INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2024, Vol. 5, No. 3, 978 – 992
http://dx.doi.org/10.11594/ijmaber.05.03.21

Research Article

Level of Acceptability of Computer-Assisted Assessment (CAA) and Student's Academic Performance in Key Stage 2 of Ilalim Elementary School for The School Year 2022-2023

Jesse S. Agoja, Jr.[1]*, Michael G. Albino[2]

[1]Teacher 1, Department of Education, Ilalim Elementary School, Olongapo City, Philippines, 2200
[2]Assistant Professor 2, President Ramon Magsaysay State University, Castillejos, Zambales, Philippines, 2208

Article history:
Submission March 2024
Revised March 2024
Accepted March 2024

**Corresponding author:*
E-mail:
jesse.agoja01@deped.gov.ph

ABSTRACT

In this research study, the researcher aimed to determine the level of acceptability of computer-assisted assessment and learners' academic performance of 127 Key Stage 2 Learners of Ilalim Elementary School for the School Year 2022-2023. A descriptive survey instrument was used to determine the level of acceptability adapted from the computer-based assessment acceptance model (CBAAM) and was modified by the researcher.

Data revealed that the use of computer-assisted assessment of the Key Stage 2 learners was Moderately Acceptable with a mean of 4.01, indicating that the application purposively used it to improve their knowledge and skills. The learners gained an Outstanding academic performance as reflected in their general weighted average from the four grading periods. Significant differences were found in the level of acceptability of the use of computer-assisted assessment on the profile variables of the learner-respondents. Moreover, the results showed a positive correlation between the level of acceptability of the use of computer-assisted assessment on the learner's academic performance.

Based on the gathered data from the survey, computer-assisted assessment provides the learners with a positive experience when using the application through its friendly user interface. Teachers may continue to use the computer-assisted assessment application to motivate their learners to increase their engagement in learning their subject. It is recommended that teachers may further enhance the delivery of questions in the CAA application to improve learners' academic performance in the future.

Keywords: *Academic Performance, Computer-Assisted Assessment (CAA), Computer-Based Assessment Acceptance Model (CBAAM)*

How to cite:
Agoja, Jr., J. S. & Albino, M. G. (2024). Level of Acceptability of Computer-Assisted Assessment (CAA) and Student's Academic Performance in Key Stage 2 of Ilalim Elementary School for The School Year 2022-2023. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(3), 978 – 992. doi: 10.11594/ijmaber.05.03.21

Introduction

Assessment serves a variety of purposes, including evaluation, feedback, motivation, and student learning (QAA, 2018). The evaluation of student work provides a performance indicator Knight, 2021, which can be used to inform progress or outcome decisions and helps to create productive instruction that leads to more effective learning. It also provides teachers with information on their own effectiveness and success at promoting learning (Dijkstra, 2019). More recently, Romero, 2018 reinforced the importance of assessment on teaching and learning: "…By measuring learning the school can evaluate its students' success at achieving learning goals, can use the measures to plan improvement efforts, and (depending on the type of measures) can provide feedback and guidance for individual students" (p. 245)..

Technological advancement has had a dramatic impact on the delivery and assessment in the educational landscape where computer-assisted assessment (CAA) is now commonplace. The importance of implementing advanced technology to improve the assessment and feedback to the learners has been the aim of every educational institution around the globe. In fact, recent studies supported this claim that educational institutions are trying their best to implement a computer-assisted assessment to encourage their learners to become more engaged and productive (Marriott & Lau, 2021).

In the Philippines, the Department of Education (DepEd) encourages public and private schools to adopt technological advancements and implement computer-based assessments. Teachers in the department undergo training and seminars to earn skills necessary for this implementation (DepEd, 2022). In addition, the Division of Olongapo City also conducted a localized training for the administration of computer-based assessment training in adherence to DepEd Order No. 29 s. 2017 issued by the Department of Education to conduct division online training.

Literature provided a lack of universal consent regarding the terminology and its definition of computer-assisted assessment, however, (Bull & McKenna, 2004) argues that computer-assisted assessment is the common term for the use of computers in the assessment of students and the other terminology tends to focus on the activities. Therefore, the definition of CAA used in this review will be that: CAA encompasses the use of computers to deliver, mark or analyze assignments or exams (Conole & Warburton, 2018). On the other hand, Computer-assisted assessment (CAA) refers to the use of computers to assess students' progress. The assessments can vary in format: either consisting of a pre-printed paper test on to which students mark their responses, which are then processed automatically using an optical mark reader; or involving the direct input of students' responses into a computer terminal (Chalmers & McCausland, 2002).

A research study presented a framework for the different computer-assisted assessment (CAA) that can be used in the learning and learning process. The shift towards online testing is well documented (for example, Li & Luo, 2023) and different forms of CAA are illustrated in Figure 1. Bull & McKenna, 2004 recently defined CAA as 'the use of computers for assessing student learning. Computer-based assessment involves a computer program marking answers that were entered directly into a computer, whereas optical mark reading uses a computer to mark scripts originally composed on paper. Portfolio collection is the use of a computer to collect scripts or written work (Conole & Warburton, 2018). Computer-based assessment can be subdivided into stand-alone applications that only require a single computer, applications that work on private networks and those that are designed to be delivered across public networks such as the web (online assessment).

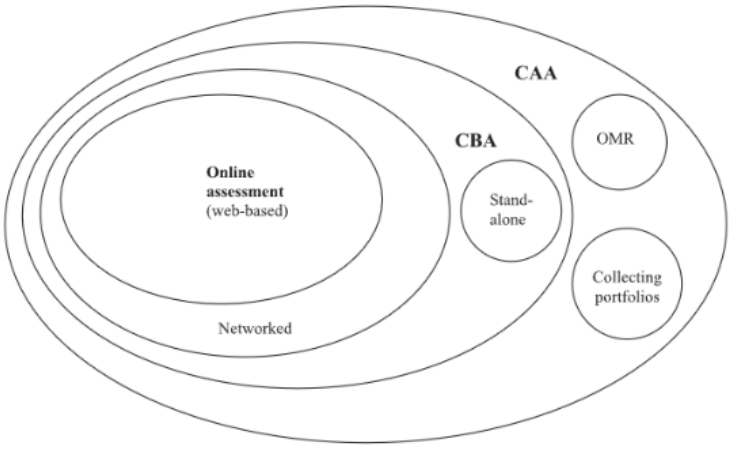

Figure 1. Different types of Computer-Assisted Assessment (CAA)

With this, different schools have implemented the use of computer-assisted instruction in assessing the knowledge and skills of their learners using the available electronic devices like desktop computers and tablet PCs provided by the department. Specifically, the Ilalim Elementary School started to implement computer-assisted assessments on their learners facilitated by the subject teachers as part of the administration of assessments in their subject taught.

Thus, this research paper aims to assess the level of acceptability of computer-assisted assessment of Key Stage 2 learners in Ilalim Elementary School, Division of Olongapo City for the School Year 2022-2023. The academic performance using the general weighted average (GWA) of the leaner-respondents will be gathered also. The result of this study will be beneficial to the teachers and school administrators for the improvement of the implementation of the use of computer-assisted assessment in their school.

Methods

The present study was conducted through the descriptive correlation research design. This method was considered by the researcher since the study gathered the acceptance of the learners on the use of computer-assisted assessment (CAA) which are now widely used in the field of educational assessment and evaluation. Furthermore, this method provides information that can be used to improve the use and implementation of CAA in the teaching and learning process. A survey instrument will be the best tool in gathering such valuable information especially in conducting a research study (Manjunatha, 2019).

In this study, the researcher gathered the demographic profile of the respondents, level of acceptability on the computer-assisted assessment (CAA) and their academic performance for the school year 2022-2023. This will help the research to determine the significate difference of these variable to one another. Since computer-assisted assessment has been widely used nowadays, it is the aim of this research study to determine its acceptability to the users to determine its possible improvement on this implementation and use.

Results and Discussion

Profile of the Respondents

To determine the level of acceptability on computer assisted assessment of the Key stage 2 learner-respondents, the researcher first identified the profile of the respondents in terms of Sex, Age, and Grade level.

Sex. The variable has two categories such as Male and Female. It is noted in the total sample, there were 52 males, representing 40.90% of the sample and 75 were females, accounting for 59.10% of the sample.

Age. The variable has four categories such as 9 years old and below, 10 years old, 11 years old, and 12 years old and above. Among the participants, 8 learners were 9 years old and below, making up 6.30% of the sample. There were 37 learners who were 10 years old,

representing 29.10% of the sample. Also, 39 learners were 11 years old, accounting for 30.70% of the sample. In addition, 43 participants were 12 years old and above, making up 33.90% of the sample.

Grade level. The variable has three categories such as Grade 4, Grade 5, and Grade 6 respectively. Among the participants, 42 students were in Grade 4, representing 33.10% of the sample. There were 41 students in Grade 5, accounting for 32.30% of the sample while 44 students were in Grade 6, making up 34.60% of the sample.

Table 1. Frequency and Percentage Distribution of the Respondents' Profile

N = 127

Variable	Category	Frequency	Percentage
Sex	Male	52	40.90
	Female	75	59.10
Age	9 years old and below	8	6.30
	10 years old	37	29.10
	11 years old	39	30.70
	12 years old and above	43	33.90
Grade Level	Grade 4	42	33.10
	Grade 5	41	32.30
	Grade 6	44	34.60

Respondent's Level of Acceptability on the use of Computer Assisted Assessment

The level of acceptability regarding the use of Computer-Assisted Assessment (CAA) can vary among individuals and educational institutions. Individuals who are comfortable and familiar with technology may be more accepting of CAA. To further determine the level of acceptability of the learner-respondents, the modified instrument using Computer Based Assessment Acceptance Model (CBAAM) was used by the research based on its six (6) criteria on perceived usefulness, perceived ease of use, content, computer/device self-efficacy, perceived playfulness, and behavioral intention to use.

Perceived Usefulness. It refers to the respondents' perception of how useful Computer Assisted Assessment (CAA) is in terms of improving their work, enhancing their learning capabilities, and increasing their knowledge of the subject. The mean scores assigned to each statement indicate the average level of perceived usefulness as reported by the respondents. Table 3 shows the level of acceptability of the learner-respondents on the use of Computer-Assisted Assessment (CAA) on its perceived usefulness.

Table 2. Weighted Mean for Perceived Usefulness

Perceived Usefulness (PU)	Mean	Descriptive Equivalent
1. Using the Computer Assisted Assessment (CAA) improves my work.	3.75	Moderately Acceptable
2. Using the Computer Assisted Assessment (CAA) enhance my learning capabilities.	3.82	Moderately Acceptable
3. Using the Computer Assisted Assessment (CAA) increase my knowledge of the subject.	3.98	Moderately Acceptable
OVERALL WEIGHTED MEAN	**3.85**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

The table shows the learner-respondents evaluation on the CAA in terms of perceived usefulness. It can be seen on the table that the respondents **Moderately Acceptable** the use of Computer Assisted Assessment with an overall weighted mean of **3.85**. The respondents find that CAA helps increase their knowledge in the subject (3.98), enhance their learning capabilities (3.82) and improves their work (3.75). This indicates that using the CAA helps learners do their task easily while also learning at the same time. It boosts their knowledge and enhances their learning abilities while using the application. These findings supports the finding of Pourdana, 2022 that the use of technology-based assessment greatly improves the learning capabilities of students.

Perceived Ease of Use. It refers to the respondent's subjective assessment or belief about the ease or simplicity of using a particular object, system, service, or technology. It reflects the perception or opinion of individuals regarding the degree of effort or difficulty they expect to encounter when using a specific tool or resource. Table 4 shows the level of acceptability of the learner-respondents on the use of Computer-Assisted Assessment (CAA) on its perceived ease of use.

Table 3. Weighted Mean for Perceived Ease of Use

Perceived Ease of Use (PEOU)	Mean	Descriptive Equivalent
1. The interaction with the software is clear and understandable.	3.96	Moderately Acceptable
2. It is easy for me to become skillful at using computer-Assisted assessment (CAA) software.	3.69	Moderately Acceptable
3. I find the computer-Assisted assessment (CAA) software easy to use.	3.86	Moderately Acceptable
OVERALL WEIGHTED MEAN	**3.84**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

The table shows the learner-respondents evaluation on the CAA in terms of perceived ease of use. It can be seen on the table that the respondents **Moderately Acceptable** the use of Computer Assisted Assessment with an overall weighted mean of **3.84**. The respondents find the application user friendly and can easily be used. The interaction between the learner and the application is clear and understandable (3.96), easy to use (3.86) and does not require computer skills in able for the learners to use (3.69) which were all interpreted as "moderately acceptable". This suggests that the overall experience of the learners on the graphical user interface (GUI) of the CAA application readily available to use with having less skills required in using the application. The buttons and the menus presented in the application were clear and understandable to all users. The result supports the findings of Thelwall, 2020, that using computer-based application in formative test provides easy navigation and use to all learners as it is versatile.

Computer/Device Self-Efficacy. It refers to the respondent's belief in their own ability to use computers/device effectively and efficiently to accomplish tasks and achieve desired outcomes. It reflects the confidence and perceived competence that individuals have in their computer/device skills and abilities. Table 5 shows the level of acceptability of the learner-respondents on the use of Computer-Assisted Assessment (CAA) on the computer/device self-efficacy.

Table 4. Weighted Mean for Computer/Device Self-Efficacy

Computer/Device Self-Efficacy (CDSE)	Mean	Descriptive Equivalent
1. I can complete the assessment task using the computer/device.	4.19	Moderately Acceptable

Computer/Device Self-Efficacy (CDSE)	Mean	Descriptive Equivalent
2. I can navigate easily through the computer-Assisted assessment (CAA) software to complete the assessment.	3.88	Moderately Acceptable
3. I can view my scores after taking the computer-Assisted assessment (CAA).	4.09	Moderately Acceptable
OVERALL WEIGHTED MEAN	**4.05**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

It can be seen in the table that computer/device self-efficacy of the CAA application was **Moderately Acceptable** by the respondents with an overall weighted mean of **4.05**. The result suggests that the learners can complete given assessment tasks (4.19), can navigate easily on the application (3.88) and can view their scores (4.09) using the CAA application on a computer/device efficiently. The design and purpose of the application contribute to the efficacy combined with the appropriate device used by the school. Although some learners suggest that the brightness of the device should be increased, the overall experience reflected a positive result on the evaluation. The use of tablet PCs and computers during the formative and summative assessments of the learners helped the teachers to easily evaluate the level of learning of their students. The result supports the findings of Ehiwario & Aghamie, 2021 that showing the scores of the students motivated them to improve their learning capabilities.

Content. It refers to the subject matter or material that is included and assessed within the Computer Assisted Assessment (CAA) system or platform. It represents the specific topics, concepts, knowledge, or skills that are targeted and evaluated through the assessment tool. It is typically presented in the form of questions, tasks, or exercises that assess the knowledge or skills of the individuals using the system. Table 6 shows the level of acceptability of the learner-respondents on the use of Computer-Assisted Assessment (CAA) on its content.

Table 5. Weighted Mean for Content

Content (CT)	Mean	Descriptive Equivalent
1. The computer-assisted assessment (CAA) provides clear and understandable questions.	4.07	Moderately Acceptable
2. The computer-assisted assessment (CAA) provides questions that are related to the topic.	4.20	Moderately Acceptable
3. The computer-assisted assessment (CAA) is useful to my studies.	4.27	Highly Acceptable
OVERALL WEIGHTED MEAN	**4.18**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

It can be seen in the table that the content of the CAA application was **Moderately Acceptable** by the respondents with an overall weighted mean of **4.18**. The result suggests that the CAA application presented clear and understandable questions (4.07) and provides related questions related to the topic (4.20) interpreted as Moderately Acceptable. Meanwhile, it is noted that the CAA application becomes useful to the learners' studies (4.27) interpreted as **Highly Acceptable**. The CAA application becomes useful on the part of the students since they will not be using paper and pencil during their assessment. The questions and answer sheets were viewed using the computer/device screen which most of the students preferred to use. Questions should be clearly presented in the computer-based

application so that learners can easily answer (Conole & Warburton, 2018). It becomes useful to the students in learning their subjects (Sobremisana & Aragon, 2016).

Perceived Playfulness. It refers to the respondent's subjective perception or belief regarding the extent to which a particular activity, system, or technology is enjoyable, entertaining, and engaging. It also reflects the individual's perception of the experience as fun, stimulating, and intrinsically motivating. Table 7 shows the level of acceptability of the learner-respondents on the use of Computer-Assisted Assessment (CAA) on its perceived playfulness.

Table 6. Weighted Mean for Perceived Playfulness

Perceived Playfulness (PP)	Mean	Descriptive Equivalent
1. Using the computer-assisted assessment (CAA) keeps me happy for my task.	3.85	Moderately Acceptable
2. Using the computer-assisted assessment (CAA) gives me enjoyment for my learning.	4.04	Moderately Acceptable
3. Using the computer-assisted assessment (CAA) can lead to my exploration.	4.04	Moderately Acceptable
OVERALL WEIGHTED MEAN	**3.99**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

It can be seen in the table that the perceived playfulness of the CAA application was **Moderately Acceptable** by the respondents with an overall weighted mean of **3.99**. The learners find the CAA application feels happy to use (3.85), enjoyable to their learning and lead them to exploration (4.04). Learners enjoyed answering the questions presented in the CAA application while learning in their subjects. The CAA application motivated the learners through its interactive process. Enjoyment is one of the factors to maintain engagement and increase the motivation level of learners. Promoting learner enjoyment is beneficial for both the students and the overall learning process. By creating engaging and meaningful learning experiences that foster enjoyment, educators can facilitate effective learning, promote student well-being, and cultivate a lifelong love for learning (LeJeune & Lemons, 2021).

Behavioral Intention to Use. It refers to the respondent's subjective likelihood or inclination to engage in a particular behavior, such as using a product, service, or technology. It is a concept commonly studied in the fields of psychology, marketing, and information systems to understand and predict consumer behavior

Table 7. Weighted Mean for Behavioral Intention to Use

Behavioral Intention to Use (BI)	Mean	Descriptive Equivalent
1. I intend to use computer-assisted assessment (CAA) in the future.	4.03	Moderately Acceptable
2. I will use computer-assisted assessment (CAA) to monitor my performance and learning in my subjects.	4.13	Moderately Acceptable
3. I will continue to use computer-assisted assessment to improve my knowledge and skills.	4.24	Highly Acceptable
OVERALL WEIGHTED MEAN	**4.13**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

Table 7 shows the level of acceptability of the learner-respondents on the use of Computer-Assisted Assessment (CAA) on its behavioral intention to use. It can be seen in the table that the behavioral intention to use of the CAA application was **Moderately Acceptable** by the respondents with an overall weighted mean of **4.13**. The result shows that the CAA application can be used in the future (4.03) and can monitor the performance of the learners (4.13) interpreted as Moderately Acceptable. On the other hand, the CAA application improved the knowledge and skills of the learners (4.24) was **Highly Acceptable**. This shows that learners choose to use the CAA application in their assessment compared to paper and pencil test. This also suggests that the CAA application improves the way the learners learn and increase their knowledge and skills on their subject. The findings supports the research of Tareef, 2021, that monitoring the performance of the students increase their motivation and resulted to improvement of their knowledge and skills.

Table 8. Weighted Mean for Level of Acceptability on the use of Computer-Assisted Assessment

Criteria	Weighted Mean	Verbal Interpretation
1. Perceived Usefulness (PU)	3.85	Moderately Acceptable
2. Perceived Ease of Use (PEOU)	3.84	Moderately Acceptable
3. Computer/Device Self-Efficacy (CDSE)	4.05	Moderately Acceptable
4. Content (CT)	4.18	Moderately Acceptable
5. Perceived Playfulness (PP)	3.99	Moderately Acceptable
6. Behavioral Intention to Use (BI)	4.13	Moderately Acceptable
OVERALL WEIGHTED MEAN	**4.01**	Moderately Acceptable

Scale: 4.21-5.00 (Highly Acceptable); 3.41-4.20 (Moderately Acceptable); 2.61-3.40 (Acceptable); 1.80-2.60 (Fairly Acceptable); 1.00-1.79 (Poorly Acceptable)

Table 8 shows the summary of the weighted mean of all the criteria. It can be seen in the table that the overall weighted mean of the learner-respondents on their level of acceptability on the use of Computer-Assisted Instruction (CAA) was **4.01** which can be interpreted as "**Moderately Acceptable**". This implies that the use of computer-assisted assessment gained a positive response from the learner-respondents. This also indicates that the learners while using the CAA application purposively used it for learning and improving their skills. It also motivated them to learn and engage themselves in the learning process through using technology-based assessment. These findings support the research of Terzis & Economides, 2021, that the use of the level of acceptability depends of the students acceptance. With the use of the CBAAM tool, student's evaluation on the computer-based tool will become easy.

Learner's Academic Performance

Learner's Academic Performance. It refers to the level of achievement and success a learner demonstrates in their educational pursuits, such as their grades, test scores, and overall academic accomplishments. It is a measure of how well a student has mastered the material, met the learning objectives, and performed in their academic endeavors.

Table 9. Weighted Mean for Learner's Academic Performance

N=127		
Academic Performance	**Weighted Mean**	**Verbal Interpretation**
General Weighted Average (GWA)	91.15	Outstanding

Scale: 90-100 (Outstanding); 85-89 (Very Satisfactory); 80-84 (Satisfactory); 75-79 (Fairy Satisfactory); Below 75 (Did Not Meet Expectation)

Table 9 shows the learners' academic performance of the Key Stage 2 learners at Ilalim Elementary School for the School Year 2022-2023. The General Weighted Average (GWA) of the learner-respondents from Grade 4, 5 and 6 gained **Outstanding** level with a mean of **91.15**. The result shows that the learners relatively enjoyed, and the use of computer-assisted assessment helped the learners in improving their knowledge and skills in all the subjects in their curriculum. The learner's academic performance shows the effect of the use of computer-assisted assessment based on their experiences (Terzis et al., 2019).

Table 10. ANOVA Result of the Level of Acceptability and Respondent's Profile

N=127

Profile of the Respondents	Level of Acceptability											
	PU		PEOU		CDSE		CT		PP		BI	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Sex df(1,125)	*2.377*	*.126*	*4.541*	*.035**	*.770*	*.382*	*.753*	*.387*	*.485*	*.487*	*.034*	*.855*
Age df(3,123)	*2.301*	*.081*	*2.924*	*.037**	*5.208*	*.002**	*4.077*	*.008**	*1.230*	*.302*	*3.660*	*.014**
Grade Level df(2,124)	*3.794*	*.025**	*2.657*	*.074*	*6.047*	*.003**	*3.741*	*.026**	*1.264*	*.286*	*4.440*	*.014**

Note: Sig. (1-tailed) at alpha level (α=.05)

Difference in the level of acceptability of the Key Stage 2 learners on the Use of Computer-Assisted Assessment when Grouped According to Profile Variables

Table 10 shows the summary table on the ANOVA result on the difference between the level of acceptability of the respondents when grouped according to their profile.

Data revels that the respondents' level of acceptability on perceived usefulness (F=2.377, Sig.=.126), computer/device self-efficacy (F=.770, Sig.=.382), content (F=.753, Sig.=.387), perceived playfulness (F=.485, Sig.=.487), and behavioral intention to use (F=.034, Sig.=.855) had no significant probability with the profile variable "Sex" on the set alpha level (α=.05), hence acceptance of the null hypothesis. On the other hand, the value on perceived ease of use (F=4.541, Sig.=.035) had a significant probability on the profile variable "Sex", hence failed to accept the null hypothesis.

The computed values on perceived usefulness (F=2.301, Sig.=.081), and perceived playfulness (F=1.230, Sig.=.302) had no significant difference on the profile variable "Age" set at alpha level (α=.05), hence acceptance of the null hypothesis. Moreover, the values on perceived ease of use (F=2.924, Sig.=.0.37), computer/device self-efficacy (F=5.208, Sig.=.002), content (F=4.077, Sig.=.008) and behavioral intention to use (F=.034, Sig.=.855) had significant difference on the profile variable "Age", hence rejection of the null hypothesis.

In addition, the values on perceived ease of use (F=2.657, Sig.=.074), and perceived playfulness (F=1.264, Sig.=.286) had no significant difference on the profile variable "Grade Level" set at alpha level (α=.05), hence acceptance of the null hypothesis. Lastly, the values on perceived usefulness (F=3.794, Sig.=.025), computer/device self-efficacy (F=6.047, Sig.=.003), content (F=3.741, Sig.=.026), and behavioral intention to use (F=4.440, Sig.=.014) had significant difference on the profile variable "Grade Level", hence rejection of the null hypothesis. This implies that the level of acceptability of the respondents varies from their profile.

Relationship between the level of acceptability of the Key Stage 2 learners on the Use of Computer-Assisted Assessment on their Academic Performance

Table 11 shows the summary table on the relationship between the level of acceptability in terms of perceived usefulness, perceived

ease of use, computer/device self-efficacy, content, perceived playfulness, and behavioral intention to use, and the learner's academic performance (GWA).

Data reveals that "Perceived Usefulness" (r=.333, Sig.=.000), "Perceived Ease of Use" (r=.253, Sig.=.002), "Computer/Device Self-Efficacy" (r=.327, Sig.=.000), "Content" (r=.389, Sig.=.000), and "Behavioral Intention to use" (r=.215, Sig.=.008) had all significant at α = .05. This signifies rejection of the null hypothesis.

Table 11. Correlation Result on the Level of Acceptability and Learners' Academic Performance

N=127

			Remarks
Perceived Usefulness (PU)	Pearson Correlation	.333**	
	Sig. (1-tailed)	.000	Significant
	N	127	
Perceived Ease of Use (PEOU)	Pearson Correlation	.253**	
	Sig. (1-tailed)	.002	Significant
	N	127	
Computer/Device Self-Efficacy (CDSE)	Pearson Correlation	.327**	
	Sig. (1-tailed)	.000	Significant
	N	127	
Content (CT)	Pearson Correlation	.389**	
	Sig. (1-tailed)	.000	Significant
	N	127	
Perceived Playfulness (PP)	Pearson Correlation	.111	
	Sig. (1-tailed)	.107	Not Significant
	N	127	
Behavioral Intention to use (BI)	Pearson Correlation	.215**	
	Sig. (1-tailed)	.008	Significant
	N	127	

*Note: ** Correlation is significant at the α=.05 level (1-tailed)*

This indicates positive correlation between the level of acceptability on the use of computer-assisted assessment on the learner's academic performance. It can be inferred that the use of computer-assisted assessment increased the academic performance of the learners. It can also be seen in the table that perceived playfulness (r=.111, Sig.=.107) had not significant at α=.05, hence acceptance of the null hypothesis. This implies that the learner's perceived playfulness on the use of the computer-assisted assessment does not affect the leaner's academic performance. The result shows that CAA become a dynamic tool in improving the knowledge and skills of the learners (Stefan et al., 2023). Using evaluation tool provides feedback and evaluation on the computer-assisted assessment application (Sclater, 2018).

Moreover, the result shows that the perceived playfulness on the use of the computer assisted assessment has been considered by the learners since employing digital technology in the classroom environment provides focus and capture the attention of the learners (Sillat et al., 2021). A research by Wu et al., 2023 found that learners experiences on the use of digital tools in learning improved their academic performance and shows favorable learning outcomes.

Conclusions

From the given findings, the following conclusions were drawn:

First, majority of the respondents were female, age 12 years old and above and in grade 6 level.

Second, the level of acceptability of the key stage 2 learner-respondents was moderately acceptable on the use of computer-assisted assessment in Ilalim Elementary School.

Third, the key stage 2 learner-respondents had an Outstanding academic performance on the use of computer-assisted assessment as indicated in their general weighted average for the four grading periods.

Fourth, there is a significant difference in the level of acceptability on the use of computer-assisted assessment and the profile of the learner-respondents.

Lastly, there is a positive correlation between the use of computer-assisted assessment on the learner's academic performance. The CAA helps the learner's gained knowledge and skills in their subject.

Acknowledgement

The successful completion of this thesis was made possible with the help of the following person whose encouragement, inspiration, suggestions, and assistance the writer recognized with sincere gratitude.

With sincere appreciation and deep gratitude, the researcher would like to acknowledge the contributions and help made by several persons which ultimately resulted in the completion of this research.

Michael G. Albino, MIT, the researcher's thesis adviser, for his professional pieces of advice and directions, invaluable suggestions, and enduring patience in making this study possible.

Marie Fe D. De Guzman, EdD., graduate university director, for her professional leadership, inspired faculty, and students to achieve better results.

Ivy Hipolito - Casupanan, EdD., Raymond Espiritu, EdD., Guillermo O. Andres, MBA., the panel during the researcher's oral defense, for their comprehensive evaluation of the manuscript and constructive suggestions and criticisms which led to this paper.

Gene A. Peralta, **MBA**., his statistician, gave support, inspiration, and prayer in doing this thesis.

Schools Division Office of Olongapo City, **Imelda P. Macaspac, PhD**. for granting the researcher permission to conduct study and administer questionnaire to the learners of Ilalim Elementary School in District III – B.

President Ramon Magsaysay State University, for giving the researcher quality education, along with the honed wisdom and values to make appropriate decisions for the realization of this study.

To his School Head, Jennifer Jayne V. De Julio and Laura S. Managbanag and to all his colleagues for their support, guidance, and understanding during the completion of this paper.

To his Parents, Jesse A. Agoja Sr., Teresita S. Agoja, and his sister Mary Rose S. Agoja, for their undying love and support and compassionate encouragement to complete this paper.

To his Uncle **Nicolas J. Arimboanga** and Auntie **Veronica C. Arimboanga, RN**., for helping him in everything especially when it comes to financial needs and for the undying support, care, and love.

To all the amazing people behind the completion of this study, the researcher's heartfelt gratitude is hereby conferred.

Above all, **to the Almighty God**, the One who made this completion possible and successful, it is truly His time that all things come to fruition. All the highest praises and glory be unto Him.

References

Abu Al Aish, A., & Love, S. (2013). Factors Influencing Students' Acceptance of M-Learning: An Investigation in Higher Education. *The International Review of Research in Open and Distance Learning*, *14*, 83–107. https://doi.org/10.19173/irrodl.v14i5.1631

Ajzen, I. (1985). *From Intentions to Actions : A Theory of Planned Behavior*.

Alderson, J. C., Brunfaut, T., & Harding, L. (2019). Towards a Theory of Diagnosis in Second and Foreign Language Assessment: Insights from Professional Practice Across Diverse Fields. *Applied Linguistics*, *36*(2), 236–260. https://doi.org/10.1093/applin/amt046

Bahari, A. (2021). Computer-assisted language proficiency assessment tools and strategies. *Open Learning*, *36*(1), 61–87. https://doi.org/10.1080/02680513.202

0.1726738

Baozhou, L., & Liang, S. (2020). Use of Video Clips in a Virtual Learning Environment of Accounting Information Systems Class—A Case Study. *Open Journal of Accounting*, *2020*(October), 107–109. http://www.scirp.org/journal/PaperInformation.aspx?PaperID=38277

Bull, J., & McKenna, C. (2004). *A Blueprint for Computer-Assisted Assessment*. https://doi.org/10.4324/9780203464687

Chalmers, D., & McCausland, W. D. (2002). Computer-assisted Assessment (from The Handbook for Economics Lecturers). *The Handbook of Economics Lecturers*, 2–12. http://www.economicsnetwork.ac.uk/handbook/printable/caa_v5.pdf

Chong, S. W. (2021). Reconsidering student feedback literacy from an ecological perspective. *Assessment & Evaluation in Higher Education*, *46*(1), 92–104. https://doi.org/10.1080/02602938.2020.1730765

Conole, G., & Warburton, B. (2018). A review of computer-assisted assessment. *Alt-J*, *13*(1), 17–31. https://doi.org/10.1080/09687760420003397 72

Croft, A. C., Danson, M., Dawson, B. R., & Ward, J. P. (2021). Experiences of using computer assisted assessment in engineering mathematics. *Computers & Education*, *37*(1), 53–66. https://doi.org/https://doi.org/10.1016/S0360-1315(01)00034-3

Csapó, B., & Molnár, G. (2019). Online diagnostic assessment in support of personalized teaching and learning: The eDia system. *Frontiers in Psychology*, *10*(JULY). https://doi.org/10.3389/fpsyg.2019.01522

Davis, F. D. (1986). *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results.* Sloan School of Management, Massachusetts Institute of Technology.

DepEd. (2022). *RM No. 152 s. 2022 Training of Trainers on the Computer-Based Assessment Relative to Programme For International Student Assessment (PSA).pdf*.

Deutsch, T., Herrmann, K., Frese, T., & Sandholzer, H. (2012). Implementing computer-based assessment - A web-based mock examination changes attitudes. *Computers & Education*, *58*, 1068–1075. https://doi.org/10.1016/j.compedu.2011.11.013

Dijkstra, A. J. (2019). Getting to grips with. *European Journal of Lipid Science and Technology*, *111*(6), 530–536.

Ehiwario, J. C., & Aghamie, S. O. (2021). Effects of Computer Assisted Instructional Software on Senior Secoundary School Students ' Achievement and Retention in Geometry in Delta State. *The Journal of the Mathematical Association of Nigeria*, *46*(1), 48–57. https://doi.org/10.21275/SR21610193320

Esfandiari, R., & Meihami, H. (2023). *Iranian EFL Teachers' Challenges and Solutions in Using Computer-Assisted Assessment: Exploring EFL Teachers' Experiential Evidence* (pp. 313–329). https://doi.org/10.1007/978-981-99-0514-0_19

Fishbein, M., Jaccard, J., Davidson, A. R., Ajzen, I., & Loken, B. (1980). *Predicting and understanding family planning behaviors*.

Ghilay, Y. (2019). Computer Assisted Assessment (CAA) in Higher Education: Multi-text and Quantitative Courses. *Journal of Online Higher Education*, *3*(1), 13–34. https://ezproxy.ufs.ac.za/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsdoj&AN=edsdoj.3eeb9fa5fba4e7e8d3e6d630c2dda6f&site=eds-live&scope=site

Ghilay, Y., & Ghilay, R. (2021). Student Evaluation in Higher Education: a Comparison Between Computer Assisted Assessment and Traditional Evaluation. *I-Manager's Journal of Educational Technology*, *9*(2), 8–16. https://doi.org/10.26634/jet.9.2.1942

Hattie, J., & Timperley, H. (2017). The power of feedback. *Review of Educational Research*, *77*(1), 81–112. https://doi.org/10.3102/003465430298487

Kashwani, G. (2019). A Critical Review on the Sustainable Development Future. *Journal of Geoscience and Environment Protection*, *07*(03), 1–11. https://doi.org/10.4236/gep.2019.73001

Knight, P. (2021). A Briefing on Key Concepts: Formative and Summative, Criterion and Norm-referenced Assessment. In *Learning and Teaching Support Network (LTSN) Generic Centre* (NV-, Vol. 7, Issue 7, pp. 1–31). Learning and Teaching Support Network. https://doi.org/LK - https://worldcat.org/title/166464741

Kumar, J. A., Muniandy, B., & Yahaya, W. A. J. W. (2021). The Relationship Between Emotional Intelligence and Students' Attitude Towards Computers: A Study on Polytechnic Engineering Students. *International Journal of Modern Education and Computer Science*, *4*(9), 14–22. https://doi.org/10.5815/ijmecs.2012.09.02

Lai, C. (2013). A framework for developing self-directed technology use for language learning. *Language Learning and Technology*, *17*(2), 100–122.

Landry, B., Griffeth, R., & Hartman, S. (2006). Measuring student perceptions of blackboard using the Technology Acceptance Model. *Decision Sciences Journal of Innovative Education*, *4*, 87–99. https://doi.org/10.1111/j.1540-4609.2006.00103.x

LeJeune, L. M., & Lemons, C. J. (2021). The Effect of Computer-Assisted Instruction on Challenging Behavior and Academic Engagement. *Journal of Positive Behavior Interventions*, *23*(2), 118–129. https://doi.org/10.1177/1098300720929680

Li, X., & Luo, H. (2023). Research on the Teaching and Learning Strategies in College English Reading Curriculum from the Perspective of Second Language Acquisition. *OALib*, *10*(03), 1–10. https://doi.org/10.4236/oalib.1109889

Lopez, S. J. (Ed), & Snyder, C. R. (Ed). (2019). Oxford handbook of positive psychology, 2nd ed. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology, 2nd ed.* (pp. xxxi, 709–xxxi, 709). Oxford University Press.

Manjunatha, N. (2019). Descriptive research. *Journal of Emerging Technologies and Innovative Research (JETIR)*, *6*(6), 863–867. https://doi.org/10.1093/fampra/8.1.92

Maqableh, M., Masa'deh, R. M. T., & Mohammed, A. B. (2015). The Acceptance and Use of Computer Based Assessment in Higher Education. *Journal of Software Engineering and Applications*, *08*(10), 557–574. https://doi.org/10.4236/jsea.2015.810053

Marriott, P., & Lau, A. (2021). The use of on-line summative assessment in an undergraduate financial accounting course. *Journal of Accounting Education*, *26*(2), 73–90. https://doi.org/https://doi.org/10.1016/j.jaccedu.2008.02.001

Marshall, S. (2010). Change, technology and higher education: Are universities capable of organisational change? *Australasian Journal of Educational Technology*, *26*(8), 179–192. https://doi.org/10.14742/ajet.1018

Moon, J.-W., & Kim, Y.-G. (2021). Extending the TAM for a World-Wide-Web context. *Information & Management*, *38*(4), 217–230. https://doi.org/https://doi.org/10.1016/S0378-7206(00)00061-6

Murillo Montes de Oca, A., & Nistor, N. (2020). Non-significant intention–behavior effects in educational technology acceptance: A case of competing cognitive scripts? *Computers in Human Behavior*, *34*, 333–338. https://doi.org/https://doi.org/10.1016/j.chb.2014.01.026

Noorbehbahani, F., & Kardan, A. A. (2021). The automatic assessment of free text answers using a modified BLEU algorithm. *Computers & Education*, *56*(2), 337–345. https://doi.org/https://doi.org/10.1016/j.compedu.2010.07.013

Padilla-Meléndez, Del Aguila-Obra, A. R., & Garrido-Moreno, A. (2021). *Padilla-Meléndez, A., Del Aguila-Obra, A. R., & Garrido-Moreno, A. (2012). Perceived playfulness, gender differences and technology acceptance model in a blended learning scenario. Computers & Education.*

Pourdana, N. (2022). Impacts of computer-assisted diagnostic assessment on sustainability of L2 learners' collaborative writing improvement and their engagement modes. *Asian-Pacific Journal of Second and Foreign Language Education*, *7*(1), 11. https://doi.org/10.1186/s40862-022-00139-4

QAA. (2018). *University of Bath quality audit report*.

Ritter, O. N. (2018). *Integration of educational technology for the purposes of differentiated instruction in secondary STEM education*. The University of Tennessee.

Rodrigues, F., & Oliveira, P. (2019). A system for formative assessment and monitoring of students' progress. *Computers & Education*, *76*, 30–41. https://doi.org/https://doi.org/10.1016/j.compedu.2014.03.001

Romero, E. J. (2018). AACSB Accreditation: Addressing Faculty Concerns. *Academy of Management Learning & Education*, *7*(2), 245–255. http://www.jstor.org/stable/40214540

Saha, S. K., & Gupta, R. (2020). Adopting computer-assisted assessment in evaluation of handwritten answer books: An experimental study. *Education and Information Technologies*, *25*(6), 4845–4860. https://doi.org/10.1007/s10639-020-10192-6

Salac, D. M. V. (2018). PRESENT: An Android-Based Class Attendance Monitoring System Using Face Recognition Technology. *International Journal of Computing Sciences Research*, *2*(3), 102–115. https://doi.org/10.25147/ijcsr.2017.001.1.28

Schoen-Phelan, B., & Keegan, B. (2018). Case Study on Performance and Acceptance of Computer-Aided Assessment. *International Journal for E-Learning Security*, *6*(1), 482–487. https://doi.org/10.20533/ijels.2046.4568.2016.0061

Sclater, N. (2018). *Open Research Online The Open University ' s repository of research publications Using evaluation to inform the development of a user- focused assessment engine Conference Item*. *August*.

Seale, J. (n.d.). Using CAA to support student. *Technology*.

Seale, J. K. (2021). Developing e-learning experiences and practices: the importance of context. *Alt-J*, *16*(1), 1–3. https://doi.org/10.1080/09687760701850141

Shee, D. Y., & Wang, Y.-S. (2018). Multi-criteria evaluation of the web-based e-learning system: A methodology based on learner satisfaction and its applications. *Computers & Education*, *50*(3), 894–905. https://doi.org/https://doi.org/10.1016/j.compedu.2006.09.005

Sillat, L. H., Tammets, K., & Laanpere, M. (2021). Digital competence assessment methods in higher education: A systematic literature review. *Education Sciences*, *11*(8). https://doi.org/10.3390/educsci11080402

Sobremisana, V. S., & Aragon, R. C. (2016). Computer-Based Assessment : Its Effects On Students ' Performance And Computer-Based Assessment : Its Effects On Students ' Performance And Attitude. *The International Journal Research Publication's*, *5*(9), 10–18.

Stefan, P., Pfandler, M., Kullmann, A., Eck, U., Koch, A., Mehren, C., von der Heide, A., Weidert, S., Fürmetz, J., Euler, E., Lazarovici, M., Navab, N., & Weigl, M. (2023). Computer-assisted simulated workplace-based assessment in surgery: application of the universal framework of intraoperative performance within a mixed-reality simulation. *BMJ Surgery, Interventions, & Health Technologies*, *5*(1), e000135. https://doi.org/10.1136/bmjsit-2022-000135

Tareef, A. Bin. (2021). the Effects of Computer-Assisted Learning on the Achievement and Problem Solving Skills of the Educational Statistics Students. *European Scientific Journal*, *10*(28), 1857–7881.

Taylor, S., & Todd, P. A. (1995). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, *6*(2), 144–176. https://doi.org/10.1287/isre.6.2.144

Teo, T. (2009). Modelling technology acceptance in education: A study of pre-service teachers. In *Computers & Education* (Vol. 52, pp. 302–312). Elsevier Science. https://doi.org/10.1016/j.compedu.2008.08.006

Terzis, V., & Economides, A. A. (2021). The acceptance and use of computer based assessment. *Computers & Education*, *56*(4), 1032–1044. https://doi.org/https://doi.org/10.1016/j.compedu.2010.11.017

Terzis, V., Moridis, C. N., & Economides, A. A. (2019). How student's personality traits affect Computer Based Assessment Acceptance: Integrating BFI with CBAAM. *Computers in Human Behavior*, *28*(5), 1985–1996. https://doi.org/https://doi.org/10.1016/j.chb.2012.05.019

Thelwall, M. (2020). Computer-based assessment: a versatile educational tool. *Computers & Education*, *34*(1), 37–49. https://doi.org/https://doi.org/10.1016/S0360-1315(99)00037-8

Tshibalo, A. (2018a). The potential impact of computer-aided assessment technology in higher education. *South African Journal of Higher Education*, *21*(6), 684–693. https://doi.org/10.4314/sajhe.v21i6.25738

Tshibalo, A. (2018b). The Potential impact of computer-aided assessment technology in higher education. *South African Journal of Higher Education*, *21*. https://doi.org/10.4314/sajhe.v21i6.25738

Undi, V. A., & Hashim, H. (2021). The Demands of 21st Century Learning: A Study on Primary School Teachers' Attitudes towards Using ICT in English as a Second Language (ESL) Classrooms. *Creative Education*, *12*(07), 1666–1678. https://doi.org/10.4236/ce.2021.127127

Van Raaij, E., & Schepers, J. (2018). The acceptance and use of virtual learning environment in China. *Computers & Education*, *50*, 838–852. https://doi.org/10.1016/j.compedu.2006.09.001

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425–478. https://doi.org/10.2307/30036540

Wang, C. H., Harrison, J., Cardullo, V., & Lin, X. (2018). Exploring the relationship among international students' english self-efficacy, using english to learn self-efficacy, and academic self-efficacy. *Journal of International Students*, *8*(1), 233–250. https://doi.org/10.5281/zenodo.1134299

Wang, J., & Ondago, O. (2021). Optimization of Computer-Assisted Vocabulary Assessment System in International Chinese Language Teaching. *Computer-Aided Design and Applications*, *18*, 106–117. https://doi.org/10.14733/cadaps.2021.S4.106-117

Winke, P., & Isbell, D. (2017). *Computer-Assisted Language Assessment* (pp. 313–325). https://doi.org/10.1007/978-3-319-02237-6_25

Wu, W.-L., Hsu, Y., Yang, Q.-F., Chen, J.-J., & Jong, M. S.-Y. (2023). Effects of the self-regulated strategy within the context of spherical video-based virtual reality on students' learning performances in an art history class. *Interactive Learning Environments*, *31*(4), 2244–2267. https://doi.org/10.1080/10494820.2021.1878231

YARON, G. (2018). Video-Based Learning of Quantitative Courses in Higher Education. *I-Manager's Journal of Educational Technology*, *15*(2), 16. https://doi.org/10.26634/jet.15.2.14302