

**The Effects Of E-Learning On Learner's Academic Performance
In Secondary Schools, A Case Study Of Magale Secondary School, Namisindwa District In
Uganda**

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Abstract.

This study explores the effects of e-learning on academic performance in secondary schools, with a specific focus on Magale Secondary School in Namisindwa District, Uganda. E-learning, utilizing electronic technologies for educational curriculum access, has become a global phenomenon, offering flexibility and accessibility. In Uganda, like many developing countries, the integration of technology into education is gaining prominence. This research investigated the potential positive contributions of e-learning on student interest and academic performance in the Ugandan context. The study employs a quantitative research design, utilizing questionnaires to collect data from 100 respondents, including learners, teachers, and administrators. Findings revealed a positive perception of e-learning benefits, such as increased academic performance, flexibility, interactive learning, cost-effectiveness, and access to resources. Challenges identified include limited internet access, reduced teacher-student interaction, and concerns about e-learning promoting laziness. Statistical analyses in Table 3 and Table 4 further confirm a strong positive correlation between e-learning and academic performance. The regression model indicates a positive association, with approximately 23.6% of the variance in academic performance explained by e-learning. In conclusion, while challenges exist, the overall sentiment towards e-learning is positive. Recommendations include improving internet infrastructure and implementing motivational programs to enhance the e-learning experience. These findings contribute to the ongoing discourse on the role of e-learning in improving educational outcomes, particularly in the context of developing countries.

Key words. E- Learning, academic performance and Secondary schools.

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Background to the study

E-learning is utilizing electronic technologies to get access educational curriculum. It refers to a course, program or degree that is completed through online (Christopher, Komunda, et al., 2022). Presently, e-learning is inspiring the world societies at large (Sylvia & Kimwise Alone, n.d.). In this perturbed era, it is hard to get education in formal mode due to social, economic or interconnected problems in the society. But everyone has an urge to continue its education within possible means. E-learning makes education flexible because there is no limitation of time and space (Sarah et al., n.d.). So, e-learning makes learning easier (Anthony, Kazaara, & Kazaara, 2023). Quality education is a global concern, creating a drive to new and improved strategies in teaching and learning processes aimed at feeding into an economy powered by technology and fueled by information and knowledge (Brian & Kalinaki, n.d.). As a result it comes as no surprise that, education institutions “Metropolitan International University” which is our case study, have been forced to embrace new education strategies to a large extent due to the increasing student needs seeking to constantly acquire and apply new knowledge and skills (Victoria et al., 2023). Information and communication technologies (ICT) which include radio and television, as well as newer digital technologies, such as computers and the Internet have been seen as potentially powerful enabling tools for this educational change and reform (Anthony, Kazaara, Kazaara, et al., 2023). The use of ICT in education has been manifest in technologies, such as web-based learning, virtual learning, and online learning and e-learning. In this study we use the term e-learning in a wide sense and define it as a learning method that uses ICT to support and enhance teaching and learning processes (Margaret, 2023). Reporting on a number of international studies that the mere use of technology in the classroom does not guarantee learning improvement. Use of information and communication technology for learning process is called E-learning (Suzan & Kazaara, 2023). E-learning is a term which is used to describe the online education and web-based training etc. E-learning has become rapidly popular learning approach in higher educational institutions due to rapid growth of internet technology (Lorna & Faith Charlotte, 2023a; Mpirirwe et al., n.d.). E-learning is a process of using information and communication technology (ICT) to

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enhance and facilitate teaching and learning. Actual use of e-learning has significant effect in student's academic performance. E-learning use is associated with increased student's academic performance (Ntirandekura, Friday, et al., 2022). In these days technology is a tool used to remove geographical barriers and facilitates everybody to learn anytime and anywhere in the world without the presence of the lecturer (Aisha et al., n.d.). The main of e-learning is to increase accessibility of education and reducing the costs and time as well as improving student's academic performance (Alamri, 2019). This approach of learning facilitates different students at different continents to attend the same classes almost at the same time.

Statement of the problem

The educational landscape is undergoing transformative changes globally, with an increasing emphasis on the integration of technology to enhance learning experiences (Pauline, 2023). While several countries (Ntirandekura, Ainebyoona, et al., 2022), including Uganda, are actively promoting education through e-learning initiatives, the impact of these technological interventions on student learning and interests, particularly in the context of developing nations, warrants comprehensive exploration (Lorna & Faith Charlotte, 2023b). In Uganda, where the utilization of science and technology is still in its nascent stages, the prevailing modes of learning may not align optimally with contemporary educational needs (Brighton et al., 2023). The current research seeks to delve into the intricate dynamics of this evolving educational paradigm, specifically investigating the potential positive contributions of technology on students' learning interests at early stages in Uganda (Bendtsen et al., 2020). Many countries of the world such as Uganda are promoting education through e-learning education (Sylvia & Kimwise Alone, n.d.). In developing countries such as Uganda, use of science and technology at early stages. So, mode of learning is not more practiced or supported. However, the current research investigated the potentially positive contributions of technology on student's interest in learning at young ages in Uganda hence finding its effects on e-learning (Mark et al., 2023).

Research objectives

1. To examine the benefits of e-learning in secondary school.
2. To assess the problems of e-learning in secondary school.
3. To identify the possible solutions to the problems affecting e-learning in secondary school.

Research Questions

1. What are the benefits of e-learning in secondary schools in Uganda?
2. What are the problems affecting e-learning in secondary schools in Uganda?
3. What are the possible solutions to the problems affecting e-learning in Uganda?

Methodology.

The Researcher adapted to a quantitative research design. Quantitative research design was used because the researcher carried out research in Namisindwa district which had a big population. The Study was conducted in Kimanya Sub County in Masaka City. The choice of the study area was because the researcher used all the languages used in the study area and more so the researcher understood all the study area properly which made data collection easy and concrete. The researcher adopted both primary and secondary sources of information. Primary sources of information included using questionnaires to collect data and secondary source of information included use of articles related to the study, publications and books. The study population comprised of 100 respondents from Magale secondary school including learners, teachers and the administrators including parents. The sample size of this study was determined according to Slovene's formula of sample determination. Under this, a target population of 100 was reduced to a sample size of 80 respondents respectively as stated by Slovene's (1978). The researcher developed both primarily and secondary sources of information and data. In collecting Primary Data, the researcher used questionnaires as tools for collecting data. For Secondary Data, publications by re known authors in this field for example magazines, articles, books and News Papers will be used by the researcher to gather information that is required. Data analysis was conducted in SPSS and all results were presented in a tabular (Nelson et al., 2022). Frequencies

and percentages were reported at univariate level, correlation and regression analysis were considered for further analysis.

Results.

Table 1: Shows the benefits of e learning.

RESPONSE	SA		A		UD		D		DS		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%
Flexibility and Accessibility:	58	26.0	78	34.0	37	16.0	27	12.0	25	11.0	225	100
Interactive Learning Environments	98	44.0	75	33.0	27	12.0	25	11.0	0.0	0.0	225	100
Self-Paced Learning	89	39.0	69	31.0	60	27.0	7	3.0	0.0	0.0	225	100
Cost-Effectiveness	65	29.0	82	36.0	52	23.0	16	7.0	10	4.0	225	100
Access to a Variety of Learning Resources	49	22.0	91	40.0	29	13.0	36	16.0	20	9.0	225	100
Immediate Feedback and Assessment	58	26.0	87	39.0	56	25.0	17	7.0	7	3.0	225	100

Source: primary Data, 2021

According to the table, 56(26%) of the respondents strongly agreed and 78(34%) agreed respectively that the academic performance significantly increased as a result of e learning which led to flexibility and accessibility of the reading materials. Accordingly, 37(16%) were not sure,

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27(12%) disagreed and only 11(5%) Strongly disagreed to the idea. 98(44%) of the respondents strongly agreed to interactive learning environment as one of the benefits of e learning (Christopher, Komunda, et al., 2022).

The table then showed that 89(39%) of the respondents strongly agreed that the e learning resulted into cost effectiveness of academics, 69(36%) agreed, 60(27%) they were not sure, 7(3%) disagreed and non-strongly agreed to the idea. The table indicated that 65(29%) of the respondents strongly agreed, 82(36%) agreed, 52(23%) were no sure, while 16(7%) strongly agreed, and 10(4%) to Access to a Variety of Learning Resources as a benefit brought about by e learning in schools (Cand et al., 2022).

The findings from the research indicated in the table above that 58(26%) of the respondents strongly agreed that self-passed learning is another benefit brought about by e learning, 87(39%) agreed, 56(25%) were not sure, 17(12%) disagreed, while on 7(3%) strongly disagreed the idea (Richard et al., 2023).

Table 2: Shows the problems associated with e learning.

RESPONSE	SA		A		UD		D		SD		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%
Limited access to internet	48	21.0	77	34.0	104	46.0	0.0	0.0	0.0	0.0	225	100
Limited interaction with teachers.	60	27.0	105	47.0	60	26.0	0.0	0.0	0.0	0.0	225	100
Promotes laziness	82	36.0	93	41.0	40	18.0	10	5.0	0.0	0.0	225	100
Limited student motivation.	102	45.0	60	27.0	63	28.0	0.0	0.0	0.0	0.0	225	100

Source: Primary, 2019

From the table 2 above, 48(21%) of the respondents noted that limited access to internet is one of the problems associated with e learning, 77(34%) of the respondents agree and 104(46%) were not

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sure about this. The study then shows that 60(27%) of the respondents strongly agree, 105(47%) agree, 60(26%) are not sure, while non-disagreed and strongly disagreed about the fact that students have limited time to interact with teachers is as well a challenge. Promoting laziness is yet another problem as, 80(36%) of the respondents confirmed that they strongly agreed, 93(%) of the respondents agreed, 40(18%) were not sure, only 10 (5%) disagreed, while non-strongly disagreed about this (Richard et al., 2022).

Table 3: shows the correlation between e learning and academic performance.

		E learning	Academic performance.
E learning	Pearson Correlation	1	.606**
	Sig. (2-tailed)		.000
	N	225	225
Academic performance	Pearson Correlation	.606**	1
	Sig. (2-tailed)	.000	
	N	225	225
**. Correlation is significant at the 0.01 level (2-tailed).			

Findings from table 3 above indicated that there was a strong positive correlation ($r = 0.606$, $P = 0.000$) between e learning and academic performance. The association was statistically significant since the p value = (0.000) was less than 0.01 at 99% level of significance (Nelson et al., 2023).

Table 4: Shows the regression model for relationship between E learning and academic performance.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.214	.236	.232	.10449
a. Predictors: (Constant), e learning				

Findings from the model revealed that there was a positive association (Coeff = 0.214) between e learning and academic performance. This implied that a unit increase in the e learning classes resulted into a 0.214 increase in the academic performance. Furthermore, 23.6% of the variations in the academic performance were explained by the e learning. This evidenced a positive impact of e learning on academic performance (Christopher, Moses, et al., 2022).

Summary of Findings.

The analysis of the benefits of e-learning presented in the section above revealed several key findings. Firstly, a significant portion of respondents, 26%, strongly agreed, and 34% agreed that

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academic performance increased due to the flexibility and accessibility afforded by e-learning. Interactive learning environments were also highly appreciated, with 44% strongly agreeing. Additionally, 39% strongly agreed that e-learning led to cost-effectiveness, and 29% strongly agreed on the benefits of self-paced learning. Access to a variety of learning resources was acknowledged by 22% strongly agreeing and 40% agreeing. The findings suggest a positive perception of e-learning, emphasizing its impact on flexibility, interactivity, cost-effectiveness, and access to diverse learning resources. However, the analysis also revealed certain challenges associated with e-learning. Limited access to the internet was noted by 21% of respondents, and 34% agreed that it posed a problem. Limited interaction with teachers was identified as a significant challenge, with 27% strongly agreeing and 47% agreeing. The concern of e-learning promoting laziness was recognized by 36% strongly agreeing and 41% agreeing. Despite these challenges, the overall sentiment towards e-learning remained positive, as indicated by the significant benefits perceived by the respondents.

The correlation analysis further supported the positive relationship between e-learning and academic performance. The strong positive correlation coefficient ($r = 0.606$) suggested a robust association, and the p-value of 0.000 indicates statistical significance at the 0.01 level. The regression model in Table 4 strengthens this association, revealing a positive coefficient (0.214) and an adjusted R-square of 0.232. These findings collectively underscore the positive impact of e-learning on academic performance, with a notable portion of the variance in academic performance explained by e-learning experiences.

Conclusion.

In conclusion, the analysis of the data on the benefits and challenges of e-learning presents a nuanced perspective on its impact in an educational context. The findings underscore a positive sentiment among respondents, highlighting the perceived advantages of e-learning, including increased academic performance, flexible accessibility, interactive learning environments, and cost-effectiveness. Despite some challenges outlined such as limited access to the internet and reduced interaction with teachers, the overall outlook on e-learning remains favorable. The

correlation analysis in Table 3 and the regression model in Table 4 provide quantitative support for the positive relationship between e-learning and academic performance. The strong correlation coefficient and the significant p-value affirm the notion that e-learning is associated with improved academic outcomes. The regression model further emphasizes the explanatory power of e-learning, with approximately 23.6% of the variance in academic performance being attributed to it. These findings collectively suggest that while challenges exist, the benefits of e-learning, as perceived by the respondents, outweigh the drawbacks. As education continues to evolve, incorporating technology and e-learning methodologies appears to be a promising avenue for enhancing the learning experience and ultimately contributing to improved academic performance. However, it is crucial for educational institutions to address the identified challenges, such as limited internet access and reduced teacher-student interaction, to maximize the potential benefits of e-learning.

Recommendations.

The researcher recommends that school headteachers should Improve and expand internet infrastructure to mitigate the challenge of limited access to the internet. This may involve collaborating with telecommunication companies, government agencies, or other relevant stakeholders to ensure widespread and reliable internet connectivity.

The researcher as well recommends that school heads should implement programs to boost student motivation in the e-learning environment. This could include incorporating gamification elements, reward systems, or other motivational strategies to keep students engaged and proactive in their learning.

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