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Enhancing Digital Literacy Through International Computer Drivers Licence (ICDL) Training: A Qualitative Study of the First-year Undergraduate Students

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Abstract

The rapid advancement of technology has transformed education, necessitating the need to equip undergraduate students with digital literacy skills. This study examines the impact of International Computer Driving License (ICDL) training on the digital literacy of first-year undergraduate students. The research used a qualitative approach, conducting semi-structured interviews with students who completed their ICDL module and document analysis for semester performance summary. The study aimed to identify the areas of digital literacy that showed the most significant enhancement, enabling educators and policymakers to design targeted interventions and curricula to enhance students' digital competencies. The findings have implications beyond academia, as digital literacy is essential in the contemporary workforce, as it helps students become qualified teachers and apply innovative skills in diverse business areas.

Keywords: *Digital literacy, Undergraduate students, Digital citizenship, ICDL, Technology, Departments, Digital skills, Inclusion*

1. Introduction

Proficiency in exploiting technology tools and platforms is crucial for both professional and academic progression in this 21st Century. The capacity to utilize computers efficiently, critically weigh digital material, and communicate across a variety of digital platforms are just a few of the many abilities that make up digital literacy. Integrating formal digital literacy training into the curriculum has grown in importance as educational institutions work to prepare students for a labour market that is not dynamic. To enhance digital literacy, the International Computer Drivers Licence (ICDL) curriculum provides a thorough structure. ICDL seeks to give students the skills they need to succeed in a technologically advanced world by offering standardized training and certification. This study concentrates on first-year undergraduates, a vital time when students enter higher education and fit well in the industry.

2. Objectives of the Study

1) To explore the impact of ICDL training on first year students.
2) To assess students' experiences in ICDL training.

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3) To identify the benefits and challenges of ICDL training.
4) To come up with strategies to add value to the quality of ICDL training.

3. Research Questions

1. What are the specific skills the ICDL training brings to undergraduate students?
2. What are the student's experiences in ICDL training?
3. What challenges and or difficulties do students face during the ICDL training, and how do they overcome them?
4. What suggestions and value addition strategies can you propose to the administrators so as to improve the training?

3.1. Theorising the Perceptions of Enhancing Digital Literacy Through ICDL Training

The perceptions of ICDL in enhancing digital literacies can be understood through the lenses of the Universal Design of Learning (UDL). The integration of this theory can create a supportive and effective learning environment that enhances the digital literacy among first year undergraduate students. The qualitative study explored students' perceptions and experiences providing insights into how the theory manifest in practice and influence their digital competencies. These learning environments should be designed to accommodate diverse learning (Desantis and Fulkerson, 2023). ICDL training can incorporate multiple means of engagement, representation, and expression to cater to different learning styles and abilities (ICDL, 2020).

4. Literature Review

Digital literacy has become increasingly important in today's society (Bakir, 2022), as technology continues to advance and permeate various aspects of life, including education. The wide call of technology across all subjects in the education sector increased the demand and call for this module in the university curricula. There is need to skill up in order to cover the digital gap that exists amongst the students (Mackey and Jacobs, 2022). This section aims to explore the existing research on the impact of ICDL training on developing digital literacy among undergraduate students.

5. Impact of ICDL in Higher Education

ICDL is a globally recognized certification program that confirms an individual's basic computer skills and digital literacy. It is a standardized certification program that assesses an individual's proficiency in using a computer and common software applications (UNESCO, 2013). Digital skills offer many opportunities in education, business and other jobs (Ribble and Bailey, 2023). Technology is dynamic and evolves at a rapid pace therefore it is of great importance to ensure students of different educational backgrounds and ages acquire and maintain a level of digital competence in order to benefit from the digital era (Koutropolous and Wang, 2023). ICDL is designed for:

1. Basic computer users
2. Students
3. Employees
4. Job seekers

5.1. Benefits of ICDL (European Commission, 2013)

1. Improved digital literacy
2. Enhanced employability
3. Increased productivity
4. Better understanding of computer concepts
5. Recognized certification globally
6. Improved confidence in using technology

6. Empirical Literature

ICDL is an effective practical digital training for digital skilling (ICDL, 2020). Ashikuzzaman (2011) highlighted in research that the impact of ICT in education has been profound, reshaping traditional learning approaches and empowering educators and learners with innovative tools and resources. Digital literacy refers to the ability to access, evaluate, and utilize digital information and technologies effectively (Ribble and Bailey, 2023; Hobbs, 2019). It encompasses a range of competences, including technological proficiency, critical thinking, information literacy, and communication (Desantis

and Fulkerson , 2023; Al-Othman and Abdullah, 2021). In the context of undergraduate education, digital literacy is crucial for academic success, future employability, and active participation in a digital society (Ribble and Bailey, 2023; ALA, 2019).

The research by (Jahanian and Noroozi, 2011) focused on the relevance of ICDL on enhancing the performance of staff at Tehtan University. The researcher collected data using interviews and the analysis showed a valid relation between ICDL training and the skills acquired by staff including the accuracy speed and relevancy to work among others. The research has demonstrated that ICDL training enhanced students' technological proficiency. Students who undergo ICDL training demonstrate improved competence in using various digital tools (Mackey and Jacobs, 2022; ICDL, 2020).

Several studies have investigated the relevance of ICDL training on the digital skills of undergraduate students. (Farid, 2016) conducted research which engrossed on outlining the impression of education and the problems of using ICTs in Egypt. In another research (Salman, 2008) carried research to explain the importance of the ICT in enhancing the student and its environment. These studies have consistently shown positive outcomes, indicating that ICDL training significantly improves students' digital literacy skills (Al-Hakeen and Abdulraham, 2017).

Careemdeen and Nonis (2015) carried out research on effect of ICDL training on classroom computer use by teachers in secondary school. The study findings were that an average of 51% of 85% participants alluded to that ICDL training resulted in them being able to use new software applications in their classrooms. Therefore, offering ICDL training to teachers will benefit them as well as their students because they will also impart digital literacy skills to their students.

Abuhmaid (2011) conducted a study on the effectiveness of ICT training courses which included ICDL for teacher's professional development in Jorden. The findings of the study were that the ICT courses assisted teachers to enhance or improve their digital skills and knowledge however there were other factors that negatively affected the effectiveness of the courses. The factors were school culture, teacher's belief, follow-up support, timing and modes of training, workload and motivation.

7. ICDL Structure and Relevance to Undergraduate Students

The ICDL is an internationally accredited certificate that certifies one's ability and competences to use the computer and its most popular applications (Ghaith and Naji, 2023; Bakir, 2022). Figure 1 shows classes of the ICDL modules. The ICDL Certifications programmes are designed and approved by academics and industry expert from around the world (Ashikuzzaman, 2011). The program covers various base modules, such as computer essentials, online collaboration, word processing, spreadsheets, and presentation software. ICDL training aims to enhance students' digital literacy by equipping them with practical skills and knowledge required to navigate and utilize digital tools effectively (ICDL, 2020). The ICDL website offers a complete solution to students as it involves delivery and equipping of all your digital skills needs and bridge the digital divide (Desantis and Fulkerson, 2023). ICDL training contributes to the development of critical thinking, innovative, hard and soft skills. Students learn to evaluate and analyse digital information critically (Careemdeen and Nonis, 2015), distinguishing reliable sources from misleading or false ones. They also acquire skills to

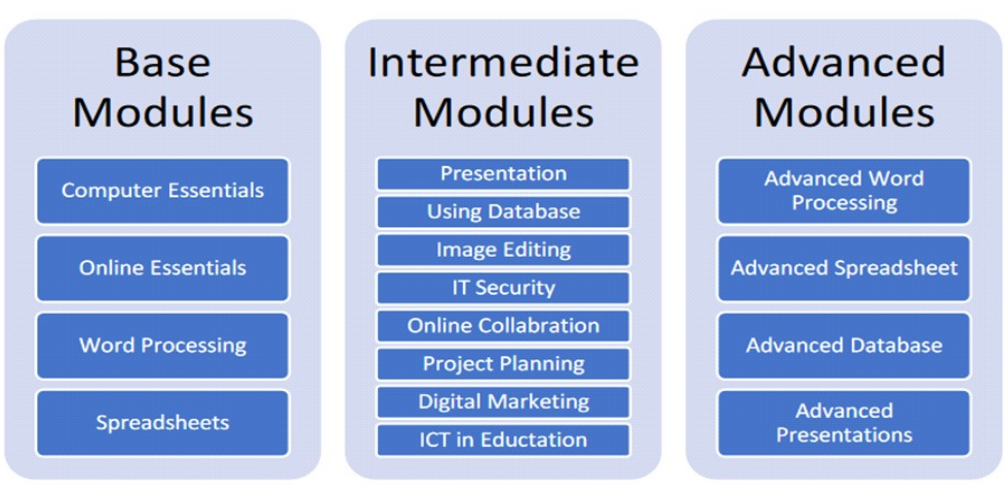

Figure 1: ICDL Modules

Source: Al-Othman and Abdullah, 2021

assess the credibility and validity of online content, promoting digital citizenship and responsible online behaviour (Mackey and Jacobs, 2022).

8. ICDL Training Enhances Students' Digital

ICDL (International Computer Driving License) training significantly enhances students' digital literacy in several key ways:

1. **Structured Learning**: ICDL provides a comprehensive curriculum covering essential digital skills, from basic computer operations to advanced software applications. This structured approach helps students build a solid foundation. (Koutropolous and Wang, 2023)
2. **Practical Skills**: The training emphasizes hands-on experience, allowing students to practice using various software tools and applications. This practical approach boosts their confidence and competence in using technology (Desantis and Fulkerson, 2023)
3. **Recognized Certification**: Earning an ICDL certification is widely recognized, which can enhance a student's resume and improve job prospects. This recognition encourages students to take their training seriously (Ghaith and Naji, 2023).
4. **Critical Thinking and Problem-Solving**: Students learn to troubleshoot common technical issues and navigate challenges, fostering problem solving and critical thinking skills important in this era's digital environment (Ke and Lee, 2023).
5. **Adaptability to Technology**: The training prepares students to adapt to new technologies and software, promoting lifelong learning and flexibility in an ever-evolving digital landscape (Koutropolous and Wang, 2023).
6. **Collaboration and Communication**: Many ICDL modules focus on tools that facilitate collaboration and communication, equipping students with the skills to work effectively in teams and engage in digital communication (Salman, 2008; Tsai and Chai, 2021).
7. **Informed Digital Citizenship**: The training often includes components on online safety, ethics, and responsible use of technology, which help students become informed digital citizens (Ribble and Bailey, 2023).

9. How ICDL Enhances Digital Literacy

1. **Standardized Curriculum**: ICDL offers a comprehensive syllabus that includes essential IT skills, such as word processing, spreadsheets, presentations, and online collaboration tools. This ensures that students gain a well-rounded understanding of digital tools (Alotaibi and Abdulazizi, 2023; ICDL, 2020)
2. **Hands-On Experience**: The certification focuses on practical skills through assessments that require students to demonstrate their abilities in real-world applications (ICDL, 2020). This hands-on approach reinforces learning and boosts confidence in using digital technologies (Ke and Lee, 2023).
3. **Recognition and Credibility**: Holding an ICDL certification is recognized by employers and educational institutions worldwide, which can motivate students to pursue the certification and improve their digital skills (Ghaith and Naji, 2023).
4. **Lifelong Learning**: ICDL encourages continuous learning by offering advanced modules and specializations (Ke and Lee, 2023), allowing students to keep their skills up to date with the evolving digital landscape (Kabilan and Rajab, 2023).
5. **Global Accessibility**: ICDL is available in many languages and countries (ICDL, 2020), making it accessible to a diverse range of students, thus promoting inclusivity in digital education (Johnson, 2023).

10. The Concept of Digital Citizenship

Mossberger *et al*. (2007) defined digital citizenship as the right to participate in online societies like the internet and other virtual environments. With the advent of technology, the undercurrent community is becoming more social and global due to the use of ICT (Desantis and Fulkerson , 2023), the nature of citizenship can't be left out. ICDL is an internationally recognised certification (ICDL, 2020) hence the emphasis on building the best digital citizen.

11. Methodology

The study adopted the qualitative research approach with the use of interviews and documents analysis were used to collect the data. The research sample picked a diverse group of students using a purposive sampling to include students from different department and representation of all diverse students in the sample. Purposive sampling was employed to select participants to provide rich and relevant insights into the research questions (Tsai and Chai, 2021). The aim was to achieve a diverse representation in terms of gender, ethnicity, and academic backgrounds. The interview questions also assessed the ability of the trainers to effectively deliver the skills as well as the effectiveness of the hardware; availability of software, time availed for the modules and internet connectivity among others. The researcher used techno-based technologies to interview some of the students especially those who were away on semester break. Part of the interview questions check on the performance of the students and checked the performance against the modules and also assessed the modules where students had challenges on. plz chk once

12. Ethical Consideration

Informed consent was sought from all participants, ensuring they understand the purpose of the study, their right to withdraw, and the confidentiality of their responses. Data will be anonymized to protect participants' identities.

13. Data Analysis

13.1. Interview Responses

The participants highlighted that they expected a lot of practical questions which enhanced their digital skills.

Enhancement of Digital Skills: All students interviewed indicated the modules developed their digital literacy skills.

> One respondent said, "*I am what I am now because of ICDL, I can operate documents better"*
>
> Another respondent said *"I am happy with ICDL training because I had never had the opportunity to do a course and write an exam online"*

These skills can now be effectively employed in their assignment and in their studying as students for research and document typing.

> One student clearly said*, "I am more than happy because I acquired skills I can use in my assignments and for visiting the internet. I now know how to use the presentation"*

Preparedness: Some students said that they needed more time practising diagnostics tests before the exams. In which they thought their performance was affected by inadequate preparedness, therefore, need more time.

> *One respondent said' "I overlooked the diagnostics test; I encourage takers to have enough practise with the diagnostics test, they are indeed helpful."*

Quality of questions in the modules: Some students indicated that the questions were clear.

> *One respondent said, "*The questions were clear enough and easy to interpret"
>
> *Another respondent said' "*the questions were tricky especially in computer essentials, they needed a lot of reading."

Relevance of the module to undergraduate students: All the interviewed participants indicated that the training improved computer skills and knowledge.

> *One respondent said "*without ICDL is like someone moving without a vision, you can't see the beauty of the world"
>
> *Another respondent said, "*ICDL is the in thing we need these skills and that we got additional international certificates on top of the program we are doing. We are better in the market"

Time as a factor (was the training time enough). Respondents indicated that there was enough time for training.

> *One respondent said,* "there was enough time and we could go to different portals to reach and we had time to prepare for the exam"
>
> *Another respondent said*, "we had plenty time because we could practise over the weekends and 24/7

Availability of Resources (Hardware and Internet): It was noted that the students need a hand especially on the hardware resources and 10 indicated the connectivity challenges

One respondent said, "Network problem, it would take time to log in and log off and electricity was a problem"

Complexity of the ICDL system: 22 participants responded in favour of the system, that the ICDL platform was found to be simple, easy to use and available for access, less down time period experienced.

*One respondent said, "*ICDL platform is easy, managed to access all notes without issues."

What was oustanding skill you benefited from ICDL: Students indicated that they appreciate the benefits and value of ICDL in their studies at institution of higher learning.

"The training was very useful, because am one student who feared the email, now am good to go and I can use powerpoint to make my presentations"

Figure 2 presents the rating of the ICDL module as relating to the teaching and learning of students. Students also managed to highlight some of the reasons why they did not take the module seriously which led to them not taking the whole courses. Some failed to certify the 4 modules.

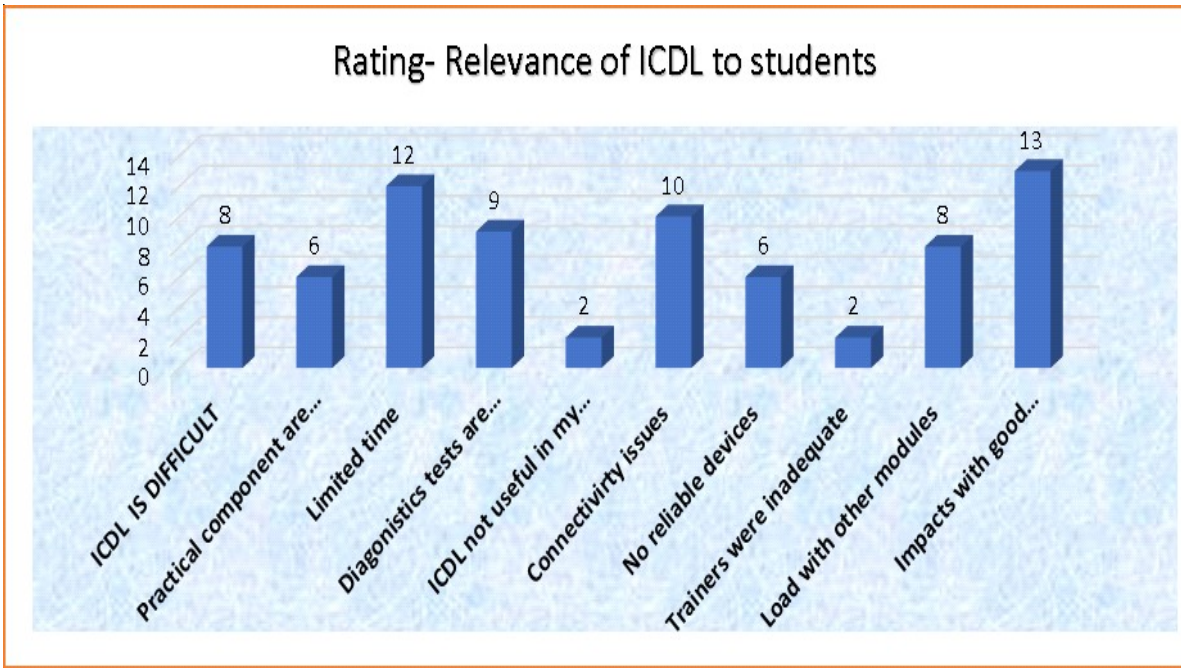

Figure 2: Relevance of ICDL to students

13.2. Document Analysis

13.2.1. Performance by Gender

The researcher through documents analyses showed that in Computer essentials, males performed better than females and which is also in agreement with the interview questions where females indicated the complexity of computer essentials questions. Some male participants in the interview indicated that they needed more time in that area.

One respondent said, "ICDL need fast computer users so that you don't take time to operate and understand the navigation"

In the documents modules female students scored high marks which is also a supported view in the interview that females indicated that generally they type faster than males.

*One male student said. "*us man we don't have time and patience to practice this questions. Ladies are better off, they have ample time"

In presentation modules, Males performed better than female as revealed in the documents analysis. The supporting reason from the interviews being that they needed more time to practise.

In the spreadsheets package, Females did well as compared to the males and respondents supported the notches highlighted by males that spreadsheets questions where a bit demanding and they took time to respond which resulted in them being timed out before completion.

13.3. Certifications By Modules

Most certificates were awarded to Documents and Spreadsheets modules.

13.4. Statistics on Completion

12% of the registered students did not write the exams reasons highlighted in the interviews being that some had withdrawn since the module ran through two semesters and some deferred and they will join the incoming group. The graphical presentation of Figure 3 shows the status of students on completing the ICDL exams at the end of the semester.

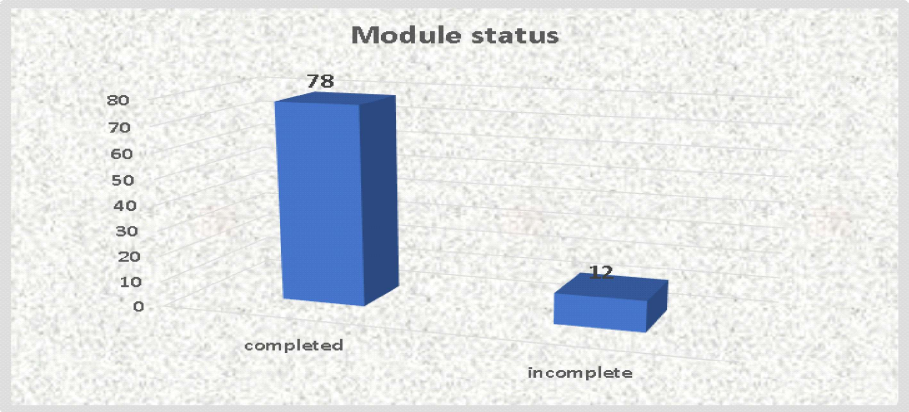

Figure 3: Module Status

Students indicated several reasons why they failed to complete the exams as recorded in the interviews. One reason being attitude towards the modules such that time becomes an issue.

> *One male student said.* "us man we don't have time and patience to practice these questions especially the diagnostics, they are repeating. Ladies are better off , they have ample time"

And another participant said,

> *"I overlooked the diagnostics test; I encourage takers to have enough practise with the diagnostics test, they are indeed helpful."*

13.5. Pass rate by Modules

Of the four modules attended, most students did very well in the computer essentials which has some general questions like the definition of terms where any student can attend

One student said., *"Computer essentials is walkover, unlike in excel which has a lot of calculation."*

The pass rate per ratio is illustrated in Figure 4.

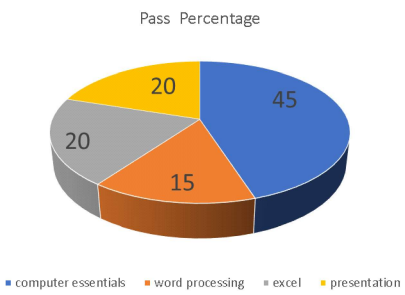

Figure 4: Pass Rate

14. Discussion

The ICDL module impacted the following as deliverable and competences to undergraduate student:

The ICDL enhanced Digital Literacy skills: There is need to extend the number of diagnostic tests so that students have enough time to practice and grasp these digital skills before examination. Students needs these skills in their teaching and learning (Mackey and Jacobs, 2022).

These modules improved computer skills and knowledge (ICDL, 2020). These skills can be applied in the teaching and learning of other modules as well as their classroom environment at work and industries

The ICDL training increased confidence in using digital skills: Students through the training increased confidence especially that the facilitators attended the practice sessions with them and the system managed to give a summary of expected responses at the end of each diagnostic session.

The platform offered personalised Learning: The acquired digital literacy enables teachers to tailor-made games learning experience to individual's student's needs (Hobbs, 2019). Students could have time to cover their needs during the personalised learning at their own free time and some modules could be accessed even on the mobile devices.

The ICDL developed Critical Thinking on students: The ability and provision of the life scenarios as part of questioning enhanced the critical thinking. The ICDL Digital skills helps students critically evaluate game-based learning and identify biases or inaccuracies (Bakir, 2022).

The training platform enhanced better understanding of digital concepts, techniques and digital terminologies and increased awareness of digital tools and resources. Participants could use and apply these digital concepts.

15. Conclusion

The study highlighted the positive impact of ICDL training on digital skills in first year students. The existing literature confirms the positive impression of ICDL training on the development of digital literacy among undergraduate students. The program augments technological proficiency, critical thinking, information literacy (Bakir, 2022) and communication skills. These findings inform strategies in enhancing digital literacy and promoting academic success. It also climaxes the importance of implementing comprehensive digital literacy training programs, such as ICDL, within undergraduate curricula. By equipping students with vigorous and outstanding practical digital literacy skills (ICDL, 2020), educational institutions can prepare them for the challenges and opportunities in the education sector and allow them to fit well in this digital age and enhance their future employability and conformity in the modernised industrial environment. The ICDL Practical training fosters information literacy skills (Jahanian and Noroozi, 2011) among undergraduate students. Students learn effective strategies for locating, retrieving, and evaluating digital information. They become adept at conducting online research, properly citing sources, and avoiding plagiarism. ICDL training improves students' communication skills (Jahanian and Noroozi, 2011; ICDL, 2020) in the digital realm. Students learn how to effectively communicate and collaborate using digital platforms, including email, online forums, and video conferencing tools. They gain proficiency in creating and delivering digital presentations, enhancing their ability to communicate ideas effectively (Salman, 2008).

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