagree-2, neutral-3, agree-4 and strongly disagree-5). To check the reliability of the tool Cronbach's alpha reliability method was used through SPSS.26 and the value was 0.906. For teacher competency questionnaire content validity was done by given it to experts in the field of psychology and education. Item selection was done through principal component analysis method & 55 items under 9 dimensions were finalized in the questionnaire with 5-point scale, i.e., I never do this-1, I rarely do this-2, I sometimes do this-3, I often do this-4, I always do this-5). The reliability of the tool was 0.923. These tools were administered to teacher trainees who were in their third semester and their responses were collected.

Data analysis and interpretation

The summary of the findings is shown in the table below.

Table 1: Descriptive statistics for Self-efficacy of prospective teachers

Self-efficacy	Low	Average	High	Total
Frequency	5	40	182	227
Percentage	2.20	17.62	80.18	100

About 2.20% (N=5) teacher trainees have low extent of self-efficacy, 17.62% (N=40) of teacher trainees have average self-efficacy while as only 80.18% (N=182) of the teacher trainees have high self-efficacy. It means that most of the trainees possess high extent of self-efficacy although some teacher trainees do possess average extent of self-efficacy.

Table 2: Descriptive statistics for Teacher competence of prospective teachers

Teacher Competence	Low	Average	High	Total
Frequency	4	27	196	227
Percentage	1.76	11.89	86.35	100

It can be inferred from the results that 1.76% (N=4) of teacher trainees have low teacher competency, 11.89% (N=27) have average teacher competency while as 86.35% (N=196) have high teacher competency. It means that most of the teacher trainees possessed high extent of teacher competency.

H0₁: There is no statistically significant relationship between Self-efficacy and teacher competence of prospective teachers.

This Hypothesis tests the association between self-efficacy and teacher competence. Pearson's coefficient of correlation for self-efficacy and teacher competence reveals a strongly positive and statistically significant association ($r=.982$, $p < 0.01$). Hence, the null hypothesis 1 is rejected. This shows that an increase in self-efficacy would lead to higher teacher competency. The summary of the findings is presented in the table below.

Table 3: Pearson's Correlation for Perceived Self efficacy and Teacher competence (N=227)

	Self-efficacy	Teacher competency	Result
Self-efficacy	1	.982**	Significant
Teacher competency	.982**	1	
<i>**Correlation is significant at 0.05 level</i>			

H0₂: There is no statistically significant influence of self-efficacy on teacher competence of prospective teachers.

This hypothesis tests whether perceived self-efficacy has any significant influence on teacher competence of prospective teachers. The dependent variable Teacher competence was regressed on determining variable self-efficacy to test the hypothesis Ho₂. The results of the regression analysis revealed that self-efficacy significantly determines Teacher competence, $F(1, 25) = 6008.564$, $p < 0.05$, which indicates that self-efficacy plays a significant role in improving the teacher competency ($b = .982$, $p < 0.05$). These findings clearly depict that self-efficacy has a strong positive influence on the teacher competency of prospective teachers. Also, the $R^2 = .964$ predictions depict that the model explains 96.4% of the variance in teacher competency. Hence, the null hypothesis H₀₂ is rejected. The summary of findings is presented in table below.

Table 4: Linear regression between Self-efficacy and Teacher competency (N=227)

Hypothesis	Regression Weights	Beta coefficient	R ²	F	p- value	Result
H ₀₂	Self-efficacy	.982	.964	600.56	.000	Sig.
	Teacher competency					

Discussion of the results

The Self-efficacy and teacher competency of the prospective teachers was tested through this study. The results confirmed that for most of the teacher trainees the extent of Self-efficacy is high (80.18%). Similarly (86.35%) of the prospective teachers showed a high extent of teacher competency. It can be further inferred from the findings of the study that Self-efficacy of prospective teachers is associated with teacher competency. The correlation value ($r = .982$) indicates a strong positive and significant relationship between Self-efficacy and teacher competency. The regression analysis further confirmed a high level of prediction among Self-efficacy and teacher competency. Therefore, Self-efficacy is a determinant of teacher competency.

Conclusion

In the light of above results, future teachers be prepared to confront with the challenges of the contemporary society. Emphasis should be given on the development of self-efficacy beliefs of teacher trainees which will help to enhance their teacher competency skills. Proper teacher training

should be imparted at preservice as well as Inservice level to enhance the self-efficacy of teachers to ascertain their teacher competency which will contribute to the student academic achievement.

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Self-Concept of the Students Studying in Secondary Schools of Tinsukia District of Assam

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Abstract

In the present study an effort was made to find out the levels of self-concept of the Class IX students of Tinsukia district of Assam. The study also attempted to explore the differences between self-concept of the male and female students, and students studying in urban and rural schools. The Children's Self-Concept Scale (CSCS) developed by S. P. Ahluwalia and H. S. Singh (2012) was used for data collection. Results of the study reveal that most of the Class IX students of Tinsukia district had average/moderate self-concept. It was also found that the entire sample was homogenous in respect of their self-concept. It manifested that gender, habitation, and types of management of the schools had no significant influence on the levels of self-concept of the Class IX students of Tinsukia district.

Key Words: *Self, Self-Concept, Academic Achievement, Gender, Habitation, Management, etc.*

Introduction

Each of us carries around a detailed, pervasive set of ideas about ourselves collectively called the self-concept. These ideas affect our relationship with others, our choice of activities or occupation, and our confidence (or lack of it) in many situations. The self-concept is also a highly significant part of what is usually called the personality which may be defined as that unique, individualized pattern of thinking and reacting to the world around us that is characteristic of each of us (Bee, Helen L. & Mitchell, Sandra, K., 1984, p. 211). The study of self-concept represents one of the oldest areas of research in social sciences. The longest chapter in William James' textbook, the first introductory textbook in Psychology, was about self-concept. There are also interesting peculiarities about research in this area. Unlike other areas of research, the study of self-concept has not occurred within a particular discipline (Marsh, Herbert W., Smith, Ian D., Barnes, Jennifer., and Butler, Susan, 1983, p. 772).

Research on self-concept has been creating extraordinary interest among psychologists during recent years. In the science of teaching, it is robustly assumed that understanding the child's personality is a key factor for developing quality education. The set of courses, methods of teaching, textbooks and other learning occurrences should be based on careful study and understanding of the child, if he/she is expected to be benefited from that educational program. There are several research findings which indicate that students differ in their scholastic accomplishments due to individual differences in intelligence, aptitude, interest, values, attitudes, habits and other personality characteristics. Therefore, it is a huge challenge for the teachers, educationists, curriculum constructors, school administrators, and policy makers to organize learning experiences for pupils to satisfy their diversified abilities, interests, attitudes, values, beliefs and other personality characteristics. These issues incite the investigator to take up the present problem for investigation. In this study, attempts have been made to understand the nature of self-concept among adolescent students studying in ninth grade, who are considered to be the builders of a nation. The study has also explored its relationship with academic achievement that seems to be one of the predictors of success in one's life career.

Significance of the study

Self-concept is a major factor that influences our personality. It is a matter of fact that teaching the students without understanding their social, economic, psychological and other backgrounds is not much different from prescribing medicine for a patient without proper diagnosis. Self-concept is a central theme around which a large number of the major aspects of personality are organized. Hence, in the present study an attempt was made to understand the self-concept of Class IX students of Tinsukia district. The study would have practical implications for teachers, policy makers, supervisors and the students themselves.

Operational definitions of terms used.

Self-Concept: In the context of the present study, *the term 'self-concept' is used to mean the scores obtained by the students through administration of the standardized tool used in the present study, i.e., Children's Self-Concept Scale (CSCS), prepared by Prof. Ahluwalia and Dr. Singh.*

Secondary School: Secondary schools provide instruction to the students of Class IX to XII. Conceptually the term 'Secondary School' refers to those schools having within their institutional

framework, and a common campus, all the classes from IX to XII. However, students of Classes IX and X are regarded as students of Senior Secondary stage.

In the present study, Secondary Schools will be used to mean all those schools within Tinsukia District which have Secondary Education Classes at least from Class IX to X. Since the target population sample will be drawn from Class IX, hence those schools which do not have the Higher Secondary sections within its fold have also been taken up as the sample of study.

Delimitations of the study

Keeping in view the purpose, scope and constraints of time, the study was limited and delimited in terms of the following aspects-

- i. The present study was limited to the geographical area of Tinsukia district of Assam.
- ii. The sample for the present study was drawn from Secondary School students of Class IX.
- iii. The study was confined to the variables of: Gender - Male and Female, Habitation - Rural and Urban, and Types of Management of the Schools- Private English Medium Schools and Provincialized Assamese Medium Schools affiliated to SEBA.
- iv. The study was confined to the study of self-concept of the students studying in Class IX in Secondary Schools of Tinsukia district only.

Review of related literature

There are several studies depicting the relationship between self-concept and academic achievement in India as well as abroad. A few studies conducted to find out the relationship between self-concept and academic achievement are mentioned below.

Sharma, R. R. (1970) conducted a study on the relationship of self-concept and academic achievement and revealed positive and significant relationship between self-concept and academic achievement. Sham, J. H. (1978) determined the significant positive relationship between self-concept and academic achievement of Secondary School pupils. Some other studies were conducted by Goswami, P. K. (1978), Sandra, J. S. (1987), Alam, M. (2009), and Aryana, M. (2010) reported significant positive relationship between self-concept and academic achievement in their studies.

Objectives of the study

1. To study the levels of self-concept of the Class IX students of Tinsukia district.
2. To compare the self-concept of male and female Class IX students of Tinsukia district.

3. To compare the self-concept of the Class IX students studying in urban and rural schools of Tinsukia district.
4. To compare the self-concept of Class IX students studying in provincialized and private schools of Tinsukia district.

Research question and hypotheses of the study

The study was carried out with the following objectives in view.

1. What are the levels of self-concept of the Class IX students of Tinsukia district?
2. There is no significant difference between self-concept of male and female Class IX students of Tinsukia district.
3. There is no significant difference in self-concept of Class IX students studying in urban and rural schools of Tinsukia district.
4. There is no significant difference in self-concept of Class IX students studying in provincialized and private schools of Tinsukia district.

Methodology

Method: The most popular method of research known as “Descriptive Survey” method was used for data collection.

Population: The population of the present study involved all the Class IX students studying in Secondary Schools of Tinsukia district.

Sample: Sample for the study was drawn from the Class IX students of Tinsukia district by using the purposive and simple random sampling technique for schools and the students respectively.

Selection of the Sampled Schools: In this study 20 co-educational Secondary Schools were selected from Tinsukia district of Assam by adopting purposive sampling technique. There are seven CD Blocks, four Town Committees and one Municipality Board in Tinsukia district. Out of these seven CD Blocks, i.e., rural areas five Provincialized Assamese Medium Schools and 5 English Medium Private Schools affiliated to the Board of Secondary Education, Assam (SEBA) was selected by the researcher. The same method was followed to select schools (5 Provincialized and 5 Private) of the urban areas from the four Town Committees and one Municipality Board of Tinsukia district.

Selection of the Sample Students: The study involved a total sample of 600 Class IX students of Tinsukia district. Simple random sampling technique was applied for selecting the sample. The

investigator went to the sampled schools and having due permission from the Head of the school, the researcher checked the attendance of the students. The Roll Numbers of the male and female students present in the Class were recorded on separate sheets. Then as per requirements of the study 15 male and 15 female students were selected from each school by adopting the lottery method. Thus, 300 male and 300 female Class IX students were selected from 10 Provincialized Assamese Medium and 10 Private English Medium Secondary Schools of Tinsukia district.

The List of Sample Secondary Schools of Tinsukia District: Out of 273 Secondary Schools of Tinsukia District, the researcher selected 20 schools for the study using purposive sampling technique. The list of the sampled schools is shown in table 1.

Table-1: List of Sample Secondary Schools of Tinsukia District

Sl. No	Name of Schools (Provincialized)	No. of Students		Name of Schools (Private)	No. of Students	
		Male	Female		Male	Female
1	Borhapanjan High School	15	15	Holy Child School, Tinsukia	15	15
2	Phillobari High School	15	15	A New High School, Tinsukia	15	15
3	Dangeri H. S. School	15	15	Babies Nursery Co-education High School, Tinsukia	15	15
4	Bordubi H. S. School	15	15	St. James High School, Margherita	15	15
5	Pengeri High School	15	15	Carmel School, Digboi	15	15
6	Bipib Borah High School, Tinsukia	15	15	Donbosco High School, Doomdooma	15	15
7	Town High School, Margherita	15	15	St. Mary's School, Margherita New Colony	15	15
8	Margherita Public H. S. School	15	15	Los Angeles English Academy	15	15
9	Digboi High School	15	15	St. Vincents High School	15	15

10	Sowmar Bidyapith H. S. School	15	15	Learner's High School, Rupai	15	15
Total	10	150	150	10	150	150
		300			300	

Tools Used: In the present study the following tool was selected and used by the researcher to collect data and related information:

Children's Self-Concept Scale (CSCS): This scale was constructed by S. P. Ahluwalia and H. S. Singh (2012). The scale contains eighty (80) items in all with 'Yes' or 'No' responses. It includes 16 lie items to detect whether the children and adolescents have filled the items accurately or not. It is a verbal paper-pencil test. The six sub-scales which are included in the self-concept scale are considered to be important in the psychological world of childhood and adolescence.

Data Collection: For collecting data from the respondents, the researcher sought permission from the Heads of the concerned schools to undertake the study. Before administering the instrument, all students were thoroughly briefed about the purpose of the study and procedure of completing the instrument and due rapport was built by the investigator with the students. The students were requested to participate with due attention to complete the scale. After making proper seating arrangements the researcher distributed the research tool to the subject. Then the investigator collected the tools and leaved the school by giving them thanks.

Analysis and interpretation of data (statistical techniques used)

The data collected through the tools earlier were then arranged in proper tables. Some data were also represented graphically. The data collected were analysed with the help of different statistical techniques. Percentile, Mean, Standard Deviation, Skewness (SK), Kurtosis (KU) were used to study the levels of self-concept of the students.

The t-test was used to study the differences between self-concepts of male and female students, urban and rural students and students of private and government/provincialized schools. Graphical representations were used to compare the differences of self-concept among students with reference to their gender, place of habitation and types of management of the schools. The analytical procedure of data is shown as follows:

Levels of Self-Concept of the Class IX Students of Tinsukia District:

The results of the study regarding levels of self-concept of Class IX students of Tinsukia district is presented below in Table No. 2 and Table No. 3 given as follows:

Table-2: Levels of Self-Concept of the Students Studying in Class IX

Variables		Sampled Students (N)	Mean (X)	Median (Mdn)	Standard Deviation (SD)	Skewness (Sk)	Kurtosis (Ku)
Gender	Male	300	51.53	52.45	9.93	-0.28	0.28
	Female	300	51.50	52.83	9.30	-0.43	0.30
Habitation	Urban	300	51.52	52.80	9.81	-0.39	0.29
	Rural	300	51.52	52.50	9.42	-0.31	0.28
Types of Management	Provincialized	300	51.38	52.67	9.20	-0.42	0.27
	Private	300	51.65	52.60	10.00	-0.29	0.30
Total		600	51.52	52.64	9.62	-0.35	0.29

Table-2 reveals that the negative values of skewness indicate that the distributions of the self-concept scores are massed at the high end of the scale (the right end) and are spread out more gradually towards the low end.

The computed positive values of kurtosis of all the variables are greater than 0.263, which indicates that the distribution of self-concept scores is platykurtic. Therefore, the scores are scattered more evenly than the normal distribution and the shape of the curve is flatter than the normal one.

Table 3: Levels of Self-Concept of the Sampled Students [M = 51.52, SD = 9.62, N = 600]

Sl. No.	Range of z-Score	Range of Raw Score	Grade	Levels of Self-Concept	No. of Students	%
1.	+2.01 and above	72 and above	A	Extremely High	1	0.17%

2.	+1.26 to + 2.00	64 to 71	B	High	54	9%
3.	+0.51 to + 1.25	57 to 63	C	Above Average	148	24.67%
4.	-0.50 to + 0.50	48 to 56	D	Average/Moderate	209	34.83%
5.	-0.51 to - 1.25	40 to 47	E	Below Average	122	20.33%
6.	-1.26 to - 2.00	33 to 39	F	Low	48	8%
7.	-2.01 and Below	32 and Below	G	Extremely Low	18	3%
Total					600	100%

Table-3 shows that most of the respondents (34.83% i.e., 209 out of the 600 students) fall in the average/moderate self-concept category. Only one respondent falls in the extremely high self-concept category, 18 fell in the extremely low self-concept category. On the other hand, 54 students fall in the high and 48 in the low self-concept category. Again 148 students fall in the above-average and 122 fall below-average category.

Figure-1 shows the levels of Self-Concept of the Class IX Students studying in Secondary Schools of Tinsukia district.

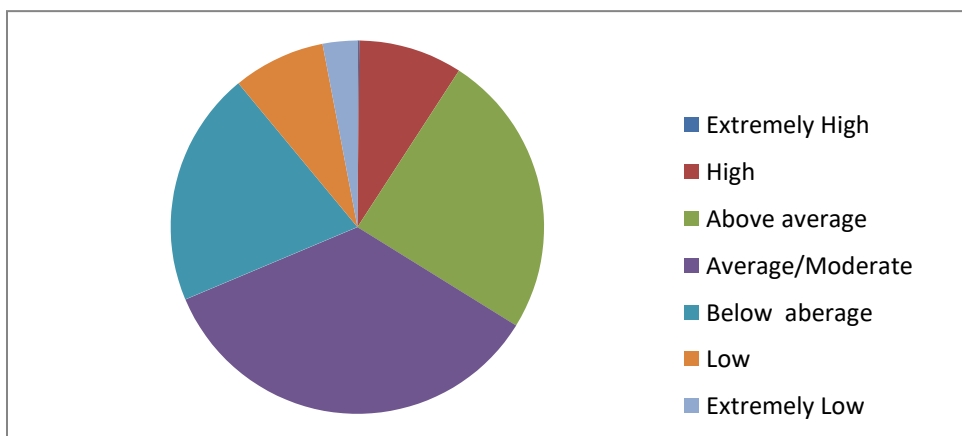


Fig. 1: Levels of Self-Concept of the Students.

Comparison of the Self-concepts of Male and Female Students Studying in Secondary Schools of Tinsukia District: To compare the self-concept of Male and Female Students studying in class IX in Secondary Schools of Tinsukia district, the ‘t’ value was computed. Table No. 4 shows the comparison of the Self-concept of Male and Female students studying in Secondary Schools of Tinsukia district of Assam.

Table 4: Difference between Self-concept of Male and Female Class IX Students

Gender	N	Mean	SD	‘t’ Value	Significance
Male	300	51.53	9.93	0.04	Not Significant
Female	300	51.50	9.30		

Table-4 reveals that the computed value of ‘t’ is 0.04, which is much less than 1.96 to be significant at 0.05 level of significance. Hence, it was not significant. The null hypothesis which mentioned, “There is no significant difference in the self-concepts of male and female Class IX students of Tinsukia district” can be accepted. This helps in arriving at the conclusion that there is no significant difference in the self-concept of the male and female Class IX students of Tinsukia District.

Difference between Self-Concept of the Class IX Students Studying in Rural and Urban Secondary Schools of Tinsukia District:

The ‘t’ test was used to compare the self-concept of the Class IX students studying in rural and urban Secondary Schools of Tinsukia district. Table No. 5 shows the comparison:

Table 5: Difference between Self-Concept of Students from Rural and Urban Schools

Habitation	N	Mean	SD	‘t’ Value	Significance
Rural	300	51.52	9.42	0.00	Not Significant
Urban	300	51.52	9.81		

The ‘t’ value of the students studying in the secondary schools of rural and urban locations was found to be 0.00. This ‘t’ value ($t = 0.00 \leq 1.96$) is not significant at 0.05 level of significance. Therefore, the null hypothesis that states, “There is no significant difference between self-concept of the Class IX students studying in urban and rural schools of Tinsukia district” may be accepted.

It can, therefore, be concluded that Class IX students studying in urban and rural schools of Tinsukia district have no significant difference in their self-concept.

9.4 Difference between Self-Concept of the Class IX Students Studying in Provincialized and Private Schools of Tinsukia District:

In order to study the self-concept of the Class IX students studying in Assamese Medium Provincialized schools and English Medium Private Schools of Tinsukia District once again, the ‘t’ test was used. Table no. 6 shows the comparison of self-concept of the Class IX students studying in Provincialized and Private schools.

Table 6: Difference between Self-Concept of Students of Provincialized & Private Schools

Types of Management of Schools	N	Mean	SD	‘t’ Value	Significance
Provincialized	300	51.38	9.20	0.35	Not Significant
Private	300	51.65	10.00		

Table-6 reveals that the calculated ‘t’ value was found to be 0.35 which is not significant at 0.05 level of significance. Therefore, the null hypothesis that states, “There is no significant difference between self-concept of Class IX students studying in Provincialized and Private Schools of Tinsukia District” may be accepted. Hence, it may be concluded that there is no significant difference between self-concept of the Class IX students Provincialized and Private Secondary Schools of Tinsukia District.

Discussion and interpretation of the findings

The present study was designed primarily to study the self-concepts of students studying in Secondary schools in Tinsukia district with reference to their gender, habitation and types of management of the schools. The results of the study and the statistical inferences from the findings of the tool used for the study have been presented earlier. Here an attempt is made to present a brief discussion on the major findings of the study under the following heads-

Levels of Self-Concept of the Class IX Students of Tinsukia District: The study revealed that self-concept of the Class IX students of Tinsukia district was average/moderate, as majority of the respondents (209 out of 600) scored between 48 and 56. The self-concept of the male and

female students, students studying in urban and rural schools and the students of Provincialized and Private schools were also moderate.

Difference between Self-Concept of Male and Female Class IX Students of Tinsukia District:

The study revealed no significant difference between the male and female Class IX students of Tinsukia district in respect of their self-concept. It shows that the entire sample was homogenous in respect of their self-concept with reference to their gender. In other words, it indicates that gender had no significant effect on self – concept of the Class IX students of Tinsukia district.

Difference between Self-Concepts of the Class IX Students Studying in Rural and Urban Schools of Tinsukia District:

The findings of the study reveal no significant difference between self-concept of the Class IX students studying in rural and urban schools of Tinsukia district. It indicates that in the selected sample urban or rural habitation had no significant influence on the levels of self-concept of the Class IX students of Tinsukia district.

Difference between Self-Concept of the Class IX Students Studying in Provincialized and Private Schools of Tinsukia District:

The findings of the present study reveal that self-concept of the Class IX students studying in Provincialized and Private Schools of Tinsukia district did not differ significantly. No significant difference indicates that the whole sample was homogenous in respect to their self-concept. In other words, types of management of the schools or medium of study had no significant influence on self-concept of the Class IX students of Tinsukia District.

Conclusion

In the present study, an attempt was made by the investigator to find out the status of self-concept of the Class IX students of Tinsukia district with the help of a standardized Children's Self-Concept Scale (CSCS). The results reveal that most of the Class IX students studying in secondary schools of Tinsukia district had average/moderate self-concept. It was also found that only one respondent fell in the category of extremely high level of self-concept, 18 students fell in the category of extremely low self-concept category. On the other hand, 54 students fell in the high and 48 in the low self-concept category. Again 148 students fell in the above average and 122 fell below-average category. Thus, this study revealed a clear image regarding self-concept of the Class IX students of Tinsukia district of Assam. It was found that the entire sample was homogenous in respect of their self-concept. It manifests that gender, habitation and types of

management of the schools had no significant influence on the levels of self-concept of the Class IX students of Tinsukia district.

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