

Implementation of ICT in Government and Private Higher Secondary Schools in Balangir: A Comparative Study

Gitanjali Naik^{1*} & Pratik Darjee¹

^{1*} Assistant Professor of Education, Rajendra University, Balangir, Odisha, India

¹ M.A. Education Student, Rajendra University, Balangir, Odisha, India

*Email: gitanjalinaik33898@gmail.com

Abstract

Even though the use of Information and Communication Technology (ICT) is increasing, resource management, along with the institutional context, plays a prominent role in its educational role, resulting in dissimilarities in the digital integration among the schools. The main purpose of this research was to compare the implementation of ICT between government and private higher secondary schools in Balangir block based on four aspects: availability of tools, use, impact on academics, and problems encountered by the students. A descriptive comparative survey design was used for this study. A total of 70 higher secondary students participated, out of which $n=35$ and $n=35$ belonged to government and private schools, respectively. Primary data were gathered from the participants through the structured Likert scale questionnaire. Descriptive analyses such as the computation of percentages were utilized to present the pertinent results. Meanwhile, the inferential statistics, which included an independent-samples t-test, were performed to examine the difference between the government and private schools' students. The results revealed that disparities in the fundamental accessibility to ICT resources such as the computer lab and internet connection were non-existent between the two (2) higher secondary schools. However, there is an apparent variation in relation to the availability of the interactive classroom display. Interestingly, the analysis revealed that there was no significant difference in daily digital activity and technical proficiency between the two (2) higher secondary schools. Furthermore, regardless of the school type, exposure to ICT resulted in a positive disposition towards learning and higher examination scores. Nevertheless, the major difference was found in the problems encountered by the students, in which government school students experienced more problems than private school students. It can be concluded that just placing the ICT tools in the academic environment is not enough to address the needs of the students in the 21st century. It is recommended that instead of acquiring more devices to facilitate learning in government schools, more resources must be allocated to address the issues in relation to the lack of proper teacher orientation and high charges for internet subscription.

Keywords: ICT Implementation, Digital Divide, Higher Secondary Education, Comparative Study, Educational Technology, Balangir Block.

1. INTRODUCTION

In the 21st century, technology has completely changed; it has changed the way of living the people who we are. Nowadays, technology plays a crucial role in our daily life; it is used in every sector to improve lifestyles and solve problems. The way of teaching and learning has shifted from rote memorization to understanding and reflective forms. With the advancement of this era and its current needs, the National Education Policy (NEP) 2020 marked that sticking with old

methods like chalk and blackboard won't be enough to provide quality education to this young generation. Generally, people think that private schools are much better than government schools due to their facilities and qualities like computer labs and smart classes. In Odisha, the government's recent 5T school transformation initiatives changed the scenario and perspective of people; through this initiative, government higher secondary schools are now getting smart classrooms and modern facilities like private institutions. This paper studies the current scenario in Balangir district and how both government and private higher secondary schools are using technologies (ICT) in their institutions.

Looking beyond the local situation, it is evident that while technology has reshaped education, it has also created a clear 'digital divide' (Pallavi & Amin, 2025). This gap is not just about who has physical access to computers, but also about the skills and resources needed to actually learn in a digital environment (Pallavi & Amin, 2025). Studies consistently show that private schools enjoy much better access to technology than government schools (Korsah et al., 2025). For example, private secondary schools often implement ICT at more than double the rate of public schools. This gives their students more chances to use technology for everyday tasks like making presentations and submitting assignments (Asaolu & Fashanu, 2012; Zia, Naz, & Qureshi, 2017). Building on these foundational findings, the current study recognizes that at the higher secondary (+2) level, this digital access becomes even more critical as students urgently need the internet to prepare for competitive entrance exams and advanced practicals. Meanwhile, government schools regularly struggle to bring basic digital tools into their classrooms. There are various issues like poor infrastructure, broken computers, and regular power outages (Asaolu & Fashanu, 2012; Pallavi & Amin, 2025).

That's why the outcomes become different in usage and implementation for students in government and private schools. Due to better resources and support, students in private schools report that ICT helps them learn much more efficiently. They also show stronger communication skills and a higher interest in their studies (Pallavi & Amin, 2025; Zia, Naz, & Qureshi, 2017). However, bringing technology into schools without proper planning can have downsides too, like physical health issues or students becoming too dependent on their devices (Shilpa & Sunita, 2018). But having the right equipment is only one side of it. While past literature notes that teacher confidence and training play a major role in running a digital class (Korsah et al., 2025; Sar & Misra, 2019), the ultimate measure of an initiative's success is whether the students themselves are actually allowed to use and benefit from these tools. By evaluating these specific student-level issues at the higher secondary level in Balangir District, this study hopes to figure out if programs like the 5T initiative are actually managing to close the digital gap for the learners. "It seems that ICTs have taken a central position, occupying a diverse human nature. It is a new paradigm, opening different means of electronic communication and circulating information to the minds of people, in various ways" (Oyewole, 2014).

2. SUMMARY OF LITERATURE REVIEW

Information and Communication Technology (ICT) has been recognized as an essential aspect of the modern-day schooling system, which facilitates access to information, communication, cooperation, self-directed learning, and digital literacy. Nevertheless, based on the literature review, it is clear that the educational potential of ICT depends not only on the presence of technology but also on its accessibility, applicability, and frequency of utilization. According to Mooi (2011), there exists huge diversity in ICT accessibility in schools, which varies from well-equipped and connected schools to those that have little or no technological facilities at all. At the same time, Asaolu et al. (2012) pointed out the differences in ICT availability and preparedness in public and private high schools.

Comparative research further suggests some differences in the experience of ICT in government and private schools. Singh & Mishra (2013) observed a significant difference in terms of the influence of ICT on students studying in government and private schools, whereas Zia et al. (2017) found differences in access, usage, and learning outcomes related to ICT between public and private school students. In a more recent study, Pallavi & Amin (2025) observed that private school students benefited more academically through the use of ICT compared to government school students. Together, these studies demonstrate that the digital divide is still present among different school types. However, the majority of studies have only examined the general impact of ICT or accessibility rather than the availability of ICT, learning-oriented use by students, and barriers collectively. There is also research that reveals the presence of ICT facilities does not ensure its educational use. Flores et al. (2017) argued that the availability of computers and internet connection is not enough for effective ICT integration, and

Palagolla & Wickramarachchi (2019) highlighted training, perception, ICT anxiety, leadership, and organizational supports as important determinants of ICT use. This difference becomes clear when considering Odisha. In assessing the ICT Scheme in Odisha, Sar and Misra (2019) have found a high degree of ICT equipment and functioning laboratories and a wide variation in the use of digital content between the districts of Odisha. This means that availability of infrastructure and utilization of it are two different facets of ICT integration. However, their research is focused on implementation of the scheme and does not make comparisons of government and private higher secondary schools from the students' perspective. Research done by Haque et al. (2017), Doley (2021) and M.V. et al. (2024) also proves that ICT usage is determined by infrastructure, training, institutional context, and individual factors of the learners. But, at the same time, all the current literature on the topic consists of research done on primary, secondary, and university levels, and it is hard to apply their results to higher secondary students. As they start relying more and more on ICT in learning subjects, assignments, preparing for examinations, searching for information, and self-study, it is necessary to study the actual availability of ICT among them.

There is also a need to consider specific problems faced by students in relation to their ICT use. Previous researchers have highlighted various barriers such as lack of proper infrastructure, inadequate connectivity, lack of training, ICT phobia, and institutional support, but only a few have considered comparing the problems faced by students from both government and private higher secondary schools. In addition, the use of ICT has been studied in general without differentiating its academic use from other uses. Thus, there is a need to consider not only the fact that students use ICT, but the extent to which they use it in relation to learning. Based on the above findings from the literature review, it can be seen that there exists a digital divide between students from government and private schools in terms of availability, utilization, and capability to use technology for learning purposes. While previous studies have recognized the existence of this difference in relation to the availability and use of ICT by the two categories of students, only a limited number of them have done so in relation to both dimensions at once. Therefore, the rationale for conducting this study is to assess the availability of ICT.

Objective of the Study

1. To find out the availability and accessibility of ICT infrastructure to the students of higher secondary schools.
2. To compare ICT usage by the students of government and private higher secondary schools for learning purposes.
3. To find out the problems that the students of government and private higher secondary schools face in using ICT for academic purposes.

Hypothesis of the Study

H⁰¹ There is no significant difference in availability and accessibility of ICT infrastructure to students between government and private higher secondary schools.

H⁰² There is no significant difference in the frequency of ICT usage between government and private higher secondary school students.

H⁰³ There is no significant difference in ICT usage problems faced by students in government and private higher secondary schools for academic purposes.

3. METHODOLOGY

3.1 Research Design

For the present study, a descriptive survey method was adopted to assess the current status and availability of Information and Communication Technology (ICT) in higher secondary schools without manipulating any variables. A comparative approach was also employed to examine differences between government and private higher secondary schools, particularly in students' ICT utilization and the challenges they face in accessing and using ICT for academic purposes. A quantitative approach was adopted to obtain objective and measurable data. Students' responses were collected using a 5-point Likert scale, which helps the researcher to quantify their perceptions and experiences and conduct statistical comparisons between the two groups.

Population and Sampling

The population of the study consists of Arts students of Classes XI and XII studying in higher secondary schools in Balangir district of Odisha. The study includes students from both government and private schools and excludes

Science, Commerce, and Vocational students. A total of 70 students were selected for the study. 35 students were selected from Rajendra Higher Secondary School (Government) and 35 students from JSM Higher Secondary School (Private). Purposive sampling was used to select the two schools, while simple random sampling was used to select 35 Arts students from each school.

Tools and Techniques

A structured questionnaire was used to collect the data. It consisted of 25 questions based on a 5-point Likert scale and covered four areas: availability and access, ICT usage and literacy, impact on learning, and challenges faced by students. The questionnaire was administered digitally through Google Forms.

Procedure of Data Collection

The researcher personally visited the selected higher secondary schools in Balangir after obtaining permission from the school authorities. The purpose and objectives of the study were explained to the selected Arts students. The students were assured that their responses would be kept confidential and used only for research purposes. The questionnaire was administered online through Google Forms, and the link was shared with the students through their class WhatsApp groups with the help of the respective teachers. The students were given sufficient time to complete the questionnaire and submit their responses online.

Statistical Techniques

The collected data will be analyzed using frequency, percentage, mean, standard deviation, and independent samples t-test. These techniques will be used to assess ICT availability, utilization, and challenges, and to compare government and private higher secondary school students.

4. ANALYSIS AND INTERPRETATION

The study used primary data collected from 70 higher secondary Arts students in the Balangir district. Out of the total respondents, 35 were government school students, and 35 were private school students. The data collection tool used was the use of five point scale response survey questionnaire. The responses were then coded numerically, and analysis was done using the mean and percentage.

Table 4.1 Gender-wise Distribution of the Respondents

Gender	Frequency (Number of Students)	Percentage (%)
Male	34	48.57%
Female	36	51.43%
Total	70	100.00

In Table 4.1. Among the 70 Arts learners included, females make up 36 individuals, which is 51.43%, while males account for 34, or 48.57%. Such proportions suggest a nearly equal split across sexes. As a result, insights on access to and use of information technology reflect views from both groups without strong bias toward one.

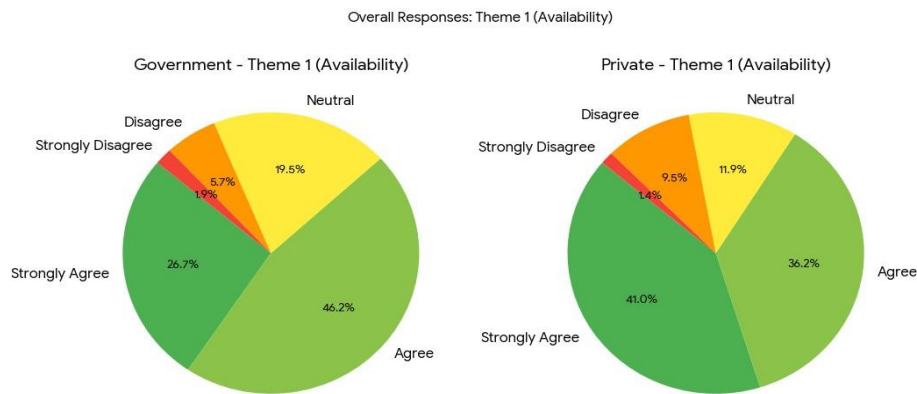
Table 4.2 Distribution of Respondents by Institution Type and Class

Demographic Variable	Category	Frequency (f)	Percentage (%)
Institution Type	Government School	35	50.00%
	Private School	35	50.00%
Class / Grade	11th (+2 First Year)	34	48.57%
	12th (+2 Second Year)	36	51.43%

Table 4.2 shows the group's makeup splits by school management and student year. Half come from government-run schools - specifically 35 out of 70 learners - while the remaining half study under private administration. Moving beyond administrative lines, nearly evenly split results emerge when examining grades: 36 sit in 12th standard, just slightly more than the 34 in 11th. Slight differences aside, proportions remain close enough to allow meaningful comparisons.

Figure 1.

Comparison of Students' Responses Regarding Theme-1 (The Availability of ICT)



Looking at Theme-I, at 41.0%, it towers over the government school share, which stops at 26.7%. So even though tech basics exist everywhere, conviction about its standard leans heavily toward private education. That confidence might stem from better gear - smartboards being one visible example.

Comparison of Theme 1 (ICT Availability)

While the pie chart (4.1) provided percentages of student responses, Table 4.3 presents a deeper statistical comparison using the Mean (M), Standard Deviation (SD), and the p -value from an independent samples t-test.

Table 4.3 Statistical Analysis and Comparison of Theme 1 (ICT Availability)

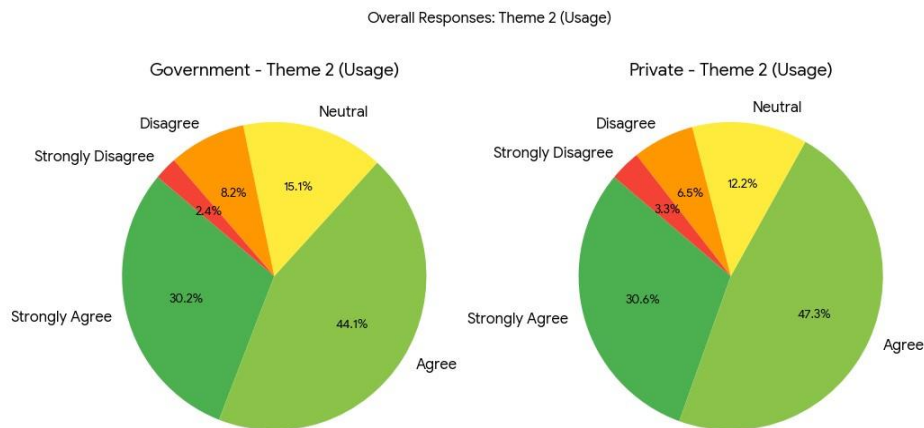
Sl. No.	Statements	Govt. Mean	Govt. SD	Private Mean	Private SD	t-value	p-value	Interpretation
1	Well-equipped computer lab	3.97	0.98	4.34	0.73	-1.796	0.077	Not Significant
2	Reliable internet on campus	4.29	0.67	3.97	0.98	1.562	0.123	Not Significant
3	Smartboards and projectors	3.69	0.99	4.51	0.78	-3.881	0.000	Significant
4	Access to devices at home	3.97	1.07	4.17	0.95	-0.825	0.412	Not Significant
5	Computers in good condition	3.94	0.76	3.83	1.01	0.533	0.596	Not Significant
6	Enough time for practicals	3.54	0.89	3.51	1.29	0.108	0.914	Not Significant
Total Average Score		3.90	0.51	4.06	0.76	-1.016	0.313	Not Significant

$p < 0.05$ = Significant; NS = Not Significant

Table 4.3 shows that access to ICT tools appears fairly strong in both education areas. On average, responses sit above 3.0 for nearly every factor, which suggests learners feel essential tech is available. Most indicators show agreement that fundamental digital setups exist where needed. Looking closely at each point reveals top marks went to dependable online access across campus alongside properly stocked computing labs. These results imply basic tools needed for tech-based study appear present in either setting. Still, one shared issue stands out - practice opportunities earned the weakest average grades from everyone surveyed. A widespread variation in responses here points to mixed experiences; although certain learners feel well supported, many others report limited chances to engage directly with equipment. Comparison at Government versus Private schools offers a clear snapshot of similarities and contrasts. The gap in average totals - Government at 3.90, Private at 4.06 - gave a p -value of 0.313. That number sits well above the usual 0.05 cutoff. So, no major divide shows up in overall ICT access across

both types of institutions. The table shows that there is no significant difference in Availability of ICT tools between government and private higher secondary schools. Therefore, the null hypothesis is rejected.

Pie-chart 4.2 Comparison of Students' Responses Regarding Theme-2 (ICT Usage and Digital Literacy)



Looking at theme-2, it can be seen that both pie charts, Government and Private schools, are almost identical. There are slight differences, but the majority of responses are in positive agreement. Approximately seventy-four percent in Government schools selected strongly agree and agree, while eighty percent did the same in the case of private schools. It can be concluded by looking at the pie charts that there is no noticeable difference between the two categories of students.

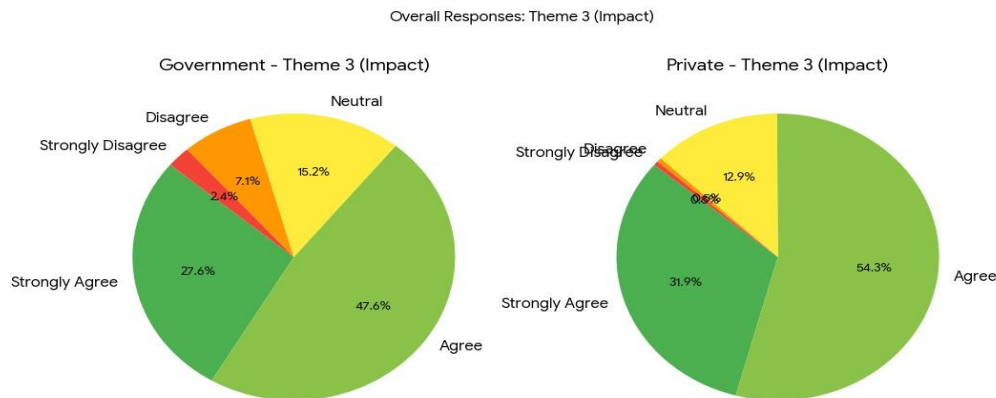
Table 4.4: Statistical Analysis and Comparison of Theme-2 (ICT Usage and Digital Literacy)

Sl. No.	Statements	Govt. Mean	Govt. SD	Private Mean	Private SD	t-value	p-value	Interpretation
1	Confidently operate basic software	4.14	1.00	4.06	1.08	0.34	0.732	Not Significant
2	Lecturers use smartboards/projectors	3.71	0.89	4.03	1.10	-1.31	0.194	Not Significant
3	Daily internet use for syllabus	4.11	0.90	4.09	0.78	0.14	0.888	Not Significant
4	Digital tools for competitive exams	3.89	1.11	3.31	1.35	1.94	0.056	Not Significant
5	Tech for practical records/projects	4.00	0.91	4.00	0.91	0.00	1.000	Identical
6	Watch educational YouTube videos	3.86	0.97	4.20	0.53	-1.83	0.073	Not Significant
7	Digitally submit assignments/tests	3.69	1.16	4.00	0.80	-1.32	0.192	Not Significant
	Total Average Score	3.91	0.49	3.96	0.56	-0.32	0.747	Not Significant

An analysis of the data using a t-test indicates that there are no significant differences in technology use between the groups. A p-value of 0.747 was found, which is much higher than the significance level of 0.05. Therefore, the differences found cannot be considered substantial. One of the groups tends to use technology for more educational purposes than the other (Government had better grades in exam preparation, $M = 3.89$ versus $M = 3.31$). However, these differences are not significant on a statistical level. Because of this, the idea that differences exist - that management type shapes digital habits - is set aside. Instead, evidence supports no real effect from school ownership on student engagement with digital tools under Theme-II. So

the null hypothesis is failed to rejected. Because it shows there are some differences in government and private higher secondary schools in the use of technology.

Pie-chart 4.3 Comparison of Students' Responses Regarding Theme-3 (Impact on Learning and Performance)



At Theme-III, the clearest pattern of approval emerges across the whole analysis. Heavily tilted toward favorable views, both visuals emphasize positive experiences. In private institutions, those selecting either “Agree” or “Strongly Agree” fill nearly nine out of ten segments - 86.2% in total - while negative responses barely register, summing to just 1.0%.

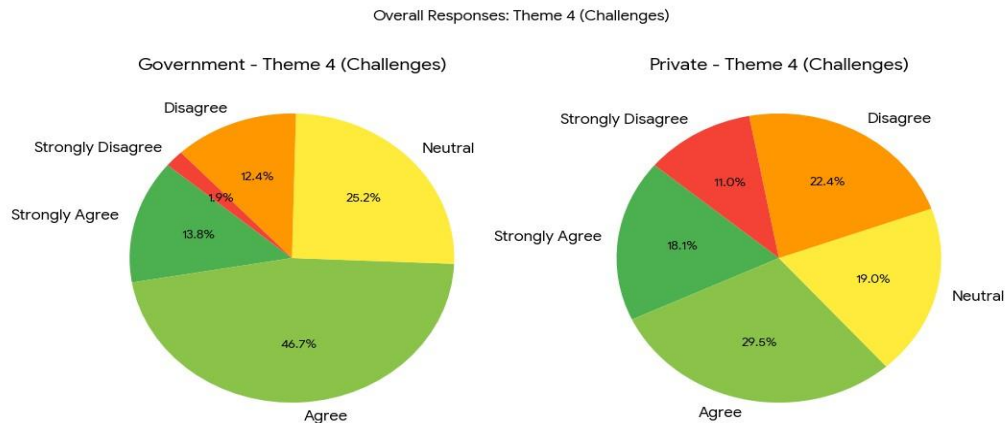
Table 4.5 Statistical Analysis and Comparison of Theme-3 (Impact on Learning and Performance)

Sl. No.	Statements	Govt. Mean	Govt. SD	Private Mean	Private SD	t-value	p-value	Interpretation
1	Digital videos/3D images help understanding	4.03	0.79	4.09	0.82	-0.31	0.757	Not Significant
2	ICT makes learning more interesting	4.11	0.83	4.20	0.83	-0.45	0.654	Not Significant
3	Digital resources improve scores	3.91	0.95	4.00	0.94	-0.38	0.705	Not Significant
4	Helps learn at my own pace	4.00	0.94	4.03	0.95	-0.13	0.897	Not Significant
5	Confidence in board exams	3.91	0.95	4.00	0.94	-0.38	0.705	Not Significant
6	Preparing well for higher education	3.91	0.95	4.00	0.94	-0.38	0.705	Not Significant
	Total Average Score	3.98	0.82	4.05	0.81	-0.36	0.720	Not Significant

Despite differences between institutions, data from Table 4.5 show strong agreement on academic benefits linked to ICT use. A consistent pattern emerges when examining individual variables - each exceeds a mean of 4.00, pointing toward clear approval by learners across settings. Far above neutral ratings, these averages signal real alignment: students see digital tools as meaningful contributors to progress in study outcomes. Highest values appear where engagement matters most - with government students at $M=4.11$, private counterparts slightly ahead at $M=4.20$ - highlighting how lively course delivery boosts attention spans during lessons. Instead of passive listening, screens prompt interaction, turning static material into something fluid and responsive. Agreement runs deep, too - the bulk of standard deviations stay under 1.0, meaning responses cluster tightly around those elevated means. With 70 participants involved, such narrow spread implies few outliers exist in perception; confusion

about value seems rare among respondents. Learning tough ideas becomes less daunting, they report, once tech enters the classroom space. So the null hypothesis is accepted. There exists the significant difference in the learning process in government and private higher secondary schools.

Pie-chart 4.4 Comparison of Students' Responses Regarding Theme-4 (Challenges and Barriers)



At Theme-IV, as per the pie charts, it can be concluded that at government schools, almost half of the respondents (46.7 percent) selected “Agree.” This outcome suggests that most government school students experienced particular barriers to using digital technologies, including the lack of relevant support and the high cost of data. At the same time, in private educational institutions, those who selected “Agree” account for only 29.5 percent. In addition, the difference between the opposite groups comprises 33.4 percent of respondents’ answers, as compared to 14.3 percent of those who hold negative views about barriers at government schools.

Table 4.6 Statistical Analysis and Comparison of Theme-4 (Challenges and Barriers)

Sl. No.	Statements	Govt. Mean	Govt. SD	Private Mean	Private SD	t-value	p-value	Interpretation
1	Slow internet speed	3.80	1.13	3.66	1.35	0.48	0.633	Not Significant
2	Frequent power cuts	3.77	0.81	3.77	1.03	0.00	1.000	Identical
3	Social media distractions	3.54	0.66	3.66	1.14	-0.52	0.609	Not Significant
4	Not enough computers	3.46	0.82	3.20	1.08	1.12	0.265	Not Significant
5	Lack of teacher guidance	3.26	1.12	2.34	1.16	3.35	0.001	Significant
6	Cost of mobile data	3.66	0.97	2.66	1.26	3.72	< 0.001	Significant
Total Average Score		3.58	0.44	3.21	0.60	2.91	0.005	Significant

In Table-4.6, the numbers reveal how common obstacles are in digital learning across Balangir. Internet slowness stands out, rated quite high with an average of 3.80. Power interruptions follow closely behind, scoring 3.77 on average. These figures highlight what many already feel - technical glitches pop up often. Students from government schools report slightly more

trouble than those in private institutions. Their overall challenge level averages 3.58, compared to 3.21 among private school peers. Theme-4 shifts from earlier patterns, showing a clear imbalance between sectors. For items five and six - lacking direction and expense of data - the numbers tell a stark story: government learners report far greater struggles than peers in private schools, backed by p -values of 0.001 and 0.000. Though electricity outages affect everyone alike ($p = 1.000$), along with sluggish connections, it's the absence of online support where disparities widen. For the above theme, there are some differences facing problems faced in government and private higher secondary schools. So, the null hypothesis is failed to reject.

5. RESULT AND DISCUSSION

This paper attempts to explore the availability, use, impact on education, and problems associated with ICT use by higher secondary Arts students in the Balangir district of Odisha. These results contribute towards a more comprehensive picture of the ICT experiences of the students in view of not just their access to technology but also the extent of their use of the same for education and the obstacles that hinder them. The paper follows an earlier study which asserts that the educational success of ICT use depends not just on availability but also accessibility, utilization, support from teachers, and cost (Flores et al., 2017; Palagolla & Wickramarachchi, 2019).

Results show that ICT infrastructure was available to the students in both the public and private schools without any significant difference. However, when it came to particular facilities, the private school students showed greater availability of smartboards and projectors. These results partially support the work by Mooi (2011) and Asaolu et al. (2012), where they highlighted disparities between ICT accessibility and preparedness within the schools. The lack of significant difference in the availability of ICT facilities further shows that there might not be as much disparity in terms of ICT infrastructure between the government and private schools as indicated in some earlier works. In the case of Odisha, Sar and Misra (2019) had similarly observed high availability of ICT equipment and functioning labs with some disparities in use of digital content. It shows that there are two separate issues – ICT infrastructure availability and its use in education. In addition to this, it is seen that there were no notable differences in ICT use and digital literacy between the students attending government and private schools. There was no major distinction between the two categories of students in terms of the use of digital technology for educational purposes. Students in both categories were involved in using ICTs for learning purposes such as watching educational videos, assignment preparation, preparing for exams, making practical records and projects, and operating basic software. In contrast to Singh and Mishra (2013) and Zia et al. (2017), the lack of difference in the ICT experience between students belonging to government schools and those attending private schools is a different finding in this study. This may be due to the growing availability of smartphones, internet-based education, and digital facilities outside the school setting.

The results relating to the effects of ICT on the learning process were positive across students from both school types. ICT was seen as useful in terms of gaining knowledge, increasing interest in studies, supporting academic performance, allowing self-study, and helping to prepare for exams and further education. There was no difference found between students from government schools and private institutions regarding the perception of the learning advantages of ICT. Such findings can be viewed in line with the existing literature acknowledging ICT as a useful technology that can help engage students in the learning process and facilitate access to educational material (Flores et al., 2017). The results obtained differ from those provided by Pallavi and Amin (2025), who found greater academic benefits of ICT for private school students. Perhaps the most significant difference noted here pertains to the problems faced by the students. Government school students found it difficult to make the right use of ICT due to the lack of guidance from their teachers and the expense incurred through mobile data costs. These results clearly indicate that the digital divide is not restricted to just the availability of devices and internet services. Students need proper academic guidance, constant assistance, and cost-effective connectivity to make the right use of ICT. The result concerning the importance of teacher guidance here is particularly in favor of Palagolla and Wickramarachchi (2019), who pointed out training and institutional backing as key factors in making effective use of ICT.

In conclusion, the results show a more refined understanding of the digital divide between the two types of schools. The current investigation does not reveal a significant difference in the overall ICT availability, ICT use, and its effect on learning. However, there are differences in the particular ICT facilities and, more importantly, the issues the students face. It appears that students in government higher secondary schools face more challenges regarding the lack of teacher assistance and the cost of Internet access. As a result, it is wrong to view the digital divide in the study area merely as a problem of having or lacking technologies.

Instead, the problem involves the differences in access quality, affordability, teaching assistance, and the possibility of using ICT effectively for academic purposes. Overall, the findings imply the importance of an integrated approach to ICT in higher secondary schools. Not only is it important to provide the students with computers, Internet facilities, and smart classrooms; it is equally important to train teachers to assist, give regular academic guidance, provide affordable access and appropriate infrastructure, and encourage the students to use ICT effectively for their academic purposes. This way, the current investigation provides a new insight into the previously explored topic by proving that the effectiveness of ICT use depends not only on the availability of the technologies but also on the socio-economic context.

Implications

This research has significant implications for schools, educators, policymakers, and students. Schools must concentrate not just on having ICT facilities but also on their effective use in education. Educators need proper training and assistance to help students utilize digital information appropriately. More emphasis should be placed on government school students since they face more issues due to lack of proper educator assistance and high cost of mobile data. In this regard, educational organizations must ensure low-cost internet access along with better ICT facilities and constant training of educators.

6. CONCLUSION

The study concludes that ICT has become an important learning resource for higher secondary Arts students in Balangir district. Students from both government and private schools reported generally positive experiences regarding ICT availability, usage, and learning benefits. However, government students experienced greater challenges, particularly related to teacher guidance and the cost of mobile data. The findings indicate that the digital divide is not limited to the availability of technology but also involves affordability, support, and meaningful educational use. Therefore, effective ICT integration requires improved infrastructure, teacher support, affordable connectivity, and regular opportunities for students to use technology for learning.

References

- [1]. Ahmed Chowdhury, S., Rahman, S., & Islam, S. (2019). Teaching-learning practices of information and communication technology in secondary schools of Bangladesh.
- [2]. Asaolu, O. S., & Fashanu, T. A. (2012). Adoption of ICT and its comparative impact on private and public high schools in Lagos State, Nigeria. *International Journal of Science & Emerging Technologies*, 3(1).
- [3]. Doley, J. (2021). A study on the use of ICT tools in government and private secondary schools in Lakhimpur district of Assam. *International Education & Research Journal*, 7(10).
- [4]. Flores, J. G., Rodríguez-Santero, J., & Torres-Gordillo, J. J. (2017). Factors that explain the use of ICT in secondary-education classrooms: The role of teacher characteristics and school infrastructure.
- [5]. Haque, M. Z., Sarker, D. K., Rahman, M. M. A., Ohiduzzaman, K. M., Ahammed, S., Islam, M. R., & Hasan, M. N. (2017). A study on implementation of "ICT in education training" in government primary schools.
- [6]. M. V., M., Sahu, S., G. V., & A. D. S. L. College of Education, Ongole, Prakasam District, A. P. (2024). Uses of information communication technology (ICT) in secondary schools. *International Journal of Research Publication and Reviews*, 5(2), 915–918.
- [7]. Mooi, T. (2011). *Effectiveness of ICT education in the Northern school area of Port Elizabeth*.
- [8]. Palagolla, W. N. C. K., & Wickramarachchi, P. R. A. (2019). Promoting effective application and management of ICT to enhance performance in secondary schools.
- [9]. Pallavi, P., & Amin, R. (2025). Digital divide in education: A comparative analysis of ICT usage between government and private schools in Pune, Talegaon. *International Journal of Advanced Mass Communication and Journalism*, 6(2), 140–145. <https://doi.org/10.22271/27084450.2025.v6.i2b.1291>
- [10]. Sar, A., Jr., & Misra, S. N. (2019). A case study on Information and Communication Technology (ICT) scheme at Odisha: Assessment of its policy and implementation. *International Journal of Recent Technology and Engineering*, 7(5), 237–238. <https://www.ijrte.org>
- [11]. Singh, S., & Mishra, S. (2013). *A study on role of multimedia in early childhood education*. LAP Lambert Academic Publishing.

- [12]. Technology accessibility and confidence: A comparative study of public and private basic schools. (2025). *Journal of Research in Didactical Sciences*, 4(1), 43–68.
- [13]. Yasmeen, S., Alam, M. T., Mushtaq, M., & Bukhari, M. A. (2015). Comparative study of the availability and use of information technology in the subject of education in public and private universities of Islamabad and Rawalpindi. *SAGE Open*, 5(4). <https://doi.org/10.1177/2158244015608228>
- [14]. Zia, A., Naz, I., & Qureshi, U. (2017). Role of information and communication technologies in knowledge gap: A comparative study of public and private schools in Lahore, Pakistan. *Journal of Research and Reflections in Education*, 124–140. <http://www.ue.edu.pk/jrre>

Cite this Article:

Naik, G.; Darjee, P. (2026). *Implementation of ICT in Government and Private Higher Secondary Schools in Balangir: A Comparative Study*. *International Journal of Multidisciplinary Research in Arts, Science and Technology (IJMRAST)*, 4(8), 51–61.

Journal URL: <https://ijmrast.com/> **DOI:** <https://doi.org/10.59828/ijmrast.v4i8.311>



This work is licensed under a [Creative Commons Attribution-Non-Commercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

© The Author(s) 2026. IJMRAST Published by Surya Multidisciplinary Publication.

Disclaimer/Publisher's Note: The author(s) are solely responsible for the content and claims of this article. The publisher and editors assume no legal liability for any errors, copyright violations, or damages arising from its use.