*Dear Readers!*

*Greetings from the members of Editorial Board*

*In the rapidly evolving landscape of education, one term stands out above the rest: Artificial Intelligence (AI). Indeed, AI has become a ubiquitous presence, permeating every facet of society and fundamentally altering the way we interact with technology. From business to healthcare, from administration to scientific innovation, AI has asserted its influence and reshaped the way we approach various domains. However, nowhere is its impact more profound than in the realm of education.*

*The integration of AI, particularly in the form of humanoid robots, into educational settings has sparked considerable interest and debate. These humanoid robots, equipped with advanced AI capabilities, are being deployed in classrooms worldwide, promising to revolutionize the learning experience. Indeed, research indicates that the implementation of educational robotics, especially in preschools and primary schools, holds immense promise for enhancing learning outcomes across a diverse array of subjects.*

*For instance, studies such as those conducted by So and Lee shed light on the positive impact of humanoid robots like NAO in facilitating learning, particularly in subjects like Mathematics. These findings underscore the potential of AI-driven technologies to engage students and foster a conducive learning environment. Moreover, the utilization of humanoid robots as lecturers at the university level, as demonstrated by Xu et al., has garnered positive feedback, indicating students' receptiveness to this innovative approach.*

*However, amidst the excitement surrounding the integration of AI in education, crucial questions emerge. Can humanoid teachers effectively nurture the psycho-social development of students? Do they possess the capacity for emotional interaction necessary for fostering holistic growth? Can AI truly supersede human intelligence in the classroom setting?*

*While studies suggest that humanoid tutors can enhance learners' motivation and enthusiasm, it is essential to acknowledge the limitations inherent in these technologies. Humanoids, despite their advanced AI capabilities, lack the nuanced thinking and emotional depth of human educators. As Macmurray(2012) aptly noted, the goal of education is not merely to impart knowledge but to cultivate individuals who embody empathy, compassion, and humanity.*

*In this issue of RRE, we explore the multifaceted implications of AI in education, alongside discussions on inclusive education and other pertinent topics. As we navigate this era of technological advancement, it is imperative to strike a balance between innovation and human connection. While AI undoubtedly holds immense potential to augment educational practices, let us remain steadfast in our commitment to nurturing the human spirit and fostering inclusive learning environments.*

*We invite our readers to engage in reflective discourse and share their insights on the evolving landscape of education. Your feedback is invaluable as we strive to facilitate meaningful dialogue and contribute to the growth of our journal.*

*With Regards*
*Editorial Board*

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## CONTENTS

# THE FORMAL SCHOOL IN INDIA: WHAT DO ADIVASI LEARNERS SAY?

Research Paper


***ABSTRACT***

*This article is the report of the experiences of discrimination and denial, physical punishment and verbal abuses, cultural loss and otherness of Adivasi students at formal school sites. The report has tried to show that their experiences emanate from the connotative meaning of the term tribe, the preconceived ideas people of so-called mainstream hold about them and the modern concept of civilization. Their knowledge and culture are branded as primitive, undeveloped thus not worth knowing and clinging to it. Thus, Adivasi students suffer discrimination and denial; punishment and abuses due to their Adivasi identity.*



***Key Words:*** *Adivasi, Formal School, Cultural Alienation, Discrimination*


## Introduction

This article is the narration of experiences of students from Adivasi communities about formal schools. The material for the article is drawn from a rigorous research carried out in six schools in Simdega district in Jharkhand, an Indian state in eastern India. The research was carried out in 2015-16 and 2016-17 with two batches of class 9 Adivasi learners. The idea of this article is to capture the experience of Adivasi learners regarding the interaction with teachers and their peers and the way they construct wider opportunities. The Adivasi learners have reported verbal as well as physical abuses and discrimination at the hands of school personnel. The experiences of the Adivasi learners at school seem to emanate from the prevalent image of Adivasi communities and the ideals of modern schools. Thus, in order to make the school experiences of Adivasi learners intelligible to us, a description of the communities, the prevalence of them and formal schooling is imperative.

## The Adivasi or Tribal

India has been home to a number of Adivasi communities since antiquity (Thapar, R and Siddiqi, M. H., 1979; Sinha, 2000). According to census 2011 there are around 705 categories of Adivasi communities (contributing 8.6 per cent to the country's population) in the country. Practically, all Adivasi communities possess language, religion, cultural, traditions etc. that are distinct from dominant Indian society (Kamat, 1998; Balagopalan, 2003). In pre-colonial era these communities, for various reasons, mainly to avoid confrontation with dominant Indian (non-Adivasi) exploiters retreated to seclusion (Kamat, 1998;Xaxa, 2011)in hilly and forested terrain of the country. The withdrawal on the one hand contributed in retaining linguistic, religious, cultural distinctness (Kamat, 1998) but on the other pushed the periphery to barbarous living condition where modern scientific and industrial development became exploitative than liberating. Later the phenomenon of withdrawal was combined with cultural differences by British perpetrators for designating Adivasi communities as 'tribe'(Beteille, 1986 and Singh, 1994) with primitiveness, backwardness, savage, uncivilized or uncultured etc. attached (Das, 2003).According to Das (2003) before coming to contact with British perpetrators Adivasi were unconscious of their ethno-tribal identities and simply called themselves 'people' or 'other'. Thus, the value loaded term 'tribe' to designate Adivasi was used for the first time by colonial government for political and administrative reasons and in Indian tradition there is no equivalent term for it. In contrast Xaxa (2005) argues that since the 16th century the term tribe has been used to refer to the groups which lived in primitive and barbarous living conditions. Categorizing the Adivasi residents of Chotanagpur (Jharkhand) as barbarous, Damodaran (2006) has a longer history than the colonial period. Bara


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(2002) says that the Adivasi of India were depicted as 'dasyus', 'daityas', 'rakshasas' and 'nishadas'(thief, demon, low caste etc.) since pre-colonial period. Roy (1912) says that the ancient Indian literature describing the conflict between Aryan and non-aryan has many references categorizing the Adivasi, the Mundas as 'shapeless and ill looking monsters', 'Dasyus', 'Demons' etc.

Owing to the derogatory conjecture of the term 'tribe' some Christian missionaries, political activists and social workers opposed its use to address the group of people and created the terms like 'Adivasi', 'Adimjati', 'Paharia' etc. during first half of the 20th century (Sengupta, 2003). The members of 'indigenous people movement' contested for the term 'Adivasi' meaning original inhabitant (Bates, 1995, Xaxa, 1999; Xaxa, 2005). Since then, the term 'Adivasi' is being used by indigenous people to reflect their history and self-identity (Sengupta, 2003). At constituent assembly Japal Singh Munda intensely used the term in the discussion concerning indigenous people (see Constituent Assembly Debates on 24 August, 1949 Part I). Yet, the constitution of India and other documents of the government use the term 'tribe' or 'scheduled tribe' to describe indigenous communities of the country. Thus, the depiction of Adivasi communities as backward, primitive, jungli etc., continues in a similar vein of (as used during)pre-colonial and colonial period. Everything that is Adivasi is considered backward and inferior. Thus, the Adivasi children enter school to confront such an image of theirs besides other problems of language and underrepresentation. This has much bearing in their educational experience.

The sections of the article that follow is Adivasi learner's experience at formal schools, teachers and other school personnel. It starts with the children's perception of teachers. Then describe the corporal punishment and verbal abuse experienced by Adivasi children, i.e. the crevice between teachers and students.

**Experience of Relating with Teachers**

Throughout the school years, children from Adivasi communities come into contact with teachers of different caste, class, religion, status and personality. Therefore, the experiences of Adivasi children in relation to them in schools were different. They felt loved by teachers on one occasion and neglected on others. Sometimes they felt accepted and respected for their individual and cultural differences and encouraged to maintain cultural differences but other time they felt rejected, ignored, slandered, discouraged and even condemned. There were a few teachers with whom the Adivasi children communicated comfortably and ask questions freely, but with some others they felt uncomfortable and anxious. There were some teachers who congratulated and encouraged the Adivasi students to do fair well, but others picked them as an example. In other words, the experiences of children from Adivasi communities in school campuses or interactions with teachers arrayed from acceptance to rejection, from esteem to contempt, from moment of joy to sadness, from harmony to anguish.

**Adivasi Children's Perception of Teachers**

Children around the globe continuously watch their teacher and categorize them. Literatures are available categorizing teachers as good and bad. Moore (2000) after reviewing literatures across world states that a good teacher is one who, in addition to being an effective communicator, is responsive, spontaneous, positive, gifted, insightful, and also has the experience of giving a quality education without ceasing to be creative and spontaneous.

Like other children around the globe, Adivasi children also classified their teachers as good and bad based on the combination of the teachers' ability to teach and the teachers' attitude towards them and the whole class. However, their perception was not derived from any theoretical framework, but on their lived experiences of relating with them. In other words, the children of the Adivasi communities perceived teachers who taught well, attended school and classes regularly, cared about learning, loved, helped and valued their achievements, etc. They seem not to mind even physical or oral reprimands from teachers who loved and cared for them.

Teachers teaching loudly and clearly as well as providing examples from local realities have also been considered as good.

The Adivasi children loved the teachers who took care of them and their studies. They were inclined and sympathetic to the teachers, who taught by moving around the whole class, asking questions of everyone in the class.

Generally, Adivasi children are introverted; they do not approach teachers with their problems. However, they appreciate and develop interest in the study of subject of a teacher who approaches them and motivates them.

Both Adivasi and non-Adivasi teachers have been included in the list of good as well as bad list. The list of good teachers provided by the Adivasi students contained a greater number of teachers from Adivasi communities. Yet, ethnic affinity does not seem to be a criterion to classify teachers as good or bad as a single response expressing dislike due to teacher's affinity to a community of Kerala.

**Corporal Punishment and Abuses**

Punishment in any form at school or at home impairs the development process of children to their full potential. Rather than producing lasting behavioral changes, punishment negatively affects the development of children. It affects the social, psychological and educational development of children and promotes violent attitudes in children. Teachers continually resort to punishment as the mechanism to ascertain discipline and to promote learning even though they are aware of its cancerous effect. At the time of the field visit, the researcher noticed that most of the teachers and other staff, whether Adivasi or not, held sticks in their hands and used them. Once, after the break, some students stood under a tree. A teacher saw them, grabbed a thick stick and rushed toward them to the class. On seeing the teacher, students ran toward the class, but the teacher threw the stick at them. The stick hit one of the students who fell to the ground. However, the teacher was not satisfied with his act. He went on to abuse the boy saying "the cane was too thin for the donkey". Similar kinds of incidents have been narrated by Adivasi boys and girls. They have received punishment and abuse of various kinds for various reasons.

The experiences of punishment and abuses at school narrated by students has been categorized into 7 broad themes and presented in table 1.



**Table 1**
**The Punishments and Abuses Received by Adivasi Children**

| Sl. No. | Kind of Punishment | No. of Boys Punished | No. of Girls Punished |
|---|---|---|---|
| 1 | Beating | 13 | 3 |
| 2 | Kneeling down | 9 | 5 |
| 3 | Pulling the Ear | 11 | 5 |
| | Slapping of Face | 2 | 0 |
| 4 | Standing at Principals office | 7 | 11 |
| 5 | Standing at Classroom | 29 | 16 |
| 6 | Verbal abuse | 37 | 24 |
| 7 | Insulted for Individual or Family Weakness | 5 | 3 |
| | Total No. of Incidence | 113 | 67 |

(Source: Interview Data)

The table above indicates 180 cases of humiliating physical punishments and verbal abuses in two years in which 113 times boys and 67 times girls were victims. It implies that corporal punishment and verbal abuse are common practices of formal schools and boys are more likely to receive corporal punishment than girls. However, the depth of pain from punishment and verbal abuse depends on time, place, and situation. Adivasi students are not expressive thus, may not react immediately to punishments, but in long turn may combine with their weak motivation and determination would push them out of school and no effort from anyone would be enough to bring them back to school. As per the information drawn from students around 10 Adivasi students have dropped out of school in the past 2 years due to sanctions of punishment and the same has been confirmed from the official records of the schools.

**Denial, Discrimination and Invisibility**

Students were pleased with their Adivasi identity and had no regret of any kind. Most faced no downside due to their Adivasi identity because of the presence of Adivasi teachers and relatively sizable number of Adivasi students within their schools. Thus, with the exception of few overt incidences in relation to some non-Adivasi teachers and

students the denial, discrimination, mistrust and so forth are subtle which very often Adivasi fail to identify as so. Students expressed their willingness to lead the class and or team. They wanted to become class monitor and team captain. They wanted to answer questions in the class. They wanted to be cared for by teachers and problems regarding study were addressed. But the way these posts were chosen reduced the chances of Adivasi students. The research data revealed that a vast majority of children experienced denial of chance to lead in any kind of group in their entire school life. Table 2 presents the kind of denial and discrimination experienced by students.

**Table 2**

**Showing the Experience of Denial, Discrimination and Invisible**

| Sl. No. | Instances of denial, discrimination and invisible | Occurrence no. |
|---|---|---|
| 1 | No given chance to lead the class or captain | 165 |
| 2 | Not given the chance to answer questions | 57 |
| 3 | Not being assigned responsibility in class | 103 |
| 4 | Singled out for punishment or reprimand | 59 |
| 5 | Not being helped in class | 64 |
| 6 | Being overlooked | 73 |
| 7 | Mistrusted against complaints and clarifications | 71 |
| 8 | Not allowed to participate in activities | 12 |

(Sources: Interview Data)

They experienced denial of chance to answer the question even after raising their hands in response to the questions of teachers. They experienced that their queries are ignored and laughed at. In any squabble or tussle involving Adivasi and non-Adivasi students, Adivasi students stood in the sufferer end. Most teachers or other school personnel considered them as wrong doer. School personnel did not accept any explanation about any limitations offered by Adivasi boys and girls as true. They were overlooked in the responsible work of the school. Students were not only mistrusted for any assignment but were made to feel that they are meant to follow the order and not giving. Experiences of being singled out for punishments for non-performance in common tasks (cleaning, sweeping, fetching water etc.) have also been reported by Adivasi students.

**Cultural Lose and Alienation**

Except for home language (some do not know their language even) and few steps of dance the Adivasi students possessed no knowledge about the life, history and culture of their communities. They identified their parents as responsible for this deficiency. In one sense they are right because for ages transfer of culture from one generation to the next was done mostly within the family and occasionally supported by school (Saal, 1972) but wrong because in modern time the task has been transferred to school. This fact is hidden from students. Thus, Adivasi children, though studying in schools to gain knowledge of all sorts of knowledge, look to their parents for cultural knowledge. Researchers time and again repeatedly have stressed the importance of including content from local culture. They have highlighted the inclusion of Adivasi folk tale in the school curriculum of Adivasi children as it is meaningful and unique to them and can keep children in touch with their culture (Kundu, 2003; Rani, 2009 & Tripura, 2014). The National Curriculum Framework 2005 has also highlighted the importance of local content in life and learning of students. Yet, the life, language, history and culture of the Adivasi do not feature in the school curriculum.

Organization and or celebration of co-curricular activities were dependent on and coloured with ideology, philosophy, caste and creed of the directors, principals, teachers and influences of the powerful around schools (Anitha, 2005 and Chopra & Jeffery, 2005). To be specific schools with Hindu management, head and teacher, festivals Holi, Diwali, Saraswati Puja etc. were celebrated. On the other school with Christian management, head, teacher predominance Christmas, Easter were celebrated. Adivasi festivals like Karma, Sarhul, Sohrai etc. were out of school.

The absences of life, history and culture of Adivasi communities in school curriculum and non-celebration of their feasts in schools give rise to two important experiences. Firstly, a big number of students expressed regret that their

life, history and culture do not find place in school curriculum or school. They experienced cultural emptiness, fear of losing their culture, cultural backwardness and lack of self-confidence etc.

## Conclusion

A careful analysis of the responses of the Adivasi children revealded that their overall schooling experiences are negative and full of numerous struggles. They enter schools with the stigma of primitive, backward, uncivilized, thief, low caste etc. which color their entire school experience. Formal schools which are majorly controlled by the non-Adivasi teacher or urban middle class teachers and or the upper-caste teachers act with the preconceived idea of the Adivasis as primitive, backward, uncivilized, thief, low caste etc. Thus, the Adivasi children at formal schools suffered discrimination, denial, abuses and even corporal punishment of various kinds due to their Adivasi identity.

## Reference


1. *Anitha, B. K. (2005). Quality and the Social Context of Rural Schools. Contemporary Education Dialogue, Vol. 3 No. 1, 28-60.*
2. *Balagopalan, S. (2003). 'Neither Suited for the Home nor for the Fields': Inclusion, Formal Schooling and the Adivasi Child. IDS Bulletin Vol 34 No 1, 55-62.*
3. *Balamurali, K., N Prathiba, N. (2016). Assessment of Socio-Educational Status of Irula Tribe School Students in Coimbatore, Tamil Nadu. The International Journal of Indian Psychology, Volume 4, Issue 1, No. 82, 25-35.*
4. *Bara, J. (2002). 'Tribe-Beast or Man: Case for New Concept of Tribe'. Social Action 52(2).*
5. *Bates, C. (1995). Lost Innocents and the Loss of innocence: Interpreting Adivasi Movements in South Asia. In R. Barnes, A. Gray, & B. Kingsbury, (eds) In Indigenous Peoples of Asia. Michigan: Association for Asian Studies.*
6. *Damodaran, V. (2006). Colonial Construction of Tribes in India: The Case of Chotanagpur. In C. L. (ed), Europe and the World in European Historiography (pp. 161-193). Pisa: Pisa University Press.*
7. *DRCWC. (2011). A Report on the Status of Primary Education of Adivasi Children in Andhra Pradesh and Orissa in the Context of the Right to Education Act 2009. Secunderabad: Dhaatri Resource Centre for Women and Children.*
8. *GOI. (2016-17). Annual Report. New Delhi: Ministry of Tribal Affair.*
9. *Jha, J., Jhingran, D. (2002). Elementary for the Poorest and the Deprived Groups: The Real Challenge of Universalisation. New Delhi: Centre for Policy Research.*
10. *Kamath, V. A. (1998). Tribal Education in India: Empowering Perspectives, Shifting Paradigms. Ranchi: Joshi Printers and Binders.*
11. *Kujur, A. S. (2017). Educational Experiences of Scheduled Tribe Children: A Study in Simdega District. New Delhi: Unpublished Thesis (Jamia Millia Islamia).*
12. *Ramachandran, V., &Naorem, T. (2013). What It Means To Be a Dalit or Tribal Child in Our Schools: A Synthesis of a Six-State Qualitative Study. Economic & Political Weekly Vol XVIII No. 44, November 2, 2013: 43-52.*
13. *Sujatha, K. (1996). Single Teacher Schools in Tribal Areas: A Study of Girijan Vidya Vikas Kendras in Andhra Pradesh. New Delhi: Vikas Publishing House PVT LTD.*
14. *Tilak, J. B. (2000). "Education Poverty in India." Occasional Papers. New Delhi: NIEPA.*
15. *Toppo, S. (1979). Dynamics of Educational Development in Tribal India. New Delhi: Classical Publications.*
16. *Tripura, B. (2014). Educational Experiences of the Indigenous Peoples: Case Study of Tripura. New Delhi: Mittal Publication.*
17. *Veerbhadra Naika, P., Kumaran, R. S., Tukdeo, S., Vasavi, A. R. (2012). The Education Question' from the Perspective of Adivasis: Conditions, Policies and Structures. Bangalore: UNICEF.*
18. *Xaxa, V. (1999). Tribes as Indigenous People of India. Economic and Political Weekly, December 18, 3589-3595.*
19. *Xaxa, V. (2005). Politics of Language, Religion and Identity: Tribes in India. Economic and Political Weekly, March 26, 1363-1370.*
20. *Xaxa, V. (2011). The Status of Tribal Children in India: A Historical Perspective. New Delhi: UNICEF.*

# IMPACT OF CONCEPT MAPS IN ENHANCING SCIENCE LEARNING AMONG HIGH SCHOOL STUDENTS

Research Paper


***ABSTRACT***

*The purpose of the present study was to find out the impact of concept maps in enhancing science learning among high school students. The research type was an experimental method, which consists of simple random sampling of 50 high school students in Palani Taluk, Dindigul district. Concept mapping instructional strategy was prepared and validated by the investigator. The interpretation of data was done with statistical methods in percentage analysis, paired sample t'-test. The findings revealed that there was a positive impact of concept maps in enhancing science learning.*



***Keywords:*** *Concept Maps, Science Learning and High School Students.*


## Introduction

Science is the result of man's deliberate attempt to comprehend and control his surroundings. Man has been attentively examining the various natural events that occur on him since the dawn of time, researching their effects and attempting to understand the sources of such phenomena. For ages, philosophers, scientists and specialists have endeavored to define the nature of science. Fitzpatrick, a scientist, provided one of the most fundamental descriptions of science. The present science is a never-ending accumulation of empirical observations that leads to the production of concepts, facts and hypotheses in light of future empirical discoveries (Bybee, and McCrae, 2011). Concept mapping has been discovered to be a learning model that supports meaningful learning. The idea maps were created in 1972 as part of Joseph D. Novak's Cornell University research programme, which aimed to track and analyze changes in children's science understanding. Concept maps are graphical tools for organizing and visualizing knowledge; they contain concepts, which are commonly encased in boxes, linking lines that indicate relationships between concepts and linking words that explain the relationship between the concepts. Concept Mapping is an educational tool that aids in Concept Attainment, meaningful learning and the construction of robust knowledge frameworks. Traditional Concept Mapping can now be improved thanks to current technology (David, 2012).

## Background of the Study

Fawazet al. (2020) conducted a study on Concept Mapping Versus Traditional Teaching Method on Health Sciences' Students' Score. The aim of this study was to compare the concept mapping versus traditional teaching method on Health Sciences' students' score. A Quasi-experimental design was implemented in the study. The study revealed that there was a significant difference between learning by traditional method and by concept mapping that can be a predictor of better academic achievement. Concept maps prove to be an efficient teaching-learning method in health sciences education.

Clara (2010) conducted a study on Using Concept maps as a cognitive tool in a Teacher Education Programme. In this study 26 teachers enrolled in a post graduate teacher education program used Concept map tools software for class work and assessment. For one semester teachers build electronic concept maps as a constructivist learning strategy to organize and reflect on the course readings, to plan course projects and to compare and contrast information from course discussions. Concept maps were posted on the course website for the instructor and colleagues to visualize and comment. At the end of the semester the learning strategy was assessed through survey


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techniques. Results revealed that teachers considered that the process of using this constructivist strategy was important to enhance their learning skills in studying the contents and also grew to understand their own thinking processes. The findings also suggested that the use of Concept Mapping within an e-learning environment made it easier for teachers to constantly increase performance at representing knowledge and creating meaning of the course core.

**Rationale of the Study**

Science is the methodical investigation of the natural world, which organizes knowledge into testable explanations and predictions about the cosmos. The study of living things, such as plants, animals and other living species, is referred to as biological science. As a result, scientific education has a unique role to play in educating a kid to become an informed, productive, useful, and successful member of society. The goal of science education is to develop scientific knowledge and attitudes. As a result, efforts have been undertaken to identify instructional methodologies that are used to help children develop cognitive capacities and affective behavior, thus achieving the goals of teaching science. The learner generates her own knowledge based on the experience she has gained while learning through Concept Mapping Instructional Strategy, which is an innovation in this direction. Teaching with a student-centered Concept Mapping Instructional Strategy would combine various Internet-based sources of information, place a greater focus on self-learning and peer collaboration, and encourage students to create Concept maps. Students would learn to design their knowledge structure in the form of concept maps, summarize a topic, and rely on their own opinions if they were immersed in a constructivist and metacognitive learning environment. In this setting, a shift from traditional teaching to new ways that assist students in constructing their knowledge is required. Thus, the investigator felt it is necessary to investigate the impact of concept maps in enhancing science learning among high school students.

**Objectives**

1. To find out the significant difference in the experimental group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy.
2. To find out the significant difference in the control group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy.

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3. To find out the significant difference in the gain scores of the control and experimental group students with regard to attitude towards concept mapping instructional strategy.

**Hypotheses**

**$H_o$1:** There is no significant difference in the experimental group between the pre-test scores and post-test scores with regard to attitude towards concept mapping instructional strategy.

**$H_o$2:** There is no significant difference in the control group between the pre-test scores and post-test scores with regard to attitude towards concept mapping instructional strategy.

**$H_o$3:** There is no significant difference in the gain scores of the control and experimental group students with regard to attitude towards concept mapping instructional strategy.

**Method Used**

The investigator adopted a parallel group experimental design method for this study. In Educational Research, the Experimental method is the application and adaptation of the classical method of the Science laboratory. John W. Best (2004) describes it as, Experimental research is the description and analysis of what will be or what will occur under carefully controlled conditions.

**Population and Sample**

The sample constitutes ninth standard students of PalaniTaluk in Dindigul district. The sample consisted of 50 ninth standard students (25 boys and 25 girls) in which control groups and experimental groups both comprised 25 students equally. The sample was selected from ninth standard students using simple random sampling techniques from CBSE School, Palani taluk, Dindigul district.

**Tool Used**

This study aims to evaluate the impact of concept

maps in enhancing science learning among high school students. The CtM Instructional Strategy was developed for the selected topics in organization of tissues and validated by the investigator with the guidance of field experts and research guide.

**Statistics Techniques Used**

Paired sample t' test and gain score were used in this study.

**Analysis of Data**

**Hypothesis 1:** There is no significant difference in the experimental group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy.

**Table 1**

**Difference in the experimental group between the pre-test scores and post-test scores with regard to attitude towards concept mapping instructional strategy**

| Test | Mean | SD | Calculated 't' Value | 'p' Value | Re marks |
|---|---|---|---|---|---|
| Pre-test | 69.28 | 5.668 | 21.317 | 0.000 | S |
| Post-test | 71.64 | 6.184 | | | |

*S – Significant at 5% level*

From table 1 it is inferred that the computed t' value 21.317 is significant at 0.05 level. Therefore, the null hypothesis is rejected and concludes that there exists a significant difference in the experimental group between the pre-test scores and post-test scores with regard to attitude towards concept mapping instructional strategy. The mean scores show that the posttest scores of the experimental group are better than the pre-test in their concept mapping instructional strategy.

**Hypothesis 2:** There is no significant difference in the control group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy.



**Table 2**

**Difference in the control group between the pre-test scores and post-test scores with regard to attitude towards concept mapping instructional strategy**

| Test | Mean | SD | Calculated 't' Value | 'p' Value | Re marks |
|---|---|---|---|---|---|
| Pre-test | 69.28 | 5.668 | 1.317 | 0.200 | NS |
| Post-test | 71.64 | 6.184 | | | |

*NS – Not Significant at 5% level*

From table 2 it is inferred that the computed 't' value 1.317 is not significant at 0.05 level. Therefore, the null hypothesis is accepted and concluded that there exist no significant difference in the control group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy.

**Hypothesis 3:** There is no significant difference in the gain scores of the control and experimental group students with regard to attitude towards concept mapping instructional strategy.

**Table 3**

**Significant difference in the gain scores of the control and experimental group students with regard to attitude towards concept mapping instructional strategy**

| Group | Mean | SD | Calculated 't' Value | 'p' value | Re marks |
|---|---|---|---|---|---|
| Control | 1.53 | 5.413 | 4.076 | 0.000 | S |
| Experimental | 5.76 | 6.6061 | | | |

*NS – Not Significant at 5% level*

From table 3 it is inferred that the computed 't' value 4.076 is significant at 0.05 level. Therefore, the null hypothesis is rejected and concludes that there is a significant difference in the gain scores of the control and experimental groups with regard to attitude towards concept mapping instructional strategy. The mean scores show that among the gain scores of the experimental group

are better in their achievement in biology than the gain scores of the control group.

## Results and Discussion

1. Table 1 reveals that there exist significant differences in the experimental group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy. The mean scores show that the posttest scores of the experimental group are better than the pretest in their concept mapping instructional strategy.
2. Table 2 reveals that there exists no significant difference in the control group between the pretest scores and posttest scores with regard to attitude towards concept mapping instructional strategy.
3. Table 3 reveals that there is a significant difference in the gain scores of the control and experimental groups with regard to attitude towards concept mapping instructional strategy. The mean scores show that among the gain scores of the experimental group are better in their achievement in biology than the gain scores of the control group.

## Educational Implications

On the basis of the findings, the investigators give the following recommendations.

It has been found that the developed concept map content was effective in terms of student's reaction. Majority of students reacted positively towards various aspects of concept maps. Many facilities were available to the students in the concept map like self-placed individualized learning, sequential presentation of content, coloured pictures, graphical representation, feedback and questions-answer dialogues.

Despite these advantages, learners were unfamiliar with learning through concept maps (web-based technologies). Students' positive reactions suggested that they loved concept maps since they were a novel way for them to go through their learning process, and they wish to read other subjects through concept maps as well. It signifies that the pupils found the idea map to be helpful. It was stimulating and beneficial to their study. This could explain why students reacted well to the concept maps that were created.

## Conclusion

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The concept mapping instructional strategy of high school students in Palani Taluk, Dindigul district, has found to be positive. Above all, the students' honesty, unbiased attitude and loyalty play a vital role in the successful application of the idea mapping instructional technique. The attitude of individuals involved in the system determines whether the system succeeds or fails, and students are an important element of the educational process.

## References


1. *Almulla (2021). Conceptual mapping tools have been used more and more for various educational purposes in recent years by academicians and educators. Academic Motivation, Performance and Student Well-Being, 13(7), 4029; https://doi.org/10.3390/su13074029*
2. *Best John W & Khan James, V. (1992). Research in Education, Prentice Hall India Pvt. Ltd., New Delhi.*
3. *Bybee, R., & McCrae, B. (2011). Scientific literacy and student attitudes: Perspectives from PISA 2006 science. International Journal of Science Education, 33(1), 7–26. https://doi.org/10.1080/09500693.2010.518644.*
4. *Clara (2010). Using Concept map as a cognitive tool in a Teacher Education Programme. Research Article. University of Minho, Braga, Portugal.*
5. *David, J. (2012). The Use of Concept Maps for Assessment. UCD Teaching and Learning, UCD. Ireland. 1-18.*
6. *Fawazet al. (2020). Concept Mapping Versus Traditional Teaching Method On Health Sciences' Students' Score. BAU Journal - Health and Wellbeing, 2(2), Article 6. https://digitalcommons.bau.edu.lb/hwbjournal/vol2/iss2/6*
7. *John. W. Best (2004). Research in Education: New Delhi, Dorling Kindersley Pvt. Ltd.*



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# DOES PERSONALITY MATTER? –A STUDY ON BIG FIVE FACTORS AND ACADEMIC ACHIEVEMENT AMONG ENGINEERING STUDENTS

Research Paper


***ABSTRACT***

*The present study aimed at analyzing the role of Big Five Factors of personality in academic achievement of students pursuing engineering courses in Punjab. Three hundred boys from different engineering colleges responded to FFI (Costa and McCare ,1992). 't'-test was applied to find out which factors of personality differentiate these students on high and low academic achievement. The results of the study revealed that all five factors of personality i.e. Conscientiousness, Extraversion, Openness to Experience, Agreeableness and Neuroticism significantly differentiate these professional students on high and low academic achievement. Thus, the results develop insight that it is significant to study individual differences in terms of personality factors while understanding academic performance of engineering students.*



***Keywords:*** *Academic Achievement, Personality, Big Five Factors, t-test*


## Introduction

Academic achievement has always been considered as the most important outcome of formal educational experiences as these achievements play a crucial role both in present and future life of a student (Kell et al., 2013). In the last few decades, several researchers have proposed theories and perspectives to explain the factors that possibly can impact academic achievement of students.

Personality is a person's complex set of traits that has an effect on behavior across time and situation (Zimbardo and Gerrig,1996). Thus, studying personality factors is important in order to identify and direct behavior of a student and understand the extent of his/her interaction in educational situations (Salehi, 2013). Besides, Rothstein et al., (1994) have emphasized that cognitive abilities and cognitive factors which are known as personality traits are responsible for academic achievement.

Various research studies have reported that the big five personality factors offer framework and in-depth analysis for explaining the relationship between personality and varied academic behaviors besides having predictive power in evaluating academic achievement (Rosander et al. 2011; Salgado & Tauriz, 2014). These five factors include Conscientiousness, Extraversion, Openness to Experience, Agreeableness and Neuroticism.

Conscientiousness indicates an individual's goal-directed behavior and high scorers on this factor are organized, persistent and motivated to achieve. Extroverts tend to be active, assertive, sociable and talkative. Openness to experience characterizes someone who is intellectually curious, creative and imaginative. High scorers on Agreeableness are altruistic, gentle, kind and warm. Neuroticism is a measure of emotional vulnerability and neurotic persons tend to experience high levels of anxiety, stress, impulsiveness etc. (Costa, & McCrae, 2003).

It has been reported that Conscientiousness shows a high predictive ability of academic achievement of college students (Vedel, 2016). Also, high conscientiousness may compensate for a certain degree of deficiency in cognitive ability (Murray et al., 2014). Further both Openness to experience and Agreeableness have been found to be positively correlated with academic performance and standard academic grades (Kochergina, et al., 2013, Salgado & Tauriz, 2014). Also, a positive relationship between extraversion and academic achievement has been revealed (Komolafe, 2013; Klinkosz et al., 2006).


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Neuroticism is associated with struggles and difficulties in various types of behavior hence correlates negatively with academic achievement of college students (Rosander et al., 2011 and Clough et al., 2016).

However, Geramian et al. (2012) have reported no positive relationship of Extraversion and Agreeableness with academic performance. Also there has been a negative relationship between conscientiousness and academic performance (Robert and Cheung, 2010). Rothstein et al. (1994) have not found systematic relation between openness to experience and academic success. Farsides and Wood field (2003) have concluded that neuroticism is positively related to academic achievement.

Thus, empirical evidence is mixed concerning the role these personality factors play in determining academic achievement and thus requires further exploration.

**Rationale of the Study**

In recent times, the advent of multinational companies and the perspective of viewing education as a medium for getting better employment opportunities has resulted in massive growth of engineering institutions in Punjab. The students join these institutions with an aim of getting opportunities for highly paid jobs. But to what extent they will be successful in achieving their aim, largely depends upon their academic performance. The recent research in the field of education emphasizes on exploring non-cognitive factors such as personality that may have significant impact on the academic performance of the students. Eilam et al. (2009) have also emphasized that recognizing learners personality traits is the basis for understanding individual differences within the learning environment. Hence, the present study has aimed at analyzing the role of personality factors in academic achievement of engineering students.

**Objective**

1. To study the role of various factors of Personality in differentiating between students having high academic achievement and low academic achievement.

**Hypothesis**

1. There will be no difference between students having high and low achievement on five factors of personality.

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**Methodology**

The survey method was adopted for the present study.

**Sample**

In the present study, the sample consisted of 300 boys of 2nd, 3rd and 4th year pursuing B.Tech Program in various engineering colleges of Punjab.

**Psychological Measure**

Neo Five Factor Inventory (NEO-FFI) – (Costa and McCrae, 2003): This is a 60-item version of the NEO-PI R, designed to measure the five domains of personality i.e. Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness.

**Reliability of the Psychological Measure**

The test-retest method was used to estimate reliability of the psychological measure. The sample of 30 students was taken and retesting was done after 15 days of first testing. The reliability coefficients are shown in the following table:

**Table 1**

**Showing the Test-Retest Reliabilities for Various Variables Under study**

| S. No. | Variables | Test-Retest Reliability |
|---|---|---|
| 1 | Neuroticism | 0.89** |
| 2 | Extraversion | 0.68** |
| 3 | Openness to Experience | 0.78** |
| 4 | Agreeableness | 0.80** |
| 5 | Conscientiousness | 0.68** |

*** * P< .01 (Values significant at 0.01 level)**

Table 1 shows that the reliability coefficients have come out to be quite satisfactory.

**Statistical Analysis**

Mean, Standard deviation, Skewness, Kurtosis were calculated and 't' –test was applied on the collected data.

## Results and Discussion

The present study aimed at analyzing the role of personality factors in differentiating engineering students having high and low academic achievement. The students of B. Tech 2nd year onwards constituted the sample of the study. In case of 2nd year students, their percentage of marks secured in first year and in case of 3rd and 4th year students, average of their previous semesters' marks was considered as their academic achievement. Their CGPA had been converted into percentage of marks by using 10 as a multiplying factor (as per the affiliating university rule). The frequency distribution of academic scores has been given below:

**Table 2**
**Frequency Distribution of Academic Achievement Scores of Engineering Students (N=300)**

| Percentage of Marks | Frequency |
|---|---|
| 91-100 | 9 |
| 81-90 | 14 |
| 71-80 | 65 |
| 61-70 | 118 |
| 51-60 | 58 |
| 41-50 | 36 |
| Mean | 66.87 |
| SD | 6.14 |
| Skewness | 0.136 |
| Kurtosis | 0.253 |

Table 2 shows that the average academic score of the sample understudy is 66.87%. and standard deviation is 6.14. The skewness is quite small; hence the data is amenable to statistical analysis.

**Hypothesis : 1** There will be no difference between students having high and low achievement on five factors of personality.

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**Table 3**
**Showing t-ratios of Personality factors of Engineering Students with High Academic Achievement and Low Academic Achievement**

| Variables | Low Academic Achievement | | High Academic Achievement | | t-Value |
|---|---|---|---|---|---|
| | Mean | S.D | Mean | S.D | |
| Neuroticism(N) | 33.81 | 5.17 | 32.56 | 4.36 | -4.10** |
| Extraversion (EX) | 35.38 | 3.12 | 39.25 | 2.89 | 7.62** |
| Openness to Experience(OP) | 30.31 | 5.77 | 36.69 | 5.77 | 6.74** |
| Agreeableness (AG) | 35.73 | 4.8 | 39.57 | 3.11 | 6.18** |
| Conscientiousness (CO) | 33.89 | 3.43 | 40.94 | 2.92 | 13.75** |

**Values significant at .01 level

The sample was divided into boys having high and low academic achievement by using Quartile deviation. In Table 3, t-ratio analysis highlights that the engineering students having high academic achievement significantly differ from those students having low academic achievement on all five factors of personality.

Table 3, highlights that conscientiousness (CO=13.75, $p<0.01$) significantly differentiates between students having high academic achievement and low academic achievement. As high scorers on conscientiousness are hardworking, systematic, self-disciplined and persistent in their efforts, hence all those students under study who possessed these qualities have achieved higher in academics in comparison to their counterparts who scored low on conscientiousness. Conscientiousness is one of the main predictors of academic achievement across different levels as conscientious students are higher on persistence, achievement motivation and use of self-regulatory learning strategies (Hattie 2009).

Further, Table 3 highlights that the engineering

students high on Extraversion (EX = 7.62, $p < 0.01$) also have achieved significantly higher in academics in comparison to those students who scored low on this factor. As engineering education involves a large number of activities, such as group discussions, seminars, team-based projects etc. that is why results of the present study are in the favor of extroverts. The support for this result also comes from the research work of Klinkozs et al. (2006).

Furthermore, the students having high or low academic achievement have also differed significantly on Openness to experience (OP =6.74, $p < 0.1$). The students high on this factor are intellectually curious, seek new experiences and have active imagination. These characteristics play a crucial role in their academic achievement. Conard (2006) has also attributed the positive relationship between academic achievement and the openness to experience to high curiosity of students.

Table 3 shows that Agreeableness (AG =6.18, $p< 0.01$) differentiate between engineering students having high and low academic achievement. It is likely that the learners high on Agreeableness tend to comply with teacher instructions and stay focused on learning tasks, hence achieve high in academics. Also, Agreeableness is a positive factor for learning (Komarraju et al.2011).

The table 3 also shows that neuroticism (N=-4.10, $p < 0.01$) also significantly differentiates the students with high and low academic achievement from each other. The negative sign of t ratio indicates that the students who scored low on neuroticism were high on academic achievement. As the neurotic learners are prone to stress, worries, have low self-esteem etc, hence, these vulnerabilities probably lead to low academic achievement among these students. Clough et al., (2016) have reported that the academic achievement is significantly higher for students who exhibit lower neuroticism.

Thus, personality factors significantly distinguish between engineering students having high and low academic achievement. So, the hypothesis is rejected.

## Implications

The results of the present work can be implemented in following ways:

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1. The engineering institutes must focus on assessing personalities of their students and through appropriate interventions try to improve academic achievement of low achievers.
2. There should be proper counseling of the students to help them understand the factors that may prove instrumental in enhancing their academic achievements.
3. Personality development programs may be made an integral part of the curriculum of the engineering students.

## Conclusion

In case of engineering students, the qualities like sense of responsibility, self-discipline, sociability, altruism, creative imagination are crucial to their academic achievement; however, emotional vulnerability may prove detrimental to their academic success. In nutshell, these Five Factors of personality have the potential to affect academic achievement of engineering students.

## References


1. *Akomolafe, M.J. (2013). Personality characteristics as predictors of academic performance of secondary school students. Mediterranean Journal of Social Sciences, 4 (2), 657-669.*
2. *Clough, P., Oakes, S., Dagnall, N., St Clair-Thompson, H., & Mcgeown, S. (2016). The study of non-cognitive attributes in education. In M.S. Khine & S. Areepattamannil (Eds.), Non-cognitive skills and factors in educational attainment (pp. 315-329), Sense Publishers.*
3. *Conard, M. A. (2006). Aptitude is not enough: How personality and behavior predict academic performance. Journal of Research in Personality,40, 339-346.*
4. *Costa, P. & McCrae, R. (2003).Manual for the NEO-PI R/FII. Psychological assessment resources, Inc.*
5. *Eilam, B, Zeidner, M. &Aharon, I. (2009) Student conscientiousness, self-regulated learning, and science achievement: An explorative field study. Psychology in the Schools 46(5), 420 - 432*
6. *Farsides, T. & Woodfield, R. (2003). Individual differences and undergraduate academic success: The roles of personality, intelligence, and application. Personality and Individual Differences, 34, 1225–1243.*


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# EXPECTATIONS FROM THE FACULTY MEMBERS

Article


***ABSTRACT***

*Teaching, as a profession, has great expectations from the institution, from the students, and from the society. A faculty member is expected to be an expert with integrity, responsibility, and excellence in the teaching profession. In a Jesuit institution, the faculty members are expected to care of students, imparting reflection and critical thinking in them, and motivating them to service rooted in justice and love. Above all they are expected to accompany the students as their mentors. The expectations of the students from their faculty members would help to realize their dreams in reality, to find meaning in life, and habit formation for success in life. Further, the faculty member should keep abreast in his/her area of teaching/specialization, excelling in professionalism and their contribution to the society at large is forming the students.*



***Keywords:*** *Student formation, Professionalism, Mentoring*


## Introduction

In any profession there is an ideal to reach and the real we are in. And there is always a gap between the ideal and the real. But what is needed is to narrow down the gap and make the ideal an achievable reality. This is true also with regard to expectations – In any mission the expectations might differ from the perspective of the management, coworkers or employees, the beneficiaries – Again we need to define the beneficiaries as immediate and remote. In our context, the immediate beneficiaries are the students and the remote beneficiaries would be the people in the society at large. If the expectations, however varying they might be, keep in focus the welfare of the greater society, we would be able to work together with meaning and joy. Let us look at expectations from a couple of stakeholders' perspectives.

## University/College Perspective

From the perspective of a university, the faculty members are expected to engage themselves in their essential and primary duties, which are effective teaching, relevant research, ongoing scholarship, and creative activities for the formation of the students as well as for the good of the society. In all these areas of academic and social obligations, the faculty members are to possess the highest standard of integrity, responsibility, and excellence within the accepted practices and norms of their fields and professions.

## Jesuit Expectations

Addressing the Jesuit educators in the USA (07Jun1989), Fr Kolvenbach, the former General of the Jesuit Order said, among other things, that the Jesuit characteristics of education are: i. Comprehensive: with the focus on forming mind and heart; ii. world-affirming: with the universal outlook for global leadership; iii. social responsibility of altruistic attitude that promotes justice; and iv. research which should be multi-disciplinary and value-oriented for the uplift of the people, especially the poor and the needy.

The Jesuit expectations could be elaborated a little more:

1. Care of the Person: Jesuit education is not mere information transfer but the holistic formation of the individual. The Jesuit management is convinced that it is not intelligence one possesses, but what one does with one's intelligence is what matters in life. Hence a faculty member is expected to understand the student from his/her perspective.

   In this complex context, the faculty member needs to coax the students to take effort in order to study well and to have a goal in life to come up on the social ladder.


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Hence personal attention to the individual and deep respect for diversity and difference would be essential for establishing unity and harmony.

2. Reflection and Critical thinking: A foundational value of Jesuit education is the practice of reflection based on critical thinking. The students need to be invited to consider the world around them and their individual place within it when they have to make a decision. They also need to be introduced to discussing with others in order to gain practice in discernment, reflecting on the pros and cons of a matter, and arriving at an informed decision that ensures harmony between their thinking and feeling. This process would include at times even challenging the status quo, recognizing and acknowledging biases and prejudices, and at the same time accepting their responsibility for their actions in life. This could be best done through case studies based on current or past events that affect social harmony and unity.
3. Service rooted in Justice and Love: In a world of corporate selfishness and exploitation, our students need to cultivate altruistic love and commitment to social justice. They need to open up their eyes to the needs of others especially those who are socially exploited, religiously ignored, and politically discriminated – They need to realize and become convinced of the universal brotherhood which often would demand affirmative action. They should scan the reality that it is not equality but equity is what is needed most in the world today. Equality is all having the same facility but equity implies some might need more in order to measure up to the status of others – This is affirmative action. This would need immersion experience – Students could be encouraged to take up volunteer opportunities. The outreach programs and service-learning opportunities could be promoted by the faculty members, not out of a sense of duty but out of love for the society we live in and work for.
4. Mentoring to accompany them: In order to ensure the above-mentioned values, the faculty members need to be their mentors. Mentoring, looking through the Ignatian perspective, is entering through their door and bringing them out through our door. As mentors, in our exercise of accompanying them, we first understand their mental and emotional fabric and we have a close look into their ambition and goal as well as their capacity and capability – Then we build up conversation to chisel out what could be brought out from them as fine citizens and leaders in the society. Just like a sculptor, the mentor sees the future personality of the student. A sculptor, before he takes up his chisel and hammer, contemplates the block of stone or wood and discovers the statue within. Then the sculptor chisels out the unnecessary junk and there emerges the lively statue. The purpose of mentoring is to make each one accepts oneself as one is and to love his/her shortcomings or deficiencies but at the same time to work to do even better. The noble task of the teacher is to make each one of the students feel great as each one is unique in the creation of God.

**Outcome**

When we interact with others, we impart a part of us to them and inherit a part of them into us. Thus, both benefit from the interaction. The outcome of accompanying the students would be that we prepare them for lifelong learning; wehelp them explore the intersection between what they know and what is needed in the world out there, and we help them have a feel for their faith and culture and tell them that their collective justice is more sacred than individual faith. As teachers, we convince them that no person is an island and hence there is a need for collaboration for common good – This is the root of liberal arts in any Jesuit institution paying special attention to values based on ethics – In other words: we strive for excellence with ethics.

We also realize that moulding our students is our responsibility – This may not be found in our work contract but it is an unwritten law and obligation for us as teachers and as fellow citizens. We become examples to our students of how we become more and more human, especially in diverse cultures, customs, and religions. We make our students imbibe from our lifestyle and our approach to the students, how we are able to face challenges, how we could handle stresses and disappointments, how we encounter social atrocities and religious fundamentalism. And we prepare them as responsible citizens who are sensitive to the needs of our time. We convince them of the need to

raise their voice when needed. We remember the words of Einstein, who said, "The world will not be destroyed by those who do evil, but by those who watch them without doing anything." And finally, while we prepare our students for a rapidly changing and diverse knowledge society and digital world, we incorporate in them a global and international dimension for growth and learning and inspire them to change the society and the world into a better place to live for themselves and for others (https://www.xavier.edu/jesuit-education/index).

**Students Perspective**

We should pay attention to the expectations of students from their teachers

**Dream and Reality:** Every student comes into an educational institution with a dream – It could be a dream to liberate oneself or it could be a dream to become affluent and powerful. Some students might come in with pain in their hearts due to neglect, suppression, or discrimination. Dr. Ambedkar did not have an easy sail with education – He was treated as an untouchable but he has attained unreachable greatness. And now the President of India would like to celebrate 07thNov, the day Dr. Ambedkar enrolled himself in school in 1900, as Students' Day in recognition of Dr. Ambedkar's contribution to education. Dr. Abdul Kalam said, 'Learning gives creativity – Creativity leads to thinking – Thinking provides knowledge – (and) Knowledge makes you great. Everyone's dream of becoming great begins with learning and the faculty members are the ones who initiate, accelerate, and make the dream become reality. Each faculty member should be able to tell the students that some just dream, but a few put their heart and soul into realizing the dream. Every dream is possible if you work with determination and with a bit of guidance.

**Meaning in Life:** In the learning process, the faculty members not only prepare the students to pass the exams but also to pass through life's challenging vistas. The students are prepared to face, deal with, overcome, and cash on the crisis. The faculty member has to show each student that every crisis contains creativity – All one needs is to look for the possibility and should muster the courage, with calculated risk, to venture into one's entrepreneurship. Covid pandemic was a global crisis but think of so many MNCs and nations who enormously profited by the crisis starting from mask making in China, to vaccine distribution in the USA, the UK, etc.

As Abraham Lincoln wrote to the teacher of his son, the faculty member should give each student strength not to follow the crowd but to teach each one how to listen to all but at the same time to filter all one hears on the screen of truth, and take only the good that comes through. This filtering needs value-based education and ethics as the basic principle of one's meaningful life. The faculty member should teach the students not to lose heart when slaughtered with defeat and betrayal. Charlie Chaplin said, "I always like walking in the rain, so no one can see me crying" – He did cry so many times but he was able to make the entire world laugh. Ultimately, the faculty members have to instill in the minds of the students not to seek primarily wealth and power but meaning in life. As Victor Frankl writes in his all-time bestseller Man's Search for Meaning, finding meaning and being responsible in one's life is the ultimate realization in one's life. He would add, 'He who has a why to live, can bear with almost anyhow. If you have found a reason to live, then you would live rain or shine. Once the teacher inspires the student on why he/she should live, the individual would find out for himself/herself how to live.

**Atomic Habits:** All these expectations from students' perspectives could be learned from atomic habits – A little change in mindset or attitude would bring out tremendous or remarkable results. James Clear talks about this at length in his international bestseller Atomic Habits (2018) a few concepts and techniques. When he discusses quantity vs. quality, he gives an example. Prof Jerry Uelsmann at the University of Florida divided his film photography class into two groups. One group would be graded based on the quantity or the number of photographs shot in the semester, while the other group would be graded on ONE quality photo for the entire semester. While the 'Quality Group' was speculating about perfection all the time, the 'Quantity Group' through their numerous trials, could actually become experts (p141f). And they got better grades.

**Tips for Success:** The teacher could teach the students the two-minute rule. Normally what could be done in two minutes would be easy but that could lead one to do the same for a longer duration and with a difficult task. One could start with very easy, move on to easy, get into

moderation, dive into hard, and achieve very hard work. For example, if you want to run a marathon, just put on your running shoes, then walk with them for ten minutes, continue walking ten thousand steps, begin to run a 5K, and running a marathon is not going to be difficult. Similarly, you just begin to write one sentence a day, then write one paragraph, continue to write one thousand words, go on with writing a five thousand word article, and finally writing a book would be easy for you (Clear, Atomic Habits, 2018, p.163).

**The clarity in Life:** The students in today's context need more than ever clarity and confidence. They should know what they could do and the needed confidence they should cultivate within. The clarity in thinking and confidence in doing helps one going. When Einstein's theory of relativity was experimentally validated, he was not excited but just responded, "I knew the theory was correct". But, he was asked, suppose your prediction had been refuted? "In that case," answered Einstein, "I'd feel sorry for God because the theory is correct" (J.S. Rigden, Einstein 1905, p.10). Such audacity of clarity would make a person definitely become great. The clarity in mission leads to the fullness of life.

**My Expectations**

Now, I would like to share with you my expectations of the faculty members:

**Keeping Updated:** In my opinion, a teacher is a professional student. The teacher should keep themselves abreast in their area of specialization; should know the present reality as well as should be able to predict the future trends as well. Instead of finding yesterday's solution to tomorrow's problem, the teacher should be able to predict the future and then prepare the students to face the future and its challenges. I would recommend that each faculty member reads at least one recently published book in his/her area of teaching. I would also recommend taking a course online in the subject one is currently teaching. In the USA, any professional, to keep his/her license, should do a course for 5-credits per year.

As faculty members, one should be able to follow the impulse of exploring and exploiting. Find out what is the area still left for you to explore and exploit for the benefit of all. In this venture, you could follow the 80:20 rule. Spend 80% of work time on the prescribed work and 20% of the time on a project of your choice. This would bring in a large dividend. It works for me and it should for you as well.

**Contribution:** If one is keeping abreast with the flow of information and change in the current of the subject, then one could also contribute to and enrich the knowledge pool. Research is what is needed today. There are two ways of looking at the research: Micro-research and integrated research. Micro-researcher would know more and more about less and less. But we need people who could bring in integrated research – This is multi- or interdisciplinary research that touches upon real-life in real-time. St Ignatius would say about one's work: He/she should have one foot on the ground, and the other raised to proceed on their journey (of progress). This implies that while the faculty member establishes himself/herself in the present field of expertise, he/she looks for new frontiers to explore and to excel.

**Forming Students:** Forming students is the obligation and privilege of every faculty member. I would like to share with you the impact of an autobiographical novel by E.R. Braithwaite. It is a novel, published in 1959, revolving around social and racial issues and discrimination in the UK many decades ago. And this came out as a film in 1967 with the title: To Sir, With Love.

Braithwaite, an engineer, migrated from (British) Guyana to England prior to the Second World War. He enlists himself in the Royal Air Force as an engineer. He does his best and his service is well appreciated. At the end of the Second World War, he was honorably discharged from the military. Then, he applies for many jobs but everywhere he is rejected. The simple reason was that he was Black. When he was brave in the war, no one noticed his color or race but now he is rejected based on the color of his skin.

Finally, Braithwaite joins as a teacher at Greens lade School in London's East End. That quarter of the city was occupied by the white but very poor people. But still, the White Supremacy feeling was abounding there. The book/film is about a dedicated teacher who slowly and painfully breaks down the barriers of racial prejudices and how he

won over the students and how he made the white students address a black teacher with respect: Sir. He turned hate into love, rebelliousness into self-respect, and contempt into consideration for others. Instead, he taught the prescribed lessons, he encouraged the students to discuss social issues in the classroom and he was the moderator of the debates. At the end of the academic year, the outgoing students signed a letter which just read: To Sir, With Love – followed by signatures of all the students. Remember that the world out there is neither fair nor just – But you have the obligation to make the world a better place to live for all. And our students would be the agents of social change – Hence, understand each student from his/her perspective. Try to see his/her world through his/her perspective, never from your perspective.

**Professionalism and Compliance:** Faculty members are responsible for cultivating a respectful and inclusive instructional and work environment. They are expected to establish and maintain a safe work environment that is free of discrimination and harassment and treat everyone with respect, courtesy, and dignity. This expectation applies whenever a faculty member is engaged in professional activities on and off-campus and in all forms of communication.

At the same time, faculty members are expected to participate in and comply with all review processes. They are, further, expected to maintain the confidentiality of procedures, proceedings, personnel matters, student records, and other processes that depend on confidentiality.

**Conclusion**

A few watch-words could be the take-home points:

**Imitate** the good examples of our predecessors, especially those teachers who were pioneers and pathfinders in the profession of teaching and research.

**Inquiry** is what you need to develop with a sense of awe and investigative mind – Research would be your contribution to the wealth of knowledge already existing.

**Inspiration** is what students expect. Teach them, among other virtues, patience and resilience. Accompany them in their struggle to go forward. When they are caught in the storm of confusion and crisis, tell them not to look at the fierceness of the storm but to look into their infinite capacity to muster courage and confidence to go ahead in life.



Teach your students intelligence. It is not studying but learning that is more important. You study computers but you learn how to use them now and later. Teach them to be open-minded along with critical thinking.

Your impact is very important in the life of students. You may teach in the classroom but your very life would be a lesson to them to learn in facing life.

Your influence would take them a long way in life. How you make them get interested in the subject they do and they could make progress etc are areas you could wield your influence. You need to show special attention to the slow learners. As Dr. Abdul Kalam said, a genius could come even from the last bench in the classroom. Even a genius could face neglect. You may remember that Einstein was not awarded the Nobel Prize for his Theory of Relativity. In fact, he should have been given the prize in 1921. But that year no Nobel Prize for Physics was awarded – Reason: discrimination. Einstein was given the 1921 Nobel Prize 1922 for his 'Photo-Electric Effect' and was given the prize on the condition that he should not mention Relativity in his acceptance speech. History has it that Einstein could not make it to the ceremony in 1922.When it took place in 1923, the King of Sweden came in person and asked Einstein personally to talk about relativity.

Finally, integration should be the watchword. You may have in your class a spectrum of students – intelligent to slow learners, rich to poor students, highly motivated to disinterested students, students with interest to students on whom the subject was forced – You are the teacher for all. You need to integrate them all and help them get interested in the subject they learn now and later to get integrated into the society they are going to live in and work in.

The expectation is what comes from others – Evolution is what takes place within you. And integration of inner evolution with external expectation would bring in the best in us all and in the world. All the best.

**Reference**

1. *Cf. Presidential address on Research Day at Loyola College, Chennai (28Feb2022).*

# READING HABIT OF PROSPECTIVE TEACHERS

Research Paper


***ABSTRACT***

*Technological advancement and digitization has influenced every phase of education and the reading habits of people also changed as there is more accessibility of user friendly resources personally. As reading is essential for the intellectual, linguistic, cultural and social development of students, teachers have a major role in developing the proper reading habit of students. Experience of the researcher proves that reading habits of prospective teachers are declining and it is an alarming situation as it will affect the reading habits of future students. The present study attempted to find out the reading habits of prospective teachers and a survey was conducted on a sample of 325 students pursuing B.Ed and M.Ed courses in Thiruvananthapuram district. Data was collected using a reading habit inventory and analysed using descriptive and inferential statistics. The result showed that the majority of the sample have moderate level of reading habits and there is no significant difference in the reading habits of prospective teachers with reference to discipline and locale. The study implies that there must be an effort to enhance the reading habits of students as well as prospective teachers and also to promote reading of classics for deepening their thoughts, knowledge, culture and wisdom.*



***Key words:*** *Technological advancement, digitization, reading habits, prospective teachers.*


## Introduction

Reading is an essential ingredient for the overall growth and development of a person both personally and professionally. As far as teachers are concerned, reading enhances the competencies in various dimensions that help not only in the professional advancement but in making teaching- learning more personal and authentic which otherwise would have been difficult to sustain in the context of changed role of teachers in digital era. Due to technological development, reading habits are changing its nature and content. A good reading habit is important for the development of personalities and mental capacities. This habit is necessary for a healthy intellectual growth and plays a very crucial role in enabling a person to achieve language proficiency (Grabe & Stoller, 1997). Reading transfers experiences to the individual so that the reader may expand one's horizons, identify, extend and intensify his or her interest and gain a deeper understanding of the world (Green, 2002).

Reading habit is looking for new forms today. Book reading has shifted to digital form with the help of computer, laptop and mobile phone. Social networking and digital information sources are slowly taking a strong control over individual daily activities and it is also affecting reading habits.

Reading has a considerable impact and role on both educational attainment and life outcomes. Rhee (2001) succinctly defined reading habits as "how often, how well, and what" individuals like to read.

## Need and Significance of the study

Reading is one of the most fundamental skills that a reader must learn in order to succeed in life. Reading is the first step in the educational process. It has been one of the most important activities in a society since ancient times. It is an excellent form of activity that provides both knowledge and entertainment. Reading is a mentally stimulating activity.


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It sharpens the mind, refines emotions, elevates tastes, and prepares one to participate effectively in social and political life.

Verplanken and Aarts (1999) define habit as "learned sequences of acts that have become automatic responses to specific cues, and are functional in obtaining certain goals or end states'. Reading habits can be a factor of students' learning process and it can slow down the progress to get the knowledge and mastering a foreign language. Vellaichamy & Jeyshankar (2014) found that TV and internet has significantly influenced the reading habits of college students. Palani (2012) also revealed the reading interest has been changed due to the wide use of digital and social networking sites. Reading habit is influenced by many factors like lack of conducive environment in home, Ameyaw, Samuel Kwame and Anto (2018), watching films and chatting through social networking sites Haliru, Abdulkarim, Mohammed and Dangani (2015), socio economic status of family Debnath (2013). Much research has proved the parental influence in reading habits of children Igbokwe, Obidike Eze (2012), Abiolu (2014), Aramide (2015), Nagaraja and Manalam (2016).

The present study attempts to find out the reading habits of prospective teachers. The new generation teacher candidates are also overly dependent on digital materials than authentic text books and other print media for their learning and preparation and experienced poor reading habits as felt by the investigator. In the context of enhanced use of digital media and resources for communication and education, there occurred a change in the reading habits of new generation learners including prospective teachers. Hence there emerged the need to investigate the reading habits of prospective teachers in the changed educational and social contexts. Research showed varied findings on reading habits of students and studies among new generation prospective teachers regarding the reading habit is not so evident and hence the present study is found to be significant.

## Objectives

1. To study the reading habits of prospective teachers in Kerala
2. To compare the reading habits of prospective teachers based on

   a. Discipline b. Locale

*Research Paper*

## Hypotheses

1. There is no significant difference between Arts and Science prospective teachers in their reading habits
2. There is no significant difference between rural and urban prospective teachers in their reading habits.

## Methodology

Survey was conducted on a sample of 325 prospective teachers pursuing B.Ed. and M.Ed. in various colleges of education in Thiruvananthapuram district. The data was collected using reading habit inventory and analysed using descriptive and inferential statistical procedures.

## Results and Discussion

The investigator used descriptive statistics namely frequency distribution, mean, standard deviation, histogram and pie diagram for the analysis of the data pertaining to this objective. The following tables describe the nature of data collected for the study.

**Table 1**

**The frequency distribution of the scores of reading habit of prospective teachers**

| Class Interval | Frequency | Percentage |
|---|---|---|
| 90 – 110 | 6 | 1.85 |
| 110 – 130 | 74 | 22.77 |
| 130 – 150 | 204 | 62.77 |
| 150 – 170 | 40 | 12.03 |
| 170 – 190 | 1 | 0.03 |
| Total | 325 | 100 |

From table 1, it is found that the majority of the prospective teachers lie between the ranges of 110 – 170 of the class interval.

**Table 2**

**Mean and standard deviation of reading habit of prospective teachers**

| Variable | Number | Maximum score | Minimum score | Mean | Standard deviation |
|---|---|---|---|---|---|
| Reading habit | 325 | 173 | 96 | 137.91 | 11.914 |

From table 2, it is observed that the mean scores on reading habit of prospective teachers is 137.91 and standard deviation is 11.914. The maximum score obtained by the student was 173 and minimum score was 96.

Classification of the total sample of the prospective teachers based on their level of reading habit

Based on the mean scores, the total sample is classified into three categories. The classification is as follows, High level of reading habit (>μ+ 1s), Moderate level of reading habit (between μ+1s and μ -1s ) and Low level of reading habit (< μ-1s) Where 'μ' is the mean and 's' is the standard deviation of the scores on reading habit. Therefore μ + 1s is 149.824 and μ- ls is 125.996. The classification of the sample on the basis of scores on reading habit is given in table 3.

**Table 3**

**Classification of the total sample of the prospective teachers based on their level of reading habits**

| Level of reading Habit | Range | No. of Students | Percentage |
|---|---|---|---|
| High | Above 149.824 | 52 | 16 |
| Moderate | Between 149.824-125.996 | 219 | 67.38 |
| Low | Below 125.996 | 54 | 16.62 |
| Total | | 325 | 100 |

From table 3 it is found that the majority of prospective teachers have an average level of reading habit. It is clearly shown that most of the students used social media to share and exchange academic information. Though they enjoyed these benefits from social networks, some of the students reported that the social media has resulted in distraction of reading habits because of reduction in time spent in reading. The results are in agreement with the findings of Muthyalaiah and Kishore (2017).

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**Hypothesis 1:** There is no significant difference between arts and science prospective teachers in their reading habits

**Table 4**

**Difference between arts and Science Prospective Teachers in their reading Habits**

| Discipline | N | Mean | SD | Calculated 't'-value | Remark at 5% level |
|---|---|---|---|---|---|
| Arts | 169 | 104.11 | 7.49 | 0.6481 | NS |
| Science | 263 | 105.07 | 9.303 | | |

Data shows that there is no significant difference in the reading habits of prospective teachers based on Discipline. Hence the null hypothesis was accepted. Majority of the respondents read for the purpose of passing the examination.

**Hypothesis 2:** There is no significant difference between rural and urban prospective teachers in their reading habits

**Table 5**

**Comparison of reading habits of prospective teachers based on Locale**

| Locale | N | Mean | SD | Calculated 't'-value | Remarks at 5% level |
|---|---|---|---|---|---|
| Urban | 169 | 104.1 | 7.68 | 0.731 | NS |
| Rural | 263 | 103.42 | 6.96 | | |

Data shows that there is no significant difference in the reading habits of prospective teachers based on Locale. Hence the null hypothesis is accepted. The average time spent on reading by both urban and rural students were 1 to 2 hours per day in which the morning hours were the favourite times to read for both the rural and urban students and home was the place where they enjoyed reading. It was also found that rural students read more for education whereas urban students read for information. Majority has

preference of reading sources and only few practices reading as a hobby. The result matches with the findings of Lone (2011).

## Conclusion

Reading habits of students as well as teachers have been changing due to the wide use of web resources and social media platforms. When every information is at the fingertips of everyone there is a declining trend of in-depth reading and spending more time with print media. The study also revealed that the majority of the sample have moderate level of reading habits and there is no significant difference in the reading habits of prospective teachers with reference to discipline and locale. Reading has also shifted e-resources and even for educational purposes, textual reading is diminished. It has been proved that reading transfers experiences to the individual so that the reader may expand one's horizons, identify, extend and intensify his or her interest and gain deeper understanding of the world which is not that much possible form new generation reading tendencies. It is alarming that future teachers are also not reading seriously as the present study revealed. Hence there must be an effort to enhance the reading habits of students as well as prospective teachers and also to promote reading of classics for a deepening of their thoughts, knowledge, culture and wisdom. Such teachers can only transform students for a better future.

## Reference


1. *Grabe, W., &Stoller, F.L. (1997). Reading and vocabulary development in a Second Language: A case study. In Coady, J., and Huckin, T. N. (Eds.), Second Language Vocabulary Acquisition: A Rationale for Pedagogy 98 -122. Cambridge University Press.*
2. *Green, P. (2002). Teachers intervention in children's reading, Journal of ChildHood Education, 46 (3), 147-149.*
3. *Rhee, A. M. S. O. (2001). Adult reading habits and patterns. Reading Psychology, 22(3), 175- 203. https://doi.org/10.1080/027027101753170610*
4. *Verplanken, B., and Aarts, H. (1999). Habit, attitude, and planned behavior: is habit an empty construct or an interesting case of goal-directed automaticity? European Review of Social Psychology. Scientific Research an Academic Publisher 10,101–134. DOI: 10.1080/14792779943000035*
5. *Vellaichamy, A., & Jeyshankar, R. (2014). Reading habits of central library users: a case study of Alagappa University, Tamil Nadu, India. Research Journal of Library Sciences, 2(2), 6- 10.*
6. *Palani, K. K. (2012) Promising Reading Habits and Creating Literate Social. Journal of Arts https://digital commons. unl. edu/cgi/view content .cgi? article = 2908 & context = libphilprac*
7. *Haliru, R.A., Abdulkarim, M., Mohammed, A.D. & Dangani, B.U. (2015). An assessment of reading habits among secondary school students in Kaduna Metropolis. IOSR-Journal of Humanities and Social Science, 20 (10), 12-17.*
8. *Lone, F.A. (2011). Reading habits of rural and urban college students in the 21st century. Library Philosophy and Practice.586*
9. *Abiolu, O. (2014). Reading habits among secondary school students in Ondo State, Nigeria. Nigerian School Library Journal, 13(1), 18–27.*
10. *Aramide, K.A. (2015). Effect of parental background factors on reading habits of secondary school students in Ogun state, Nigeria. Journal of Applied Information Science and Technology, 8(1), 70-80.*
11. *Nagaraja, S. &Manalam, J. (2016). Reading habits and reading preferences of secondary school students. International Journal of Advanced Research in Management and Social Sciences, 5 (9), 73 – 87*


Research Paper

# CONSTRUCTION AND VALIDATION OF CRYSTALLISED INTELLIGENCE QUESTIONNAIRE FOR TEACHER EDUCATORS

Research Paper


***ABSTRACT***

*The aim of the study was to construct and validate a tool to measure the Crystallised Intelligence of the teacher educators. The questionnaire consists of multiple choice questions with four responses and three dimensions namely Academic Knowledge (Philosophy, Psychology, Technology and Pedagogy), Vocabulary & Reasoning and GK. The final tool consisted of 34 items. Item analysis was done with item difficulty and discriminating power. The validity of the questionnaire was established through content validity and the reliability was found as 0.845.*



***Keywords:*** *Construction, Validation, Crystallised Intelligence Questionnaire, Teacher Educators.*


## Introduction

Intelligence is the aggregate of an individual's capacity to act purposefully, to think rationally, and to deal effectively with his/her environment. It is a form of mental or cognitive abilities, available with an individual which enables him to handle the environment in terms of adaptation to face novel situations as effectively as possible. The concepts of fluid and crystallized intelligence were originally identified and introduced by Raymond Cattell. Fluid intelligence is the capacity to reason and solve novel problems, independent of any knowledge from the past. But, crystallized intelligence is the store of specific information, knowledge, skills and strategies that one has acquired through experience and education. It is basically the acquired knowledge. Fluid intelligence and crystallized intelligence are discrete factors of general intelligence. Most of the IQ tests attempt to measure both varieties of intelligence.

## Objective of the study

The objective of the study was to construct and validate the Crystallised Intelligence Questionnaire for Teacher Educators.

## Construction of crystallized intelligence questionnaire

The investigator referred to a number of books, articles, chapters and web resources related to Crystallised Intelligence but found very little literature and thus realized the need for the construction of a tool for Crystallised Intelligence. After direct consultation with research supervisor and experts, the investigator fixed three dimensions namely Academic Knowledge, Vocabulary & Reasoning and General Knowledge. Discussions with the research supervisor and experts were helpful for the investigator in the designing of the questionnaire as multiple choice questions and refining of the tool. The draft tool consists of 51 items.

### a) Pilot Study

After the construction of the first draft of the Crystallised Intelligence Questionnaire, the investigators decided to administer the tool. The tool with 51 items was administered to 45 teacher educators, who were selected randomly from Mar Chrysostom College of Education, Kirathoor, Bethlahem College of Education, Karungal in Kanyakumari District and St. Johns College of Education, Palayamkottai in Tirunelveli district. The teacher educators were requested to choose their responses by circling the right response from the four responses given in each item. The responses of the questionnaire were collected and scored as 1 for right answer and 0 for the wrong answer. The scores obtained by each respondent were tabulated and preceded for item analysis.


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## b) Item Analysis

The total score of the Crystallised Intelligence Questionnaire ranges between 09 and 39 out of 51. Based on the scores two groups namely upper 27% and lower 27% were formed and the item difficulty and discriminating power were calculated. Items with item difficulty level between 20% and 80% and also with the discriminating power 0.2 and above were considered as valid items and they were retained and the remaining items were detained. So as per the item analysis, 17 items were removed from the tool. Thus, the final draft of the Crystallised Intelligence Questionnaire consisted of 34 items. The item analysis for CIQ was given below.

**Table 1**
**Crystallised Intelligence Questionnaire – Item Analysis Results**

| Items | Item Difficulty | Discriminating power | Remarks | Items | Item Difficulty | Discriminating power | Remarks |
|---|---|---|---|---|---|---|---|
| Item1 | 21 | 0.25 | Selected | Item27 | 58 | 0 | Detained |
| Item2 | 21 | -0.08 | Detained | Item28 | 67 | 0.5 | Selected |
| Item3 | 67 | 0.67 | Selected | Item29 | 67 | 0.33 | Selected |
| Item4 | 25 | 0.33 | Selected | Item30 | 54 | 0.08 | Detained |
| Item5 | 17 | -0.17 | Detained | Item31 | 38 | 0.42 | Selected |
| Item6 | 58 | 0.5 | Selected | Item32 | 25 | 0.17 | Detained |
| Item7 | 63 | 0.75 | Selected | Item33 | 54 | 0.08 | Detained |
| Item8 | 29 | 0.25 | Selected | Item34 | 38 | -0.08 | Detained |
| Item9 | 29 | 0.58 | Selected | Item35 | 33 | 0.33 | Selected |
| Item10 | 38 | -0.08 | Detained | Item36 | 54 | 0.75 | Selected |
| Item11 | 29 | 0.25 | Selected | Item37 | 58 | 0.33 | Selected |
| Item12 | 33 | 0.17 | Detained | Item38 | 63 | 0.42 | Selected |
| Item13 | 33 | 0.5 | Selected | Item39 | 63 | 0.42 | Selected |
| Item14 | 42 | 0.17 | Detained | Item40 | 67 | 0.5 | Selected |
| Item15 | 33 | 0 | Detained | Item41 | 71 | 0.58 | Selected |
| Item16 | 63 | -0.08 | Detained | Item42 | 58 | 0.5 | Selected |
| Item17 | 42 | 0 | Detained | Item43 | 50 | 0.67 | Selected |
| Item18 | 54 | 0.42 | Selected | Item44 | 46 | 0.42 | Selected |
| Item19 | 25 | 0.33 | Selected | Item45 | 50 | 0.67 | Selected |
| Item20 | 33 | 0.67 | Selected | Item46 | 50 | 0.67 | Selected |
| Item21 | 33 | 0.17 | Detained | Item47 | 46 | 0.42 | Selected |
| Item22 | 42 | 0.17 | Detained | Item48 | 58 | 0.67 | Selected |
| Item23 | 67 | 0.67 | Selected | Item49 | 33 | 0.5 | Selected |
| Item24 | 42 | 0.33 | Selected | Item50 | 38 | 0.25 | Selected |
| Item25 | 25 | 0 | Detained | Item51 | 50 | 0.17 | Detained |
| Item26 | 21 | 0.25 | Selected | - | - | - | - |

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## c) Establishing the Validity

The validity of a tool has been established through different techniques. For the Crystallised Intelligence Questionnaire, the investigator established validity using the techniques of content validity. The procedure adopted for the establishment of validity are discussed below.

### Content Validity

To establish the content validity, the questionnaire was given to three experts namely Thomas Alexander, Principal, St. Xavier's College of Education (Autonomous), Palayamkottai, Indra Mary Ezhilselvi, Assistant Professor of Psychology, St. Ignatius College of College of Education (Autonomous), Palayamkottai and Deepa, Assistant Professor of Education, NVKSD College of Education, Attoor . The correction, modification, reframing, rewording and rephrasing were done accordingly as per the valuable suggestions given by the experts. The experts' evaluation and corrections prove that the items of the questionnaire were intended to assess intelligence as the items are directly related to the concept of crystallized intelligence.

## d) Establishing Reliability

### Test-Retest Method

The reliability of the questionnaire was established using the test-retest method. The draft tool with 34 items was administered to 45 teacher educators, who were selected randomly from Mar Chrysostom College of Education, Kirathoor and Bethlahem College of Education, Karungal in Kanyakumari District and St. Johns College of Education, Palayamkottai in Tirunelveli district. After an interval of 14 days, the same questionnaire was administered and data were collected from the same group of teacher educators from the same institutions. The two sets of data were statistically treated and the correlation between the two scores was found. Thus the reliability coefficient of the questionnaire was established as 0.845.

### Final Tool

The final tool consisted of 34 items under three dimensions namely Academic Knowledge which covers Philosophy, Psychology, Technology and Pedagogy with 10 items, Vocabulary & Reasoning with 10 items and General Knowledge with 14 items. The items were in the

format of multiple choice questions with four responses. The right response carries a score of 1 and the wrong response was allotted 0 score.

**Crystallized Intelligence Questionnaire (CIQ)**

1. The most appropriate meaning of learning is
   (a) Inculcation of knowledge
   (b) Modification of behavior
   (c) Acquisition of skills (d) Personal adjustment
2. The aptitude of a person for taking teaching profession could be tested on the basis of
   (a) His/her achievement standards in his/her courses of study
   (b) His/her imposing personality for controlling classes
   (c) His/her attitude towards persons whom he has to teach
   (d) His/her enthusiasm to display his knowledge
3. Educational psychology helps the teacher to
   a) Motivate the learners for learning
   b) Modify his/her teaching in accordance with individual differences
   c) Study the personality of learners and plan his/her way of action
   d) All of them
4. If a student reproduced the learnt material without any manipulation, then it is called
   a) Whole memory b) Rote memory
   c) Perfect memory d) All of these
5. Which of the following is NOT a type of CAI?
   a) Tutorial Type b) Educational Game Type
   c) Simulation Type d) Situational Type
6. Texts, Graphics, sounds, animations and videos are incorporated by you in your teaching, that means you are using
   a) e-Content b) e-Education
   c) Multimedia d) Digital Media
7. The educational philosopher must have knowledge of psychology because
   (a) Psychology acquaints the philosopher with the world of reality
   (b) Psychology is after all a branch of philosophy.
   (c) Psychological principles arise out of philosophical maxims
   (d) The question of 'why' and 'what' in philosophy is purely psychological at the root
8. Which of the following statements is NOT correct?
   (a) A good communicator need not be a good teacher
   (b) A good communicator has wide reading
   (c) A good communicator has good sense of humor
   (d) A good communicator has command over language
9. As an educator, you can use observation method in
   a) Classroom situation b) Sports situation
   c) Lab situation d) All of these
10. A learner goes from the first frame to the second frame only if he makes the correct response. If he makes an error, then he is led to a remedial frame where he is given more help in understanding the concept. He will then be directed to the original frame number one. He reads again and answers correctly in the light of remedial material received. This is the procedure of
    a) Linear Programming
    b) Forward Branching Programme
    c) Backward Branching Programme
    d) Extrinsic Programming
11. Fill up the blank with the appropriate word: 'The decisions of the teacher will ___ the entire nation.'
    a) Impact b) Impress
    c) Implant d) Implement
12. What is the synonym of the word 'Pedagogy'?
    a) The method of teaching b) The method of learning
    c) The art of teaching d) The art of learning
13. What is the meaning of acknowledgement?
    a. To become sick through contaminated food
    b. To admit or recognize that something is true
    c. To show great knowledge
    d. To deny something's existence
14. If your colleague always thinks the best will happen, then he/she is:
    a) Creative b) Outgoing
    c) Optimistic d) Confident
15. Choose the word which is least like the other words in the group
    a) January b) May
    c) July d) November
16. Identify the odd one
    a) Explaining b) Reading
    c) Questioning d) Illustrating with Examples

17. A book always has
    a) Chapters b) Pages
    c) Contents d) Pictures
18. Study: Knowledge :: Work : ?
    a) Experiment b) Service
    c) Experience d) Appointment
19. Arrange the following words in a meaningful order.
    1. Probation 2. Interview 3. Selection
    4. Appointment 5. Advertisement 6. Application
    a) 5,6,3,2,4,1 b) 5,6,4,2,3,1
    c) 6,5,4,2,3,1 d) 5,6,2,3,4,1
20. When you visit any historical place, you try to
    a) Feel the weather and enjoy the break of a monotonous life
    b) See the uniqueness of the architectural design
    c) Explore the cultural or social aspect of the design
    d) None of these
21. Who chairs the Governing Council meeting of NITI Aayog?
    a) NITI Aayog CEO b) President of India
    c) Prime Minister of India d) Union Finance Minister
22. Government established the UGC by an act of parliament in the year
    a) 1950 b) 1948
    c) 1953 d) 1956
23. The state with most deemed universities is
    a) Tamil Nadu b) Andhra Pradesh
    c) Karnataka d) Maharashtra
24. Which of the following days is celebrated as National Education Day?
    a) September 5 b) October 2
    c) November 11 d) November 14
25. The constitution of India is divided into
    a) 20 parts b) 21 parts
    c) 22 parts d) 23 parts
26. Indian Maritime University, Chennai is a
    a) State University b) Deemed to be University
    c) Central University d) Private University
27. MOOC stands for
    a) Mass Open Online Course
    b) Massive Online Open Courses
    c) Mass Online Open Course
    d) Massive Open Online Courses
28. The position of Indian Higher Education with regard to student enrolment is
    a) First b) Second
    c) Third d) Fourth
29. The chairman of New National Education Policy (2020)
    a) K. Kasturirangan b) Shakila T. Shamsu
    c) Ramesh Pokhriyal d) Vasudha Kamat
30. Access, Equity, Quality and Accountability are the four pillars of
    a) Indian Higher Education
    b) Teacher Education in India
    c) New National Education Policy (2020)
    d) Constitution on India
31. In 2006, Singapore, China, Japan & other nations announced a proposed plan to restore and revive ……. Indian University as an International University.
    a) Nalanda b) Takshila
    c) Ajantha d) Ujjain
32. SWAYAM stands for
    a) Standard Webs of Active-Learning for Youth Aspiring Minds
    b) Study Webs of Active-Learning for Young Aspiring Minds
    c) Standard Webs of Active-Learning for Young Aspiring Minds
    d) Study Website of Active-Learning for Youth Aspiring Minds
33. Identify the Centrally Sponsored Scheme (CSS)
    a) UGC b) NCTE
    c) RUSA d) AICTE
34. 'To achieve planned and coordinated development of the teacher education system throughout the country, the regulation and proper maintenance of Norms and Standards in the teacher education system and for matters connected therewith' is the major objective of …….
    a) UGC b) NCTE
    c) NCERT d) AICTE

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**Conclusion**

Delwin & Punitha's Crystallised Intelligence Questionnaire (DPCIQ) was constructed and validated with

the purpose of measuring the crystallized intelligence of teacher educators exclusively. The investigators have the faith that this questionnaire will be beneficial to the teacher educators for analyzing their present status of crystallized intelligence and in that light they can think of ways and means to enhance their crystallized intelligence. Similarly, it will be useful for the future researcher to construct tools for crystallized intelligence of various populations of study.

## References


1. *Dang, C., Braeken, J., Ferrer, E., & Liu, C. (2012). Unitary or non-unitary nature of working memory? Evidence from its relation to general fluid and crystallized intelligence. Intelligence, 40(5), 499-508. https://doi.org/10.1016/j.intell.2012.05.002.*
2. *Dash Neena Dash, M. (2012). Fundamentals of educational psychology. Ghaziabad: Nice Printed Press.*
3. *Kaufman, J. C. (2012). Self-estimates of general, crystallized, and fluid intelligences in an ethnically diverse population. Learning and Individual Differences, 22(1), 118-122. https://doi.org/10.1016/j.lindif.2011.10.001.*
4. *Lal, Raman Behari & Joshi, Suresh Chandra (2014). Development of learner and teaching- learning process. Meerut: R. Lall Book Depot.*
5. *Mahmud, Jafer (2009). Introduction to psychology. New Delhi: Balaji Offset.*
6. *Mangal, S. K. (2000). Advanced educational psychology. New Delhi: Prentice-Hall Pvt. Ltd.*
7. *Motallebzadeh, K., & Tabatabaee Yazdi, M. (2016). The relationship between EFL learners' reading comprehension ability and their fluid intelligence, crystallized intelligence, and processing speed. Cogent Education, 3(1), 1228733. https://doi.org/10.1080/2331186x.2016.1228733.*
8. *Nirmala, J. (2012). Psychology of learning and human development. New Delhi: Neelkamal Publications Pvt. Ltd.*
9. *Papalia, Diane F. & Wendkosolds, Sally (1987). Psychology. New York: McGraw-Hill Book Company.*
10. *Rindermann, H., Flores-Mendoza, C., & Mansur-Alves, M. (2010). Reciprocal effects between fluid and crystallized intelligence and their dependence on parents' socioeconomic status and education. Learning and Individual Differences, 20(5), 544-548. https://doi.org/10.1016/j.lindif.2010.07.002.*
11. *Sharma, R. A. (2005). Fundamentals of educational psy*chology. Meerut: R. Lall Book Depot.


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Research Paper

## DOES PERSONALITY...


7. *Geramian S.M., Mashayekhi, S., & Ninggal, M. T. (2012). The relationship between personality traits of international students and academic achievement, Procedia - Social and Behavioral Sciences, 46, 4374 – 4379.*
8. *Hattie, J. (2009).Visible Learning: A synthesis of over 800 meta-analyses relating to achievement, Routledge.*
9. *Kell, H. J., Lubinski, D., & Benbow, C. P. (2013). Who rises to the top? Early indicators. Psychological Science, 24(5), 648–659.*
10. *Kochergina, E.V., Nye, J., & Orel, E.A. (2013). The Big Five traits as predictors of academic achievements in university students. Psychological Studies, 27, 4–10.*
11. *Komarraju, M., Karau, S.J.,Schmeck, R.R. & Acidic, A.(2011).The Big Five personality traits, learning styles, and academic achievement. Personality and Individual Differences, 51(4), 472-477.*
12. *Rosander, P., Backstrom, M., & Stenberg, G. (2011). Personality traits and general intelligence as predictors of academic performance: A structural equation modeling approach. Learning and Individual Differences, 21, 590–596.*
13. *Salehi, S. (2013).The effect of personality traits and psychological compatibility on the academic achievement of university students, Master thesis, Department of Psychology, University of d'Alger2.*
14. *Salgado, J. F., & Tauriz, G. (2014). The Five-Factor Model, forced-choice personality inventories and performance: A comprehensive meta-analysis of academic and occupational validity studies. European Journal of Work and Organizational Psychology, 23(1), 3–30.*
15. *Vedel, A. (2016). Big Five group differences between academic majors: A systematic review. Personality and Individual Differences, 101, 523.*
16. *Zimbardo, P. G. & Gerrig, R.J. (1996). Psychology and life (14th ed.). New York: Harper Collins.*

# THE ROLE OF EDUCATION, SOCIETY AND CULTURE ON WOMEN EMPOWERMENT

Research Paper


***ABSTRACT***

*In most of the remote, rural, village, socially and educationally backward areas women are not on par with their male counterparts. Every now and then domination of men and crime against women like dowry, witch-hunting, rape, murder, and such other still prevails. Women empowerment means opening the door for women in the decision-making process of various fields. In the present paper, the author attempts to analyze the role of education, society, and culture towards empowerment of women. Descriptive study is employed for the present study. Education should create awareness about women's rights, constitutional provision, and designing attractive curriculum for girl students. Society should sensitize different personnel working in legislative, judicial, executive on gender equality and appoint more women leaders. Culture should open the door for women to challenge the traditional belief, allow women to go for specialized knowledge and fair division of labor.*



***Keywords :*** *Women empowerment, Gender equality, education, society, Culture*


**Introduction**

In India, in most of the religions, women are placed in an important position and worship as Goddesses. However, if we read the newspaper and watch news on television, reports of women being killed, tortured, and sacrificed can be seen and heard. Most women in rural, remote, socially and educationally backward areas are not aware about and enjoy their rights. However, the issue of women empowerment is not confined to a particular place, country, religion, culture, society and so on. It is a universal issue (Ramdas, 2010).The concept of women empowerment was introduced at the international women conference at Nairobi in 1985. In India, the year 2001 was declared as 'Women's empowerment year'

Empowerment is enabling a person to select a thought pattern, behavior, and take action in an autonomous way and control over different affairs of one's own life. Empowerment is a process that empowers a person to carry the thinking process, behave, take action, and control work in an independent way and take control of his own destiny. Empowerment includes power to have access and control over resources and ideology (Batliwala, 1994) Empowerment is allowing an individual to have self-governance, self-sufficiency, and self-maintenance (K.P Meera & Jumana M.K 2015). Empowerment is permitting a person to govern themselves with all the power and rights endowed with.

Women empowerment is enabling women to exercise their rights that they are entitled to and enjoy equal status without deprivation for being women. Taking decision independently without interference from external or another male person and become economically independent. It is opening the door to women to different professions and enabling them to manage their own affairs of life. Empowering woman means helping them to take care of their health and access to many facilities given to them by Government. According to Prasad et.al (2016) Women empowerment includes five components. Firstly, women having a sense of self-worth. Secondly, having the power to control of one's own life. Thirdly, a sense of self-worth and controlling power at home and fourthly outside home. Fifthly, capability to exercise influence on social change that is helpful in creating just social and economic order at different levels. In some culture and society, it is man who take decision and control on what type of knowledge women should have access to (Ramdas et.al, 2004) and what type of work women should


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do. Even if they earn, they cannot spend their earning independently they have to submit it to their husband, brother, or father (Bhasin, 2007; Rao 2004; Desai, 1994). Women are wrongly viewed as third class citizens and property of their husbands by society. Most of the women are not aware of their rights and power that have been guaranteed to them by the constitution. Man takes advantages of their ignorance and exploit them. Women face eve teasing, sexual harassment, discrimination and denial of education, medical health care system and cannot enjoy nutritious food.



**Significance of the study**

Women empowerment is important to enable them to raise their voice against mistreatment and injustice meted out to them for being woman. When women become empowered women can take independent decisions and manage their household. It enables the girl students and women to escape forced child marriage and fight against the dowry, female infanticide and other social evils prevailing in the society. The development of the nation is also dependent on to what extent women are empowered. If women are not empowered, they cannot develop their potential to contribute towards development.

**Objectives of the study**

The objective of the present study is to analyze the role of education, society, and culture on women empowerment

**Methodology**

Descriptive study method and Qualitative approach of study is employed for the present study. The study is based on secondary data collected from secondary sources such as Journal articles, edited books, e-books published by university and authentic online websites.

**Result and discussion**

**Role of education towards empowering women**

1) Creating awareness about the rights and constitutional provision for women: Although the number of women who are aware and sensitive about their rights are increasing, women living in rural, slum, remote and socially and educationally backward areas have not been able to exercise their rights and become ignorant of their rights. To avoid the problem of exploitation and mistreatment they first must know about their rights and raise their voice whenever anyone violates their rights. Knowledge on rights, power and reservation policy for women should be imparted in the educational institution by including the subject matter as one of its compulsory papers.

2) Instilling in them more confidence: Sometimes the person concerned may not show a supportive attitude towards women in such cases education should train them to pluck out courage to claim their rights. Making them understand that their rights are valuable and important for their all-round development. There are laws that will support them.

3) Providing guidance and counseling: Even though some girl students are aware of their rights and power, unfortunately, they are not aware of how to exercise their rights. If someone violates their rights and exploits them, they do not know whom to approach and where to start. Guidance and counseling of the educational institution should help women to cope and manage themselves after going through painful experiences resulting from crime and injustice committed against them.

4) Appointment of women leaders: It is not that women are not appointed in the educational field but there should be higher number of women in the decision-making process as woman will be in a better position to understand the problem of girl student and even girls' students will also feel more comfortable to approach the woman representatives.

5) Attractive curriculum: Curriculum is one of the factors that acts as a motivator and demotivator for students in general and girls. Curriculum should include subjects and activities that will fulfill the needs and aspirations of the girl student. It should be related to local and real-life situations. Curriculum will act as an attractor for girls' student to attend formal education and through education girl will be able to enlighten themselves with various opportunities.

(6)Providing information on occupational opportunity: Education should enable the girl to get information about the opportunity of occupation. All the required information shall be made available to the students so that they can select from multiple options. Information like minimum required educational qualification, skills, aptitude, attitude, and remuneration shall be widely available.

(7) Provide technological knowledge and skills: Education should open the door to women in science and technology. Women shall be allowed to select a career in science and build their career on it. The modern world is the age of science and technology. Every task is carried out with the help of technology. If a girl or woman is not able to operate modern computing devices. She becomes outdated and could not adjust with the modern world.

(8) Teacher's efficiency in skills and attitude: Education should work on the efficiency of the teacher to ensure the girls are getting the opportunity to empower themselves. The success of empowering women depends on the ability of the teacher to implement the policy, schemes, rules, and regulations for women. In the teaching-learning process and inside the classroom should emphasize on the values of respect for other gender and principle of equality.

(9)Preventing unintended pregnancies and delay marriage: Education should impart woman on how unplanned pregnancies affect their health and goals in life. Once a woman becomes a mother, they are not allowed to pursue their dreams and achieve their aim in life because in some societies and cultures married women are believed and assigned the role of looking after children and doing household work.

**Role of Society towards empowering women**

1) Creating awareness among the parents to develop a favorable attitude towards girls: Favorable attitudes should be developed towards girls and for this people should be made aware about everyone's role in it. Some societies viewed girls as members of another family. Girls are not members of other families but great potential contributors towards the family and the nation. Women are not meant to stay indoors and do only household chores but go outside and do what every man does.

2) Removing conservative outlook: Some sections of men in the society are afraid of accepting new roles and structure in the society. They just want to continue with the traditional role assigned as man and woman. At first, they should be convinced that they should keep themselves open minded for progress in society to take place. The conservative outlook if not removed then it will act as an obstacle in empowering women.



4) Gender sensitization among different personnel working in different fields: At the institutional level, personnel, legislative, executive, judicial and several others should sensitize the case of gender equality. Proper monitoring and action shall be taken if any misconduct is reported. Appropriate mechanisms for addressing grievances shall be implemented. Values like respecting every individual, equality of opportunity and non-discrimination shall be the basis of working.

5) Appointing women leaders in a correct proportion to man: Women leadership at the top level can prove to be effective means for woman empowerment. As it is assumed that women will understand the problem of women more than men will understand. It will also be easier for women to share their problems with the women leaders.

6)Practice what one preaches: Formulation, implementation, and evaluation of various policies for women welfare should be carried out in a practical sense. All the activities of policy including framing, implementation and evaluation should be carried and ensured at national, state, regional and local level.

**Role of culture towards empowering women**

1) Creating a culture that accepts and challenges traditional beliefs: A culture should be open to new and allowed to be challenged. It should allow us to question some old traditional beliefs and values. Some of the irrational beliefs associated with women should be relook and reexamined. Women should be encouraged to challenge those traditional beliefs.

2) Encourages women to challenge traditional roles assigned to them: In some cultures, women are assigned low level tasks like household work, agricultural work, and child bearer. They are not allowed by culture to perform highly intellectual tasks as they are not permitted. Culture should allow women to select and perform roles as per man. It should be normalized and accepted by the culture.

3) Establishing a new cultural pattern: A pattern of culture that permits women to exercise their rights and power, try out and explore new ways should be developed. This new pattern must be accepted as general way of life by the people

4) Access to specialized types of knowledge for women: Every culture shall allow women to have access to knowledge in different fields. Women's access to knowledge is controlled by men in some cultures (Kakati, 2014). The restriction put by men on women regarding the type or field of knowledge that one can have access acts as an obstacle for women to enrich themselves with knowledge and information which may empower them.

## Conclusion

Women who are a mother will be able to instill a scientific attitude among the children when they are provided with science and technology. They will be able to exchange ideas, opinions and views with other women on the globe. Mentally prepared by every human being is important for women empowerment. Appointing more women leaders in decision making positions will enable more girls and women towards their empowerment. Curriculum of the education system should be related to the needs and real-life situation of girls and women. Not only a particular government, society, culture, men, or women but every human being is responsible for women empowerment. Practicing what one preaches should be the guiding principle for every women empowerment endeavor, the reason being that only celebration of international women's day, developing policy and schemes and creating awareness will not help in achieving true women empowerment.

## References


1. *Batliwala, S. (1994). The meaning of women's empowerment : new concepts from action. In G. Sen, A. Germain, & L. C. Chen (Eds.), Population policies Reconsidered: Health, empowerment and rights (pp. 127-138). Boston: Boston, Massachusetts, Harvard University, Harvard Center for Population and Development studies, 1994.*
2. *Bhasin, V. (2007). Status of Tribal Women in India. Studies on Home and Community Science, 1-16. doi:10.1080/09737189.2007.11885234*
3. *Desai, S. (1994). Geographic Inequalities and Demographic Behaviour - India. New York: THE POPULATION COUNCIL / NEW YORK. Retrieved from https://citeseerx.ist.psu.edu/viewdoc/download? doi=10. 1.1. 701. 9655 & rep =rep 1&type=pdf*
4. *Kakati, B. K. (2014). CULTURE AND WOMEN EMPOWERMENT IN THE STUDY OF TRIBES IN INDIA. TUI - A Journal on Tribal Life and Culture, XVII(1), 27-35.*
5. *Meera, K. P., & Jumana, M. K. (2015). Empowering Women through Education. International Journal of Humanities and Social Science Invention, 4(10), 58-61. Retrieved from www.ijhssi.org*
6. *Prasad, N., Arshad , M., Kumar, V., & Jindal, P. (2016). Education for Empowerment of Women. Noida: Vikas Publishing House PVT.LTD. Retrieved from https://tripurauniv.ac.in/Content/pdf/Distance Education Notice/Education for Empowerment of Women _ MAEducation _806E English_21072017.pdf*
7. *Ramdas, K. (2010, July 01). Discussing culture in development. Retrieved April 18, 2022, from Culture in development: http://www.cultureindevelopment.nl/News/Discussing_Culture_and_Development/439/How_culture_impacts_development_and_gender_equality#:~: text= Gender%20quality%20and%20the%20empowerment,which%20 societies%20 achieve%20 these%20 goals.*
8. *Ramdas, S., Ghotge, N. S., Ashalatha, Mathur, N., Rao, M., Madhusudhan, N., . . . Savitri, J. (2004). Overcoming gender barriers: local knowledge systems and animal health healing in Andhra Pradesh and Maharashtra. (S. Krishna, Ed.) Thousand Oaks: Sage Publications.*
9. *Rao, N. (2001). Enhancing Women's Mobility : Transport and Gender Relations in the Santhal Parganas, Jharkhand. In S. Krishna, Livelihood and Gender. doi:https://doi.org/10.1177%2F097152150100800208*


Research Paper

Research is something that everyone can do, and everyone ought to do. It is simply collecting information and thinking systematically about it. *Raewyn Connell*

Research must continue to be the centrepiece of intellectual life, and our commitment to research must grow, because our problems are growing.

*Ernest L. Boyer*

Research is to see what everybody else has seen, and to think what nobody else has thought.

*Albert Szent-Gyorgy*

# INCLUSION OF SUBJECT ON CORPORATE SOCIAL RESPONSIBILITY IN SOCIAL WORK EDUCATION INSTITUTIONS (SWEI'S) GUJARAT

Research Paper


***ABSTRACT***

*Corporate Social Responsibility (CSR) has its origin from ancient Roman law and can be evident from asylums, homes for poor and old, Hospitals etc. Concept of CSR evolved from personal decisions of business to sustainable value. (Agudelo, Jóhannsdóttir and Davíðsdóttir, 2019). CSR is one of the emerging fields in Social work education although Social Work Methods are linked with CSR in one or the other ways. Skills required for CSR domains are being taught as part of social work methods in every SWEIs. But field specific knowledge would help students to build better understanding. This article will help one to understand the inclusion of CSR as subject in MSW curriculum and the gap required to be filled by including specific Subjects/ Units in the Social Work curriculum to prepare students to work more efficiently in CSR Domain.*



***Keywords:*** *CSR, Social Work Education Institutions (SWEIs)*


**Introduction**

Social work is a helping profession, and its main aim is to enhance human wellbeing. To enhance human wellbeing, one needs to study the individual and his/her behavior, environment, structure of society he/she lives in, the responsibility of the state towards the wellbeing of every citizen and so on. Thus, a trained social worker is expected to study the basics of every social and behavioral sciences such as sociology, anthropology, criminology, legislation and psychology. Hence Social work is called a multidisciplinary and applied discipline of profession. (Bhatacharya, S. 2008) The social work education started by efforts of Victorian reformers in the last decades of the nineteenth century, remodel its concept from charity work to scientific philanthropy.

The very first school social work with a two-year full-time program was established in Amsterdamin1899, but the real beginning of social work education is found in Octavia Hill's training of volunteers in housing management in 1870. Expansion of this training in the 1880s,in cooperation with the women's university settlement, led in 1890 to an organized one-year program of courses and field practice which involved, under the direction of COS(Charity Organization Society), into London school of sociology launched in 1903. (Kendall k. 2000)

In India, in 1936, full-time professional course in social work was introduced by Sir Dorabaji Tata at Sir Dorabji Tata Graduate School of Social Work, Mumbai with the help of western consultant: Clifford Manshardat. It is now known as TISS (Tata Institute of social science). From 1936 to 1947, for 11 years, TISS was the only social work school in India then, Delhi school of social work was introduced in 1947-48 which was the first institution affiliated with university- based system. Till 1957, nine different colleges were started giving social work training. Up to2005, there were 220 schools of social work (SWEPC 2005), and it reaches to more than 300 by 2012 (SWEPC 2012). Earlier TISS began with the generic social work course and presently it offers MA in social work degree along with specialization in a particular field.


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In Gujarat, only two institutions are pioneers in the field of social work education (Faculty of Social Work, The Maharaja Sayajirao University of Baroda, and Gujarat Vidhyapith) for many decades but because of the increasing popularity and demand of social work courses, now almost every district has its own school of social work.

The social work education curriculum basically includes Theoretical knowledge, Field work Practice and social work research. Social work education is broadly divided into three categories: Foundation courses, Method courses and Field work Courses. Foundation Courses are important to prepare basic understanding about human behavior and society viz. Human growth and behavior, Psychology, Philosophy, Sociology, Social Problem etc. Method courses prepare students to do social work in a specific way which are: Social case work, Social group work, Community organization, Social action, Social work Research, Social work Administration. Field work courses are helpful to understand the practical realities of various groups in society and skill building of students to work with different groups, these subjects are: Medical and Psychiatric social work; Community health and development; Human Resource Management; CSR; Criminology and correctional social work; Juvenile Justice; Rehabilitation in correctional setting; Working with children, youth, elderly, women and other marginalized group.

**History of CSR at National Level (India)**

Corporate Social Responsibility (CSR) has its roots in India for a long time in the form of charity and philanthropy. Mahatma Gandhi has also described it in the form of the Trusteeship Concept. It depicts that rich people would be the trustees of trusts who are responsible for the welfare of the general people of the society. CSR is also depicting the same.

GDP of India's GDP increased gradually from 2000 to 2015. But it leads to an increase in economic inequality. For Sustainable Development, it is required to balance between social and economic growth. With this context, Corporate Social responsibility was conceptualized as an instrument for integrating social, environmental, and human development concerns in the entire value chain of corporate business. (High level Committee Report)



The Ministry of Corporate Affairs (MCA) introduced Voluntary Guidelines on Corporate Social Responsibility by the Ministry of Corporate Affairs to encourage the concept of Business Responsibilities in 2009. It is the first formal step to include social responsibility as a part of Business responsibility. In 2014, by the introduction of section 135 in Companies Act, CSR is mandatory by every eligible company in India.CSR funds are steadily increasing since inception of CSR Act.

**Social Work Methods and CSR**

In social work education, there are three primary methods of working with individuals, groups and communities. Apart from these, there are three secondary methods such as social work research, social welfare administration and social action. Social case work is method of affecting the understanding of the needs, resources, and reactions of the individual (Porter Lee) Social group work is method through which individuals in the group in social agency settings are helped by a worker who guides their interaction in program activities so that they related to themselves to others and experience growth opportunities in accordance with their need and capacities (Tracker) Community Organization is process by which community identifies its need or objectives, gives priority to them, develop confidence and will to work at them, finds resources (internal and external) to deal with them, and in doing so extends and develops cooperatives attitudes and practices in the community. (M. G. Ross) It is a systematic, critical investigation of questions in the social welfare field with the purpose of yielding answers to problems of social work and extending and generalizing social work knowledge and concepts (W. Cater)

It is observed that the above mentioned four methods are linked with CSR in one or the other ways. Skills required for CSR domains are needed assessment, planning, proposal writing, mobilization of resources, implementation of the project, monitoring, Documentation, evaluation of project results, impact assessment. These skills are being taught as part of social work methods in every SWEIs. The social work core curriculum is comprehensive enough to prepare students in the CSR domain. But certain additional subjects/ topics/ units need to be included to brief students about the

concept, its history and its legality. Thus, CSR history, CSR act/rule/amendments need to be included in the social work curriculum to prepare students for the CSR domain. CSR agency visit, field work, seminar, expert talk will give holistic experience to students of CSR domain.

**CSR in Curriculum of SWEIs in Gujarat**

In this paper, SWEIs means all Social Work Education Institutions geographically located in Gujarat imparting post graduate level of regular full-time degree in social work course. It also includes all Grant-in-aid and self-financed social work education institutions.

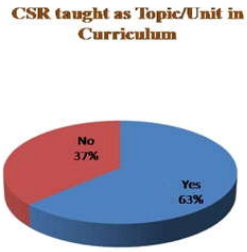
There are around 70 plus SWEIs in Gujarat which offer PG in Social Work Degree affiliated to 19 Universities (e.g: M.S University, Gujarat University etc). It is important to understand the following aspects to prepare students to be placed in the CSR domain.

i. Whether these SWEIs includes CSR as Subject/Unit/ topic in their curriculum
ii. If Curriculum includes CSR as Subject/Unit/ topic then whether it comprises CSR Act/Rule, proposal writing, research etc

The researcher had studied MSW curriculum of all SWEIs of Gujarat. The researcher has adopted the content analysis method of research to study the subject. The researcher has covered all the SWEIs for this study.

**Findings**

A quick review of secondary data available on the websites of SWEIs of Gujarat shows the following results.



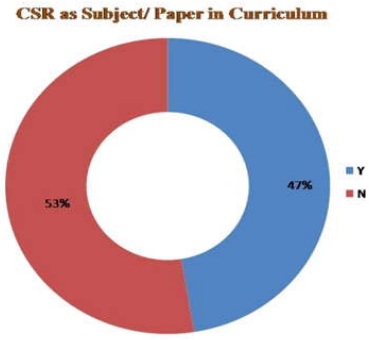




Figure (ii) | Figure (iii)

As per figure (ii) & (iii), it is observed that around one-third of SWEIs doesn't include CSR as topic/ unit in curriculum. More than half of SWEIs don't have CSRas a full-fledged subject/ paper in their curriculum.

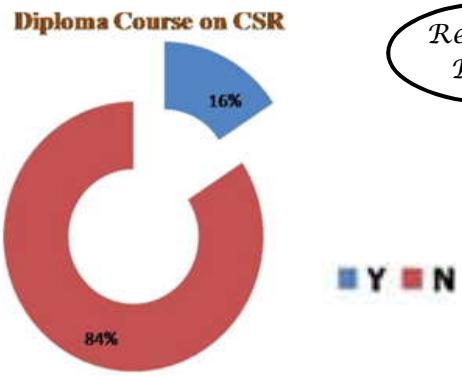
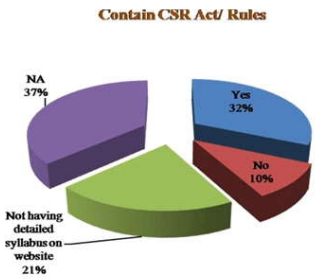



Figure (Vi)

As per figure(iv), it is evident that only16% of universities provide diploma courses on CSR.

It is evident from the study that every SWEIs has the subject of research in their curriculum but dissertation is not compulsory in all the institutions.



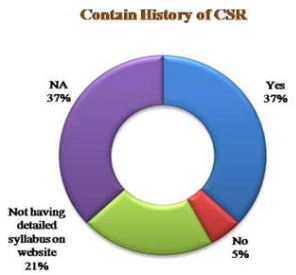




Figure (v) | Figure (vi)

From figure (v) & (vi), it is observed that around 37% SWEIs contain CSR as history in CSR and around 32% SWEIs contain CSR Act/ Rules in the subject of MSW curriculum. Around 21% of SWEIs in Gujarat have not mentioned a detailed unit wise syllabus on the website.

**Conclusion**

Paper discusses SWEIs, its history, curriculum, history of CSR at global and national level, CSR as subject in curriculum, subject of CSR in SWEIs in Gujarat. Education system should be assessed and revised as per the current requirement of the market to engage the students to fulfill the requirement. As discussed in the paper, CSR is one of the emerging fields in Social Work Education. Social Work Method Courses are comprehensive enough to inculcate foundation skills into social workers required for CSR domain but for specific field related

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# THE EDUCATIONAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE

Article


***ABSTRACT***

*Artificial Intelligence is a fast-growing technology. It is a technology that allows machines to perform multiple tasks like a human person but in a much faster and efficient way within a span of few seconds to accomplish a vast volume of work. Besides intruding on all walks of life, the technology is bound to bring about a revolutionary type of change in the field of education in particular. Its impact is bound to change the teaching and learning process, spread of education and is geared towards taking the teaching and learning not only beyond the four walls of a classroom, but also beyond nations and continents. Some have even predicted AI would cause adverse damage to society if not regulated properly. Hence its application should be done wisely without allowing it to abrogate the common vision, goal and the purpose of education towards establishing a humane society.*



***Keywords :*** *Artificial intelligence, machine learning, assistive technology, intelligent tutoring system.*


## Introduction

The technology of the day, Artificial Intelligence, has begun to make inroads into all walks of life. It is being utilized for a faster, efficient and most effective means of accomplishing a task. The IT industry has been enhanced beyond measure by the use of Artificial Intelligence. Various other fields of technology also began to apply the AI to supersede one another. Medical technology has taken great strait to the use of artificial intelligence to deliver faster and more comprehensive treatment and cure. In fact, technology is bound to bring about a global revolution in order to enable humanity to reap its fruits though some concern remains to be answered. The education field in particular is bound to witness a new and the most effective way in the teaching and learning experience.

## Artificial Intelligence

Artificial Intelligence was termed in 1950. It is basically a machine-simulation of human-like intelligence. It covers all the technologies, which come under Machine learning and Deep Learning.

In other words, AI is a hybrid technology that ignites man-made machines, especially the computer system that can perform almost all the functions that a human person can do in much faster and efficient ways. Their performances can be manipulated to perform an array of activities when and where needed and can be repeated at optimum times. Its specific application can include a very complex system, language processing and recognition of speech etc. For its functioning, a combination of specialized hardware and software is required for writing and training machine learning algorithms.

AI, Machine learning and Deep learning are common terms used interchangeably in the IT sector. But all three are not same and have a distinctive difference in spite of having some commonality, as they are the different stages of development of Artificial Intelligence.

## AI impact on Education

a. Personalized Learning: AI can be utilized to give a personalized learning experience. Learning can take place according to the learning capacity of the learners. The slow learners can gradually be enabled to comprehend the lessons at their respective learning phase. The specially abled people can use the technology to accomplish their learning at their convenient time and phase.

b. Global Class Room The combination of Computer vision, image recognition and language translation can


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enable to establish a universal classroom situation. Students from any part of the globe attend a classroom lecture done in one corner of the world. Thus it can help to save finance and time to travel to a particular venue to avail specialized studies.

c. Virtual Laboratory: The automated robotic technology can give rise to virtual laboratories to be available online for a global use for accurate analysis, measurement and combination to infuse new chemical resultant to meet the human need.

d. Online line learning with close social contact: Online learning need not be at the cost of missing social relationships. The image enhancement, language interpretation etc, can bring the student and teaching community to have social interaction on the same intensity that a physical classroom will offer.

e. Easy access of Teaching Material: Teachers can prepare their teaching material using AI. It can help the teachers to prepare comprehensive teaching materials with needed visual and audio teaching aid.

f. Easy Access to Learning Materials: Students can easily have access to learning material more than what can be provided in the classroom. AI can enable the students to gather sufficient learning material for a comprehensive understanding of a subject by the use of efficient and specialized searching AI engineering.

g. Enhancing Research Work: AI can enhance the research work with its versatility. It can enable the researcher to do an in-depth study and analysis without spending excess time collecting materials, data and analysis. It would be a phenomenal time saving and cost saving phenomenon.

h. Modern Class Room: With the introduction of AI in education, the conventional classroom learning will be completely changed. Students and teachers need not to spend six to seven hours in the four walls of a classroom. With a short input, the students can be guided to learn from home on their own especially in the higher education fields.

i. Assistive Technology: With the use of AI, especially abled people's learning can be highly enhanced. They can, not only have easy access to earning material but also to attend a on-line classes without much difficulty. It can also help them to select the field of study befitting of their physical condition in the field of electronics, digital technology, computer science etc.

j. Teach and Learn from Home Teachers and students need not to go to schools and colleges always to teach and learn. Most of the teaching and learning can be accomplished attending online classes. Only weekly classes can be done for the subjects, which need laboratory work and for further face to face clarification with the teachers and to have interaction with fellow students.

k. On line Library: The AI can be utilized to set up an on-line library for a global use. All that needs to be done is to digitize the books and link them with AI technology. This move will revolutionize the dissemination of knowledge throughout the world.

l. Open Educational Resources: Study material for various disciplines can be prepared very comprehensively with the use of AI. The access to them can be made very easy by the use of mobile phones and other simple electronic gadgets.

m. On Line Educational Museum: with the help of AI technology, a comprehensive online educational museum can be set up. People from all over the world can have access to it to carry out their study and research.

n. Improved Examination System: The AI technology can be utilized to evolve a highly effective examination system for a comprehensive evaluation of the student assessment. The result can be published within a short period of time. Such a system will be very beneficial for a country like India where millions of students sit for multiple exams every year.

o. Feedback Loops: AI technology in education can be of immense help for giving feedback to the students on their learning process. Teachers also receive feedback with regard to their content, teaching style and clarity from various quarters and their efficiency and effectiveness can be accurately measured and communicated fast.

p Student Advising Applications: Further use of AI can be used to evolve a system to measure the ability of the students and propose ways and means to improve it gradually. Their temperament, acumen and their interests can be measured to give them future orientation, the right type job and field of specialization.

q. Intelligent Tutoring System: AI technology software can play a vital role in Intelligent tutoring of the students. Students need not to look for a tutor for specialized subjects, which lack proper tutors and teachers. The AI software can enable the students to acquire sufficient knowledge, skill and expertise.

r. Quality Education: The technology can help in improving the quality of education to the desired degree and can be made available to all. As many people avail the facility, its cost of use of the technology can be considerably brought down. And the governments can also invest in it to such an extent to make it free use in the field of education.

**A Call to Action for Education Leaders**

a. Need of Human in the Loop: It should not be taken for granted that AI will completely replace teachers in the teaching learning process either in the off/online classroom situation. Teachers and other stockholders should be 'in-the-loop' whenever AI is applied in the field of education to notice the ill effects of it and automate the teaching and learning process.

b. AI for Shred Vision of Education: Learners should not be allowed to become the slaves of machine learning powered by AI. Researchers, Educationists, policy makers and technologists should be involved in recommending optimization of AI for the all-round development (intellectual, social, cultural, etc.) of the learners. In other words, AI should be made to promote the Common and shared vision of Education according to the context and need of each community.

c. AI based Modern Learning Principles: Analyzing a large store of data does not pave the way for the effective way of learning. Rather the AI in education should be utilized based on the modern principles of learning, wisdom of educational practitioners to remove biases and to ensure fairness in the learning process. Further it should be culturally responsive and sustainable.

d. Prioritizing Trust: Trust is a prerequisite to achieve the educational goals by the use of educational technology beside the objectives. Distrust of educational technology including AI is very much in the air and very often one hears and reads about it. Hence focus should be on building trustworthiness of emerging educational technology through associations, conventions and organizations that work in close collaboration with innovators, educationists, researchers and other stockholders.

e. Involving Educators: Every educational technology has to involve the educators to make the technology palatable to the prevailing condition of the particular society. By reviewing the technology, the educators can contribute to the technology to overcome certain barriers and to make it for the conductive teaching and learning objectives rather than making it purely machine learning which affects serious repercussions in the formation of the learners.

f. Addressing Safety and Content: The technology-based content needs to be optimized to fulfill the local educational needs rather than technology for technology's sake. Besides technological skills, safeguarding the cultural ethos, social and spiritual value should form the core element of the AI educational technology.

g. Developing Specific Guidelines: Besides the existing norms and guidelines, further regulation are to be put in place to alleviate the risk involved in the usage of the AI technology. Norms for its marketability and the tendency to make an educational opportunity purely on a commercial basis need to be looked into. The technology should be closely monitored and checked its pros and cons to fit into the harmonious growth of the learners thereby protecting them from becoming slaves to mere a machine learning.

## Conclusion

Artificial Intelligence has the potential for making teaching and learning more efficient and effective. It also brings along with it certain ill effects and potential danger, which should be attended to. A concerted effort of the researchers, technologists, educationists and other stakeholders can make the technology more humane and make use it for the better and proper development of the human society.

## Reference


1. *Fusco, J. & Ruiz, P. (n.d.) I'm a teacher. Will artificial intelligence help me?CIRCLS. https://circls.org/educatorcircls/im-a-teacher-will-artificial-intelligence-help-me*
2. *Benjamin, R. (2019). Race after technology: Abolitionist tools for the new Jim code. Wiley. https://www.wiley.com/en-us Race + After + Technology % 3A + Abolitionist +Tools+for+the+New+Jim+Code-p-9781509526406*
3. *Roschelle, J., Lester, J. & Fusco, J. (Eds.) (2020). AI and the future of learning: Expert panel report [Report]. Digital Promise. https://circls.org/reports/ai-report*
4. *The Engage AI Institute, CIRCLS Expertise Exchanges, National Institute for Student AI-Teaming*
5. *Documents such as the 2016 report Preparing for the future of artificial intelligence, OECD principles, and other policy organizations.*
6. *CIRCLS AI and Education Policy Expertise Exchange Group*
7. *https://doi.org/10.1145/3330430.3333622*
8. *Artificial Intelligence Research, Development and Regulation Adopted by the IEEE-USA Board of Directors, 10 Feb. 2017*
9. *Friedman, L., Blair Black, N., Walker, E., & Roschelle, J. Safe AI in Education Needs You. Blog@CACM. https://cacm.acm.org/blogs/blog-cacm/256657-safe-ai-in-education-needs-you/fulltext*
10. *Noble, Safiya Umoja. (2018). Algorithms of Oppression: How Search Engines Reinforce Racism. New York University Press.*
11. *GartnerGlossary. Augmented intelligence. https://www.gartner.com/en/information-technology/glossary/augmented-intelligence*


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Article

## INCLUSION OF SUBJECT...

knowledge need to be imparted to prepare students for CSR Domain.

Researcher has observed that more than half of SWEIs in Gujarat do not have CSR as subject/full paper in its curriculum. Hence, it is required to review and revise curriculum of SWEIs time to time as per current trends of the market. We hope, each SWEIs of Gujarat adopt standardized CSR modules as subjects to impart basic knowledge of CSR domain among students. This will help in creating job opportunities and creating trained manpower as per market requirement which will be helpful to society at large.

## References


1. *Bhatacharya, S.(2008). Social work: an Integrated Approach. Deep & Deep Publications.*
2. *Chavada,G.(2008). Social Work profession.*
3. *Dadlani, G., 1961.Survey of Social Work Education in India as Preparation for Work in The Field. Baroda: Faculty of Social Work, The Maharaja Sayajirao University of Baroda.*
4. *Kendall, K. (2000). World Wide Beginning of social work education. Indian Journal of Social Work, 61(2). doi:2/4/2000*
5. *Kothari, C.R.,& Garg,G.(2016). Research methodology: methods and techniques. New Delhi: New Age International (P) Limited.*
6. *R.A. Sharma (2001).Research Methods (Edition: 01,2001ed.). Rawat Publications.*
7. *Agudelo, L., Jóhannsdóttir, L. and Davíðsdóttir, B., 2019. A literature review of the history and evolution of corporate social responsibility. International Journal of Corporate Social Responsibility, [online] 4(1). Available at: <https://jcsr.springeropen.com/articles/10.1186/s40991-018-0039-y#Sec11>*
8. *Mca.gov.in.2021.[online] Available at:<https:/www.mca.gov.in/Ministry/pdf/HLC_report_05102015.pdf>.*
9. *Csr.gov.in.2021.NationalCSRPortal.[online] Available at: <https://www.csr.gov.in/index_across.php>.*

# BUILDING INCLUSIVE CLASSROOM: STRATEGIES FOR EFFECTIVE SPECIAL EDUCATION INTEGRATED FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

Article


***ABSTRACT***

*This paper explores the intersection of special and inclusive education in addressing the needs of children and young adults with Autism Spectrum Disorder (ASD). The comprehensive overview of ASD provides insights into the disorder's impact on social interaction, communication, and behavior. The discussion underscores the necessity of ongoing research to better understand and support individuals with ASD, especially considering the challenges exacerbated by the COVID-19 pandemic. The paper delves into the benefits of inclusive education for children with ASD, highlighting enhanced social skills, academic improvement for all, and the cultivation of a positive school environment. It identifies challenges faced by children with ASD, ranging from limited resources to assessment difficulties, and proposes solutions that span increased funding, teacher training, collaborative approaches, and awareness campaigns. The conclusion emphasizes the multifaceted nature of addressing ASD challenges, advocating for collaboration, education, and a commitment to inclusivity. The strategies outlined, including personalized education plans, sensory accommodations, and parental involvement, contribute to creating an environment where every child, regardless of abilities, can thrive. The paper underscores the importance of embracing inclusivity not only for the benefit of students with ASD but for the enrichment of the entire learning community.*



***Key words:*** *Autism Spectrum Disorder, inclusive education, personalized learning*


## Introduction

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid." - Albert Einstein

Education is essential if everyone wants to progress and succeed. Special and Inclusive education are services designed to support the needs of children and young adults with disabilities in public and private schools and in the community, work, and leisure environments. Inclusive education recognizes students of all circumstances to educate and grow abreast, to the benefit of all. Inclusive education is a belief in the value inherent in the individual's right to a life filled with relationship, opportunity, and promise, a life not limited by a disability label and the bias that follows in all forms. But the progress comes slowly. Inclusive systems require change at all levels of society. The overriding goal of inclusive education is to provide the conditions necessary to prepare young people for independent, self- determination adult lives. School activities and classroom experience should naturally lead to meaningful employment and leisure-time activities after the student leaves the education system.

## Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is an umbrella term for anyone who displays difficulty with others, causing problems in social interaction and communication. The term "spectrum" in autism disorder refers to the developmental disability caused by differences in the brain and a wide range of symptoms. ASD impacts the nervous system and affects


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the overall cognitive, emotional, social and physical health of the affected individual. The disorder also includes finite and repetitive effects of behavior. Children with ASD are more liable to many mental health disorders, Speech delay, addiction, attention deficit, sleep disorder and hyperactivity behavior since the covid 19 pandemic started. ASD research is essential for us to better understand people with autism, meet their needs, and provide them with the highest quality of life possible.

**Identification of Autism Children**

Early misconceptions about the disorders because of research on autism lags behind that of other psychiatric and medical conditions, and it seems the more we discover about ASD, the more we realize we still have to learn. We need to do more research, we know the more specific, the better we become at early diagnosis and development and as one clear finding, the earlier the diagnosis and improvement, the better. Early detection cannot only improve behaviors, but actually enhance brain function, and gives autistic individuals a much better chance at thriving as adults. Children with speech delay and hyperactivity have lots of trouble in paying attention, focusing, and possibly learning. Some children will experience a significant decrease in symptoms as they get older. Others will continue to experience speech delay and hyperactive symptoms through their adolescent years into adulthood.

**Characteristics of Individuals with ASD**

1. ASD is associated with the triad of difficulties associated with social interaction, communication, and repetitive patterns of behavior.
2. Although many of the behavioral characteristics displayed by children with ASD are similar to those displayed by children with autism, the former generally have higher cognitive development and more typical communication skills.

**Benefits of Inclusive Education for children with ASD**

*Enhanced Social Skills*

a. Opportunities for students to interact with diverse peers.
b. Fosters understanding, empathy, and acceptance.

*Academic Improvement for All*

a. Increased academic achievement for students with and without disabilities.
b. Tailored teaching approaches benefit the entire class.

*Promotes Diversity and Inclusion*

a. Celebrates differences and creates a culture of acceptance.
b. Prepares students for a diverse society.

*Improved Self-Esteem and Confidence*

a. Positive interactions contribute to a sense of belonging.
b. Recognition and appreciation for individual strengths.

*Preparation for Real-world Inclusivity*

a. Reflects the diversity of the broader community.
b. Equips students with essential social skills for the future.

*Personalized Learning Opportunities*

a. Individualized Education Plans (IEPs) cater to diverse needs.
b. Varied teaching methods address different learning styles.

*Enhanced Communication Skills*

a. Opportunities to communicate with a wide range of peers.
b. Improved verbal and non-verbal communication skills.

*Promotes Equality and Equity*

a. Reduces stigma associated with disabilities.
b. Ensures all students have equal access to education.

*Cultivates a Positive School Environment*

a. Inclusive culture promotes a sense of community.
b. Reduces bullying and fosters a supportive atmosphere.

**Challenges of Children with Autism**

a. Limited Resources.
b. Teacher Preparedness.
c. Individualized Needs of Students.
d. Social Integration Difficulties.

e. Lack of Awareness and Understanding.

f. Classroom Environment Challenges.

g. Inadequate Collaboration.

h. Resistance to Change.

i. Parental Involvement Barriers.

j. Assessment and Evaluation Challenges.

**Solution for the challenges**

1. Advocate for increased funding and resources for special education programs.
2. Provide ongoing professional development and training for educators on inclusive teaching methods and strategies for ASD.
3. Develop and implement personalized education plans (IEPs) for each student with ASD, tailoring teaching approaches to their specific needs.
4. Implement social skills training programs and peer support systems to facilitate social interaction and inclusion.
5. Conduct awareness campaigns among teachers, students, and parents to promote understanding and acceptance of ASD.
6. Modify the physical environment and provide sensory accommodations to create an inclusive space for all students.
7. Encourage regular communication and collaboration among teachers, special education professionals, and support staff to ensure a cohesive and coordinated approach.
8. Foster a culture of openness and flexibility, providing incentives for embracing inclusive education practices.
9. Establish clear communication channels between parents and educators, and provide resources to support parents in understanding and contributing to their child's education.
10. Develop alternative assessment methods that consider the diverse abilities and strengths of students with ASD, ensuring fair and accurate evaluations.

**Conclusion**

Article

In the pursuit of inclusive education for children with Autism Spectrum Disorder (ASD), this comprehensive exploration underscores the fundamental belief in the potential of every individual, as eloquently expressed by Albert Einstein. Recognizing the value inherent in each person's right to a life filled with relationships, opportunities, and promise, inclusive education emerges as a transformative force against the constraints of disability labels and biases. The paper illuminates the challenges posed by ASD, emphasizing the urgent need for research, early detection, and understanding. Despite advancements, misconceptions persist, and the dynamic nature of ASD demands continuous exploration and awareness. The central theme revolves around the benefits of inclusive education for children with ASD, highlighting enhanced social skills, academic improvements, and the cultivation of a positive school environment. By celebrating diversity and preparing students for real-world inclusivity, inclusive education emerges as a catalyst for individual growth and collective acceptance. However, challenges persist, ranging from limited resources to resistance to change. The proposed solutions advocate for increased funding, teacher training, collaborative approaches, and a culture of openness to address these challenges comprehensively. In conclusion, the paper emphasizes that children with ASD can face obstacles in focusing, socializing, and communicating. As we navigate the complex landscape of ASD, a multifaceted approach involving collaboration, education, and a commitment to inclusivity is crucial. Establishing and maintaining inclusive classrooms, with effective special education integration, holds the key to creating environments where every child, regardless of abilities, has the opportunity to thrive. The journey towards inclusive education requires perseverance, awareness, and a collective commitment to nurturing a future where every individual can lead an independent, self-determining adult life.

**Continued on Page 3**

# HOPE AND RESILIENCE IN RELATIONSHIP WITH OCCUPATIONAL STRESS AMONG SPECIAL EDUCATION TEACHERS IN INCLUSIVE CLASSROOMS

Research Paper


***ABSTRACT***

*The aim of the present study was to find out the relationship among Hope, Resilience and Occupational stress of teachers working in Inclusive educational school setups. A sample of 33 special education teachers from an inclusive school in Bangalore city was considered for the present study. Hope among the sample was measured using Adult Hope Scale by Snyder et al. Bharathiar University Resilience Scale was used to measure the resilience among the sample. Occupational stress among the sample was measured using Teacher's Occupational Stress Scale developed by Sajid Jamal and Abdul Raheem. Correlation analysis was done to find out the relationship among Hope, Resilience and Occupational stress. Results showed that there existed a negative correlation between hope, resilience with occupational stress among the sample.*



***Keywords:*** *Occupational stress, Hope, Resilience, Inclusion*


## Introduction

Special education teachers in inclusive classrooms shoulder a multifaceted role, addressing the diverse needs of students with varying abilities and learning styles. This challenging environment often exposes educators to occupational stressors, highlighting the significance of cultivating work hope and resilience. Work hope, defined as a positive expectation regarding future professional achievements, emerges as a crucial element in sustaining motivation among special education teachers. The inherent optimism associated with work hope acts as a powerful antidote to the stressors encountered in the dynamic landscape of inclusive education.

Resilience, another key factor, plays a pivotal role in determining the ability of special education teachers to navigate occupational challenges successfully. The capacity to bounce back from setbacks and adapt to the ever-evolving demands of inclusive classrooms is essential for prolonged career satisfaction. Occupational stress among special education teachers in inclusive settings can emanate from various sources, including the need for individualized instruction, diverse behavioural challenges, and the emotional toll of supporting students with special needs. The interplay between work hope and resilience becomes particularly evident in how teachers cope with and overcome these stressors. A teacher with a high level of work hope is more likely to view challenges as opportunities for growth, maintaining a positive outlook even in the face of adversity.

Furthermore, resilience acts as a protective factor, buffering the impact of occupational stress on the mental and emotional well-being of special education teachers. Teachers who exhibit resilience are better equipped to manage stress, preventing burnout and promoting a sustainable career in the field. The cultivation of resilience involves developing coping mechanisms, seeking social support, and fostering a mindset that embraces challenges as integral components of professional growth.

In conclusion, work hope and resilience are integral


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components of the professional tool kit for special education teachers in inclusive classrooms. By fostering a positive outlook on their work and equipping them with the tools to bounce back from challenges, educators can not only weather the storms of occupational stress but also contribute to the creation of inclusive learning environments that empower all students to succeed. Educational institutions play a pivotal role in nurturing these qualities, recognizing that the well-being of special education teachers is intricately linked to the success of inclusive education as a whole.

**Background of the study**

A study was conducted by Quick and Henderson (2016) on the topic Occupational Stress: Preventing Suffering, Enhancing Wellbeing. The conclusion of the study emphasized that organizational protection and work environment protection come first in managing occupational stress, but it may differ according to the person. They have found that positive psychological skills for occupational stress may have positive spill over effects into the home. Candeias, Galindo, Calisto, Borralho, Reschke (2021) conducted a study on Stress and burnout conditions of teachers working presently in inclusive schools and the corresponding influence of personal variables. The result showed that the specialists in special education have low level of burnout and non-specialist teachers exhibit higher level of burnout. A study by Zhang, Bai, Li (2020) showed that there existing a correlation between resilience and mental health symptoms of the special education teachers, resilience and its other factors had significant negative predictive effects on mental health symptoms and its different factors, and second finding were teaching barriers played a negative moderating role on the effect of resilience on mental health symptoms.

The Relationship study between work stress, resilience and hope among employees was conducted by Nathani, Bendre (2022). The data were collected from 175 employees. Pearson's Correlation was used as a statistical tool. The result showed that hope was negatively correlated with work stress and resilience was negatively correlated with work stress. Thus, there are a number of studies done on hope, resilience and occupational stress. But there are hardly a few studies that are carried out in the field of inclusive schools. Thus, the present study aims to fill this gap.

**Objectives**



1. To find out if hope has a relationship with occupational stress among the special education teachers who work in inclusive classrooms.
2. To find out if resilience has a relationship with occupational stress among the special education teachers who work in inclusive classrooms.

**Hypotheses**

1. Hope has a relationship with Occupational Stress among the special education teachers who work in inclusive classrooms.
2. Resilience has a relationship with Occupational Stress among the special education teachers who work in inclusive classrooms.

**Methodology**

The present study followed a quantitative design. It is correlation research.

**Sample**

A total of 33 special education teachers were selected from an inclusive school in Bangalore city using a purposive random sampling method. After establishing the rapport and obtaining the consent for the study, questionnaires on occupational stress, resilience and work hope were administered to the sample and data were collected through Google form. The sample comprises full time, permanent special education teachers ranging from 23-35 age group working in private inclusive schools with CBSE board were included as sample.

**Research tools**

The Teacher's Occupational Stress Scale developed by Sajid Jamal and Abdul Raheem (2012) was used to measure occupational stress of the subjects in the sample. The Scale consisted of 30 statements. The subjects can evaluate each statement on the basis of their judgment on the following 5 point rating scale, Strongly agree, Agree, Undecided, Disagree and Strongly disagree. Cronbach alpha was used to assess the scale's stability, which was determined to be 0.89. The scale's validity was highly significant since it had a good correlation with two identical uniform scales, with coefficients of correlation of 0.71 and 0.89, respectively.

Bharathiar University (BU) Resilience Scale was used to measure the resilience of the subjects in the sample. BU Resilience Scale was developed by Annalakshmi (2009). The scale consisted of 30 Likert type items. The scale had adequate reliability (reliability coefficient of Spearman Brown, 0.84; Guttman, 0.84; and Cronbach alpha, 0.86) as found on a sample of 577 post-graduate students. The scale was validated against Friborg's Resilience Scale for Adults (r = 0.401) and Bell's Adjustment Inventory (r = -0.392). Higher scores indicated higher resiliency, and lower scores indicate lower resiliency.

Adult Hope Scale (AHS) developed by Snyder et al., (1991) was used to measure the level of hope among the sample in this study. The tool consisted of 12 items divided into two subscales: Agency and Pathways based on Snyder's cognitive model of hope. Each item was answered using an 8-point Likert-type scale ranging from Definitely False (1) to Definitely True (8). The reliability score is estimated to be 0.89 (Cronbach's alpha).

**Results and Discussion**

To find out the relationship between hope, resilience and occupational stress among the special education teachers who work in the inclusive classrooms, a Karl Pearson correlation test was administered. Results of the analysis are given in table 1.

**Table 1**
**Relationship among hope, resilience and resilience of special education teachers of the inclusive classroom**

| Variables | Occupational Stress | Hope |
|---|---|---|
| Hope | -0.416* | 1 |
| Resilience | -0.438* | 0.473** |

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

As per the findings (Table 1), Hope and occupational stress are negatively correlated. This shows that people with high hope will have lesser occupational stress as the results indicate that occupational stress has a significant moderate negative correlation ($r = -0.416$, $P < 0.05$) with hope. The results of the study indicated that there is a moderate negative correlation between occupational stress and hope. Results also showed that the teachers who are high in agency and pathway subscales of hope are having lesser occupational stress. The results of our study are somewhat like the study conducted by Nathani and Bendre (2022) and Sucan (2019). Hope as a motivational construct aims to help an individual in identifying and engaging in various pathways to achieve goals.

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According to Mishra (2016), hope is considered as a psychological resource that sustains motivation in individuals to attain their goals through different pathways. Thus, teachers high in hope may tend to have better propensities to sustain motivation to achieve goals. This makes them explore different pathways to attain the goals. Their sustained motivation towards achieving targeted goals through different ways might tend to decrease their stress level in the job when compared to others.

The results from table-1 also showed that resilience and occupational stress are negatively correlated. This showed that people with high resilience will have lesser occupational stress as the results indicate that occupational stress has a significant moderate negative correlation ($r = -0.416$, $P < 0.05$) with resilience. The results of the present study are similar to the findings of the study conducted by Kavagci (2022) and contrary to the study carried out by Latif et al. Resilience is a protective factor that reduces the adverse effects of work-related stress. The results of the present study may be attributed to the reason that individuals with high resilience tend to be more confident in dealing positively to stress. Resilient teachers experience less stress level during the teaching learning process, and they are more efficient in utilizing resources from the environment. Resilient teachers demonstrate an unwavering commitment to their profession despite the inherent difficulties, fostering a sense of perseverance and dedication that contributes to a positive work environment.

**Implications and Limitations**

Inclusive classrooms demand a unique set of skills and a deep commitment to meeting the diverse needs of every student. While developing a generalized approach that makes teaching and learning a joyful experience, importance has also been given to the teacher's point of

view. Appropriate interventions and training programs given to teachers to equip them to the changing demands of education will enhance the quality of life of the educators, as well as the educated. As such, the role of work hope and resilience in supporting special education teachers in inclusive classrooms seems crucial. Educational institutions and administrators should recognize the importance of creating a conducive environment that promotes work hope through professional development opportunities, mentorship programs, and acknowledgment of teachers' achievements. Simultaneously, efforts should be directed towards building resilience by offering resources for stress management, establishing supportive networks, and promoting a culture that values the well-being of educators.

## Conclusion

To conclude, the present study implies that there exists a negative relationship between hope and occupational stress among special education teachers in inclusive classrooms. It also reveals that there exists a negative correlation between resilience and occupational stress among special education teachers in an inclusive classroom. An important finding of the study is that it gives a negative relationship between resilience and occupational stress which is inconsistent with most of the previous literature. Thus, more attention can be focused on finding out about their exact relationship and the variables that best explains them. Also, the concept of inclusion is an emerging field, therefore it can be concentrated more to have constructive thoughts and models in various other sectors.

## References


1. *Adigun, O. T., Tijani, F. A., Nzima, D. R., &Vivekanantharasa, R. (2021, November). Perceived Stress of Special Education Teachers in the Context of the Person-Environment Relationship. The Open Psychology Journal, 300-309.*
2. *Candeias, A., Galindo, E., Calisto, I., &Borralho, L. (2020, November). Stress and Burnout in teaching. Study in an inclusive school workplace. Research gate.*
3. *Hargreaves, A. P., & Shirley, D. L. (Eds.). (2009). The Fourth Way: The Inspiring Future for Educational Change. Corwin Press.*
4. *Kaur, I. P. (2017, Aug-Sep). A Study of Occupational Stress among Special Education School Teachers. Scholarly Research Journal for Humanity Science and English Language, 4/23.*
5. *Latif, A., Ali, D. R., Shahzad, D. S., Hussain, D. S., Manj, M. H., & Akram, S. (2021). A Correlational Investigation of Resilience and Job Stress Among Public and Private School Teachers at Secondary Level. Webology (ISSN: 1735-188X).*
6. *Mishra, U. S., Patnaik, S., and Mishra, B. B. (2016). Role of hope in job satisfaction and stress. International Business Management, 10(9), 1729-1736.*
7. *Sklavaki, D. (2022, July). Study of the Effectiveness of Special Education Teachers on the Promotion and Implementation of Integration Practices. Open Access Library Journal, 7.*
8. *Sucan, S. (2019, March 18). The Relationship Between Hope and Perceived Stress in Teacher Candidates. International Journal of Higher Education.*
9. *Tyagi, V. (2021, July). Occupational Stress and Wellbeing Among Special Educators. The International Journal of Indian Psychology, 9(3).*
10. *Westwood, P. (2018). Inclusive and Adaptive Teaching: Meeting the Challenge of Diversity in the Classroom. Routledge.*
11. *World Health Organization. (2003). Creating an Environment for Emotional and Social Well-being: An Important Responsibility of a Health Promoting and Child-Friendly School. World Health Organization.*
12. *Zhang, M., Bai, Y., & Li, Z. (2020). Effect of Resilience on the Mental Health of Special Education Teachers: Moderating Effect of Teaching Barriers. Psychology Research and Behavior Management, 537-544.*


Research Paper

Basic research is what I am doing when I don't know what I am doing.

*- Wernher von Braun*

Highly organized research is guaranteed to produce nothing new."

*- Frank Herbert, Dune*

Research is formalized curiosity. It is poking and prying with a purpose.

*- Zora Neale Hurston*

# EXPLORING THE INTEGRATION OF ARTIFICIAL INTELLIGENCE IN PERSONALIZED LEARNING ENVIRONMENT

Article


***ABSTRACT***

*This article provides a thorough exploration of the integration of artificial intelligence (AI) into personalised learning, tracing the historical evolution of education from a teacher-centric to a student-centric approach. It highlights the transformative impact of personalised learning and underscores the role of AI in enhancing its accessibility and efficiency. The article examines the advantages of AI in education, emphasising its ability to streamline administrative tasks, offer personalised feedback, and create engaging learning experiences. Challenges, such as privacy concerns and educator resistance to change, are also acknowledged. The article envisions the future of education at the intersection of AI and personalised learning, stressing the importance of a balanced approach that preserves essential human elements.*



***Key Words:*** *Personalised Learning, Artificial Intelligence, Natural Language Processing, Intelligent Tutoring Systems.*


## Introduction

Throughout human history, the pursuit of knowledge has been integral to our development. In prehistoric times, learning was experiential, focused on survival skills. As human intelligence evolved, our cognitive abilities showcased remarkable adaptability. The formalisation of education began around 3000 BCE, with teachers emerging as crucial figures. Initially, a uniform curriculum was applied to all students, assuming consistent cognitive capacities. However, personalised learning traces back to the 16thcentury, with Jean-Jacques Rousseau advocating for individualised education. The shift to a student-centric approach accelerated in the 20th century, culminating in the widespread adoption of personalised education. The USDOE National Education Technology Plan in 2010 defined personalization as tailored instruction, and modern technology, particularly Artificial Intelligence (AI), has greatly expanded its feasibility. AI-driven platforms analyse student data, offering personalised content, methods, and resources. Intelligent Tutoring Systems and AI chatbots contribute to individualised learning experiences, while AI streamlines assessments and feedback, transforming the educational landscape.

## Understanding Artificial Intelligence and its relevance in Education

Artificial Intelligence (AI), coined by John McCarthy in 1956, is a rapidly evolving field that empowers machines to perform tasks requiring human-like intelligence. It involves developing computer systems replicating various cognitive functions, from learning to problem-solving. AI is categorised into Weak AI (Artificial Narrow Intelligence - ANI) and Strong AI (Artificial General Intelligence - AGI). In the 21st century, AI revolutionises education by playing a crucial role in administrative and academic aspects. AI simplifies tasks like admissions, scheduling, and assessments while proving invaluable in personalised education. Platforms like Khan Academy and Duolingo, powered by AI, deliver tailored content, addressing global challenges and making education more accessible and efficient.


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**Personalised Learning**

Definitions of personalised learning converge on key elements: a student-centric approach, flexible learning, mastery attainment, variable pacing, and fostering student agency. Personalization spans learning objectives, content, methods, pace, and context. Though the terms "personalised" and "individualised" learning are often used interchangeably, distinctions exist, with personalised learning benefiting marginalised groups by addressing unique needs. Theoretical foundations draw from Gardner's Multiple Intelligence Theory, Bruner's constructivism, Vygotsky's emphasis on social interaction, and Ryan & Deci's Self-Determination Theory. Personalised learning systems, aligning with Self-Determination Theory, enable students to progress at their own pace, promoting autonomy. The primary goal is to enhance engagement, address underachievement, and elevate educational standards by integrating meaningful activities into the curriculum. Empowering students through active participation in goal-setting and decision-making fosters a sense of ownership, resulting in optimal learning outcomes.

**The intervention of technology in personalised learning**

The influence of technology on personalised education traces back to Sydney Pressey's pioneering 'teaching machine' in the 1920s, evolving into Skinner's advanced version. These early personalised learning tools, akin to tutors, offered self-paced instruction without punitive measures. The commercialization of computers in the 1970s paved the way for computer-assisted instruction (CAI), enhancing motivation and achievement. Intelligent tutoring systems (ITSs), a sophisticated form of CAI utilising machine learning and AI, further advanced personalised learning. Technology facilitates diverse resources, utilising learning management systems for personalised content delivery and assessment. While personalised learning benefits special needs students, fosters inclusivity, and supports emotionally struggling or gifted learners, challenges like high costs, data privacy concerns, and limited digital literacy among educators and students persist.

**Integration of AI in Personalized Learning.**

Artificial intelligence (AI) has become integral in education, addressing challenges in providing one-on-one tutoring. While limited teacher availability hinders personalised instruction, AI enables educators to create tailored learning environment. Advancements in technology, from teaching machines to Automated Essay Scoring (AES) using deep learning and natural language processing, have transformed assessment methods. Smart cameras monitor classrooms for enhanced student engagement, while augmented reality, virtual reality, and simulations contribute to personalised learning. AI-driven Learning Management Systems analyse student data to integrate individual preferences. The Intelligent Tutoring System (ITS) employs natural language processing to offer real-time, personalised guidance and replicate a customised learning environment.

**Some of the strategies to incorporate artificial intelligence into personalised learning are:**

1. Adaptive Learning Systems: These systems engage with learners to create personalised resources and learning methods.
2. Learning Analytics: Tracking learner progress and performance, allowing teachers to tailor instructional materials to individual learning styles, skills, and competencies.
3. Predictive Analytics: Identifying patterns through machine learning algorithms to predict future learning needs and challenges, enabling proactive teacher intervention.
4. Intelligent Tutoring Systems: Technology-aided tutoring mimicking human interaction, providing personalised guidance, feedback, and support.
5. Chatbots for Support: AI-powered chatbots addressing learner queries and offering additional resources.
6. Gamified Learning with AI: Incorporating gamification to boost student engagement, tailoring game dynamics based on individual preferences and progress.
7. Natural Language Processing: Utilising deep-learning technology to understand students' language, enhancing feedback mechanisms and content customization.
8. Personalised Content Recommendations: AI-assisted learning management systems recommending personalised resources, materials, and activities.
9. Virtual and Augmented Reality: Creating immersive learning environments for hands-on experiences, enhancing learner engagement.

By implementing these strategies, educational institutions can establish a flexible and customised learning environment that caters to individual needs, ultimately enhancing overall academic performance.