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IMPROVING BASIC COMPUTER SKILLS OF 4th YEAR GRADUATING CLASS OF ADULT EDUCATION AND COMMUNITY DEVELOPMENT STUDENTS OF AMBO UNIVERSITY FOR ONLINE EXIT EXAMS

Jemal shuku Dido (corresponding author)

Institute of Education and Behavioral Sciences

Department of adult education and community development, Ambo University

Abstract

The action research conducted aimed to enhance the basic computer skills of graduating class students at Ambo University's Department of Adult Education and Community Development for their online exit exams. The study utilized a quantitative data collection method, involving the distribution of 30 multiple-choice questions and a five-Likert scale questionnaire to participants before and after the intervention. The collected data was analyzed using descriptive and inferential statistics, including frequencies, percentages, standard deviation, mean, One-Simple t-test, and one-way ANOVA. The study involved 34 graduate students and demonstrated that the intervention strategies effectively improved the students' computer skills, thus benefiting them during the online exit exams.

Keywords: *Basic computer skills; Online exit exam*

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1.1. Introduction

In today's rapidly changing educational landscape, it is imperative to acquire computer skills to succeed in academics. The educational use of information and communication technologies (ICT) for different purposes in higher education is increasing (T. Deutsch et al. 2012). Ambo University's fourth-year graduating class of adult education and community development students are preparing for their online exit exams, and proficiency in basic computer skills is becoming increasingly important for their success. In this action research project, targeted interventions were implemented to enhance the computer skills of the graduating class so they are prepared for online assessments and equipped with essential competencies.

As part of the project, the researchers assessed and implemented targeted strategies to enhance students' computer skills in areas such as word processing, presentations, internet navigation, and online communication. In addition to improving computer skills, the graduating class contributed to the generation of valuable insights and best practices for integrating technology into adult education and community development programs by participating in this action research project.

The purpose of the project was to empower students with the necessary digital literacy to thrive in an increasingly technology-driven world through collaboration, data-driven interventions, and reflective practice. The outcomes of this action research endeavor informed future initiatives aimed at enhancing the educational experience and success of adult learners in the digital era.

1.2. Why the national online exit exam in Ethiopia?

In the modern world, the quality of education has long been a cross-cutting issue. Performance-based competition has become stronger. Despite dramatic university expansions between 2000 and 2018, education quality in Ethiopia has been deteriorating for decades, and experts in the field have persistently expressed the urgency of applying mechanisms like exit exams to ensure the quality and competency of graduates. To solve the problem, the Ministry of Education launched an initiative to provide exit exams in all private and government higher education institutions for first-degree graduates from the 2023 academic year. Hence, all degree-seeking students need to take an exit exam in Ethiopia. The ministry decided to provide the exit exam through online mode. The decision has been to save resources and minimize exam cheating, according to the ministry. According to (Mohammad A & Mohammed, 2013), the online process and security of the online exam system help with eliminating cheating. So, for the students taking the exit exam, developing computer skills is crucial. According to Shaw (2003), there are two main reasons why students need to learn about computers and learn to use computers in college. Skills and knowledge about computers will help them learn and will give them some skills for living and survival in a society that is increasingly using computers.

The importance of computer skills in academic endeavors is very important. Since student exposure to computers does not always equate to knowledge, educators are advocating for higher computer literacy requirements. Since students use computers to communicate with teachers, other students, and the community, computer literacy is essential for success in higher education. Without this skill, students cannot finish their schoolwork or look up solutions online (LaPlant, 2023). Therefore, the research objective was to investigate and implement strategies to enhance the basic computer skills of graduating class students at Ambo University Department of Adult Education and Community Development.

The focus was on preparing them for online exit exams, which require a solid understanding of computer usage and proficiency in various digital tools. The study explored the current level of computer literacy among students, identified areas of improvement, and designed interventions to bridge the gap. The effectiveness of these interventions in enhancing students' basic computer skills and their performance in online exit exams was evaluated.

The findings of this study revealed that targeted interventions and support systems to ensure successful completion of online exams and enhance students' overall computer skills were effective.

1.3. Statement of the problem

In Ethiopia, the use of digital technology is at an early stage. Studies show that the integration of digital technology in education in Ethiopia has its challenges. This is due to different reasons. According to Yigezu (2021), while most teachers and students are skilled in word processing, the use of digital content in the actual teaching and learning of subject areas has not been fully developed at primary and secondary schools. Moreover, a study conducted at Gondar University shows that students' knowledge is inadequate and their utilization of ICT is poor. It was recommended that the university should sustain professional development to improve teaching, raise student performance, and equip the college with student-centered ICT computer labs to increase students' ICT utilization (Assefa et al., 2013).

As part of their preparation for their online exit exams, Ambo University's adult education and community development graduating class faces significant challenges due to insufficient basic computer skills. Their inability to utilize digital tools required for online exams is effectively hindering their academic success and prospects due to a lack of proficiency in essential computer skills as was observed by the researchers. The students' basic computer skills need to be improved and their readiness for online assessments needs to be

ensured through a structured intervention. Therefore, this action research fills the existing gap and aims at improving the students' basic computer skills by implementing structured intervention.

1.4. Basic Computer skills

Basic computer skills are the fundamental abilities required to use a computer effectively. These skills include:
Computer Basics: Understanding the basic components of a computer, such as the CPU, RAM, and hard drive, and how they work together.
Operating Systems: Familiarity with common operating systems, such as Windows, macOS, and Linux, and how to navigate their interfaces and manage files.
Word Processing: Ability to create, edit, and format documents using word processing software like Microsoft Word or Google Docs.
Spreadsheets: Proficiency in using spreadsheet software like Microsoft Excel or Google Sheets to organize and analyze data, create charts and graphs, and perform basic calculations.
Presentations: Ability to create and deliver presentations using software like Microsoft PowerPoint or Google Slides, including adding text, images, and multimedia elements.
Email and Communication: Understanding how to use email and other communication tools, such as instant messaging and video conferencing, to send and receive messages, collaborate with others, and participate in online meetings.
Internet and Web Browsing: Familiarity with using web browsers like Chrome or Firefox to access websites, search for information, and navigate the internet safely.
File Management: Ability to organize and manage files and folders on a computer, including creating, moving, copying, and deleting files.
Security: Understanding basic security practices, such as using strong passwords, recognizing phishing scams, and protecting personal information online.

Computer skills have become an essential component of students' online learning culture. It is possible to maximize teaching and learning resources through online learning for more students, colleges, and universities. Online learning offers many benefits. To begin with, it facilitates the continuation of education of people living in distant areas, which in turn expands the geographical area where information can be accessed. Secondly, it makes it easier for learners to access computer knowledge. Moreover, it provides multiple methods of demonstration and performs different tasks online (Smith & Robb, 2010).

As a result of computer literacy, you can use and comprehend digital technology as well as computer hardware and software. Computer literacy is a prerequisite for a technology-based learning environment, according to Li & Lee (2016). With the rapid advancement of technology, teachers and students are required to possess the necessary abilities.

1.5. The importance of computer skills for academic success

Nowadays, computers play a major role in the daily activities of human beings. According to (Cadiz-Gabejan& and Takenaka,2021) Computers are used extensively in many facets of daily life, as if they are necessary for all endeavors, including work, school, and personal life. Every aspect of our lives and every sphere of the global civilization is impacted by computers, therefore proficiency with them is necessary for anyone hoping to fit in with 21st-century society. There is a positive significant association between Computer Literacy and Academic Performance (Khan et al., 2023). According to the findings of their study, a significant positive link exists between Computer Literacy and Academic Performance. This means that conducting this action research to support students improve their basic computer skills is supported by the literature.

2. Method

The study employed the Educational Action Research method. The literature most commonly defines educational action research as a research concept or approach that combines academic study with the resolution of social and organizational issues (Mertler, 2019). To achieve the research objective, an experimental survey research design was employed in which questionnaires and observations were used to collect data from sample respondents. In addition, pre and post-training test was given to participants to measure the effectives of the intervention. Many different fields employed surveys as a means of data collection. They were a fantastic option if you wanted to learn about a group of people's traits, tastes, viewpoints, or beliefs (McCombes, 2023).

2.2. Research Model

For this study, the researchers utilized Susman's Action Research Model (1983). According to this model, (Goh, 2012), the researchers should follow the steps identified by him. Diagnosing or Identifying the problem, Action Planning (considering an alternative course of action), Acting, evaluating, and Specifying Learning (Identifying or general finding).

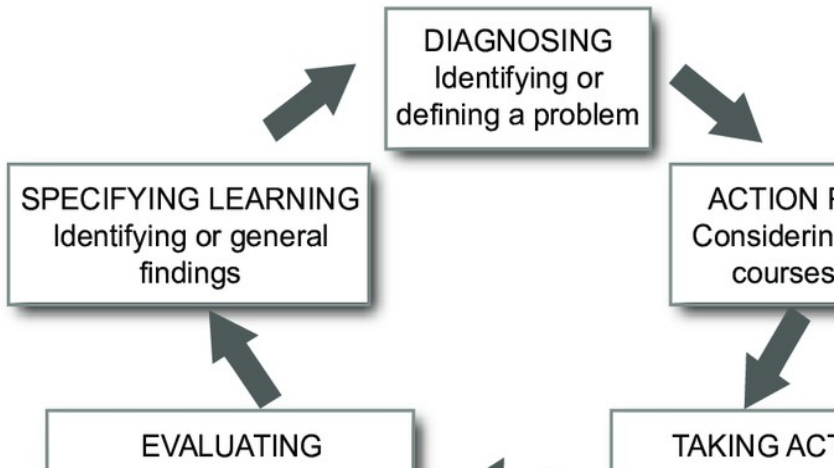

Fig. 1. Susman's Action Research Model (1983)

2.3. Participants

Thirty-four graduating students from the Department of Adult Education and Community Development participated in the action research project. There were 7 females and 27 males in the group. All of them were 4th year and graduating classes looking to take exit exams through the online platform at the end of the academic year. Hence, the goal of the action research was to improve students' basic computer skills to support them develop confidence in online assessment. The specific objectives were listed as under:

- To identify the students' current status regarding basic computer skills.
- To develop a structured strategy to improve the limitations concerning digital literacy
- To implement a designed strategy so that students' basic computer skills improved.

2.4. Procedure

Following Susman's Action Research Model (1983), the researchers first identified the gap regarding basic computer skills. They developed a pre-intervention test and gave it to students. Based on the results, an intervention strategy was developed and implemented. The plan for the project is indicated in Table 1 below.

Concerning research ethics, all participants were fully informed about the nature of the study, their involvement, potential risks, and benefits. Participants provided voluntary and informed consent before participating in the research. To safeguard their Privacy and Confidentiality, data was anonymized when reporting findings to protect participants' identities. Moreover, all participants were treated with respect and dignity. Furthermore, the researchers got permission from both the institution and the department to conduct the action research.

Table 1. Timetable for Action Research

S/N	Activities	Time frame	Responsible body
1	Problem identification: skills gap in using computer giving pre-intervention test	Mid-October 2023 to the end	Research Team
2	Action planning: planning tutorial classes for students	1-10 November,2023	>>
3	Implementation: giving skill improvement training to students	From 15 November to mid-, mid December 2023	
4	Evaluation: giving post-intervention tests analyzing and interpreting data and Comparing the result	From 20 mid-December to the end of December	>>
5	Result/Report: reporting the findings	January 2024	>>

Following this model after the problem was identified, the researchers moved to the second phase of the model.

2.4.1. Acting

Once the problem had been identified and planning had been done, the researchers moved on to the implementation of the plan. accordingly, the researchers distributed a questionnaire to the students as a pretest and collected pre-intervention data. Next, the researchers provided training on basic computer skills to 34 students. A total of 20 hours of training has been provided to the students regarding basic computer skills. To monitor their practical skills, the researchers provided mock online exams 5 times using Google Forms. From the first test to the fifth, the participants showed great improvement as observed by the researchers. In addition, the participants were asked to open Microsoft Office Word, write the text given to them by the researchers, save it in the folder, and then attach it to the researchers' email. Address to check their skills regarding using Gmail account and almost all of them did it effectively. Moreover, the participants presented their mini-assignments to the researchers using PowerPoint. Furthermore, they can open a Gmail account, log in to the account, recover their password, and send and receive documents through email as well as using different browsers. The strategy that the researchers used is indicated in Table 2 below.

Table 2: intervention strategies

Activity	Training Time
Introduction to Microsoft Word	2 hours
Introduction to Microsoft Excel	2 hours
Introduction to Microsoft PowerPoint	1 hour
Internet and web Browsing	1hour
Gmail and communication	2hours
File rending and receiving	2hours
Four mock online exams using Google form	5 hours
Hands-on training in the pedagogy lab	5hour

After the completion of the training, a training test was distributed to the students to check the effectiveness of the training. The results of both pre and post-training results are indicated in Table 3. The researchers evaluated the effectiveness of the training by analyzing data that was collected before and after the intervention had been made. Based on the evaluation, reflection had been done regarding the improvement. Finally, the result was reported to the department and the Institute of Education and Behavior Sciences at Ambo University.

2.4.2. Evaluation

After intervention has been made the researchers distributed the questionnaire to gather post-training data. to this end, all 34 students filled out the questionnaire and returned. The result of both pre and post-training data is indicated in Table 3 above. As it can be understood from the table above, participants produced positive progress in terms of all items requested regarding basic computer skills. In all areas being assessed, there were

improvements as it is shown in the table above. Especially, concerning email usage the data shows that the participants' skills were improved more than the others. This was the area that special focus was given to during the intervention.

Table 3: Observation checklist

Activity	Yes/No
Students can open MS Word, create Word documents, save and edit	Yes
Can log in to your email address, compose files, and send and receive documents via email.	Yes
You can use browsers to do assignments	Yes
Can use presentation	Yes

As part of the evaluation, using the above checklist we observed the participants' ability to perform the above activities before and after training. The participants performed the above activities in a better way. Their confidence developed when interacting with computers. We checked all the activities by giving them assignments to perform. Participants effectively created files, saved them in folders, and attached them to the researchers' email addresses. Moreover, they can log in to their Gmail addresses, recover passwords, and change passwords effectively. From this, the researchers believed that the intervention helped participants improve their basic computer skills which can help them during actual online exit examinations.

2.4.3. Reflecting

The current level of computer literacy among graduating students at Ambo University's Department of Adult Education and Community Development is varied, with a significant portion experiencing challenges in navigating online exam platforms and utilizing digital tools effectively. Many students expressed a lack of familiarity with specific software and online exam interfaces, leading to difficulties in completing assessments within the allocated time.

Conducting the research, the researcher was pleased to help students improve basic computer skills as it helps them perform well during the online exit examination. The researchers used a strategy that combined both theory and practice to support the students in enhancing their basic computer skills. (refer to Table 2.) The research findings show that the students' skills are improved regarding the utilization of digital tools effectively. To make it short, the action research helped students to improve their basic computer skills. These would help students build confidence, adopt challenges

3. Result

Data analysis

Pre and post-intervention test result was analyzed and interpreted. Both descriptive and inferential statistics were used to analyze and interpret the data. frequencies, percentages, mean, and standard deviation were computed based on the raw data. moreover, one-way ANOVA and simple or single-tailed t-tests were used to determine the mean difference between the two results and identify whether there was a significant difference between pre and post-test results. Histogram graphs were used to compare the distribution of data before and after intervention.

3.1. Participants basic computer skills

The current level of computer literacy among graduating students at Ambo University's Department of Adult Education and Community Development is varied, with a significant portion experiencing challenges in navigating online exam platforms and utilizing digital tools effectively. Many students expressed a lack of familiarity with specific software and online exam interfaces, leading to difficulties in completing assessments within the allocated time.

Conducting the research, the researcher was pleased to help students improve basic computer skills as it helps them perform well during the online exit examination. The researchers used a strategy that combined both theory and practice to support the students in enhancing their basic computer skills. The research findings show that the students' skills are improved regarding the utilization of digital tools effectively. The summary of the comparison between the results of the pre and post-intervention test is summarized in Table 3 below.

Table 3 depicts pre and post-intervention test result

			Statistic
N	Valid	Exam results before training	34
		Exam results after training	34
Mean		Exam results before training	13.971
		Exam results after training	23.265
Std. Deviation		exam result before training	5.0181
		exam result after training	2.1505

As shown in the table above the participants show improvement regarding the basic computer skills. The mean score increased from 13.971 to 23.265 while the standard Std. decreased from 5.0181 to 2.1505 after the intervention had been made. This revealed that the participants' knowledge and skills were improved after they took the theoretical and practical training on basic computer skills.

Table 4. ANOVA result

			Sum of Squares	Df	Mean Square	F	Sig.
Exam result before training * Exam result after training	Between Groups	(Combined)	311.342	7	44.477	2.225	.065
		Linearity	88.571	1	88.571	4.432	.045
		Deviation from Linearity	222.771	6	37.129	1.858	.127
	Within Groups		519.629	26	19.986		
	Total		830.971	33			

The researchers assigned the pre-intervention test result to Group 1 and the post-intervention test result to Group 2 to compare whether there was a difference between and within the groups. As portrayed in the table above there was a statistically significant difference between and within the groups after the intervention. The sig. scores show .065 and 0.45 as depicted in table 4 above. This shows that there is a statistically significant difference between the responses of pre and post-intervention tests.

Table 5. One-Sample Test result

	Test Value = 0.05					
	t	df	Sig. (2-tailed)	Mean Difference	90% Confidence Interval of the Difference	
					Lower	Upper
Exam results before training	15.653	33	.000	13.4706	12.014	14.927
Exam results after training	61.724	33	.000	22.7647	22.141	23.389

Here also the t-test result shows that p<.001 before and after training. From this result, it can be understood that the test is statistically significant. Moreover, this indicates that there was improvement concerning participants' basic computer skills after the intervention had been made by the researchers.

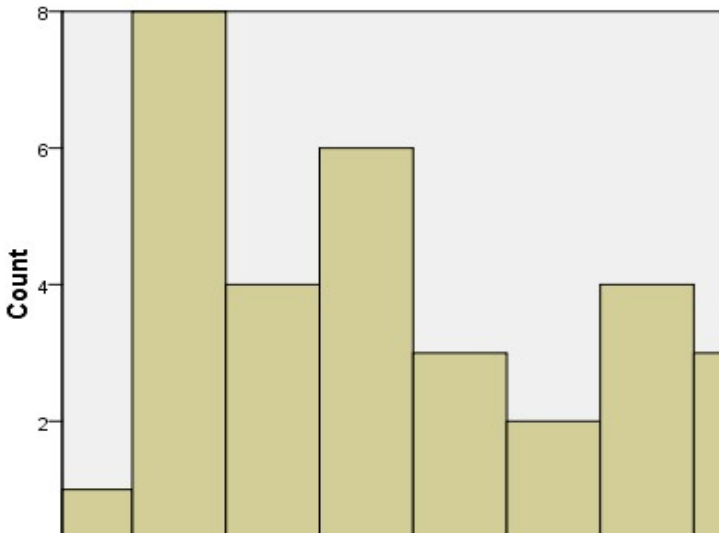

Fig. 1. Showing exam results before Intervention 1

This histogram graph was taken to show the distribution of data before intervention had been made. As the figure indicates the data was not normally distributed before the training had been given to the participants. There was a big gap among the participants' test scores as it can be read from the graph.

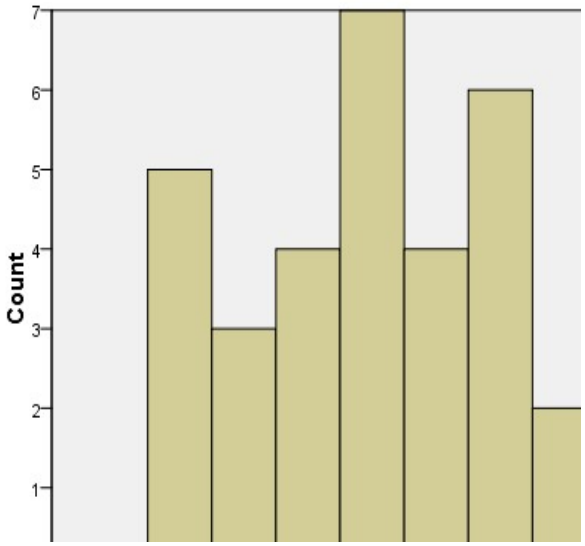

Fig. 2. Showing exam results After intervention

This was the histogram graph after the intervention had been made by the researchers. As one can read from Figure 2 the gap between the participants' scores had been narrowed after they took training. The data looks normally distributed. Therefore, it can be concluded that the training had improved the participants' basic computer skills and knowledge.

Table 6. Comparison of Pre and Post Survey Responses (mean Likert response 1-5 scale) Rate yourself in terms of your ability to use basic computer skills effectively

One-Sample Test result

Items	Pre-survey Mean	SD	Post survey mean	SD	Mean difference Pre/Post	Sig. (2-tailed)
Can use Microsoft Word properly Creating and Editing Word Documents.	1.9412	.11123	4.3824	.55129	2.4412	.000
Saving Documents, Working with Text:	1.4412	.74635	4.0294	.30003	2.5882	.000
Can use Microsoft Excel properly	2.2353	1.07475	3.9118	.62122	1.6765	.029
Can use Microsoft PowerPoint effectively	1.5000	.13517	4.7647	.49597	3.2647	.029
You can use a browser to do assignments	2.0882	1.23993	3.9706	.17150	1.8824	.045
Can create a Gmail account, change passwords, and recover accounts.	2.1471	.43571	4.6176	.45863	2.4705	.029
send, receive, and compose files via email:	3.1176	.55129	4.6176	.55129	1.5000	.029

The researchers developed and distributed before and after intervention had been made the above items to participants rate their skills regarding items using five Likert scale ranging from 1 strongly disagree to 5 strongly agree. The results from the round data is indicated in the table 5 above. One simple t-test was calculated to measure the significant of the intervention. As depicted in table above the p values for all items show that there is statistically significant difference between the mean before training and after training had been provided to the participants. Therefore, it can be concluded that, after intervention had been made the participants basic computer skills were improved.

4. Discussion

Conducting the research, the researchers were pleased to help students improve basic computer skills as it helps them perform well during the online exit examination. The researchers used a strategy that combined both theory and practice to support the students in enhancing their basic computer skills. The research findings show that the students' skills were improved regarding the utilization of digital tools effectively. For example, the mean score regarding participants' basic computer skills increased from 13.971 to 23.265 scoring a mean difference of 9.294. This shows good improvement after the training had been provided to the students. The ANOVA test and t-test results also indicated that there was a statistically significant difference between the pre and post-intervention test scores. The p-value measure of the t-test was $p<.001$ which indicates there was a significant difference between the two scores. From observation, we witnessed that, students' ability to perform activities was improved compared to previous performance.

To make it short, the action research helped students to improve their basic computer skills. These would help students build confidence, and adopt challenges during the actual online exit examinations.

5. Conclusion

Based on the findings the following conclusion has been drawn. The intervention helped students improve their basic computer skills, including Computer Basics, file management, internet navigation, word processing, spreadsheets, presentation software, Email and Communication, Internet and Web Browsing, and Security and Privacy. The students' confidence was developed regarding online exit exams. The majority of the students developed skills related to Gmail account creation, composing files, send and receiving files via email.

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