

Status of Use of ICT by Secondary School Students of Nepal

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Abstract: Information and communication technology (ICT) is most important part of modern education system. It is highly beneficial for the improvement of students several aspect of knowledge, skill and attitudes. The study focused in use of ICT with respect to students of class nine and ten from secondary schools of Kathmandu, Nepal. Responses of 106 students were taken and data has analyzed by percentage and Mann Whitney U test. It was found that most of the students of that level are weakly using technology and public school students were poorer in several measured items even boys and girl students were not differ in the use of ICT. It is important to accomplish so many properties by several stakeholders for proper use of it in their learning.

Key Words: Information and communication technology (ICT), Education, E-learning.

1. INTRODUCTION:

Information and communication technology (ICT) is modern conception in the field of education. It makes easy to understand new concepts, knowledge, skill related to daily life circumstances. Education system has been affected by technology (Adu & Olatundun, 2013). New technologies challenge the traditional conceptions and ensure new concepts in teaching learning process. So use of ICT in learning has typical role for students' motivation and learning. Developed country has good practice in the field of education and others even develop country may have some difficulties because of financial, awareness, availability of resources at home and school, appropriate policies and integration related problems. Nepal is developing country and technological or digital dives have not highly developed so this study presents the root of the reality.

It has been increasingly used in schools and educational institutions, and established in classroom practice (Passey, 2002). In this sense knowledge of ICT is necessary for students (Georgescu, 2013; Karami, 2013). It helps to motivate students to learn, increase their attainment (Cox et al., 2003), flexibility, knowledge, skills and attitude (Noor, 2013; Harbi, 2014). It has opened innovative avenues, like, online learning, E-learning, Virtual University, E-coaching, E-education, E-journal, M-learning, etc. The thoughts that teaching and learning can effectively take place through the application of electronic communication facilities between teachers and students (Adeyinka, n. d.). Education comforts to develop technology and technology support to develop different pedagogical thoughts in education. Most of the education related experts agreed that proper use of ICT hold great promises to improve teaching and learning in addition to sapping workforce opportunities (Aduwa-ogiegbaen, Okhion, & Iyamu, 2005). Present education system should tackle and extend such concept from basic to higher stage. Maximum numbers of the countries have incorporated ICT in their course from primary to higher education level; even there are numerous organizations in the world providing formal education through online. Accordingly there are several sites which have integrated verities of information of different subject matter. ICT has several roles in education like as instructive, cultural, communal, professional and administrative (K & S, 2004).

Formal education structure of Nepal has categories in three fragments as school education, higher education and technical education in which school education implies class 1 to 12 (MOE, 2014). ICT is new concept, before few years it has integrated in several streams. Some policies have formulated for the improvement of ICT in schools like; School Sector Reform Programme (2009-2015), Three-Year Plan (2011-2013) and ICT in Education Master Plan (2013-2017) (Ministry of Education 20013).

In practice level, some NGOs/INGOs and different level of government bodies have been contributing on this field such as; laptop and computer with printer distribution for schools, one student one laptop program and other financial support for ICT instruments. Policymakers have to decide appropriate methods and technology to be integrated in curriculum and need based curriculum can be developed to address new technology (Ojugo and et al, 2015), which may more beneficial for the proper adjustments of learners in future. ICT has integrated several

streams for secondary education in Nepal. Computer education is a separate additional subject in secondary level (class 6 to 10). Distance education and open learning division under NCED has been developing some mathematics, science and English curriculum related audio visual documentaries since few years and broadcasting by Radio Nepal and Nepal Television for the support of school students. National curriculum framework has taken ICT as a tool for educational transformation (CDC, 2005).

Students are the main pillars of teaching learning process and future leader in all sectors of the government and social bodies. Every student should have knowledge of new technology for their better settlement in future. On the basis this things all related responsible bodies should facilities them for excellence of future society and country. If education system of any country cannot address such things it may be backward in each stream. So this study will be helpful for students, teachers, school principal and founder, policy makers and other stakeholders.

Several studies can be found in the field of education even present status of students towards the use of ICT related studies has no more in the context of Nepal, so this study can fulfill this gap and provide some guidelines for related stakeholders.

2. OBJECTIVES OF THE STUDY:

The main objectives of the study are to study the status of ICT instruments with secondary school students and use of ICT by secondary school students at their home and school.

1. Null Hypothesis

H01 There is no significance different between boys and girls students in the use of ICT at their home.

H02 There is no significant difference between private and public school students in the use of ICT at their home.

H03 There is no significance different between boys and girls students in the use of ICT at school.

H04 There is no significant difference between private and public school students in the use of ICT at school.

3. METHODOLOGY:

3.1 Participants

Data was collected by 106 students of class 9 and 10 from three schools of Kathmandu districts of Nepal, schools were selected by purposively and all available students during data collection period were taken.

3.2 Research Instrument

“Students’ questionnaire for the use of ICT” has been used for the study developed by researcher. Nature of instruments was multiple options and Likert five point scale types of questionnaire. Export validity was calculated and reliability was calculated by Cronbach's Alpha and it was found to be 0.90.

3.3 Data Collection and Analysis Procedures

Data were collected by providing questionnaires for the students in the classroom by taking permission and help of principal and class teacher. Data has analyzed by using percentage, mean, SD and Mann Whitney U test.

4. RESULTS:

4.1 Types of Devices at Students’ Home

School students of Nepal are mostly using mobile in their daily activities for their ICT related tasks. It shows that maximum number of student do not have computer and laptop which is very important for them.

Table 1 Types of Devices at Home

| Types of devices | Percentage | | |
|----------------------------|------------|--------|-------|
| | Private | Public | Total |
| Mobile | 48.4 | 58.1 | 51.9 |
| Mobile and computer | 1.6 | 4.7 | 2.8 |
| Mobile and laptop | 35.5 | 30.2 | 34.0 |
| Mobile laptop and computer | 14.5 | 7.0 | 11.3 |
| Total | 100.0 | 100.0 | 100.0 |

From the Table 1 it can be seen that 51.9% students have only mobile device and that quantity is more in case of public school students. So many subject related software are difficult to use in mobile like as mathematics, science and other subject related software which can affect the learning activity of students.

4.2 Time to Spend in Using ICT per Day

It is important to measure the time of using ICT by students. This period seems to technological period so every person has to know about it and maximally use in their real life circumstances.

Table 2 Time Spending for the Use of ICT per Day

| Time to spend in using devices | Percentage | | |
|--------------------------------|------------|--------|-------|
| | Private | Public | Total |
| 1 hour/day | 24.2 | 72.1 | 44.3 |
| 2 hour/day | 46.8 | 18.6 | 34.9 |
| 3 hour/day | 11.3 | 4.7 | 8.5 |
| 4 hour/day | 4.8 | 4.7 | 4.7 |
| More than 4 hour/day | 12.9 | 0.00 | 7.5 |
| Total | 100.0 | 100 | 100.0 |

From the Table 2 it can be seen that maximum students are using ICT only one hour per day and that case is very high in case of public school students. By this result we can say that students of school level are poorly using ICT in their practices.

4.3. Internet Facility at Home

Table 3 Having Internet Facility at Home

| Internet facility at home | Percentage | | |
|-------------------------------|------------|---------|-------|
| | Public | Private | Total |
| Do not have internet facility | 32.6 | 3.2 | 15.1 |
| Having internet facility | 67.4 | 96.8 | 84.9 |
| Total | 100.0 | 100.0 | 100 |

From Table 3 it can be seen that maximum numbers of student have internet facility at their home even data has taken from capital city of Nepal and 15.10% were out of internet access. Public school students have less entrance in internet at their home. From this result we can easily guess that maximum number of students of remote area may not have good internet access.

4.4. Time Spending in Internet Surfing Per/Day

Table 4 Time of Using Internet per Day

| Time of using internet per/day | Percentage | | |
|--------------------------------|------------|--------|-------|
| | Private | Public | Total |
| 1 hour/day | 27.4 | 74.4 | 47.2 |
| 2 hour/day | 41.9 | 25.6 | 34.9 |
| 3 hour/day | 19.4 | 0.00 | 11.3 |
| 4 hour/day | 3.2 | 0.00 | 1.9 |
| More than 4 hour/day | 8.1 | 0.00 | 4.7 |
| Total | 100.0 | 100 | 100.0 |

From Table 4, it can be seen that maximum students are poorly using internet in their regular tasks. Public school students are more poorly using internet, which may be cause of these students are from poor family background and is expensive for daily uses.

4.5. Type of Internet Connection at Home

Table 5 Types of Internet Connection at Home

| Type of internet connection at home | Percentage | | |
|-------------------------------------|------------|--------|-------|
| | Private | Public | Total |
| Phone line | 16.1 | 10.04 | 10.4 |
| Wi-Fi | 4.8 | 60.04 | 60.4 |
| Mobile | 79.0 | 29.20 | 29.2 |
| Total | 100.0 | 100.0 | 100.0 |

Table 5 shows that maximum students are using internet by mobile which is very expensive and slow in the context of Nepal.

4.6 Types of Devices for Internet Surfing

Table 6 Types of Internet Connection at Home

| Devices for internet surfing | Percentage | | |
|------------------------------|------------|--------|-------|
| | Private | Public | Total |
| Mobile | 64.5 | 67.4 | 66.0 |
| Mobile and computer | 3.2 | 4.7 | 3.8 |
| Mobile and laptop | 29.0 | 25.6 | 27.4 |
| Mobile, laptop and computer | 3.2 | 2.3 | 2.8 |
| Total | 100 | 100 | 100 |

From the Table 6 it can be seen that two third students are using only mobile for internet surfing and less than one third students do not have access of computer and laptop which is very poor because that data has taken from the capital city and is highly developed area than other part of the country.

4.7 Use of ICT at Home

Table 7 Use of ICT at Home

(E-everyday, Wks- two or three times in a day, W- about once a week, M- at least once a month and L- less than once a month)

| Please tick one only one box in right side and left side of each row | Mean | SD | At home | | | | | Level |
|--|------|------|---------|------|------|------|------|--------|
| | | | E | Wks | W | M | L | |
| I use internet for communication (like; chatting, massaging, video-calling etc.) | 3.26 | 1.49 | 30.2 | 19.8 | 12.3 | 21.7 | 16.0 | Medium |
| I use internet for downloading documents related to my course. | 2.62 | 1.26 | 10.4 | 13.2 | 27.4 | 26.4 | 22.6 | Medium |
| I use computer for preparing assignment and doing homework. | 2.44 | 1.22 | 7.5 | 13.2 | 20.8 | 33.0 | 25.5 | Medium |
| I use computer for typing documents | 2.24 | 1.14 | 6.6 | 4.7 | 25.5 | 32.1 | 31.1 | Low |
| I use internet for searching documents related to my course. | 2.75 | 1.24 | 9.4 | 20.8 | 22.6 | 29.2 | 17.9 | Medium |
| I use the Internet to prepare for examinations. | 2.52 | 1.32 | 9.4 | 15.1 | 23.6 | 21.7 | 30.2 | Medium |
| I use internet for watching videos, listening radio/music/ reading newspaper. | 3.39 | 1.51 | 34.0 | 20.8 | 12.3 | 16.0 | 17.0 | Medium |
| I use internet for shopping. | 1.79 | 1.16 | 2.8 | 9.4 | 13.2 | 13.2 | 61.3 | Low |
| I use computer for playing games. | 2.53 | 1.43 | 11.3 | 19.8 | 14.2 | 19.8 | 34.9 | Medium |
| I use internet to get new knowledge | 3.09 | 1.29 | 16.0 | 26.4 | 21.7 | 22.6 | 13.2 | Medium |
| I use computer for drawing and painting | 1.96 | 1.26 | 3.8 | 13.2 | 14.2 | 13.1 | 55.7 | Low |
| I use internet for sending and receiving emails. | 1.92 | 1.12 | 2.8 | 8.5 | 16.0 | 23.6 | 49.1 | Low |

From the Table 7, it can be seen that students are using ICT at home for communication and for watching videos, listening radio/music/reading newspaper more and poorly using for drawing and painting and sending and receiving emails. Even they are moderately using ICT in more measured items.

4.8 Use of ICT at School

Table 8 Use of ICT in School

(E-everyday, Wks- two or three times in a day, W- about once a week, M- at least once a month and L- less than once a month)

| Please tick one only one box in right side and left side of each row | Mean | SD | At school | | | | | Level |
|--|------|------|-----------|------|------|------|------|-------|
| | | | E | Wks | W | M | Lm | |
| I use internet for communication (like; chatting, massaging, video-calling etc.) | 1.56 | 1.05 | 2.8 | 4.70 | 11.3 | 7.50 | 73.6 | Low |
| I use internet for downloading documents related to my course. | 1.71 | 1.10 | 1.9 | 10.4 | 7.5 | 17.0 | 63.2 | Low |
| I use computer for preparing assignment and doing homework. | 1.75 | 1.16 | 5.7 | 2.8 | 15.1 | 14.2 | 62.3 | Low |
| I use computer for typing documents | 1.86 | 1.18 | 2.8 | 9.4 | 17.0 | 12.3 | 58.5 | Low |
| I use internet for searching documents related to | 1.69 | 1.01 | 0.9 | 6.6 | 14.2 | 17.0 | 61.3 | Low |

| | | | | | | | | |
|---|------|------|-----|------|------|------|------|-----|
| my course. | | | | | | | | |
| I use the Internet to prepare for examinations. | 2.04 | 1.33 | 8.5 | 7.5 | 16.0 | 15.1 | 52.8 | Low |
| I use internet for watching videos, listening radio/music/ reading newspaper. | 1.67 | 1.03 | 1.9 | 4.7 | 16.0 | 13.2 | 64.2 | Low |
| I use internet for shopping. | 1.58 | 0.97 | 0.9 | 5.7 | 11.3 | 14.2 | 67.9 | Low |
| I use computer for playing games. | 1.73 | 1.12 | 2.8 | 8.5 | 9.4 | 17.0 | 62.3 | Low |
| I use internet to get new knowledge | 1.82 | 1.24 | 3.8 | 11.3 | 12.3 | 8.5 | 64.2 | Low |
| I use computer for drawing and painting | 1.77 | 1.02 | 0.9 | 7.5 | 14.2 | 22.6 | 54.7 | Low |
| I use internet for sending and receiving emails. | 1.67 | 1.02 | 0.9 | 8.5 | 9.4 | 18.9 | 62.3 | Low |

In Table 8 it can be seen that students are poorly using ICT in school in measured items. On the basis of this result it can be said that schools were not giving chance them for proper use of ICT in the school or school may have poor management of ICT infrastructure or less use of ICT in their teaching learning process.

4.9 Validation of H01

Table 9 Significance of Difference in Use of ICT at Home between Boys and Girls Students

| Sex | N | Mean Rank | Sum of Ranks | U value | Z value | P-value* |
|-------|----|-----------|--------------|----------|---------|----------|
| Boys | 50 | 54.29 | 2714.50 | 1360.500 | -.250 | .802 |
| Girls | 56 | 52.79 | 2956.50 | | | |

*P-value for Mann-Whitney U Test at 0.05 level of significance.

It can be seen from Table 9, that for the sample of N=106, consisting of 50 boys and 56 girls students of class 9 and 10 the computed p-value of Mann-Whitney U test in the use of ICT at home comes to be 0.802, which is greater than the criterion value 0.05, at 0.05 level of significance. Therefore, null hypothesis “there is no significant difference between boys and girl students to use ICT at home” is accepted and it can be said that there exist no difference in the use if ICT by girls and boys students.

4.10 Validation of H02

Table 10 Significance of Difference in Use of ICT at Home between Private and Public School Students

| Types of school | N | Mean Rank | Sum of Ranks | U value | Z value | p-value* |
|-----------------|----|-----------|--------------|---------|---------|----------|
| Private | 63 | 65.24 | 4110.00 | 615.000 | -4.764 | 0.000 |
| Public | 43 | 36.30 | 1561.00 | | | |

*P-value for Mann-Whitney U Test at 0.05 level of significance.

It can be seen from Table 10, that for the sample of N=106, consisting of 63 private and 43 public school students of class 9 and 10 the computed p-value of Mann-Whitney U test in the use of ICT at home comes to be 0.000, which is less than the criterion value 0.05, at 0.05 level of significance. Therefore, null hypothesis “there is no significant difference between private and public students to use ICT at home” is rejected. Mean rank score of private school student is higher than public school students so private school students are using ICT at home more than public school students.

4.11 Validation of H03

Table 11 Significance of Difference in Use of ICT at School between Boys and Girls Students

| Sex | N | Mean Rank | Sum of Ranks | U value | Z value | p-value* |
|-------|----|-----------|--------------|---------|---------|----------|
| Boys | 50 | 54.29 | 2714.50 | 1360.50 | -0.25 | 0.802 |
| Girls | 56 | 52.79 | 2956.50 | | | |

*P-value for Mann-Whitney U Test at 0.05 level of significance.

It can be seen from Table: 11, that for the sample of N=106, consisting of 50 boys and 56 girls students of class 9 and 10 the computed p-value of Mann-Whitney U test in the use of ICT at school comes to be 0.802, which is greater than the criterion value 0.05, at 0.05 level of significance. Therefore, null hypothesis “there is no significant difference between boys and girl students to use ICT at school” is accepted and it can be said that there exist no difference in the use if ICT by girls and boys students.

4.12 Validation of H₀₄

Table 12 Significance of Difference in Use of ICT at School between Private and Public School Students

| Types of school | N | Mean Rank | Sum of Ranks | U value | Z value | p-value* |
|-----------------|----|-----------|--------------|---------|---------|----------|
| Private | 63 | 65.24 | 4110.00 | 615.00 | -4.764 | 0.000 |
| Public | 43 | 36.30 | 1561.00 | | | |

*p-value for Mann-Whitney U Test at 0.05 level of significance.

It can be seen from Table: 12, that for the sample of N=106, consisting of 63 private and 43 public school students of class 9 and 10 the computed p-value of Mann-Whitney U test in the use of ICT at school comes to be 0.000, which is less than the criterion value 0.05, at 0.05 level of significance. Therefore, null hypothesis “there is no significant difference between private and public students to use ICT at school” is rejected. Mean rank score of private school student is higher than public school students so private school students are using ICT at school more than public school students.

4.13 Social sites using by school students

Table 5.13 social sites using by students

| Names of Social Networks | Frequency | Percent |
|--------------------------|-----------|---------|
| Facebook | 55 | 51.9 |
| Whats App | 11 | 10.4 |
| Telegram | 5 | 4.7 |
| Viber | 3 | 2.8 |
| Skype | 5 | 4.7 |
| Facebook and Viber | 10 | 9.4 |
| Facebook and Skype | 8 | 7.5 |
| Whats App and Skype | 5 | 4.7 |
| No Response | 4 | 3.8 |
| Total | 106 | 100.0 |

From the Table 5.13 it can be said that most of the students are using facebook as social communication and very less number of them are using Telegram. Use of these verities takes time even most of the students are using such technologies in only one hour/day it clears that most of them are using technology for entertainments or communication not for their subjective learning.

5. CONCLUSION:

Technology has been incorporated in many aspect of human behavior it has so many paybacks. Teaching learning procedure of present leads the future hence it should be available for all persons. From above analysis it can be conclude that utmost numbers of students are poor in technological feature. Public and public school students do not differ in the use ICT at home and same result was found in case of boys and girls students. In case of use of ICT at school significant result was found in case of private and public school students even that result is not differ in case of boys and girls students. By this result we also can says that school, guardians, governmental and non governmental bodies, policy maker, financers and other related stakeholders should make excellent plan for the improvement of learners ICT skills for their future development.

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