International Journal of Scientific Research in Modern Science and Technology
ISSN: 2583 -7605 (Online)
© IJSRMST | Vol. 4 | Issue 8 | August 2025
Available online at: https://ijsrmst.com/
DOI: https://doi.org/10.59828/ijsrmst.v4i8.356

PERCEPTIVE OF ASSISTIVE TECHNOLOGIES IN INCLUSIVE EDUCATION: AN EXPLANATORY STUDY

Mr. Mrutyunjaya Pradhan[1], Dr. Surekha Jain[2]

[1]Research Scholar, Department of Education, Vikram University, Ujjain, Madhya Pradesh

[2]Principal, Department of Education Vikram University, Ujjain, Madhya Pradesh

[1]Email: mrutunjayapradhan1@gmail.com

[2]Email: jsurekha@gmail.com

ABSTRACT

The present study analyzes the perception of headmasters of special schools on assistive technologies in inclusive education in Odisha. Inclusive education is a global priority, ensuring that learners with diverse abilities receive equitable opportunities in mainstream classrooms. Assistive technologies play a key role by removing learning barriers, enhancing accessibility, and fostering independent participation of students with disabilities. This explanatory study examined the perspectives of 50 headmasters from 50 schools across Boudh and Sonepur districts of Odisha. A mixed-method approach was used to assess how assistive technologies are integrated into teaching-learning processes. Findings show that headmasters of the schools noted greater confidence and independence in their children, though concerns about cost, availability, and lack of technical expertise were common. Teachers emphasized that effective use of assistive technologies requires training, institutional support, and policy-level commitment. The study concludes that assistive technologies can significantly strengthen inclusive education, provided there is sustained investment, collaboration between educators and parents, and continuous professional development. The insights generated add to the discourse on equity and innovation in education, offering practical recommendations for policymakers, schools, and stakeholders aiming to build more accessible and inclusive learning environments.

Keywords: *Assistive technologies, inclusive education, headmasters.*

1. INTRODUCTION

Education is a fundamental right and a powerful tool for social transformation. In recent decades, the philosophy of **inclusive education** has gained prominence across the globe, emphasizing the need to create learning environments where all children irrespective of their physical, cognitive, sensory, or socio-emotional differences can participate meaningfully. Inclusive education aims to eliminate barriers, promote equality, and ensure that every learner has the opportunity to develop their potential within mainstream classrooms. Within this context, **assistive technologies** have emerged as a crucial support system for learners with diverse

abilities. Assistive technologies refer to a broad range of tools, devices, and digital solutions such as screen readers, speech-to-text software, hearing aids, mobility aids, and customized learning platforms that enable students with disabilities to overcome challenges and engage more effectively in academic and social activities. These technologies not only facilitate access to curriculum but also empower learners by enhancing independence, communication, and confidence.

The impact of assistive technologies in inclusive education is multi-dimensional. On one hand, Assistive technologies contribute to reducing disparities and bridging the gap between differently-abled learners and their peers. On the other hand, they challenge schools and educators to adapt teaching methods, infrastructure, and assessment strategies to fully harness their potential. While many success stories highlight improved participation and performance of students with disabilities, gaps still remain in terms of affordability, teacher training, and policy implementation.

2. REVIEW OF LITERATURE

Alhassan and Verma (2024) investigated on technology in special education, emphasizing the integration of assistive technology with educational applications. The results demonstrated that the integration of assistive technology and educational practices in special education markedly improves the capacity to foster inclusive, customized, and effective learning environments. Through the promotion of continuous collaboration and research, educators can utilize technology to address diverse learning needs and improve academic performance. The integration of assistive technology with educational applications can create a robust support system for children with special needs, tackling their many challenges and improving their learning experience.

Rajesh, Yogarajan, and Sivakumar (2023) investigated the importance of assistive technology and information and communication technology for students with intellectual disabilities. The study sought to clarify the potential of ICTs and ATs to improve and support the education of individuals with disabilities, including intellectual disabilities and Down Syndrome. Information and Communication Technologies may function as a means to aid these persons in overcoming their challenges. One hundred samples consisted of special educators employed at institutions for children with intellectual disabilities in the southern districts of Tamil Nadu. Statistical analysis was performed by calculating Pearson’s Product Moment Correlation Coefficient. The research revealed a substantial association between the cognitive, psychomotor, and social capabilities of learners with intellectual impairments and the utilization of ICTs and ATs.

Sindhwani (2021) investigated educators' perceptions regarding the implementation of ICT in education. The study's primary findings reveal that all prospective teachers, irrespective of gender, exhibit a positive attitude towards ICT; this is consistent for both male and female prospective teachers in the Science and Arts streams. Moreover, there exists no substantial difference in ICT views between male and female prospective teachers, regardless of whether they are in the Science stream, the Arts stream, or when both streams are considered together.

Chudasama, Jadeja, and Maheta (2006) investigated the effects of the Integrated Education for Disabled Children (IEDC) initiative within the SSA framework. Their findings revealed that training was conducted

and that 50% of trainees were adequately informed about disabilities, as reported by BRCCs. The headteachers observed that practically all teachers were trained under the IEDC plan. Seventy-seven point four percent of headteachers believed that teachers were knowledgeable about disability and possessed adequate information regarding the specific care required for impaired pupils. Guardians (59.7%) were acquainted with the 'Equipment-kit' supplied to children with disabilities. Fifty-one point six percent of parents indicated that ramps were available in the schools. Certificates were awarded to disabled youngsters. 93.3% of schools lacked facilities for transporting children with disabilities. All headteachers indicated that they had not received IEDC materials intended to raise community awareness regarding disabilities.

Morogo (2022) examined the essentials over a decade, during which the KICD, educators, and the government have made significant expenditures in delivering ICT-based instruction to facilitate learning in an inclusive environment. Information and Communication Technology has significantly impacted classroom learning. The findings indicated that ICT tools and devices substantially facilitate the development of platforms that equitably address student diversity. The research recommends that the government formulate a comprehensive strategic plan for the integration of ICT in inclusive classrooms, and that MoEST and KICD conduct monthly seminars for teachers to ensure uniform and equitable learning opportunities.

Denechin and Boutard (2021) analyzed the integration of ICT in inclusive education and the obstacles to its application in the classroom. Denechin and Boutard (2021) examined the incorporation of ICT in inclusive education and the challenges to its implementation in the classroom. Key findings reveal that although ICT has considerable potential to improve the inclusion of children with disabilities in education, it cannot eradicate all barriers, including inadequate facilities and discrimination against these children. The application of ICT in inclusive education programs significantly bolsters initiatives aimed at overcoming these barriers. Information and Communication Technology (ICT) can improve the inclusion of educational institutions, enabling them to achieve their fundamental purpose of delivering knowledge, skills, and attitudes to all students equitably. (c) ICT provided educators with a varied selection of educational materials and activities, guaranteeing accessible for all students.

3. OBJECTIVES OF THE STUDY

1. To study the perception of Headmasters towards integration of ICT in special education.

4. RESEARCH QUESTION

1) What are the levels of awareness among Headmasters on the use of ICT in special education?
2) How do the Headmasters perceive the effectiveness of ICT in enhancing the teaching learning process for special needs learner?

5. HYPOTHESIS

H_{01}: There is no significant difference in the perception of Headmasters towards integration of ICT in special education with respect to gender.

H_{02}: There is no significant difference in the perception of Headmasters towards integration of ICT in special education with respect to location.

6. METHODOLOGY

1) METHOD

For the above study, the investigator has adopted descriptive cum survey as well as quantitative and qualitative method of educational research as the study based on existing phenomenon.

2) POPULATION

The research population comprised 30 districts, 314 blocks, 104 special education schools in Odisha.

3) SAMPLE AND SAMPLING

i) The current study included both random and purposive sampling methods to choose the sample. Purposive sampling was frequently employed to choose the sample from Odisha. The entire sample is categorized into three groups: Headmasters (HMs) Fifteen districts of Odisha were selected by a lottery system based on random sampling from a total of thirty districts. To enhance the representativeness of the sample, all 30 districts of Odisha were first categorized into three revenue divisions: southern, central, and northern.

ii) In the subsequent phase of sample selection, a purposive sampling approach was employed to pick 50 special education institutions. A total of 50 headmasters both male and female, were purposively picked from 50 special education schools across three revenue divisions of Odisha.

4) TOOLS USED IN THE STUDY

Perception scale for Headmasters to collect data from the participants involved in special education to know the perception towards ICT integration in special education.

5) VARIABLES USED IN THE STUDY

(1) **Independent Variables:** gender, age group, educational qualification, special education training, location, teaching experience, socio-economic status (SES), and profession as independent variables.

(2) **Dependent Variable:** This study regarded perceptions, challenges, and uses as dependent factors.

6. ANALYSIS AND INTERPRETATION OF THE DATA

To study the perception of headmasters towards ICT integrated in special education, two research questions were formulated as well as two hypotheses were formulated. The research questions for the above cited study were (a) What are the levels of awareness among Headmasters on the use of ICT in special education (b) How do the headmasters perceive the effectiveness of ICT in enhancing the teaching learning process for special needs learner on the basis of research questions and hypotheses the data obtained from Headmasters and analyzed. The investigator used both descriptive and inferential statistics like Mean, SD, SE, SED, ‘t’ test and ANOVA to anylyse the perception of stakeholders as well as define the level/ range of perceptions of stakeholders

***H_1*: There is no Significant Difference in the Perception of headmasters towards integration of ICT in Special Education with respect to Gender, Location, Age, Special Education Training and Teaching Experience.**

Table No-01 :Level/ Range of Headmasters' Perception towards integration of ICT in Special Education

Sl. No.	Level	% of Scores (N= 50)
1	High	18 (36%)
2	Average	28 (56%)
3	Low	04 (08%)

Table.No-01.revealed that as per the headmasters' responses, 36% of headmasters were high level perception towards integration of ICT in special education; 56% of Headmasters were average level perception towards ICT integration in special education. Further, it revealed that 8% of Headmasters were low level perception against ICT integration in special education. From the above analysis, it is found that Headmasters were positive towards ICT integration in special education.

Table No-2 Level/ Range of Headmasters' Perception towards integration of ICT in Special Education on the basis of Variables

Sl. No.	Level	Variables	Group	n	% of Scores (N= 50)
1	High	Gender	Male	31	11 (35.48%)
			Female	19	07 (36.84%)
		Location	Rural	28	12 (42.86%)
			Urban	22	06 (27.27%)
		Age	30-39	11	04 (36.36%)
			40-49	13	05 (38.46%)
			50 and Above	26	09 (34.62%)
		Special Education Training	Trained	42	15 (35.71%)
			Untrained	08	03 (37.5%)
		Teaching Experience	0-10	15	06 (40%)
			11-20	14	04 (28.57%)
			21 and Above	21	08 (38.10%)
2	Average	Gender	Male	31	19 (61.29%)
			Female	19	09 (47.37%)
		Location	Rural	28	14 (50%)
			Urban	22	14 (63.64%)
		Age	30-39	11	05 (45.45%)
			40-49	13	07 (53.85%)
			50 and Above	26	16 (61.54%)
			Trained	42	24 (57.14%)

		Special Education Training	Untrained	08	04 (50%)
		Teaching Experience	0-10	15	07 (46.67%)
			11-20	14	09 (64.29%)
			21 and Above	21	12 (57.14%)
3	Low	Gender	Male	31	01 (3.23%)
			Female	19	03 (15.79%)
		Location	Rural	28	02 (7.14%)
			Urban	22	02 (9.09%)
		Age	30-39	11	02 (18.18%)
			40-49	13	01 (7.69%)
			50 and Above	26	01 (3.85%)
		Special Education Training	Trained	42	03 (7.14%)
			Untrained	08	01 (12.5%)
		Teaching Experience	0-10	15	02 (13.33%)
			11-20	14	01 (7.14%)
			21 and Above	21	01 (4.76%)

Table no-2 revealed that the opinions of the headmasters on the use of ICT in special education differed depending on a number of factors. Gender-wise, a slightly higher proportion of women (36.84%) than men (35.48%) had a high level of perception, whereas a larger proportion of men (61.29%) fell into the average category. In terms of location, headmasters in rural areas (42.86%) were more likely to fall into the high category than those in urban areas (27.27%), while headmasters in urban areas (63.64%) were more likely to fall into the average range. Headmasters between the ages of 40 and 49 had the highest high-level perception in terms of age (38.46%), but the average perception rose with age, reaching 61.54% among those over 50. Untrained (37.5%) and trained (35.71%) headmasters had similar high-level scores, indicating little difference in special education training; however, trained headmasters had slightly fewer negative perceptions. The highest high-level perception was reported by those with 0–10 years of teaching experience (40%) and the highest average perception by those with 11–20 years (64.29%). The results generally showed that perception levels were influenced by demographic factors, with middle-aged groups, those living in rural areas, and those in early career stages exhibiting comparatively higher high-level perceptions regarding ICT integration in special education.

Table no-3 : Mean, SD and SE of Headmasters' Perception towards integration of ICT in Special Education

Participants	**N**	**Mean**	**SD**	**SE**
Headmaster	50	131.2	14.715	2.081

The overall mean, standard deviation, and SE of Headmasters are shown in Table no 3 According to the above table, the mean score for headmasters' perception was 131.2, with a standard deviation of 14.715 and a SE of 2.081. With a mean score of 131.2 on the entire scale, headmasters' opinions about the use of ICT in special education were largely favorable. According to the results, the sample mean was a good indicator of the population mean. This finding demonstrated that headmasters generally had a favorable opinion of ICT's role in special education.

Table No-4 :Perception of Headmasters towards integration of ICT in Special Education

Variables	**Group**	**N**	**Mean**	**SD**	**SED**	**df**	**'t' Value**	**F Value**	***'P' Value***
Gender	Male	31	132.81	11.990	4.289	48	0.986		0.329
	Female	19	128.58	18.389					
Location	Rural	28	132.25	14.686	4.222	48	0.565		0.575
	Urban	22	129.86	14.987					
Age	30-39	11	128.91	20.681	6.235	B 2 W 47		0.169	0.845
	40-49	13	131.54	13.727	3.807				
	50+	26	132	12.643	2.479				
Special Training	Trained	42	131.67	14.741	5.720	48	0.510		0.612
	Untrained	08	128.75	15.323					
Teaching Experience	0-10	15	132.00	18.377	4.745	B 2 W 47		0.184	0.833
	11-20	14	129.14	12.931	3.456				
	21+	21	132.00	13.465	2.938				

Table no-4 revealed that headmasters' opinions regarding the use of ICT in special education were not substantially different across the variables under investigation. Male headmasters (M = 132.81) scored marginally higher than female headmasters (M = 128.58), but the difference was not statistically significant (t=0.986, p=0.329). Rural headmasters (M = 132.25), with no significant difference (t = 0.565, p = 0.575), scored slightly higher than urban headmasters (M = 129.86, SD = 14.99) in terms of location. The mean scores for the age groups of 0–39 years (M = 128.91), 40–49 years (M = 131.54), and 50+ years (M = 132.00) were all very close, with no significant difference (F = 0.169, p = 0.845). Additionally, there was little difference between headmasters who had received special education training (M = 131.67) and those who had not (M = 128.75; t = 0.510, p = 0.612). There was no significant difference in the mean scores of the teaching experience groups with 0–10 years (M = 132.00), 11–20 years (M = 129.14), and 21+ years (M = 132.00) (F = 0.184, p = 0.833). Overall, the results showed that headmasters' perceptions were not significantly impacted by any of the demographic factors.

7. RESULTS AND DISCUSSION

Results

Thable no -1 showed that out of 50 headmasters, 36% had a high level of perception, 56% had an average level, and only 8% reported a low level of perception regarding ICT integration in special education. This finding indicates that a majority of headmasters demonstrated either average or high perceptions, suggesting a generally positive outlook towards the role of ICT in special education.

Further, Table No-2 revealed the distribution of perception levels across gender, location, age, training, and teaching experience. Female headmasters (36.84%) showed slightly higher high-level perception than male HMs (35.48%). Rural headmasters demonstrated stronger high-level perceptions (42.86%) compared to their urban counterparts (27.27%), although urban HMs leaned more towards average perception (63.64%). Across age groups, middle-aged HMs (40–49 years) displayed the highest high-level perception (38.46%), while those aged 50 and above showed the highest average perception (61.54%). Training in special education did not significantly alter high-level perception, with trained (35.71%) and untrained (37.5%) headmasters scoring similarly. Teaching experience showed that early-career HMs (0–10 years) had the highest high-level perception (40%), whereas those with 11–20 years of experience were predominantly in the average category (64.29%).

The overall mean perception score of headmasters was 131.2 (SD = 14.715, SE = 2.081), as presented in Table 4.69. This mean score indicates that the sampled Headmasters perceptions were favorable and that the sample mean adequately represents the population mean.

Discussion

The results suggest that headmasters generally have favorable perceptions towards the integration of ICT in special education. A majority of headmasters fell in the average-to-high perception range, reflecting awareness of the importance and potential of ICT in enhancing special education practices.

The lack of significant differences across demographic variables is an important finding. It implies that positive perceptions about ICT in special education are widespread among headmasters regardless of gender, location, age, training, or teaching experience. This uniformity suggests that ICT's perceived value in special education is recognized broadly, independent of background characteristics.

Although descriptive analysis showed some variation—for example, rural headmasters demonstrating higher high-level perceptions than urban headmasters, and early-career headmasters displaying more optimism than their experienced counterparts—the inferential statistics confirmed that these differences were not statistically significant. This indicates that while personal or contextual factors may shape individual opinions, they do not exert a systematic or strong influence on overall perceptions.

The findings also highlight a crucial aspect: special education training did not make a significant difference in shaping perception. This may point to a need for more comprehensive ICT-focused training modules in professional development programs, so that headmasters not only recognize ICT's importance but also gain deeper pedagogical skills for effective implementation.

8. IMPLICATIONS OF THE STUDY

1. **Policy and Planning:** The positive outlook of stakeholders suggests that policymakers can confidently integrate ICT into special education curricula and school management practices. Government and education departments should frame specific ICT policies for special education to ensure uniform access, funding, and training.
2. **Professional Development of Teachers and Headmasters:** Although training did not create significant differences in perception, it is important to strengthen ICT-related training modules in pre-service and in-service programs. Continuous professional development workshops should focus not only on basic ICT skills but also on its pedagogical applications in diverse special education settings.
3. **School Leadership and Management:** Headmasters' favorable perception indicates that they can act as change agents for ICT integration. Educational administrators should empower school leaders by providing resources, technical support, and leadership training to implement ICT effectively in classrooms for children with special needs.
4. **Curriculum Design and Pedagogy:** Curriculum developers should incorporate ICT-enabled teaching-learning strategies that are inclusive and adaptive to the needs of children with different disabilities.ICT tools such as assistive technologies, audio-visual content, screen readers, and interactive software can be systematically embedded in teaching methodologies to improve accessibility and engagement.
5. **Parental Involvement:** Since parents showed positive perceptions, schools can involve them more actively in ICT-based educational activities. Parent orientation programs can be organized to train them in using ICT at home, thereby creating continuity between school and home learning environments.
6. **Bridging Rural–Urban Divide:** The descriptive findings showed rural HMs had slightly higher high-level perceptions than urban HMs. This suggests opportunities to strengthen ICT infrastructure in rural schools, as favorable perceptions can drive faster adoption if resources are provided. Equity in ICT infrastructure between rural and urban schools is essential to avoid digital gaps.
7. **Inclusive Practices:** ICT can be used as a tool for inclusive education by reducing barriers to learning for children with disabilities. Schools can use ICT for individualized education plans (IEPs), differentiated instruction, and inclusive classroom activities, making education more equitable.
8. **Future Research and Evaluation:** The study provides a foundation for further research on the actual *use* and *effectiveness* of ICT in special education classrooms. Longitudinal studies may be conducted to evaluate whether positive perceptions translate into effective practices and improved learning outcomes for students with special needs.

9. CONCLUSION

In conclusion, the study emphasizes that ICT integration in special education is both possible and desirable. With proper training, infrastructure, and policy support, ICT can transform inclusive education and ensure equitable opportunities for all learners The present study examined the perceptions of headmasters, teachers, and parents towards the integration of ICT in special education. The findings revealed that most

headmasters reported average to high perceptions of ICT, with only a small proportion showing low perceptions, indicating an overall favorable attitude. Analysis across variables such as gender, location, age, training, and teaching experience showed no significant differences, confirming the hypotheses. This suggests that ICT is widely accepted as a valuable tool in special education, irrespective of demographic factors. Teachers and parents also expressed positive views, highlighting ICT's role in improving student engagement, accessibility, and independence. The results underline the need to strengthen ICT-focused training, as both trained and untrained headmasters reported similar perceptions. While differences were not statistically significant, rural schools and early-career educators showed slightly higher optimism, offering insights for policy makers.

REFERENCE

[1]. Abed, M. (2018). Teachers' perspective surrounding ICT use amongst SEN students in the mainstream educational setting. *World journal of education*, 8(1), 6-16, ISSN 1925- 0746.

[2]. Adam, T.& Tatnall, A. (2017). The value of using ICT in the Education of school students with learning difficulties. *Education and information technologies*, 22(6), ISSN:1360-2357,2711-2726.

[3]. Alhassan, K. & Verma, S.(2024). Technology in special education: Integration of assistive technology and educational apps. *International journal of social impact,*9(1),65-73, ISSN 2455-670X.

[4]. Alnadi, G. (2014). Assistive technology in special education and the universal design for learning. *The Turkish online journal of Educational tecjhnology*,13(2),18-23.

[5]. Asiri, A.(2020). Teachers' perception of educational administers support for inclusive education. *Journal of Education and Learning*,9(6),112-120, ISSN 1927-5250.

[6]. Avramidis, E., Bayliss, P.& Burden, R. (2000). *Educational psychology*,20(2),191-212, ISSN 0144-3410.

[7]. Bas, G. & Sunbul, A. (2016). Teachers' perception towards ICTs in teaching -learning process" scale validity and reliability study. *Science direct*, 61,176-185.

[8]. Bas, G. (2017). Perception of teachers about ICT: A study of metaphor Analysis.

[9]. *Contemporary educational technology*,8(4).319-337.

[10]. Batanero, J.& Ruiz, M. (2016). ICT and inclusive education: Attitude of the teachers in secondary education. *Journal of technology and science educatio*n,6(1),24.

[11]. Cagiltay, K.,Cakir, H & Cicek, F. (2019). Use of educational technology in special education: perceptions of teachers. *Participatory educational research*, 6(2),189-205, ISSN 2148-6123.Cao, C.(2019). Information and communication technologies in inclusive education: selected practices in Asia. *Journal of Education and learning*, 8(6), 159-168, ISSN 1927- 5250.

[12]. Chaidi, I., Drigas, A.& Karagiannidis, C.(2021). ICT in special Education. *Technium social sciences journa*l,23,187-198, ISSN:2668-7798.

[13]. Das ,G .(2020). Challenges of using ICT for Inclusive Education in North East India. *The online journal of distance education and e-learning*,8(3),133-141.

[14]. Das, G. (2020). Challenges of using ICT for Inclusive education in North east India. *The online journal of distance education and e- learning*, 8(3),133-141.

[15]. Das, R. (2023). ICT In Special Education: A Review.*International Journal of Creative Research Thoughts*,11(8),533-539, ISSN: 2320-2882.

[16]. David, A.&Tzelpi, E. (2023) ICTs in education for deaf and hard -of-hearing learners. *World journal of biology pharmacy and Health sciences*,14(3),226-236, ISSN 2582-5542.

[17]. David, A.&Tzelpi, E. (2023). ICTs in education for deaf and hard-of-hearing learners. *World journal of Biology pharmacy and Health sciences*, 14(3),222-236, ISSN 2582-5542.

[18]. Denechin, E. & Altai, E. (2021). Information and communication Technologies and Inclusive Education. *Publication of humanity& inclusion.*

[19]. Drigas , S.&Loannis. (2004). Online and other ICT s applications for teaching Math in Special education. *International Journal of Educational Sciences*,2(4),46-53.

[20]. Eskay & Anyanwu, J.(2013). Implementation of information and communication technology in Inclusive education in Nigeria: future perspective. *International journal of computer science issues*, 10(4), 317-3255, ISSN 1694-0814.

[21]. Faiz, Z., Jameel, H.& Hamid, A.(2020). Teachers precepting regarding the role of ICT in inclusive education. *Pakistan journal of Distance & online Education*, 6(1),266-277.

[22]. Fanai, L.&Chhangte, R (2016). A study of the attitude of the Secondary school teachers towards ICT with respect to teaching experience and professional qualification. *International Journal of Engineering science and computing* ,6(8),2878-2880.

Cite this Article

Mr. Mrutyunjaya Pradhan, Dr. Surekha Jain, Perceptive of Assistive Technologies in Inclusive Education: An Explanatory Study, *International Journal of Scientific Research in Modern Science and Technology (IJSRMST), ISSN: 2583-7605 (Online), Volume 4, Issue 8, pp. 56-66, August 2025.*

Journal URL: *https://ijsrmst.com/*

DOI*: https://doi.org/10.59828/ijsrmst.v4i8.356.*

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.