Article title: Digital Literacy: An Investigation into Perceived Competencies of Open Distance Learning Students in the Eastern Cape Province of South Africa

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Digital Literacy: An Investigation into Perceived Competencies of Open Distance Learning Students in the Eastern Cape Province of South Africa

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Abstract

The aim of this study was to investigate and describe the perceived digital literacy (DL) competencies of open distance learning (ODL) students at the University of South Africa (Unisa) in the Eastern Cape (EC) province of South Africa.

The association between the socio-demographic variables of the students and their perceived DL competencies was statistically tested. In this study, I examined whether there is a statistically significant relationship between the independent variables, attitudes towards digital technology (DT) for academic purposes, use of the Learner Management System (LMS), attendance at regional DL workshops, and the dependent variable, perceived DL competencies.

Internationally, there are numerous DL frameworks with a variety of terminologies and definitions for DL (Hall, Atkins, and Fraser 2014; Ilomäki et al. 2016; Pokpas 2014). Pokpas (2014) studied the available frameworks and developed a new conceptual framework of e-skills for digital inclusion. Eight competence components were identified: basic, technological, information, media, communication and collaboration, real-time thinking, creation of content, and transferable. The expected knowledge, skills and attitudes were specified for each of the eight components. In this study, I employed this theoretical framework to investigate the perceived DL competencies of ODL students in the EC province of South Africa.

The research question for this study was: What are the perceived DL competencies of Unisa’s EC students? In addition, the following sub-questions were also dealt with:

- What are students’ attitudes towards using DT for educational purposes?
- To what extent do students use the Unisa LMS?
- Do students attend DL workshops in the EC region?
- Is there a statistically significant association(s) between the socio-demographic and academic characteristics and the students’ perceived DL competencies?
• Is there a statistically significant relationship between students’ attitudes towards DT for educational purposes, use of the LMS, attendance at regional DL workshops and perceived DL competencies?

The positivist paradigm was used for this study as it allowed the researcher to use scientific methodology for the study: the researcher was independent and remained objective throughout the study (Maree 2011; McMillan and Schumacher 2010; Welman Kruger, and Mitchell 2012). The researcher had no interaction with the students during the data collection phase. The collected data were analysed and the results were reported in an objective and unbiased manner.

In this study, I used the quantitative research approach which is used to examine relationships between variables and statistical procedures to analyse the data (Creswell 2014). The quantitative research approach supports the aim and objectives of this study where the researcher could objectively collect data, statistically analyse the data and determine whether there was any statistically significant association(s) and relationship between the variables.

The non-experimental design was used for this study, which allows the researcher to investigate the identified environment and examine the relationships in the environment. The researcher does not interfere with the conditions of the environment (McMillan and Schumacher 2010).

To achieve the aims and objectives of the study, I followed a cross-sectional survey design and used an online questionnaire as a collection instrument. The online questionnaire enabled the researcher to obtain information directly from all the participants at one time in an unbiased manner.

The target population for this study was 16 983 students, comprising all students who were registered in 2018 for both formal and non-formal qualifications at the three Unisa offices in the EC. The researcher used the census method as the entire target population was accessible; there were no financial implications and a greater response rate was expected. A total of 381 students responded to the survey, producing a response rate of 2%. A low response rate is one of the disadvantages of online surveys (Bryman et al. 2014). Responses from four participants were incomplete and were removed from the data set. The total of 377 responses were analysed and reported upon. The targeted sample size was reached, despite the exclusion of the four participants.

An online survey tool was used to gather information from the participants for this study. An online survey tool uses the Internet to create the questionnaire, to send the questionnaire and to receive the responses from the participants (McMillan and Schumacher 2010). Based on the eight competencies of the e-skills digital inclusion framework (Pokpas 2014), the researcher created a new online questionnaire using the Survey Monkey software program to meet the aim and objectives of the study. The online survey link was sent by the ICT department at Unisa to all participants of the...
study using their Unisa student email address (myLife). The survey was conducted over six weeks and a reminder email was sent after two weeks as the response rate was low.

The collected data were exported from the Survey Monkey program into the Statistical Package for the Social Sciences (SPSS) program. Data were drawn from the SPSS program for the purpose of statistical analysis of the socio-demographic characteristics, academic characteristics of the participants, perceived DL competencies, attitudes towards DT for educational purposes, use of the LMS and attendance at regional DL workshops. The descriptive statistics are presented in the form of graphs and tables.

Inferential statistical analysis, using Pearson’s chi-squared test (Field 2013), was used to determine the association(s) between the socio-demographic and academic characteristics of the participants and the perceived DL competencies.

To test the hypotheses, Kendall’s tau non-parametric correlation coefficient (Field 2013) was used to test the strength and direction of association between the dependent variable, perceived DL competencies and independent variables, attitudes towards DT for educational purposes, use of the LMS and attendance at regional DL workshops.

At the time of data collection, the socio-demographic and academic characteristics of the study could be generalised to the EC student population and the Unisa student population, with most of the students being female, most students being employed, and most students being registered for an undergraduate degree qualification. Furthermore, the following colleges have the greatest number of registered students: CEDU, CEMS, CLAW and CHS. The study is proportionately representative of the three offices with the East London office having the greatest number of students, followed by the Port Elizabeth office and the Mthatha office having the lowest number of students in the EC region.

The study concluded that most students have high self-perceived DL competencies. Statistically significant positive relationships were found between attitude towards DT for educational purposes, use of the LMS, attendance at regional DL workshops and perceived DL competencies.

Recommendations were made to revisit the marketing strategy and the offering of DL workshops to meet all the DL competency areas. Recommendations were also made for Unisa to revisit the admission policy and to include a DL competency assessment test for all students. The study recommended further research to test the actual DL competencies of the students.

This study is the first study of this nature that has been conducted at a regional office level at Unisa. The findings of this study can be used as a baseline for future similar studies. This study is intended to create an awareness among regional office staff members on the important part that DL competency plays in the success of students in
an ODL environment. Regional office staff members are encouraged to be innovative to promote and provide DL workshops continually.

This study further emphasises the importance for all students to be digitally literate. This is not only for achieving academic success but also for being able to operate effectively and efficiently in the digital society and being prepared for the 4IR.

**Keywords:** attitude towards digital technology; digital literacy; digital competence; digital literacy workshops; learner management systems; open distance learning

**References**


