Original Article

The Correlation between Continuous Assessment Scores and National form four Examination Results in Tanzania: A Case Study of Morogoro Municipality

Gabriel Leonard Myombe* & Prof. Paul S. D. Mushi, PhD†

1 Jordan University College, P. O. Box 1878, Morogoro-Tanzania.
* Author for Correspondence gabrielleonardmyombe@gmail.com

ABSTRACT

This research work aimed to find out whether there is correlation between continuous assessment (CA) scores and national form four final examination results in Tanzania 2021/2022 in Morogoro Municipality. The specific objectives were to assess the correlation between CA scores and form four final examination results basing in Biology, Chemistry, Physics, Mathematics and English Language. The study used Ex post facto research design because it groups the qualities that already exist and compared on some dependent variables. This study preferred this design because it has an ability to use the information that has been grouped based on a particular characteristics or trait. The study also used purposive sampling technique to select the two government secondary schools in Morogoro Municipality as well as five subjects which were taken as a sample these are Biology, Physics, Chemistry, Mathematics and English language following the low performance to most of the candidates to the mentioned subjects above. The data were collected by using documentary instrument where the head of schools had given the Mock results of 2021 which were caped as CA documents due to the fact that mock is regarded as a reflection of the NECTA results since it is always done after undergoing several number of assessments to the candidates where mock becomes the almost last measure of the candidates to attempt the national form four examination and national form four results 2021/2022 were taken from the NECTA website. The data were analyzed using Pearson’s product moment correlation coefficient (r) and the null hypotheses were tested at 0.05 level of significance. The findings that from five subjects that is Biology, Chemistry, Physics, Mathematics and English language. There were positive correlation between CA scores and NECTA results 2021/2022 because the significance level was .000 then in Biology (r) = .845, Physics r = .773, Chemistry r = .886, Mathematics r = .715 and English language r = .849 respectively. So they rejected null hypothesis and accept alternative hypothesis. This indicated that there was positive correlation between CA scores and national form four final examination results.
INTRODUCTION

Ganiyu (2013) Continuous Assessment (CA) is viewed as the tool that plays multiple tasks to both students and teachers from the feedback of t/learning, prepares students for the final exam (Ezeudu, 2005), enhancing student’s learning, improving the faculty’s teaching skills and improving the education and instructional assessment system (Chen, 2017). Also CA determines the level of achievements and provides them with feedback on their strengths and weaknesses (Al-Maskari, 2015). Different scholars have conducted their studies in different places arguing about the correlation between CA scores and the examination results. These studies were traced beginning at the global level through studies that were very limited globally. At the African level, Nigeria seemed to be the leading country with more studies on the correlation between CA scores and examination results and then followed by Ghana, Ethiopia, Uganda, Niger and end up in Tanzania, where is no direct study that touches on the area of correlation between CA scores and national form four examination results.

Globally, the study done by Ahukanna and Ukah (2012) observed that CA made the university students perform well on their semester exams and vice versa it is confirmed by the findings of both Kola and Ganiyu (2013) and Dery and Lamptey (2006) who also argued that, semester examinations keep students in track during all years of the study.

Also, the study by Al-Maskari, (2015) on the comparisons between continuous assessment scores and examination results of the secondary school students in Oman. The study used the Pearson method to analyse data. The study reported that students were seen failing the continuous assessment scores but passing the final examination, something that showed that the final examination has the strongest correlation.

De Sande et al. (2008) explored the relationship between continuous assessment and examinations in Madrid-Spain. The study used 210 electrical and electronic engineering students as a sample that was divided into seven groups with different lecturers. Students in this experiment were assessed by using two different methods. The findings indicated students were failing the CA but passing the national final examination. The results implied that there is no direct relationship between
the CA scores and final examination scores obtained by the same group of students.

In Africa, Ganiyu et al. (2013) explored the relationship between continuous assessment and students’ performance from 92 college students in their final examinations in Kwara state in Nigeria. The method used was the Pearson product-moment correlation coefficient. The findings revealed that there was a correlation between continuous assessments and examination scores because it was seen that CA influences the good performance in the national final examination. A similar study done by Kumur and Siya (2015) in Adamawa State in Nigeria, investigating the relationship between continuous assessment and national examination. The study also employed the Pearson correlation coefficient (r) via SPSS version 20 was used in data analysis. Also it was revealed that CA has a great influence in the performance of national final examination since it was observed as the paramount in t/learning process.

Not only that but also the study was done by Fareo (2020) on the influence of continuous assessment on four national final examinations in Adamawa state in Nigeria. The study aimed to assess the relationships between continuous assessment and the form of four national examinations. The sample size used was 200 secondary school students, and the study adopted the research instruments from Faraye and Adefioye (2016). Data were analysed using mean, Pearson product-moment correlation coefficient and t-test statistics. Both studies observed that CA motivated students to perform well on their national final examination. This implies that there was a significant relationship.

Furthermore, Fan et al. (2014) carried out a study on the relationship between continuous assessment and the national form four final examination scores. The study used a sample of 260 secondary school students and the design employed was causal-comparative. The study coded the data using the Pearson product-moment correlation coefficient. The findings obtained stated that CA scores =15.46, SD = 3.51, r = 1.7, end of semester score = 20.054 and its SD = 4.85 and the significance at 0.05 df = 258 and r = 0.102. There was a correlation because CA was noticed to have an effect on form four national examinations especially providing the necessary feedback- we require in order to maximize the outcome of the education effort, which paves the way toward the better performance of the final exam.

Also, the study by Bich and Musa (2015) assessed the correlation between continuous assessment and examination scores in education subjects in Nigeria. The method used to analyse data was the Pearson product-moment correlation coefficient, while the sample used was 200 students. The overall results were in agreement with Olufemi (2014) in his study on the relationship between Continuous Assessment and Junior School Certificate Examination in Mathematics Scores in Ekiti State. The study found the relationship between the CA and the final examination results.

Aina and Adedo (2013) conducted a study on the correlation between Continuous Assessment (CA) and secondary school Students’ Performance in Physics. The study revealed the significant relationship between CA and students’ performance in their final examinations in physics subject. Therefore it was concluded that continuous assessment was very important in teaching and learning because it influenced students’ performance. Continuous assessment influences both examination scores and final grades in electromagnetism physics.

All the studies done in Africa above used similar methods in data analysis which was the Pearson product-moment coefficient employed in indicating the correlation. Not only that but also, each study used different sample sizes from others though the findings from the study were similar, all showing a strong correlation between CA scores
and final examination results in different institutions since the study did not base on secondary schools only, it went far even in colleges and universities.

Moreover, Hayford (2018) investigated the continuous assessment and academic improvement to the students in Ghana. A sample selected was 107 primary and secondary students who answered the questionnaires, 12 teachers were interviewed and 6 students were interviewed through a focus group interview. The findings showed that CA supports students to improve academically. This was supported by Alemu (2013) who conducted a study on continuous assessment issues and practices in secondary schools of the Oromia region in Ethiopia. From the study, the findings found that Continuous assessment keeps students active in learning as they are regular in touch with the assessment that causes student’s improvement in the last examination.

Moreover, Fred (2017) investigated the impact of continuous assessment on the student’s academic performance in selected public secondary schools in Mbale Municipality in Uganda. The study discovered that CA accompanied by its strategies (home assignment, class activity, quizzes, recap exercises, muddiest point, peer assessment, observations and discussion), helped students identify their weaknesses and strengths. The CA results helped in the monitoring of students’ learning progress, gauging students’ mastery of the required knowledge, among others.

All the literatures surveyed above, most of them were done in Nigeria, one in Russia, Oman, Ghana, and Ethiopia and one related study in Uganda. However, some of the studies mentioned above were done in colleges, universities, and primary schools. Nevertheless, there is a very limited published study in Tanzania in the area of assessing the correlation between CA scores and national form four final examination results.

**Statement of the Problem**

The studies above seemed to have different scholars who did their studies in the area of correlation between continuous assessment scores and final examination results from various institutions like universities/colleges and primary and other technical institutions. But very limited studies have been done in secondary schools where the current study focuses. Not only that but also, from the researchers’ survey in different studies and their locations seemed to have a very limited number of the current published studies in different parts of the world, including Tanzania, which relate to the current study being undertaken currently in Morogoro Municipality in Tanzania.

Furthermore, in Africa, the study seemed to have more done in Nigeria than other countries and then followed by Ghana, Ethiopia and Uganda. Moreover, there are very limited published studies which have been done in Tanzania in the area of “correlation between continuous assessment scores and national form four examination results” in neither universities/colleges, primary schools or secondary schools. That is why the current study carried out the assessment of the “correlation between CA scores and national form four examination results in Tanzania”, specifying in Morogoro Municipality.

**Purpose of the Study**

The main purpose of this study was to establish the correlation between continuous assessment scores and the national form four examination results in Tanzania.

**Significance of the Study**

It is foreseen that the results obtained in this study shall have a significant impact on the community as it will provide alternative ways of carrying out continuous classroom assessment. The findings of the study will offer a comprehensive understanding to the policymakers and planners in education.
about the role of continuous assessment on the student’s academic performance in the final examinations. Results will assist them in designing proper policies and plans necessary for effective and efficient implementation of classroom assessments to enhance students’ academic performance in Morogoro Municipality secondary schools.

**Scope of the Study**

There is little information about the CA practice in relation to the form four national examinations in secondary schools. Since students may do well in CA but fail in their final examinations or fail the CA but pass in their national examinations (Al-Maskari 2015). Thus the study seeks to find out the correlation between Continuous assessment and form four national examinations results in Tanzania.

**METHODS**

**Research Design**

Kothari (2004) A research design is described as the plan and procedures for conducting research. Orodho (2002) research design is essential in collecting, analysing and interpreting data so as to answer the research question(s).

**Data Collection Methods**

The study used documentary review to obtain data from the field. The researcher collected CA scores from secondary schools and NECTA results from NECTA website.

**Targeted Population and Sample**

The target populations in this study were head masters/mistress in public secondary schools.

**Data analysis and Presentation**

Researchers always engage their own intellectual capacities to make sense of data analysis (Omari 2011). In this study, data were analysed qualitatively based on the research hypothesis. Quantitative data were coded and analysed through the use of a statistical package for social science (SPSS) version 25 and presented by using tables.

**CA Scores from KSS and SSS**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Biology</th>
<th>Physics</th>
<th>Chemistry</th>
<th>Mathematics</th>
<th>English Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90.5</td>
<td>0</td>
<td>90.5</td>
<td>0</td>
<td>90.5</td>
</tr>
<tr>
<td>B</td>
<td>70.5</td>
<td>1</td>
<td>70.5</td>
<td>0</td>
<td>70.5</td>
</tr>
<tr>
<td>C</td>
<td>50.5</td>
<td>11</td>
<td>50.5</td>
<td>3</td>
<td>50.5</td>
</tr>
<tr>
<td>D</td>
<td>32.5</td>
<td>63</td>
<td>32.5</td>
<td>15</td>
<td>32.5</td>
</tr>
<tr>
<td>F</td>
<td>12</td>
<td>210</td>
<td>12</td>
<td>14</td>
<td>12</td>
</tr>
</tbody>
</table>

*No. of cand. = number of candidates ; Av. Mks = Average marks*

Source: Headmaster/Mistress from Selected Secondary Schools (2022)

The table above shows the CA scores of the candidates from the selected secondary schools in the year of 2021/2022.It shows the performance in each subject and grade as well and the total number of candidates who sat for the exams per subject.
Table 2: NECTA Scores from KSS and SSS

<table>
<thead>
<tr>
<th>Grade</th>
<th>Biology</th>
<th>Physics</th>
<th>Chemistry</th>
<th>*Mathematics</th>
<th>*English Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90.5</td>
<td>1</td>
<td>90.5</td>
<td>0</td>
<td>90.5</td>
</tr>
<tr>
<td>B</td>
<td>70.5</td>
<td>9</td>
<td>70.5</td>
<td>1</td>
<td>70.5</td>
</tr>
<tr>
<td>C</td>
<td>50.5</td>
<td>37</td>
<td>50.5</td>
<td>5</td>
<td>50.5</td>
</tr>
<tr>
<td>D</td>
<td>32.5</td>
<td>76</td>
<td>32.5</td>
<td>17</td>
<td>32.5</td>
</tr>
<tr>
<td>F</td>
<td>12</td>
<td>98</td>
<td>12</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: NECTA Website 2022

The table above shows the NECTA results of the candidates from the selected secondary schools in the year of 2021/2022. It shows the performance in each subject and grade as well and the total number of candidates who sat for the exams per subject.

RESULTS OF THE FINDINGS

Correlation between Continuous Assessment Scores and the National Form Four Final Examination Results per Subject

Biology

$H_0$: There is no significant correlation between continuous assessment scores and the national form four final examination results in Biology.

To test the above hypothesis, continuous assessment scores and the national form four final examination results in Biology in 2021 were correlated to obtain the Pearson’s Product Moment Correlation Coefficient ($r$), and the result is presented in Table 3 below.

Table 3: Correlation between Continuous Assessment Scores and the National Form Four Final Examination Results in Biology

<table>
<thead>
<tr>
<th>Assessment Mode</th>
<th>N</th>
<th>Pearson’s Product Moment Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>$H_0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>285</td>
<td>.845**</td>
<td>.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>Examination Scores</td>
<td>221</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).**

Source: Field Data (2022)

The result from Table 3 above reveals that there is a correlation $r = .845$ between continuous assessment scores and the national form four final examination results in Biology in 2021. The sig (2-tailed) value of .000 is lesser than 0.05 and thus the null hypothesis is rejected. These results indicate that there is a statistically significant correlation between continuous assessment scores and the national form four final examination results in Biology in 2021.

Physics

$H_0$: There is a significant correlation between continuous assessment scores and the national form four final examination results in Physics.
To test the above hypothesis, continuous assessment scores and the national form four final examination results in Physics in 2021 were correlated to obtain the Pearson’s Product Moment Correlation Coefficient (r), and the result is presented in Table 4 below:

Table 4: Correlation between Continuous Assessment Scores and the National Form Four Final Examination Results in Physics

<table>
<thead>
<tr>
<th>Assessment Mode</th>
<th>N</th>
<th>Pearson’s Product Moment Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>$H_0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>32</td>
<td>.773**</td>
<td>.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>Examination Scores</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2022)

The result from Table 4 above reveals that there is a correlation relationship $r = .773$ between continuous assessment scores and the national form four final examination results in Physics in 2021. The sig (2-tailed) value of .000 is lesser than 0.05 and thus the null hypothesis is rejected. These results indicate that there is a statistically significant correlation between continuous assessment scores and the national form four final examination results in Physics in 2021.

Chemistry

$H_0$: There is a significant correlation between continuous assessment scores and the national form four final examination results in Chemistry.

To test the above hypothesis, continuous assessment scores and the national form four final examination results in Chemistry in 2021 were correlated to obtain the Pearson’s Product Moment Correlation Coefficient (r), and the result is presented in Table 5 below:

Table 5: Correlation between Continuous Assessment Scores and the National Form Four Final Examination Results in Chemistry

<table>
<thead>
<tr>
<th>Assessment Mode</th>
<th>N</th>
<th>Pearson’s Product Moment Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>$H_0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>68</td>
<td>.886**</td>
<td>.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>Examination Scores</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2022)

The result from Table 5 above reveals that there is a correlation relationship $r = .886$ between continuous assessment scores and the national form four final examination results in Chemistry in 2021. The sig (2-tailed) value of .000 is lesser than 0.05 and thus the null hypothesis is rejected. These results indicate that there is a statistically significant correlation between continuous assessment scores and the national form four final examination results in Chemistry in 2021.

Mathematics

$H_0$: There is a significant correlation between continuous assessment scores and the national form four final examination results in Mathematics.

To test the above hypothesis, continuous assessment scores and the national form four final examination results in Mathematics in 2021 were correlated to obtain the Pearson’s Product Moment
Correlation Coefficient (r), and the result is presented in Table 6 below:

### Table 6: Correlation between Continuous Assessment Scores and the National Form Four Final Examination Results in Mathematics

<table>
<thead>
<tr>
<th>Assessment Mode</th>
<th>N</th>
<th>Pearson’s Product Moment Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>H_04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>283</td>
<td>.715**</td>
<td>.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>Examination Scores</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2022)

The result from Table 6 above reveals that there is a positive correlation (r = .715) between continuous assessment scores and the national form four final examination results in Mathematics in 2021. The sig (2-tailed) value of .000 is lesser than 0.05 and thus the null hypothesis is rejected. These results indicate that there is a statistically significant correlation between continuous assessment scores and the national form four final examination results in Mathematics in 2021.

### English

**H_05: There is a significant correlation between continuous assessment scores and the national form four final examination results in English.**

To test the above hypothesis, continuous assessment scores and the national form four final examination results in English in 2021 were correlated to obtain Pearson’s Product Moment Correlation Coefficient (r), and the result is presented in Table 7 below.

### Table 7: Correlation between Continuous Assessment Scores and the National Form Four Final Examination Results in English

<table>
<thead>
<tr>
<th>Assessment Mode</th>
<th>N</th>
<th>Pearson’s Product Moment Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>H_05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td>284</td>
<td>.849**</td>
<td>.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>Examination Scores</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2022)

The result from Table 7 above reveals that there is a positive correlation (r = .849) between continuous assessment scores and the national form four final examination results in English in 2021. The sig (2-tailed) value of .000 is lesser than 0.05 and thus the null hypothesis is rejected. These results indicate that there is a statistically significant correlation between continuous assessment scores and the national form four final examination results in English in 2021. All the findings above are in line with Federal Republic of Nigeria (2004), Ajidagba (2004), O’kwu and Orum (2012), Olaleye and Aliyu (2012), Adesoji and Kenni, A.M. (2013), and Kolawole and Ala (2013) who have also found that there is a positive and significant relationship in the continuous assessment scores and students’ performance.

### SUMMARY OF THE FINDINGS

This study tried to establish the correlation between continuous assessment scores and the national form four examination results in Tanzania. H_01 in Biology, H_02 in Physics, H_03 in Chemistry, H_04 in Mathematics and H_05 in English language. They all stated that there is no significant correlation between continuous assessment scores and the national form four final examination who have also found that there is a positive and significant relationship in the continuous assessment scores and students’ performance.
results in all subjects, these were rejected and thus implies that, there was a significant correlation between continuous assessment scores and the national form four final examination results in the outlined subjects above.

These findings are in agreement with Federal Republic of Nigeria (2004), Ajidagba (2004), O’kwu and Orum (2012), Olaleye and Aliyu (2012), Adesoji and Kenni, A.M. (2013), and Kolawole and Ala (2013) who also found that there was a positive and significant relationship in the continuous assessment scores and students’ performance.

CONCLUSION

From the findings through Pearson’s Product Moment Correlation Coefficient continuous assessment scores and the national form four examination results of Biology, Physics, Chemistry, Mathematics, and English showed that they are significant correlated with $r = .845$, $r = .773$, $r = .886$, $r = .715$ and $r = .849$ respectively.

This indicated that CA scores have great effect on the national form four examination results.

Recommendations

- CA should be given maximum attention in secondary schools since it reveals the learners’ strengths and weaknesses.

- TIE should be the only institution to certify the pre-service teachers order to assess their pedagogical mastery and other competencies in general. This is because sometimes lecturers and tutors don’t prepare them well as the results they go to the schools implement things with less skill.

- The government should ensure that hostels are built to different secondary school especially school KSS and SSS secondary schools where students are walking for a long distance or travelling by public transport in the morning where sometimes delay to arrive at school, this reduces concentration to students in the classroom due to tiredness and another thought of how to reach at home. This can help to solve the drop out of the students from school especially girls who sometimes engage in love affairs by either minibus conductor or driver for the sake of picking them freely in their bus. This results to pregnancy hence drop out from the school

- The both internal external quality assurers team should ensure the school documents are well kept for future use no matter how long time has been there.

Areas For Further Research

- The role of the students, administrators and parents in CA needs to be researched. There should be some research to equip us with this information.

- There is a need to carry out the study on the internal and external factors affecting the student’s performance in their form four national final examination in Morogoro Municipality.

- To investigate on how environment can affect the student’s academic performance on their studies and suggest the solutions.

- The study on the correlation between CA scores and national form four examination results in Tanzania from 2010-2015 and comment on the trend.

REFERENCES


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secondary schools in Ghana (Doctoral dissertation, University of Birmingham).


