


Analysis of the Effects of Utilization of Online Modules on Grades in a First Year Computer Literacy Course


Oduronke T. Eytayo
and
George Anderson

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Research





Preamble




How do first year students use resources and how does it affect their results



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Course Overview

- The course "GEC121 Computing and Information Skills Fundamentals I" is meant to instil basic computing and information literacy skills in year one students.
- It covers basic computing skills (e.g. software concepts, hardware concepts, using a computer for file management, internet access, word processing, etc.) as well as information skills
- It's a 2unit course
- The course consists of two major components: the face-to-face lecture and practical hands-on laboratory sessions.

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Course Overview

- The course "GEC122 Computing and Information Skills Fundamentals II" is meant to instil basic computing and information literacy skills in year one students.
- Operating systems and file management, more on internet, Microsoft Excel and Microsoft Access
- It's a 2unit course
- The course consists of two major components: the face-to-face lecture and practical hands-on laboratory sessions.


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- The use of WebCT as a LMS requires learners to actively interact with the computer to access 1) online lab materials, 2) online assignments 3) online course content as well as email and self tests.
- The level of activity of a student in WebCT can be compared to student attendance in class in a traditional lecturing environment.

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- In WebCT, level of activity of a student can be used to determine student participation in the course.
- In this paper we are attempting to test if correlation between WebCT usage and student performance exists. We also investigate general usage of WebCT as first year students begin to familiarize themselves to the university environment to give a picture of usage patterns.

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- Several studies have looked at student achievement and the use of the web. Powers (1997) taught a course in Human Ecology through the web and his findings are that there is no significant difference with the results of the previous year, however class attendance reduced.

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- There are not much studies directly on the on correlation between course website usage and student performance.
- Baugher, Varanelli, and Weisbord (2003) reported no correlation between total number of course website hits per student and student performance, but very strong correlation between hit consistency and student performance

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- Senderock and Shaw (1999) discovered a significant positive correlation between WebCT use and assessment marks in an Applied Sports Science course.
- Rivera and Rice(2002) discovered that when a course was split into traditional, web-based, and hybrid groups (with web-based and hybrid using WebCT), the performance of the web-based group did not suffer

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- In terms of first year experience and web use,
- Browne and Funnel (1998) on using CAL and the Web for a first year undergraduate geography course showed there was increase in knowledge of the subjects.

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- A study of the faculty of Social Sciences first year students in UB in 2003 showed that there is a high correlation between the marks and the no of pages visited as well as the no of hits (Eytayo, 2005).
- Another study on first year students performed in 2005 in 2004 in five faculties in GEC121 revealed that the correlation tests show that student performance increases together with increasing WebCT usage in four out of the five faculties studied. (Anderson and Mogothhane, 2005).

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- GEC121 course offering, which ran from August 2007 to November 2007 had 481 active students
- GEC 122 which ran from January 2008 to April 2008 had 499 active students.
- This is an initial study looking at 10% selected students at different levels from the Faculty of Social Sciences

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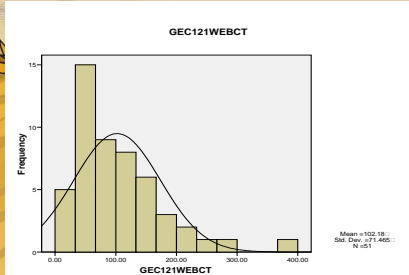
- At the end of the academic year students were accessed on the theory aspects with multiple choice questions. These examinations were marked using an Optical Mark Recognition (OMR) Reader.
- The same students were used for as the subjects in both GEC121 and 122.

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Data Analysis

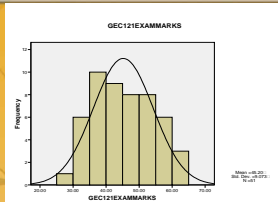
- The data was analysed using SPSS for Windows statistical analysis software package.
- The survey was analysed using Pearson's r correlation test.
- Tables and Charts were developed to display the data

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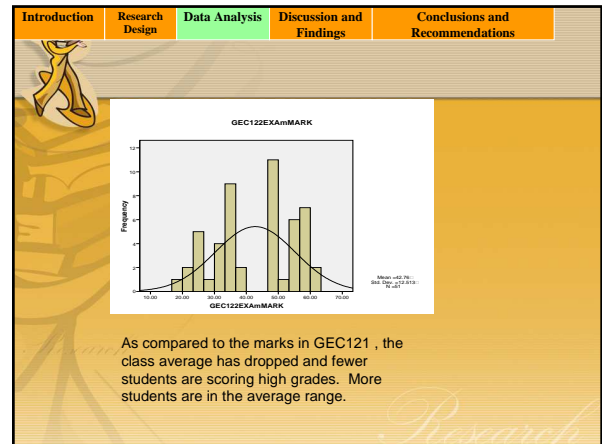
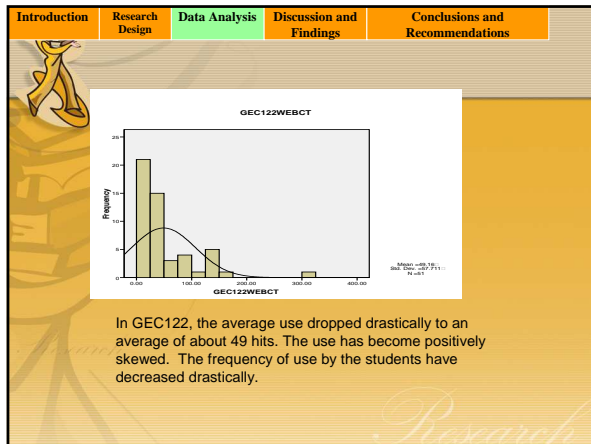


In GEC 121, amongst the student sample, the mean number of hits for WebCT was about 102. The maximum was 369 hits. More students were just around the mean number of hits.

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The distribution for the examination marks for the same course was also quite similar to the pattern found in the WebCT use.



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Analysis results

- For GEC121, the result was $r=0.303$, which means that roughly 9.18% of the variance in student performance can be accounted for by how much students use WebCT (sig. (2-tailed) = 0.030).
- Coincidentally, for GEC122, the result was $r=0.303$, which means that roughly 9.18% of the variance in student performance can be accounted for by how much students use WebCT (sig. (2-tailed) is also 0.030).
- Comparing the GEC121 and GEC122 marks, the correlation was $r=0.781$, which is highly significant as $P<0.01$.
- The association is positive in all the cases, meaning performance increases with WebCT usage, but not significant.

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Discussion of Findings

- The correlation tests show that student performance in both courses increase with WebCT usage.
- Those students who had a large number of hits, also did well in the course.
- The charts show the students at first year when they first entered the university made adequate use of the resources. As they become more familiar with the university system, their use of WebCT declined.
- Only very few students spent time with the resource. This is also reflected in the results.
- The mean for GEC121 (49.16/70) was higher than that of GEC121 (42.76/70).
- Berger (n.d.) however, argues that correlation might not mean anything, that the real independent variable is probably motivation and the lasting effect on student overall performance which is hard to determine in this study. Other factors that could also be responsible for the performance might be the students previous knowledge.

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Conclusions

- First year education matters a lot in students' academic career. The results show that course management systems like WebCT can have significant impact on student results.
- First year students should therefore be encouraged to use the resource. Students should not be given a choice, but measures should be put in place to encourage use.
- The results for GEC122 might have been better if this was done. A follow up on the study will be to compare the results gathered from the study with students from other faculties who did the same course.

Thank you for listening.