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Student's Perception towards ICT Use in Government and Non-Government Schools of Surkhet District

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Abstract

This article delves into students' perceptions of Information and Communication Technology (ICT) use in government and non-government schools in Surkhet District. The main objective of the article is to explore the perception of students towards the use of ICT in government and non-government school in Surkhet district. In this article, a mixture of article methods is used including both quantitative and qualitative approaches. All the secondary level students in 18 schools of Surkhet district was the population of the article. Among the students of 18 schools, 424 were selected as sample. Questionnaires were used as the source for the data collection. The article used the statistical tools like Regression analysis to find out the perception of the students towards ICT use in schools. Data collected from both school types revealed demographic distributions and attitudes toward ICT. Government school respondents were primarily aged 12-13, while non-government schools had more respondents across all age groups. Males were the majority in both. The regression model analyzing students' perception of ICT use displayed a moderately strong positive correlation (R = 0.610), with 37.2 percent variance explained by factors like Access to Personal Device, Digital Literacy, Access to School IT Resources, and ICT Integration in Curriculum. Constructs showed good reliability and validity, affirming measurement accuracy. Results highlighted the positive impact of examined factors on ICT use, underlining the significance of resource access, digital literacy, and curriculum integration. Non-government schools had higher mean scores in computer and internet skills, possibly due to infrastructure or resource differences. Notable disparities existed between government and non-government schools in combined school and home ICT use and confidence levels, with gender differences also noted, warranting further exploration

or intervention. The article underscores the need for improving access to resources, enhancing digital literacy, and integrating ICT in curricula to positively influence students' perceptions and use of ICT.

Key Words: Access to Personal Device, Digital Literacy, Access to School IT Resources, ICT Integration in Curriculum

Background of the Study

The integration of Information and Communication Technology (ICT) in education is a global trend reshaping learning paradigms and educational landscapes. Investigating the utilization of ICT among students in government and non-government schools is imperative for policymakers and educators (Daniels, 2002). This article aims to explore the extent of access, frequency of use, and types of ICT tools employed for educational purposes in these settings. ICT has evolved from mere computing to encompass various technologies such as video conferencing, email, and interactive media, becoming an integral part of modern education (Kumar, 2009). Initially termed "IT," emphasizing information handling, the advent of email led to the broader concept of ICT in the 1990s, encompassing information and communication activities beyond computing (Daintith, 2009).

While ICT primarily involves computer and communication equipment for data management, its application extends beyond computers, emphasizing digital information generation and sharing (James, 2008). The 1990s witnessed a shift from computer-centric instruction to broader ICT applications in education, distinguishing between ICT for education and ICT in education. Despite its benefits, ICT integration in education poses challenges such as maintenance costs, misuse risks, and preparation time constraints (Kozma, 2003). Successful implementation necessitates robust infrastructure, teacher collaboration, and pedagogical shifts toward student-centered learning. Government schools, serving diverse student populations with limited resources, face unique challenges in ICT adoption due to budget constraints and infrastructure limitations (OECD, 2015). Conversely, non-government schools may exhibit disparities in ICT access and utilization due to varying resource allocations.

Examining ICT usage across government and non-government schools is crucial for identifying disparities and informing equitable intervention strategies (UNESCO, 2019). Understanding the current state of ICT utilization among students contributes valuable insights to educational policy and practice, enhancing learning outcomes and preparing students for the digital era.

Investigating ICT use among government and non-government school students in Surkhet District, Nepal, is crucial for educational equity. Despite the global proliferation of ICT resources, article on Nepalese students, particularly in rural areas like Surkhet,

remains limited. Understanding ICT adoption in this region is vital to identifying disparities and informing interventions for equitable access.

In the 21st century, technology, particularly graphing calculators, plays a crucial role in teaching mathematics. While mathematical software aids in solving tasks, errors and misinterpretations may occur without understanding the problem. Challenges arise in integrating ICT into teaching, including lack of access, training, infrastructure, and administrative support. Despite extensive article and resources invested, satisfactory solutions remain elusive. This article focuses on identifying and addressing challenges faced by students in Surkhet district, Nepal, in utilizing ICT for teaching.

This article aims to fill gaps in empirical evidence on ICT use among Surkhet students, providing systematic insights into prevailing trends. Researchers hope to contribute valuable perspectives to Nepal's education discourse, guiding policy formulation. Disparities in ICT access may exacerbate educational inequalities, particularly for marginalized students. Thus, this article seeks to identify and address such inequities, advocating for interventions to bridge the digital divide and striving for equal opportunities for all students to leverage ICT for learning and skill development. The main objective of the article is to explore students' perceptions of ICT use in government and non-government schools in Surkhet District. The article questions focus on understanding students' perceptions towards ICT use in these schools. The hypotheses tested in this article include the significant relationships between Access to Personal Devices, Digital Literacy, Access to School ICT Resources, and ICT Integration in the Curriculum with students' perceptions of ICT use. This article was limited to students of government and non-government secondary schools in the Surkhet District of Karnali Province, including both male and female students, and focused on ICT use at the secondary level.

Literature Review

Theoretical Perspective

Effective utilization of Information and Communication Technology (ICT) fosters a positive educational atmosphere, promoting enhanced classroom communication. Cox (1997) found that proficient integration of ICT by teachers positively impacted academic achievement in National Curriculum subjects. This effectiveness hinges not merely on ICT's utility as a tool, but on its adept application within pedagogical frameworks to bolster classroom interaction. Somekh and Davies (1999) and Sutherland (2005) corroborated this, emphasizing the pivotal role of skilled practitioners in leveraging ICT for improved learning outcomes. Teachers must possess comprehensive knowledge of ICT's capabilities to maximize its potential as a resource (Beauchamp, 2012), emphasizing the importance of thorough ICT training for educators.

ICT and Constructionist Theory

The use of ICT enables opportunities for learning environments and practices that require interaction among individuals, co-operation with chances to experiencing learning, and the principles which constructionism supports. Many educational establishments, especially at a post-secondary school level, work on supporting integrating technology into teaching and learning. Kanuka and Anderson (1999) provide an example of the use of the internet for learning, as learners use the internet and explore it in different ways and explore it in different directions. Their article used small group discussions and their presentations after the article produced various interpretations of the subject matter.

ICT in School Education in Nepal

Before Nepal's National Information Technology (NIT) policy in 2000, initiatives like telecommunications sector liberalization and radio teacher training by the Ministry of Information and Communications (MOIC) and Ministry of Education (MOE) set the stage for ICT in education. Post-NIT policy, the MOE intensified efforts under Education for All (EFA) Programs, providing schools with computers and internet access. Initiatives like One Laptop per Child (OLPC) pilots and computer labs with internet showcased ICT integration. Challenges persist, including digital material dissemination and teacher training for effective integration (NCED) (MOIC, 2015).

Empirical Review

In Joshi's 2016 article, "Status of ICT Use by Secondary School Students in Nepal," the focus was on class nine and ten students in Kathmandu. The article surveyed 106 students, analyzing data via percentage and the Mann Whitney U test. Results indicated widespread weak usage of technology, particularly among public school students, with no significant gender disparity. The article underscored the necessity for concerted efforts from various stakeholders to enhance students' technological proficiency for effective learning. It emphasized the pervasive integration of technology into human behavior and its manifold benefits. Highlighting the imperative nature of technological proficiency for future prospects, the article stressed the need for equitable access to technology across all demographics. Recommendations included collaborative efforts from schools, parents, government, NGOs, policymakers, and financiers to devise comprehensive plans for bolstering students' ICT skills, crucial for their future development.

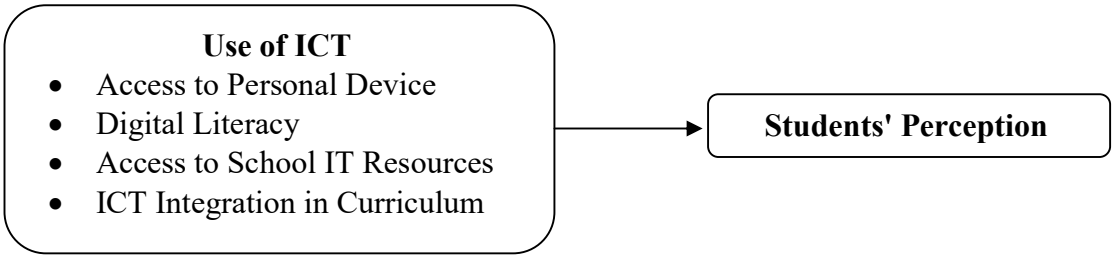
In their 2019 article titled "Perceptions of Students Using ICT as an Educational Tool in a Private Secondary School in Famagusta, North Cyprus," Irkad et al. explored students' perspectives on ICT tool utilization in learning environments. Conducted at Doğa College, the article initially employed a questionnaire to gauge overall student perceptions, followed by random semi-structured interviews for deeper insights. Questionnaire data was

analyzed with expert support, while interview analysis utilized content analysis methods. The article found that integrating ICT tools in education not only saves teachers time on lesson preparation, a significant finding, but also enhances student engagement with more dynamic and colorful lessons. Ultimately, the article concluded that ICT tools are effective for both teaching and learning.

In his article "Exploring ICT Use in Government Schools of Nepal: A Case Article of Pokhara Metropolitan City," Tiwari (2021) examined innovation integration in Nepal's educational system. The article evaluated ICT use in classrooms, its impact on teaching and learning, and identified barriers to ICT advancement. Data collection involved interviews, classroom observations, and theoretical frameworks like Vygotsky's Zone of Proximal Development and social constructivism theory. Despite limited infrastructure and stakeholder perceptions, schools are transitioning to student-centered, interactive classes. Nepal's education policies aim to integrate ICT, crucial for its socio-economic development. The government's commitment underscores ICT's role in disseminating knowledge and skills, aligning with Nepal's goal of becoming a middle-income nation.

Despite recognizing the theoretical benefits of ICT in enhancing education and fostering interactive learning environments, there are conceptual gaps related to the effective implementation and integration of ICT in Nepalese schools. Empirical studies show weak ICT usage, especially in public schools, and highlight significant challenges like inadequate digital material dissemination and insufficient teacher training. These gaps indicate a need for focused interventions to improve infrastructure, provide comprehensive ICT training for educators, and ensure equitable access to technology to maximize its educational potential.

Conceptual Framework of the Article



Methodology

This study adopts an explanatory research design, employing a quantitative research method and convenience sampling technique. Data collection is facilitated through a survey questionnaire utilizing a five-point Likert scale. The population comprises all the secondary level students of government and non-government schools business in Surkhet district, with a sample of 424 individuals selected through convenience sampling. The primary data source is a critical aspect of this study. Both descriptive and

inferential statistics are utilized for data analysis. Descriptive statistics such as frequency and percentage are employed to analyze demographic responses, while regression analyses to examine the perception of students towards ICT use in schools.

Analysis and Interpretation

Age Composition

The age composition of the respondents is presented in the following table:

Table 1: ***Distribution of the Respondents based on Age***

Age Composition	Government School		Non-Government School	
	No.	**Percent**	**No.**	**Percent**
Below 12	40	9.43	42	9.91
12-13	125	29.48	131	30.90
14-15	34	8.02	28	6.60
16 and above	13	3.07	11	2.59
Total	**212**	**50.00**	**212**	**50.00**

Table 1 shows the age composition of the respondents. Among the total respondents of government school, 9.43 percent were below 12 years of age, 29.48 percent were 12-13 years of age, 8.02 percent were 14-15 years of age and 3.07 percent were 16 years and above of age. Similarly, among the total respondents of non-government school, 9.91 percent were below 12 years of age, 30.90 percent were 12-13 years of age, 6.6 percent were 14-15 years of age and 2.59 percent were 16 years and above of age.

Status of Use of ICT

Table 2: ***Students' Perception on Use of ICT in Teaching/Learning Process***

S.N.	Statements	Mean	Standard Deviation	Rank	Mode
1	I enjoy lessons with a computer.	3.95	1.135	1	5
2	I feel comfortable working with computers	3.82	1.118	2	4
3	ICT is very helpful in my learning process.	3.81	1.19	3	5
4	I believe that the more often teachers use computers, the more I will enjoy school.	3.8	1.219	4	5
5	I have better information sources than ICT.	2.88	1.302	5	3
6	I know how to use ICT but am not interested in using it to learn.	2.85	1.296	6	2
7	I find it time- consuming using ICT in	2.63	1.377	7	1

	learning				
8	I need help from teachers to learn with ICT	2.59	1.307	8	1
9	Working with computers makes me nervous.	2.33	1.233	9	2
10	I am tired of using a computer	2.3	1.203	10	1
11	I wish ICT was not used in teaching.	2.18	1.412	11	1
12	Computers are difficult to use.	2.03	1.25	12	1
13	Computers scare me.	1.99	1.263	13	1
	Average	**2.85**	**1.25**	**-**	**-**

In Table 2, students mostly agreed with positive statements about ICT impact while disagreeing with negative ones. For example, they enjoyed computer-based lessons (mean 3.95, SD 1.135) and felt comfortable with computers (mean 3.82, SD 1.118), though views varied. Conversely, they disagreed with negative statements like "Computers scare me" and "Computers are difficult to use" (means 1.99 and 2.03, respectively), with notable standard deviations indicating differing perspectives. Regarding ICT's impact on achievement and learning, perceptions were straightforward, with a mean of 2.00 and a modal value of 2.

Model Summary of Regression Analysis

The model summary provides information about the regression model used to analyze students' perception towards ICT use in government and non-government schools of Surkhet district.

Table 3: ***Model Summary of ICT Use***

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.969[a]	.939	.938	.24734

a. Predictors: (Constant), IIC, ASIR, APD, DL

The provided data summarizes the results of a regression model, indicating its effectiveness in explaining the variability in the dependent variable using the predictors (IIC, ASIR, APD, DL). The model, labeled "1," has a multiple correlation coefficient R=0.969, signifying a strong positive linear relationship between observed and predicted values. With R^2=0.939 and an adjusted R^2=0.938, the model explains 93.9 percent of the variance in the dependent variable, with a standard error of the estimate of 0.24734, indicating a good fit. The constant in the regression model represents the expected value of the dependent variable when all predictors are set to zero, with each predictor contributing uniquely to the model's explanatory power. While the exact numerical impact of each

predictor on the constant is not provided, their collective inclusion suggests significant roles in explaining the dependent variable's variance. Thus, the model is highly effective, but determining the precise impact of each predictor on the constant would require the regression coefficients for each predictor.

Table 4: ***ANOVA***

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	195.261	4	48.815	797.951	.000[b]
	Residual	12.663	207	.061		
	Total	207.925	211			

a. Dependent Variable: IU

b. Predictors: (Constant), IIC, ASIR, APD, DL

The data provides the results of an ANOVA analysis for a regression model, examining how independent variables (IIC, ASIR, APD, DL) affect the dependent variable (IU). The regression model, with a sum of squares of 195.261 and 4 degrees of freedom, indicates that the independent variables collectively explain a substantial portion of the variability in IU. The residual sum of squares, representing unexplained variability, is 12.663 with 207 degrees of freedom, while the total sum of squares is 207.925 with 211 degrees of freedom. The highly significant F-value of 797.951 ($p = .000$) suggests that the regression model is highly significant, affirming the substantial impact of the independent variables in predicting IU. The relatively low residual sum of squares compared to the total sum of squares further validates the model's effectiveness. Therefore, the independent variables significantly influence IU, as indicated by the ANOVA results.

Table 5: ***Coefficients***

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.086	.074		1.151	.251
	APD	.409	.102	.405	4.019	.000
	DL	-.178	.107	-.171	-1.671	.096
	ASIR	.031	.053	.032	.582	.561
	IIC	.734	.090	.708	8.164	.000

a. Dependent Variable: IU

The constant (0.086) represents the baseline value of IU when all predictors are zero, though it is not significantly different from zero (p = 0.251). Among the predictors, APD (0.409) and IIC (0.734) have significant positive impacts on IU, with highly significant p-values (0.000), indicating that each unit increase in APD and IIC results in increases of 0.409 and 0.734 units in IU, respectively. The standardized coefficients (APD: 0.405, IIC: 0.708) further highlight their substantial impact relative to other predictors. DL (-0.178) shows a non-significant negative relationship (p = 0.096), suggesting that a one-unit increase in DL results in a 0.178 unit decrease in IU. ASIR (0.031) has a minimal and non-significant impact on IU (p = 0.561), with a standardized coefficient of 0.032.

Results

Among government school respondents, 9.43 percent were below 12 years old, 29.48 percent were 12-13 years old, 8.02 percent were 14-15 years old, and 3.07 percent were 16 years old and above. For non-government school respondents, 9.91 percent were below 12 years old, 30.90 percent were 12-13 years old, 6.6 percent were 14-15 years old, and 2.59 percent were 16 years old and above. In government schools, 27.12 percent of respondents were male and 22.88 percent were female. In non-government schools, 29.48 percent were male and 20.52 percent were female. Males constituted the majority of respondents in both types of schools.

The model exhibits strong fit and effectiveness, with a multiple correlation coefficient R=0.969 indicating a robust positive linear relationship between observed and predicted values. The R^2=0.939 and adjusted R^2=0.938 demonstrate that the model explains 93.9 percent of the variance in the dependent variable, reflecting a precise fit with a standard error of the estimate of 0.24734. The ANOVA analysis confirms that the independent variables collectively explain a substantial portion of the variability in IU, supported by a highly significant F-value of 797.951797.951797.951 (p = .000). Regarding predictor impact, the constant (0.086) signifies the baseline value of IU when all predictors are zero, though not significantly different from zero (p = 0.251). APD (0.409) and IIC (0.734) display significant positive impacts on IU, with highly significant p-values (0.000), whereas DL (-0.178) exhibits a non-significant negative relationship (p = 0.096), suggesting IU decreases with a one-unit increase in DL. ASIR (0.031) has a minimal and non-significant effect on IU (p = 0.561). Standardized coefficients further emphasize the substantial impact of APD (0.405) and IIC (0.708) relative to other predictors.

Conclusion

The article presents insightful findings regarding student demographics and their perception towards ICT use in schools. Analysis of respondent demographics reveals similar age distributions across government and non-government schools, with a majority falling within the 12-13 years age group. Males dominate both school types. The

regression model employed demonstrates strong fit and effectiveness, indicated by a high multiple correlation coefficient and R^2 values, elucidating that majority of the variance in the dependent variable is explained by the model. The ANOVA analysis affirms the collective impact of independent variables in explaining variability in the dependent variable, highlighting significant predictor effects, particularly APD and IIC, on student perceptions of ICT use. These findings underscore the importance of understanding student demographics and perceptions to inform policies and strategies for integrating ICT effectively into both government and non-government schools in the Surkhet district. Further research could delve into nuanced factors influencing ICT perception among students, facilitating tailored interventions to enhance ICT utilization and educational outcomes.

Implications

Practical Implications:

Regression model insights aid policymakers and educators in tailoring strategies for ICT integration in education. APD and IIC's impact suggests investing in personal devices and connectivity to enhance ICT engagement.

Theoretical Implications:

APD and IIC's positive effects enrich theoretical frameworks on ICT utilization in education. Strong model fit informs refining predictive models for understanding and predicting ICT adoption in education.

Delimitations

- This research study focused specifically on students of government and non-government secondary schools in the Surkhet District of Karnali Province.
- The study included both male and female students to provide a comprehensive understanding of ICT use across genders.
- The study concentrated on the use of ICT at the secondary level to gain targeted insights into this educational stage.

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APPENDIX I

A. Demographic Features of the Respondents

Age: a. Below 12 b. 12-13 c. 14-15 d. 16 and above

Gender: a. Male b. Female

B. Use of ICT

Students' Perception on Use of ICT in Teaching/Learning Process

S.N.	Statements	SA	A	N	D	SD
1.	I enjoy lessons with a computer.					
2.	I feel comfortable working with computers					
3.	ICT is very helpful in my learning process.					
4.	I believe that the more often teachers use computers, the more I will enjoy school.					
5.	I have better information sources than ICT.					
6.	I know how to use ICT but am not interested in using it to learn.					
7.	I find it time- consuming using ICT in learning					
8.	I need help from teachers to learn with ICT					
9.	Working with computers makes me nervous.					
10.	I am tired of using a computer					
11.	I wish ICT was not used in teaching.					
12.	Computers are difficult to use.					
13.	Computers scare me.					