

# Student Online Activities and their impact on Self driven Learning and Motivation among Students in Public Secondary Schools in Bungoma County, Kenya

Kato Masika Erastus

Masinde Muliro University of Science and Technology  
P.O. Box 190 kakamega, Kenya

\*Corresponding author details: Kato Masika Erastus; [erastusmasika@gmail.com](mailto:erastusmasika@gmail.com)

## ABSTRACT

The objective of this study was to establish student online activities and their impact on learning motivation among public secondary school students in Bungoma County, Kenya. The target population was 600 respondents in 71 schools. The sample size was 234 student respondents selected from 19 schools. Tools used for data collection were questionnaire and interview guide. Descriptive statistics such as frequencies and percentages were used. The study's findings revealed that student online activities had insignificant impact on learning motivation to enhance student self-driven learning. The study's recommendations were: availing of adequate tools to learners and emphasis on use of digital technologies such as tablets and mobile phones by school authorities. Internet services were necessary to allow learners connect with experts on global perspective in such a dispensation as this one.

**Keywords:** online activities; motivation; self-driven learning; student centred learning

## INTRODUCTION

The purpose of this study was to evaluate student online activities and their impact on motivation and Student self-driven Learning (SDL) and Student Centred Learning (SCL) in public secondary schools in Bungoma County, Kenya. This is in view of the much importance being attached to online learning as the only successful mode of learning during the COVID-19 pandemic period. Countries that have never given priority to online learning among learners in secondary schools are hurriedly rolling out online programs which are being resisted by the poor majority in the educational fraternity. This might still pose greater challenges where prior and adequate arrangements were not present. The study focused on 12 most common online activities i.e. emailing, word processing, personal communication, and learner- learner interactions, teacher-learner interactions, reading of online texts, social media interactions, online assignments, creativity, collaborative learning and self-evaluation. The study adopted descriptive survey research design. Data was collected through questionnaires. Results revealed that most of the learner online activities were hampered by lack of internet services in their schools. None internet use activities were overwhelmingly embraced. The study recommended that schools should install internet services as a key component of SCL. Schools should also encourage online environments, group discussions and giving of feedback to the learners. This is the only way to go otherwise the mass rolling out of online learning in schools may turn out to be a white elephant.

## BACKGROUND TO THE STUDY

### Student Online Activities and SDL Skills Practice

Havizoah & Zuraina (2007), selected four main SDL skills they deemed were constructivist and which embraced psychological principles. These were Self Directed Learning, collaboration and interactivity, student teacher interaction and deep learning.

According to Havizoah & Zuraina (2007), all the four SDL activities had a positive impact on SCL skills and learning motivation. Learners had embraced creative and innovative skills, and were 'turned on' that is they had become active participants in learning process. Psychologically online learning was found to have improved learner concentration on learning activities, visual tracking skills such as hand eye - coordination, attention to detail, memory enhancement and active listening skills. The less confident learners were able to forward their thoughts and ideas to their peers as well as behavioural change deemed positive for the achievement of self-efficacy. Use of online learning also improved learners' cognitive skills where learners are able to exploit high order thinking skills in the learning process (Underwood, 2009 & Maclellah, 2008). The various ICT use and learning skills are discussed in the subsequent sub section

### Online Active Learning skills

Online Active Learning involves mobilization tools for examinations, calculation and analysis of information (Singh, 2015). It provides a platform for student's inquiry, analysis and construction of new information. This also motivates learners leading to increased engagement in the learning process. Short Message Send (SMS) can be used especially for distant learning with students whose course requires them to communicate and calculate. Online interactions between student and student to teachers can be enhanced (Colston et al., 2017). It enables the learner to achieve self-efficacy and enhance individual personality development (Maclellah, 2008). All these can be achieved through the expansion of technology access to learners to enable them benefit from student self-driven learning and enhance SCL skills.

### Online Learning and Collaborative skills

This is an SDL skill where the students are encouraged to interact and cooperate with other students, teachers and experts, regardless of where they come from. It also improves on an individual's personality development as learners acquire social skills necessary for them to fit in society. Collaborative learning skills provide opportunity for learners to work and share ideas with people from different cultures helping them to enhance their communication skills as well as their global awareness (Saylor, 2012). This can be achieved by use of all range of online technologies to digital technologies. More online collaborative learning has been enhanced by computers through teleconferencing. To expand collaborative learning among students, the use of cheap and effective technologies such as tablets, smart phones and handheld computers are indispensable.

### Online Learning and Creative Learning skills

Online learning is important for learner creativity in that the learner is able to structure assignments, engage in creative problem solving, designing research projects, model building and video projects. According to the constructivists' theory of learning, learners are creators of knowledge from their experiences and incoming new information. A wide range of online technologies promotes access to new information for learners such as exposure to texts, learning materials and resource persons (Murray & Nicole, 2011). Creativity among learners can be facilitated by use of drill and practice which enhance retention and memory. It is also a component of constructivism.

Research show that contemporary online technologies use has potential for creativity among teachers and learners (Kim, Kim, Lee, Spector & DeMeester, 2013). Teaching with use of online technologies would make a teacher to develop a creative mindset that embraces new ways of content delivery. For instance, use of Smart phones which has not been designed for educational purposes can be used creatively for teaching where a teacher downloads diagrams, texts and images for learner consumption. On the other hand, students become creative in communication, creation of unique or mixed work, sharing videos, audio, images and texts across global contexts (Ertmer, ottebreit-Leftwich, Sadik & Sandurur, 2012).

Research has also revealed teachers' beliefs about the subject matter, learning and teaching and online technology use influence the way they approach practice (Kim, Kim, Lee, Spector & DeMeester, 2013). Therefore, if teachers have positive beliefs about online aided learning, they are likely to influence the learners to practice technology use hence making them become creators of knowledge. This would lead to SCL. Learner online activities therefore make them more creative in solving class work assignments and solving problems

### Online Integrative learning skills

This is online enhanced learning skill that promotes thematic and integrative approach to teaching and learning. Through online Integrative learning skill, the traditional classroom and SDL skills can be applied at the same time to enrich students' experiences and enrich SCL. The theoretical part of learning can be integrated with the practical part which is more collaborative and interactive to enhance SCL. The integrative learning improves cognition process of the individual. This can be achieved through more experiments and real-life problem solving (SCL, 2010).

Online enhanced learning will involve learners in the interactive learning more than the traditional classroom learning by exposing students to many learning resources, collaboration and generally students will able to reach out to the global interactive networks to prepare for life a head of them in the society (Bamber, 2014). Integrative online skills would enable the learner to create knowledge when he or she interacts with various sources of knowledge and is able to link the theory and the practical knowledge. Practice of the skills enhances retention and memory of the learner. The learner acquires personal experience and motivation to expand knowledge and realize self-efficacy.

### Online Evaluative learning skills

This is online enhanced learning skill which is student directed and self-regulative. Self-regulated learners are more motivated and are high achievers. Self-evaluation skills lead to the learners giving more attention to their work, organization of the work and self-control. They also allow learners to explore and discover rather than merely listen and remember (SCL, 2010). It enables learners to choose what to learn, how to learn and be able to assess his/ her learning achievement (Ktoridou & Epaminonda, 2016). Online evaluative learning skill can enable managers/stakeholders identify weaknesses of a programme and point out the kind of interventions needed for effective learning. It is a constructivist method of self-directed learning and motivation (Deci & Ryan, 1985). Online evaluative skill provides a way to fast learning through online quizzes, banks, and online platforms that enable collaboration and peer review (Bamber, 2014).

### STATEMENT OF THE PROBLEM

Online learning has turned out to be the only option to enhance learning during this COVID 19 pandemic that has stalled learning in nearly all institutions of learning globally. Online learning has therefore become a topic for discussion in educational sectors in most countries. Already online learning has been rolled out even in countries with poor technology statuses especially in the developing countries. Online technologies for leaning will enhance distant learning that takes place away from the learning institutions. It should be geared towards mentoring personalities with global awareness qualities and active participants through networking, sharing of information and collaboration with others while at home. Problematic exposure of learners to technology use may undermine the key goal of online learning in schools and derail learner achievement of both SDL and SCL and motivation (Nehme 2010). Lack of internet in schools, use of poor or faulty online devices and lack of supervision are factors that are likely to undermine SDL and SCL.

### OBJECTIVE OF THE STUDY

The objective of the study was to evaluate student online activities and their impact on SDL motivation and SCL skills among public secondary school students in Bungoma County.

### Methodology

Quantitative research design was used. This study adopted descriptive survey research design. Purposive and simple random survey was employed. Data was collected through questionnaires and analyzed through descriptive statistics through SPSS. The results were presented in tables as frequencies and percentages

### Students' Responses on Emailing Skills

Student respondents were asked to indicate the number of hours spent on emailing skill per week. The results are presented in table 1.

**TABLE 1:** Students' Responses on Emailing Skills

		Frequency	Percentage
Valid	0 Hrs	202	86.3
	1 Hrs	16	6.8
	2 Hrs	7	3.0
	3 Hrs	2	0.9
	4 Hrs	7	3.0
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source Survey Data (2018)

Table 1 shows that majority of the respondents 202 (86.3 %) spent 0 hrs. on emailing, 16 (6.8 %) spent 1hr, 7 (3.0 %) spent 2 hrs., 2 (0.9 %) spent 3 hrs. and 7(3.0 %) spent 4hrs. These results imply that emailing skill was best exploited by the learners (6.8 %) at 1hr, (3.0 %) at 2 hrs. and 3.0 % at 4hrs of technology exposure per a week. On average basis only 32 (13.7 %) of student respondents spent averagely 2 hrs. on emailing skill per week. This hence implies that several factors may have affected learner exploitation of emailing skill such as lack of internet

services in schools, policy issues and timetabling problems. Poor schools were unable to install internet services.

#### Students' Responses on Personal Communication Skills

Personal communication skills entailed interactions through technology between learners and friends for personal reasons and interests. Respondents were asked to indicate the number of hours they spent on personal communication skills. Table 4.2 presents the results.

**TABLE 2:** Students' Responses on Personal Communication Skills

	Frequency	Valid Percentage
0 Hrs.	202	86.3
1 Hrs.	13	5.6
2 Hrs.	6	2.6
3 Hrs.	4	1.7
4 Hrs.	9	3.8
<b>Total</b>	<b>234</b>	<b>100</b>

Source: Field survey 2018

Table 2 shows that majority of the respondents 202 (86.3 %) spent 0 hrs on Personal Communication skills, 13 (5.6 %) spent 1hr, 6 (2.6 %) spent 2 hrs, 4 (1.7 %) spent 3 hrs and 9(3.8 %) spent 4hrs. Respondents (5.6 %) recorded the highest responses at 1hr and 3.8 % at 4hrs. These results imply that personal communication skill was best exploited by the learners (5.6 %) at 1 hr and 3.8 % at 4 hrs of technology exposure per week respectively.

On average basis only 32 (13.7 %) respondents spent 2 hrs on personal communication skill per week.

#### Students' Responses on Creativity skill

Creativity entailed designing of personal programs, artistic and decorative works, using technology. Respondents were asked to indicate the number of hours spent on creative skills. Table 3 presents the results.

**TABLE 3:** Students' Responses on Creativity Skills

	Creativity	Frequency	Percentage
Valid	0 Hrs	202	86.3
	1 Hrs	16	6.8
	2 Hrs	7	3.0
	3 Hrs	2	0.9
	4 Hrs	7	3.0
	Above 5 Hrs	5	2.1
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source: Field survey (2018)

Table 3 shows that majority of the respondents 113 (48.3 %) spent 0 hrs on creativity, 25 (10.7 %) spent 1hr, 17(7.3 %) spent 2 hrs, 19 (8.1 %) spent 3 hrs, 55 (23.5 %) spent 4 hrs and 5 (2.1 %) spent above 5 hrs. These results imply that creativity skill was best exploited by the learners (23.5 %) at 4 hrs and 10.7 % at 1hr of technology exposure per week respectively. On average basis 121(51.7 %)

respondents spent averagely 2 hrs of the skill per week. Creativity was therefore averagely practised by the learners. Therefore, this implies that creativity was exploited through various ways such as uploading of programs, pictures, decorations, art designs, fun making and drawings with ease because most of these activities are cheap and may not necessarily require internet.

**Students’ Responses on Teacher-Learner Interactions**  
 Teacher-learner interactions through technology is an important skill where learning would continue without necessarily having face to face interactions and which constitute active learning. This can be achieved through short text messages to communicate assignments, marking

and for student inquiries. It is a powerful driver of self-directed learning where the teacher facilitates learning as learners get involved in their own learning. Respondents were asked to indicate the number of hours spent on teacher-learner interactions per week. Table 4 presents the results.

**TABLE 4:** Students’ Responses on Teacher-Learner Interactions

Hours	Frequency	Percentage
0 Hrs	22	9.4
1 Hrs	28	12.0
2 Hrs	32	13.7
3 Hrs	39	16.7
4 Hrs	109	46.6
Above 5 Hrs	3	1.3
<b>Total</b>	<b>234</b>	<b>100.0</b>

Source: Survey Data (2018)

Table 4 shows that student respondents 22 (9.4 %) spent 0 hrs. on teacher-learner interactions, 28 (12%) spent 1hr, 32 (13.7 %) spent 2 hrs., 39 (16.7 %) spent 3 hrs., 109 (46.6 %) spent 4 hrs., 3 (1.3 %) above 5 hrs. and 1(0.4 %) spent 47 hours. These results reveal that teacher-learner interactions recorded highest performance of 46.6 % at 4hrs and least performance was 3 (0.4 %) at 5 hrs., implying that there was average exploitation of the skill by the respondents with highest number of respondents recording 46.6 % at 4hrs, followed 16.7 % at 2 hrs. of the skill exploitation per week. On average basis 212 (90.6 %)

respondents spent averagely 2 hrs. of the skill per week. This was the skill performed by the highest number of respondents since it included all the classroom instruction hours which affected nearly all the students.

**Students’ responses on Teacher-Learner Interaction Skill in Schools of various levels**

The cross tabulation between the teacher-learner interactions and level of schools gave the comparison of the exploitation of the skill in various schools. Table 5 presents the results.

**TABLE 5:** Cross Tabulation of Teacher-Learner Interactions and Level of Schools

Level of School	0 Hour	1 Hour	2 Hours	3 Hours	4 Hours	Above 5 Hours	47 Hours	Total
<b>Sub-County</b>	1(2.27%)	4(9.09%)	11(0.25%)	16(36.4%)	11(0.25%)	0(0%)	1(2.27%)	44
<b>County</b>	6(14.6%)	11(26.8%)	7(17.1%)	3(7.32%)	14(34.1%)	0(0%)	0(0%)	41
<b>Extra County</b>	7(8.1%)	9(10.5%)	10(11.6%)	14(16.3%)	44(51.2%)	2(5.2%)	0(0%)	86
<b>National</b>	4(7.7%)	3(5.8%)	1(1.9%)	6(11.54%)	37(71.2%)	1(1.9%)	0(0%)	52
<b>Total</b>	18	27	29	39	106	3	1	223

Source: Field survey 2018

Table 5 indicates the cross tabulation of the teacher-learner interactions and the level of schools as follows: at 1hour sub county schools recorded a minimum of 9.09 % and a maximum 36.4 % at 4 hrs. of exposure. County schools recorded a minimum of 26.8 % at 1 hour and a maximum of 34.1% at 4 hrs. Extra county schools recorded a minimum of 10.5% at 1hour and a maximum of 51.2 % at 4 hours. Finally, the national schools recorded a minimum of 5.8 % at 1hr and a maximum of 71.2 % at 4 hrs. This therefore implies that the highest number of compliances to teacher-learner interactions were the national schools (71.2) % at 4 hours followed by the extra county schools (34.1%) at 4 hours. The county schools recorded 34.1% at 4 hours and the sub county schools had 0.25 % at 4hrs.

However, at 1-hour compliance the highest responses were from the county schools 26.8 %, followed by extra county schools at 10.25 %, then Sub County 9.09 % and the least were national schools with only 5.8 %. This demonstrates that the main beneficiaries of teacher-learner interactions via technology are the national schools.

**Students’ Responses on Learner-Learner Interaction Skills**

Learners were asked to give the number of hours they spent on learner-learner interactions. This skill was instrumental in the enhancement of active and collaborative learning. Table 6 presents the results.

**TABLE 6:** Students’ Responses on Learner-Learner Interaction Skills

		Frequency	Valid Percent
Valid	0 Hrs	202	86.3
	1 Hrs	16	6.8
	2 Hrs	7	3.0
	3 Hrs	2	0.9
	4 Hrs	7	3.0
	Above 5 Hrs	5	2.1
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source: Field survey 2018

Table 6 shows that respondents 45 (19.2 %) spent 0 hrs. on learner-learner interactions, 22(9.4 %) spent 1hr, 17 (7.3 %) spent 2 hrs., 18 (7.7 %) spent 3 hrs., 127 (54.3 %) spent 4 hrs. and 22 (9.4 %) at 1hr. These results reveal that learner-learner interactions recorded 127 (54.3 %) at 4 hrs. highest performance and 22 (9.4 %) at 1hr, implying that there was average exploitation of the skill by the respondents with highest recording 54.3 % at 4hrs, followed by 22 (9.4 %) at 2hrs of the skill exploitation per week.

On average basis 189 (80.8 %) respondents spent averagely 2 hrs. of the skill per week.

**Students’ responses on Learner-Learner Interaction Skill in Various Levels of Schools.**

The cross tabulation between the learner-learner interactions and level of schools gave the comparison of the exploitation of the skill in the various levels of the schools. Table 7 presents the results.

**TABLE 7:** Cross Tabulation of Learner-Learner Interactions and Level of Schools

Level of School	0 Hour	1 Hour	2 Hours	3 Hours	4 Hours	Above 5 Hours	Total
<b>Sub-County</b>	10(31.7%)	4(9.09%)	4(9.09%)	8(18.18%)	18(40.9%)	0(0%)	44
<b>County</b>	13(29.6%)	5(12.2%)	8(19.5%)	2(4.9%)	13(31.7%)	0(0%)	41
<b>Extra County</b>	14(16.3%)	8(9.3%)	2(2.33%)	7(8.14%)	55(63.96%)	0(0%)	86
<b>National</b>	4(7.69%)	3(5.77%)	3(5.77%)	0(0%)	37(71.15%)	5(9.61%)	52
<b>Total</b>	41	20	17	17	23	5	223

Source: Field Survey 2018

Table 7 indicates the cross tabulation of the learner-learner interactions and the level of schools as follows: at 1 hour sub county schools recorded a minimum of 9.09 % at 1 hour and a maximum 40.9 % at 4 hrs. County schools recorded a minimum of 12.2 % at 1 hour and a maximum of 31.7 % at 4 hrs. Extra county schools recorded a minimum of 9.3 % at 1hour and a maximum of 63.96 % at 4 hours. Finally, the national schools recorded a minimum of 5.77 % at 1 hour and a maximum of 71.2 % at 4 hrs. This therefore implies that the highest number of compliances to learner-learner interactions were the national schools

71.2 % at 4 hours followed by the extra county 63.96 % at 4 hours. The sub county schools recorded 40.9 % at 4 hours and the county schools had 31.7 % at 4 hrs. However, at 1-hour compliance, the highest responses were from the county schools 12.2 % followed by extra county schools 9.3 %, then sub county 9.09 % and the least national schools with only 5.77 %.

**Students’ Responses on Online Assignment Skills**

Respondents were asked to indicate the number of hours they spent on online assignments. Table 8 presents the results.

**TABLE 8:** Students responses on Online Assignment Skills

		Frequency	Valid Percent
Valid	0 Hrs	180	76.9
	1 Hrs	20	8.5
	2 Hrs	7	3.0
	3 Hrs	2	0.9
	4 Hrs	25	10.7
	<b>Total</b>		<b>234</b>

Source: Field survey 2018



Table 8 shows that respondents 180 (76.9 %) spent 0 hrs. on online assignments, 20 (8.5 %) spent 1hr, 7 (3.0 %) spent 2hrs, 2(.9 %) spent 3 hrs. and 25 (10.7 %) spent 4 hrs. These results reveal that online assignments on the highest only recorded 10.7 % at 4 hrs. and at the lowest (8.5 %) at 1 hr. Online assignments registered highest exploitation of 10.7 % at 4 hours, followed by 8.5 %).

On average basis 54 (31.62 %) of the respondents spent 2 hrs. on online assignments per week.

#### Students Responses on Word Processing Skill

Learners were asked to give the number of hours they spent on word processing skill. Table 9 presents the results.

**TABLE 9:** Students' responses on Word Processing Skill

		Frequency	Valid Percent
Valid	0 Hrs	35	15.0
	1 Hrs	27	11.5
	2 Hrs	21	9.0
	3 Hrs	26	11.1
	4 Hrs	124	53.0
	58	1	0.4
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source: Field survey 2018

Table 9 shows that respondents 35(15 %) spent 0 hrs. on word processing, 27(11.5 %) spent 1hr, 21 (9.0 %) spent 2hrs, 26 (11.1 %) spent 3 hrs., 124 (53.0 %) spent 4 hrs. and 27 (11.5 %) at 1 hrs. These results reveal that word processing was exploited at highest 53.0 % at 4hrs, followed by 11.5 % at 1 hr. of the skill per week. This indicates average exploitation of the skill. On average basis 199 (85 %) of the respondents spent 2 hrs. for word processing per week.

The skill was practiced widely and considered one of the most basic skills acquired and practiced by learners. It does not need internet to run and learners may have exploited the skill to a great extent.

#### Students' Responses on Internet Games Skills

Learners were asked to respond to the number of hours they spent on internet gaming skill. Table 10 presents the results.

**TABLE 10:** Students responses on Internet Games Skills

		Frequency	Valid Percent
Valid	0 Hrs	199	15.0
	1 Hrs	15	11.5
	2 Hrs	7	9.0
	3 Hrs	2	11.1
	4 Hrs	10	53.0
	<b>Total</b>	<b>233</b>	<b>100.0</b>
Missing		1	
<b>Total</b>		<b>234</b>	

Source: Field survey data 2018

Table 10 shows that respondents 199 (85.4 %) spent 0 hrs on internet games, 15(6.4 %) spent 1hr, 7 (3.0 %) spent 2 hrs, 2 (0.9 %) spent 3 hrs and 10 (4.3 %) at 4 hrs. These results reveal that gaming on internet at the lowest accounted for only 4.3 % at 4 hrs and at the highest 6.4 % at 1 hr implying that internet gaming skills were best exploited by the learners at 1 hr (6.4 %) and 4 hrs (4.3 %) of technology exposure per week respectively. On average basis 35 (14.6 %) of the respondents spent 2 hrs for per week.

The overwhelming majority 199 (85.4 %) did not play internet games. Internet games were mostly played by young individuals. Since such games also relied on internet, they were therefore practised to a limited extent among learners.

#### Students' Responses on Social Media Interaction Skills

Learners were asked to indicate the number of hours they spent per week on social media. Table 11 presents the results.

**TABLE 11:** Students responses on Social Media Interaction Skills

		Frequency	Valid Percent
Valid	0 Hrs	210	89.70
	1 Hrs	8	3.4
	2 Hrs	4	1.7
	3 Hrs	1	0.4
	4 Hrs	10	4.3
	14 Hrs	1	0.4
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source survey data (2018)

Table 11 shows that respondents 210 (89.7 %) spent 0 hrs. on social media interaction, 8 (3.4 %) spent 1hr, 4 (1.7 %) spent 2 hrs., 1(0.4 %) spent 3 hrs. and 10 (4.3 %) spent 4 hrs. These results indicate that social media on the highest accounted for only 4.3 % at 4 hrs. followed by 8 (3.4 %) at 1 hr. implying that social media interaction skills were best exploited by the learners at 4 hr. (4.3 %) and 1(3.4 %) of technology exposure per week respectively.

The overwhelming majority 210 (89.7 %) had no access to social media interactions. On average basis 24 (10.3 %) of the respondents spent an average of 2 hrs per week on social media. This implies that very few respondents had exploited the skill.

**Students’ Responses on Collaborative Learning Skills**

Learners were asked to indicate the number of hours per week they spent on internet on collaborative learning skill. Table 12 Presents the Results.

**TABLE 12:** Students’ responses on Collaborative Learning Skills

		Frequency	Valid Percent
Valid	0 Hrs	211	90.2
	1 Hrs	5	2.1
	2 Hrs	4	1.7
	3 Hrs	2	0.9
	4 Hrs	11	4.7
	14 Hrs	1	0.4
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source: Field survey (2018)

Table 12 shows that respondents 211 (90.2 %) spent 0 hrs. on online collaborative learning, 5 (2.1%) spent 1hr, 4 (1.7 %) spent 2 hrs., 2 (0.9 %) spent 3 hrs. 11(4.7 %) spent 4 hrs. and 1(0.4 %) spent 1hr. These results reveal that collaborative skills on the highest accounted for only (4.7 %) at 4hrs, followed by 2.1 % at 1 hr. This implies the exploitation of the skill was best at 4 hrs. and 1hr respectively.

The overwhelming majority 211 (90.2 %) failed to exploit the collaborative learning skill. On average basis 23 (0.8 %) of the respondents exploited the skill at an average of 2 hrs. per week.

**Students’ Responses on Reading Online Texts**

Respondents were asked to indicate the number of hours per week they spent on reading online texts. Table 13 presents the Result.

**TABLE 13:** Students’ responses on Reading Online Texts

		Frequency	Valid Percent
Valid	0 Hrs	211	90.2
	1 Hrs	10	4.3
	2 Hrs	3	1.3
	3 Hrs	1	0.4
	4 Hrs	9	3.8
	<b>Total</b>		<b>234</b>

Source: Field survey (2018)

Table 13 shows that student respondents 211 (90.2 %) spent 0 hrs. on online text book reading, 10 (4.3 %) spent 1hr, 3 (1.3 %) spent 2 hrs., 1 (0.4 %) spent 3 hrs. and 9 (3.8 %) spent 4 hrs. These results show that online text book reading recorded the highest performance 4.3 % at 1hrs followed by 3.8 % at 4 hr., implying that the exploitation of the skill was best exploited at 1 hrs. and 4 hrs. respectively.

On average basis 24 (0.8 %) of the respondents spent 2 hrs. per week on reading online texts. The overwhelming majority 211(90.2 %) did not read online textbooks.

#### Students' Responses on Self-Evaluation Skills

Respondents were asked to indicate the number of hours per week they spent on self-evaluation. Table 14 presents the results.

**TABLE 14:** Students' Responses on Self-Evaluation Skills

		Frequency	Percent
Valid	0 Hrs	128	54.7
	1 Hrs	16	6.8
	2 Hrs	12	5.1
	3 Hrs	18	7.7
	4 Hrs	60	25.6
<b>Total</b>		<b>234</b>	<b>100.0</b>

Source: Field survey (2018)

Table 14 shows that student respondents 128 (54.7 %) spent 0 hrs. on self-evaluation, 16 (6.8 %) spent 1hr, 12 (5.1 %) spent 2 hrs., 18 (7.7 %) spent 3 hrs. and 60 (25.6 %) spent 4 hrs. These results show that self-evaluation recorded the highest performance 60 (25.6%) at 4 hrs. and the lowest 16 (6.8 %) at 1 hr., implying that the best results of the exploitation of the skill among the respondents were at 1hr and 4 hrs. respectively. On average basis 106 (45.3 %) of the respondents spent 2 hrs. per week on self-evaluation skill practice. This was fairly average performance which could be attributed to minimal dependency on internet by learners.

#### DISCUSSIONS

From the data presented, internet utility remains a key component of online based SCL skills. It is an inevitable tool for any online transactions and which has cost implications. The emailing skill (active learning) had insignificant results (13.7 %) on SCL and motivation in the current study because of restricted learner internet activities in most schools. This finding concurs with the finding given by the BECTA report (2009) on emailing among students in 27 selected European secondary schools whose online results were presented: most learners (54 %) performed emailing skill outside school, 28 % performed both within and without schools, 5 % practiced emailing within schools per week and 13 % never emailed at all. The study finding is also in agreement with Bee & Chia (2008) who found out that emailing skill was performed by 33.3 % of student respondents among secondary schools in Malaysia per week. Internet browsing was performed by 36 % of student respondents. Generally emailing skill which depended on internet was still lowly practiced among learners. Use of the skill in learning was rare but it is an important for exchange of academic materials and information among learners to enhance both active and collaborative skills.

Personal communication skill requires use of portable technologies such as hand held computers, smart phones, mobile phones and tablets. However, the findings of this study reveal that such technologies are not exploited among most learners in public secondary schools in Bungoma County. The tools are instrumental for learner exploitation of technology anytime anywhere, hence this was not achieved. Therefore, the personal communication skill (active learning) had insignificant results (13.7 %) on SCL and motivation in the current study. This finding concurs with the findings given by the BECTA report 2009,

& Bee & Chia (2008), on personal communication skills among learners in selected European secondary schools and Malaysian secondary schools where 50 % and 17.9 % of students exploited the skill per week respectively. Therefore, the skill was not commonly exploited within schools but outside school it was more exploited.

Most young individuals are attracted to computers to do creative works. Therefore, the creativity skill (creative learning) had significant results (51.7 %) on SCL and motivation in the current study. These findings concur with the BECTA report (2009) on role of technology on creativity among learners where respondents (78%) had uploaded artefacts (mostly photographs or video clips from phones) to the internet. However, nearly all technology use for creativity was done outside school, and for social purposes.

Teacher learner interaction was highly practiced given that all contact hours between the teacher and the learner were exploited during class hours and any other additional hours. Therefore, the teacher-interaction skill (active learning) had significant results (90.6 %) on SCL and motivation in the current study. This interaction is cheap and could benefit all the learners. This finding concurs with the BECTA report (2009) where it was reported that (59 %) of the teachers believed that popular resources should get more use in the classrooms to foster teacher - learner interactions over a wide range of technologies.

Regarding the comparison made between various levels of schools on learner - learner interactions, national and extra county schools enjoyed more interactions than county and sub county schools. This can be explained by the fact that most extra county and national schools are well equipped with technological tools hence teachers are motivated to exploit adequate time with learners to enhance SCL and motivation. Learners have more exposure to technology in terms of time and accessibility.

Learner-learner interactions like teacher-learner interactions were practiced by majority of the learners because of proximity to each other and class sessions undertaken together. This could also take the form of sharing of ideas, group discussions and group assignments undertaken together by the class (Nehme, 2010). Therefore, the learner-learner skill (online active learning) had significant results (80.8 %) on SCL and motivation in the current study.



Therefore, the main beneficiaries of learner- learner interactions via technology were the national schools while the county and sub county schools had little time for exposure to technology.

Online assignments were poorly preformed due to lack of online environments in most schools. Few schools availed internet to learners consequently undermining online assignments. This finding could also be attributed to the fact that timetables did not allocate more time for technology use in schools. The first come first served system of computer use in the developing countries may have been another major barrier to technology use due to inadequate tools (UN 2008). Therefore, the online assignment skill (online active learning) had insignificant results (31.62 %) on SCL and motivation in the current study. This finding concurs with the BECTA report (2009) which disclosed that 34 % of the learners spent on average only 1 hour each week using a computer at school on online assignments, and non-exploitation of internet was common in most schools. Timetable rigidity was also confirmed by BECTA report (2009) as a barrier to ICT use implementation in schools.

The word processing skill (online active learning) had significant results (85 %) on SCL and motivation in the current study. This is basic skill which only require a key board for typing of texts. It is therefore the cheapest skill practiced widely for messages, editing and formatting. The study finding is in agreement with the BECTA report (2009) and Bee & Chia (2008) who found out that most older students were more involved in typing, editing and formatting of texts on computers as opposed to young individuals who played games most of their free times.

Gaming on internet skill (online creative learning) had insignificant results (14.6 %) on SCL and motivation in the current study. Gaming in most cases involved young individuals who choose to make fun. Gaming which depends on internet is expensive as opposed to gaming which does not require internet. This finding is in agreement with the BECTA report (2009) where desktop games recorded 46 % of the respondents in the European countries, however a fraction of them who are older preferred browsing, social networking, general typing and email reading.

Collaborative skills mostly rely on the utilization of internet services. Therefore, where internet access is a problem, there is no meaningful collaborative learning activities that can be achieved. The skill can be used by learners through exchange of knowledge, educational materials and ideas across time and space. In most schools in Africa use of collaborative learning through internet is feared to subject learners to inappropriate materials. However, learners still access the materials mostly outside the school. Therefore, the collaborative learning skill had insignificant results (0.8 %) on SCL and motivation in the current study. The findings agree with the BECTA report (2009) which found out that Collaborative activity is higher outside school than inside the school. Activities such as file, picture sharing, videos and music downloading and sharing had minimal use within schools.

Social media skill is a least impressed skill as it is not widely practiced in most schools by learners within schools. The skill requires internet connectivity with use of portable tools such as laptops, smart phones and mobile phones. Therefore, the social media skill (online collaborative learning) had insignificant results (10.3 %) on SCL and motivation in the current study. Since some of these devices are not allowed in schools, social media was not in existence in most schools.

However, learners may have exploited the skill through mobile phones outside school. This finding is in agreement with the BECTA report (2009) stating that social networking was high among learners 69 % outside the school and yet only 5 % accessed within school while 23 % of the learners never utilized the resource at all. Social medial skill is important for connecting with friends by creating profiles. The skill is good for collaborative learning and promotion of social skills among learners. Tools needed are the portable technologies such as mobile phones and tablets whose use in school has not been fully consented.

Online text reading skill requires personal mobile devices such as laptops, smart phones and tablets to avoid interruptions by other users. This was the less embraced skill because the tools available could not be used by individuals for long hours as they are few and also required internet services which were lacking in most schools. It was not possible for students to read online texts from the few computers hence it was the least exploited skill. Therefore, reading online text skill had insignificant results (0.8 %) on SCL and motivation in the current study. This finding is supported by the BECTA report (2009) finding that browsing and reading was mostly done by older individuals in school

Self-evaluation was subject to the availability of tools and was averagely performed. Learners could rehearse skills and practice them at their own time to master concepts especially in preparation for exams. Therefore, self-evaluation skill had significant results (45.3 %) on SCL and motivation in the current study.

## CONCLUSION

The results of the SDL and motivation skills can be categorized into two main parts: skills enhanced through internet and skills enhanced without internet use. All skills which required internet use such as emailing (on average basis only (13.7 %) respondents spent 2 hrs), social media use (averagely 10.3 % of the respondents spent an average of 2 hrs) and online assignments (averagely 31.62 % of the respondents spent 2 hrs) were very poorly performed given that most schools were yet to install internet and some schools had no plans to install internet because of the high cost of installation. This finding is also in agreement with earlier finding on the distribution of tools where most digital tools such as laptops and smart phones were not available for use in schools. Skills that did not require internet use such as word processing (on average basis (85 %) respondents spent 2 hrs), self-evaluation (highest performance on average basis only 45.3 % of the respondents spent 2 hrs), teacher-learner interaction (on average basis only 90.6 % of student respondents spent 2 hrs) and learner- learner interactions (on average basis only 80.8 % of student respondents spent 2 hrs) performed well compared to technology use with the involvement of internet. This implies that internet-based skills were not factored in teaching-learning activities hence greatly undermined the use of internet skills and jeopardized the learner attainment of SCL skills and motivation as over 90 % of student respondents recorded 0 hrs on SDL skills and motivation

The findings on the SCL skills concur with Nehme (2010) who found out that SCL depends on encouraging interactions, collaboration and formation of study groups, creation of online environments, supervision and supplying of feedback to the learners. Motivation can only occur if the teachers stimulated it among learners through the creation of online environments. In the current study absence of online environments in most schools led to very low attainment of SCL skills.

**Summary of Student Responses to SCL Skills**

Responses on SCL were summarized on an average basis of 2 hours per week. Table 15 presents the results

**TABLE 15:** Summary of Student Responses to SCL Skills

SCL Skills	Frequency	Percentage	Average Hours
Emailing	32	13.7	2
Personal Communication	32	13.7	2
Creativity	121	51.7	2
Teacher - learner Interactions	212	90.6	2
Learner - Learner Interactions	189	80.8	2
Online Assignments	54	31.6	2
Word Processing	199	85	2
Internet Gaming	35	14.6	2
Social Media	24	10.3	2
Collaborative	23	0.8	2
Reading Online Textbooks	24	0.8	2
Self-Evaluation	106	45.3	2

Source: Field Data (2018)

Table 15 shows that teacher-interactions had the highest performance of 90.6 %, followed by word processing 85 % and learner-learner interactions was 80.8 %. Creativity 51.7 % and self-evaluation 45.3 % were averagely practiced. Emailing, personal communications, online assignments, Internet games, Social media, Collaborative learning and reading online textbooks which depended on internet were all below 35%. This finding is in agreement with results on infrastructural motivation where tools that relied on availability of internet were minimally utilized (see table 4.8). This implies that internet use was a key aspect of SCL which was not factored in by most schools.

**RECOMMENDATIONS**

Regarding the objective of the study, learner online activities were highly undermined by lack of online environments. The study recommends for the creation of online environments, formation of groups for discussion among learners and regular feedback.

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