

**OPPORTUNITIES AND CHALLENGES OF INTEGRATING  
INFORMATION LITERACY AS A CREDIT-BEARING MODULE INTO  
FIRST-YEAR LEVEL ACADEMIC PROGRAMMES AT THE UNIVERSITY  
OF VENDA, SOUTH AFRICA**

by

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## DECLARATION

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Title of the thesis:

***Opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the university of Venda, South Africa***

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.



.....

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**01 November 2022**

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## **ABSTRACT**

The influx of emerging technologies has challenged the way in which the information literacy (IL) concept is defined in the 21<sup>st</sup> century, e.g. the construct of IL has evolved and expanded to include digital literacy and media literacy. Most higher education institutions in countries such as South Africa and Tanzania regard IL as an optional skill, rather than an essential requirement for working efficiently. Because of limited collaboration between academics and librarians, it has been noted that library tutorials and IL activities are not sufficiently preparing students for the academic programmes at the University of Venda (UNIVEN). The limited or lack of collaboration between academics and librarians impact on many aspects such as academic programmes, library IL programmes, and students' IL skills. For example, without collaboration, academics and librarians remain uncertain of the important aspects of IL to include into academic programmes to improve IL skills of students. This has culminated to less-effective IL programmes hence studies continue to report that in Africa IL programmes do not seem to be yielding significant results as both undergraduate and postgraduate students continue to show limited or lack of IL skills particularly in South Africa and Tanzania. Notwithstanding the limited or lack of IL skills among students, the integration of IL into academic programmes is not always a priority.

In the context of the foregoing argument, this study explored the opportunities and challenges of integrating IL as a credit-bearing module into academic programmes of first-year level at the UNIVEN. This investigation was regarded as critical, in that most first-year students at the UNIVEN are from historically disadvantaged schools, which means that some of them have not been exposed to libraries and academic writing learning activities before they registered at the UNIVEN.

This study adopted the Information Literacy Integrated Model (ILIM) and the Association of College and Research Libraries (ACRL) IL standards as the conceptual framework. The ILIM was regarded as useful in terms of accommodating the research objectives of the study. The IL learning outcomes, based on ACRL IL standards, stipulate that a literate student should be able to (i) find the information needed; (ii) evaluate information sources; and (iii) use the information for a specific purpose in an ethical manner.

The convergent research design adopted for the study involved both the quantitative and qualitative research approaches. The following sampling methods were used: (i) purposive sampling to select seven deans of schools, three early adopter academics and six information librarians; (ii) stratified random sampling to select 40 non-adopter academics from eight schools and 60 adopter students. The study used online questionnaires to collect data from the adopter students, the non-adopter academics, deans of schools, early adopter academics and information librarians. The latest version of the Statistical Package for Social Sciences (SPSS) and Google Forms were used to analyse the collected data.

The research findings showed that the UNIVEN has not been left behind as it has incorporated some aspects of the Association of College and Research Libraries (ACRL) standards in its IL programmes such as educating library users how to access, retrieve and evaluate information from the online library databases. For example, the early adopter students displayed improved academic literacy skills, compared to their non-adopter counterparts. It is apparent that, the content of the IL programmes does to a certain extent, provide the students with the appropriate skills for the digital information era. The research findings also revealed that the content covered in the existing IL programmes at UNIVEN equipped students with the skills to access information, evaluate information sources, use information effectively, understand legal issues surrounding the use of information, and access and use information ethically. However, the concern was that the IL programmes were not offered to all university students. In addition, it was found that the venues for IL instruction and the human resources for teaching IL were inadequate. A further challenge was the lack of collaboration between academics and librarians *vis-à-vis* IL instruction.

The study recommends that the UNIVEN should: (i) develop strategies for IL programme awareness aimed at non-adopter academics and the university community in general; (ii) that a collaborative approach is used to improve the IL programme in line with technological trends; (iii) that university management should source funds from

government and private stakeholders to use for the development of the infrastructure and resources – such as venues for IL instruction and emerging technologies suitable for offering IL programmes – at all levels of study; (iv) that the IL Integration Model (ILIM) and the ACRL standards are adopted for the integration of IL as a credit-bearing module in all first-year level academic programmes; and (v) finally, that the ILIM and ACRL standards should be used as a strategy to enhance the existing IL programmes.

The current IL programmes are fragmented, as the UNIVEN library and the UNIVEN schools such as Law, Management and Nutrition, run their first-year students' IL programmes independently. Therefore, the study recommends that the UNIVEN should develop a well-planned IL programme that will be integrated into first-year students' courses or degrees. The planning needs to involve all relevant stakeholders, such as UNIVEN executive management, academics, librarians and student representatives. The well-planned IL programme needs to be developed in line with technological trends. Because South Africa has not developed its IL standards, the IL programme can be developed in line with the IL Integration Model (ILIM) and the ACRL standards, which were adopted for this study.

In terms of further research, it is recommended to focus on the value and efficiency of the content of IL programmes offered in historically disadvantaged universities in South Africa. Such future research should take cognisance of the contextual needs of first-year undergraduate students. Piloting the IL programme prior to actual implementation may assist in establishing loopholes that may fixing.

**Keywords:** Academic curriculum; academic literacy; academic programmes; Association of College and Research Libraries; credit-bearing modules; computer literacy; digital literacy; higher education; information literacy; information literacy integration; information literacy theories; rural-based university; University of Venda.

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## **DEDICATION**

This study is dedicated to my mother, Alilali Marandela Tshamano, for her tireless efforts in taking care of my children while I struggled to reach this level of study.

To my wife, Jestina, and my children, Rotondwa, Ofhani and Mulatedzi: this study is also dedicated to you.

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## LIST OF ACRONYMS AND ABBREVIATIONS

4IR	Fourth Industrial Revolution
ACRL	Association of College and Research Libraries
ADDIE	Analysis, Design, Development, Implementation and
ANZIIL	Australian and New Zealand Institute of Information Literacy
CEO	Chief Executive Officer
CHELSA	Committee of Higher Education Libraries of South Africa
CILIP	Chartered Institute of Library and Information Professionals
COVID-19	Corona Virus 2019
CPU	Central Processing Unit
CPUT	Cape Peninsula University of Technology
CUNY	City University of New York
CUT	Central University of Technology
DUT	Durban University of Technology
ECS	English Communication Skills
ELRs	Electronic Library Resources
GEM	General Education Module
HDIs	Historically Disadvantaged Institutions
ICTs	Information and Communication Technologies
IDEA	Interview, Design, Embed, Assess Model
IL	Information Literacy
ILIM	Information Literacy Integration Model
JISC	Joint Information Services Committee
LIS	Library and Information Science
LMS	Learning Management System
NDP	National Development Plan
NOUN	National Open University of Nigeria
NWU	North-West University
ODL	Open Distance Learning
SA	South Africa

SAFLII	Southern Africa Legal Information Institute
SPSS	Statistical Package for Social Sciences
TUT	Tshwane University of Technology
UAE	United Arab Emirates
UCT	University of Cape Town
UFH	University of Fort Hare
UFS	University of Free State
UK	United Kingdom
UNESCO	United Nations Educational Scientific Cultural Organisation
UNISA	University of South Africa
UNIVEN	University of Venda
UP	University of Pretoria
USA	United State of America
USF	University of South Florida
UWC	University of Western Cape
WSIS	World Summit on the Information Society

# CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

## 1.1 Introduction

Library and information literacy (IL) instruction programmes are not new initiatives. Numerous universities and librarians have been facilitating these programmes for a long time (Harris 2013; Wang 2010; Wang 2011). However, what has been less common are well organised IL programmes that involve good planning on teaching and assessing IL instruction or education (Harris 2013).

Higher education institutions are being challenged regarding the quality content of their academic programmes, and IL programmes can help bring academics and librarians together to share knowledge on how IL programmes can be integrated into academic programmes. IL programmes can help to produce critical thinking graduates in line with the pre-set learning outcomes (Smith 2016). This implies that IL has become a critical component of the strategic goals of universities. In this context, discourse on IL integration in academic programmes has been gaining momentum. However, little attention has been given to the way in which to prepare librarians become active contributors to the academic programme design in higher education (Moselen & Wang 2014:117). This role shift requires librarians to be equipped with pedagogic knowledge and skills “to broaden and deepen their understanding of IL” (Moselen & Wang 2014:117). Majanja (2020:318) reiterates that some Library and Information Science (LIS) educators have also not received pedagogical training during their graduate studies; hence the importance of strong partnerships when engaging in projects for integrating IL in academic programmes.

This role shift of librarians is occurring simultaneously with several discourses regarding the extension of the concept of IL. The literature indicates that the IL concept is expanding to include new forms of literacy, such as academic literacy, media literacy, digital literacy, visual literacy and cognitive literacy (Zimu 2020:56; Onyancha 2020; Li, Chen & Wang 2021). Furthermore, Favaro (2012:216) and Zimu (2020) explain the concept of metaliteracy as an overarching and self-referential framework that integrates emerging technologies and unifies multiple literacy types. It is apparent

that, since the concept “information skills” was introduced by Zurkowski in 1974, it has evolved in line with technological trends.

Zurkowski used the concept to refer to people who can address their information needs by using relevant information sources and by applying relevant technology to locate, access, retrieve, use and disseminate information (Boekhorst & Britz 2004; Zurkowski 1974). According to Noe (2013), several institutions of higher learning recommend the need to include technical aspects of using the computer, the Internet and the evaluation of websites in the IL content.

Wang (2010:27) reiterates that IL has evolved from being a simple information skill that is acquired through library and bibliographic instruction (during the 1980s); to the experimental phase (1990–1995) in which the IL concept began to be used in research; to the exploratory phase (1995–1999) during which a variety of paradigms to IL research were explored beyond the positivist approach; and the current phase, which is evolving (2000–). IL is seen as encompassing the collaborative work of researchers who are keen to understand IL within various contexts, such as work, communities and cultural settings. For Li, Chen and Wang (2021:4196), “IL is no longer a simple universal skill but a practice skill that cannot be taught independently of the knowledge domains in which the IL skills are needed”. Furthermore, “it is simple and uncomplicated if one assumes that IL is a one-shot, one-size-fits-all instruction session, or that all that is needed are slight adjustments to a standard, ‘canned’ library orientation” (Noe 2013). It cannot be denied that these changes call for all relevant stakeholders to collaborate and to become change agents in the journey of creating lifelong learners. Given the foregoing information, the need for rigorous debates and research on how IL can be collaboratively integrated in academic programmes and degrees cannot be disregarded.

Notwithstanding the extension of the IL concept to include new literacies, Li, Chen and Wang (2021) argue that IL is still defined as comprising a series of definable and standardised capabilities that guide an individual in obtaining, screening, evaluating and integrating information from various information sources to a purposeful action for which it is needed. Wang (2010:17) asserts that, what makes contemporary IL instruction or education more important than the traditional library instruction

programmes is that it encompasses more than accessing and finding information and library resources, so as to include the understanding of information needs, how to use the acquired information, communicate it, and keep updated in today's world of information explosion.

The focus has shifted from specific information resources to a set of critical thinking skills, including the ability to evaluate and use of information, from specific to general skills, and transferable lifelong learning skills. IL education is no longer a library issue only, but a lifelong learning issue, a campus issue and an education issue (Wang 2010). In the context of these changes, the importance of this study, which advocates for partnership in IL integration in academic programmes, becomes clear.

Derakhshan and Singh (2011) argue that numerous IL instruction or education programmes have failed – or have not had sufficient impact – because they are parochial and have been the sole responsibilities of the university libraries and librarians. The literature posits that academics are often reluctant to collaborate with librarians to facilitate the integration of IL in academic programmes (Zimu 2020; Derakhshan & Singh 2011). Derakhshan and Singh (2011) view this as a challenge, as high-quality IL programmes that can benefit students can be provided by both academics and librarians.

Several studies have reached a consensus that students' IL skills can be improved by integrating or embedding IL into the curriculum (Onwuchekwa 2017; Moselen & Wang 2014; Derakhshan & Singh 2011; Wang 2010; Wang 2011). In Africa, integrating IL in academic programmes is viewed as critical, because several IL-related studies have revealed that students, particularly first-year students, are not sufficiently prepared for higher education academic programmes (Lwehabura 2018; Noll & Brown 2018; Neerpuh 2012:253). Before discussing the importance of IL integration in higher education institutions in South Africa (SA), the concept of IL integration is explored.

Wang (2011) explains the integration of IL into academic programmes as the IL woven into the content, structure and sequence of academic programmes. Wang (2014a:100) demystifies the concept of IL by citing Bruce (1997), who indicates that "IL does not have a life of its own, rather it is a way of thinking and reasoning about aspects of a

subject matter". Bruce (1997), as cited in Wang (2010:18), reiterates that IL cannot be learned without engaging the discipline-specific subject matter.

Hence, the terms *integration* and *embedded* have been used interchangeably in the literature (Wang 2011). The curricular integration approach is advocated by both the ACRL Information Literacy Competency Standards for Higher Education and the Australian and New Zealand Institute of Information Literacy (ANZIIL) Information Literacy Framework (Wang 2010; Wang 2011). These IL frameworks propose the integration of IL in curricula as the most effective way of providing IL education (Wang 2010; Wang 2011).

Furthermore, Wang (2010:18) and Wang (2011:404) claim that there are four approaches to IL education in higher education: i) *extra-curriculum*: a course outside of academic curriculum; (ii) *inter-curriculum*: a session(s) add-in to an academic course; (iii) *intra-curriculum*: integrated into a course; and (iv) *stand-alone*: an *independent course(s)* within the academic programme. While some scholars are lamenting the limited or lack of collaborative activities between academics and librarians in integrating IL into the academic programme (Derakhshen & Singh 2011), Wang (2010) and Wang (2011) assert that there are different practical examples of collaborative activities between academic staff and librarians of integrating IL instruction into academic programmes, but less research regarding the systematic integration of IL programme across an academic degree.

In order to integrate IL into academic programmes, Wang (2010) developed a model comprising of three interrelated elements: "what", "who" and "how". The *what* element answers questions such as: What is IL? What characteristics should information literate students have? What level of IL are students expected to have by the time they graduate from the university? What level of IL are graduates required to achieve by accrediting professional organisations? What are the roles of academic staff and librarians in IL education? Understanding the answers to these questions provides tertiary educators with a solid understanding of why IL education is important for students. The *who* element deals with questions such as: Who are the key stakeholders in IL integration? Who are the critical people in IL programme integration? Who are the key stakeholders who should be involved in curriculum

design and development and how should relationships be established between these stakeholders and, in particular, academic staff and librarians?

The *how* element deals with IL programme design: How can IL be contextualised to become part of the academic programmes? How can students be provided with ongoing interaction with information throughout a single course and across multiple courses? How can learning theories, or pedagogical and IL theories be applied to IL programme design?

This study did acknowledge that context should be considered when adopting an IL model. However, the study deemed it important to adopt Wang's (2010) IL integration model, while referring to other relevant frameworks, such as ACRL and the ANZIL frameworks, to understand the relevancy of the IL content of the studied university in providing effective IL education; particularly to the first-year students. An in-depth discussion of these frameworks will be given in Chapter 2. To connect the reader with the phenomenon that was studied, it was important to give background information on why this study considered it critical to integrate IL into the academic programme within the South African context.

Several studies concur that most students entering higher education institutions in South Africa (SA) are the product of the apartheid education system. Consequently, most first-year university students in SA have limited IL skills, or they lack the IL skills needed to deal with their academic programmes successfully (Zimu 2020; Tiemensma 2012:162; Naidoo & Saibb 2014:185–186). In addition, previous studies observe that university students in SA lack the readiness for IL skills and that they are not well equipped with the relevant skills required for tertiary level studies (Molepo & Bopape 2018; Zinn, Stilwell & Hoskins 2016). If aggressive remedial programmes are not implemented, the future of equipping students with IL skills in SA appears bleak. Zimu (2020:57) states that “it cannot be disputed that basic education IL challenges are inherited by higher education. To address the challenges, scholars have recommended various IL initiatives such as stand-alone IL programmes or the integration of IL into the academic programme”.

Notwithstanding the educational background of students, Tiemensma (2012:163) posits that few universities provide structured programmes for developing students' IL skills; not to mention programmes that accommodate emerging literacies. In her (Tiemensma, 2012) investigative study on the *status quo* of IL programmes at South African universities, Tiemensma (2012) established that IL programmes were either compulsory or voluntary, ranging from basic to advance IL programmes and from online to contact or mixed teaching methods. Tiemensma (2012:163) further observes that it is often a problem to attract students to attend IL instruction sessions, when the programme is not mandatory.

Zimu (2020) argues that some South African universities have been proactive in engaging in collaborative IL instruction projects, but more needs to be done; hence the importance for this study, which aims at understanding IL integration programme of a rural-based university. "For example, at the University of Pretoria (UP), a full IL course is compulsory for all first-year students. It is a credit-bearing course offered by the Department of Information Science. At the University of South Africa (Unisa), a course "Developing information skills for lifelong learning" is compulsory for Information Science students, but optional for students from other disciplines" (Zimu 2020:57; Tiemensma 2012:164). However, Zimu (2020:57) has learned from the responsible academic that "the module is over-subscribed, which suggests that students, other than information science students, are aware of the need for such a course".

Both the Tshwane University of Technology (TUT) and the Cape Peninsula University of Technology (CPUT) have introduced certificate-based IL courses (Davids & Omar 2018). At the CPUT, the short course, which is called the "Certificate of Information Literacy", was started in 2012. Its development was informed by the IL deficiency manifesting in the understanding of subject guides.

Despite these initiatives, studies continue to point to the limited IL skills among both undergraduate and postgraduate students (Zimu 2020; Lwehabura 2018; Noll & Brown 2018). It is apparent that these IL programmes need to be updated continuously, in line with technological and other trends. As observed by Zimu (2020:57), research is yet to identify the most appropriate form of IL programme.



Therefore, this study can be seen as a timeous one, resonating with current needs – particularly within the context of higher education in SA. The next section gives the contextual background, focusing on the IL programme of the university that was studied.

## 1.2 Contextual setting

The University of Venda (UNIVEN) is a rural-based university with the prerequisite technologies and facilities necessary for adequate utilisation of electronic library resources (ELRs) found in other universities (Ndou 2021). It must be noted that the contextual background information on the IL programme at UNIVEN is based on the researcher’s observations as an employee of the UNIVEN academic library since 1996. Similar to other universities, the IL programme at UNIVEN is facilitated by information librarians. The IL programme is conducted annually, from January to December. It runs for two days/weeks of each month of the year. It must be indicated that there are IL programmes that are conducted independently by the various schools. It is not mandatory for the schools to integrate their IL programmes into their curriculum and, therefore, they run them independently, depending on the discretion of each school. Table 1.1 outlines the IL-related modules that are offered by the different schools to their first-year students. Furthermore, Table 1.1 indicates whether the module offered is a formal or a core programme.

*Table 1.1: Modules related to IL*

School	Subject	Code	Type/Programme
Education	Computer Literacy	PSC 3521	Formal
Law	Introduction Computer Literacy	ICL 1141	Formal
All First Year Schools	English Communication Skills	ECS 1541	Core
School of Mathematical and Natural Sciences	Information Technology Fundamentals	FIT 1140	Formal

As indicated in Table 1.1, the School of Education at the UNIVEN offers Computer Literacy 3521 (PSC 3521), with 12 credit values, to undergraduate students as a formal module in its academic programmes. The School of Law also offers the module Introduction Computer Literacy 1141 (ICL 1141), with eight credits, to its first-year level students (UNIVEN 2022a). The university calendar (UNIVEN 2022a) further shows

that all first-year level students in all eight schools at the UNIVEN are offered English Communication Skills (ECS 1541) as a core module, which helps students to cope with university studies and everyday communication in English, as well as basic computer literacy. The module Information Technology Fundamentals 1140 (FIT 1140), which introduces students to the use of different computer software and hardware packages, is offered in the Science Foundation Department under the School of Mathematical and Natural Sciences.

The narration given bears evidence that the IL programmes are fragmented and not integrated, as each department works independently. It confirms Wang's (2010) view regarding the dearth of systematic integration of IL programmes across an academic degree. It is apparent that IL programmes at UNIVEN are not offered to all first-year level students. Therefore, the aim of this study was to dig deeper into the opportunities and challenges of integrating IL into the first-year academic programmes at the UNIVEN. It is envisaged that the study may provide rich data given that there are some schools that have strived to introduce stand-alone IL programmes, such as the schools of Education, Law and Mathematical and Natural Sciences, as indicated in Table 1.1. Ndou and Mojapelo (2019) reveal that some of the ELRs at the UNIVEN are readily accessible to the university community via the web and through the multiple search platforms of the library. It is under this backdrop that, the researcher is of the view that the integration of an IL credit-bearing module in first-year level academic programmes might assist in students' usage of library resources including electronic resources. Furthermore, Ndou and Mojapelo (2019) note that academics and postgraduate students at the UNIVEN are offered training on the access and use of ELRs. Therefore, the integration of IL as a credit-bearing module could be an opportunity for extending training on the access and use of ELRs to all, including first-year level students. Ekong and Ekong (2018) affirm that the use of library resources is largely dependent on the students' IL skills, hence the importance of training users on the what, who and how.

The IL programmes that have been developed at the UNIVEN can be categorised into three stages – the programmes offered before 2011; those offered between 2011 and 2012; and those offered as from 2013. The library department was the only stakeholder in the offering of IL programmes offered before 2011. Providentially, during and after 2011, some of the academics who are referred to as the *early adopter*

*academics* in this study, have been collaborating with the librarians in offering IL programmes. Each stage/period is described in the sections below.

Before 2011, the UNIVEN did not provide any formal IL programmes. However, the university library did offer an orientation programme that targeted all first-year students and that offered training in the following areas: the use of the university library catalogue, electronic databases, and reference management tools. In addition, training on the use of library information resources was conducted during the library orientation week, during the induction of new staff members, as well as by arrangement with individual academics for their students. Furthermore, academics and postgraduate students were trained in the use reference management tools during specially organised functions, such as research open days and other workshops arranged by the university.

Other universities in developing countries – such as Bangladesh, Nigeria, Zimbabwe and SA – have used library orientation as a platform for offering IL skills to students (Islam & Tsuji 2010; Baro & Zuokemefa 2011; Mugwisi 2015). The UNIVEN library orientation training programme was provided as adjunct modules, which are defined as modules “offered outside of formal timetabled university programmes. They are generic, and may be delivered online, in an electronic format or face-to-face” (Munn & Small 2017:59). However, library orientation is “not sufficient to transfer IL skills to the students” (Baro & Zuokemefa 2011:562). Before 2011, the UNIVEN library orientation focused on the access and use of the library catalogue only and familiarised first-year students with the different sections within the library.

In the year 2011, the UNIVEN introduced Turnitin, a plagiarism detection tool, to deter plagiarism in the university community. The university hired an information literacy librarian to administer the Turnitin tool and to train the university community on its use. In 2011, the library also introduced formal IL programmes to first-year students.

During academic meetings, such as school board and senate meetings, the Director of the Library Services Department proposed the idea of offering IL to first-year students and received a positive response from the School of Education. Consequently, the library offered IL to first-year students from the School of Education as a pilot programme during the 2011–2012 academic year. Although the piloted IL

programme had no documented content, the programme introduced students to searching for information by using library catalogues and online databases, as well as typing and presenting academic assignments. Noticeably, the IL programme offered to the first-year students in the School of Education was only offered from 2011 to 2012 by the library department. During this period, the IL instruction was not allocated a slot in the academic timetable. Students usually attended IL instruction when some of their module classes were cancelled. Attendance of the IL instruction classes was not compulsory. Table 1.2 outlines the way in which librarians and academics at the UNIVEN collaboratively integrated IL into the academic programmes.

*Table 1.2: Collaborative in IL integration*

School	Module	Module code	Type/Programme
Health Sciences	Introduction Skills to Nutritionist Students	RNT 1841 /RNT 1441	Integrated into module
Law	Introduction to Theory of Law	INT 1541 / INT 1141	Integrated into module
Management	Entrepreneurship	FET 1540 / FET 1140	Integrated into module

In 2013, academics from the Foundation Phase in the School of Management Sciences, the Nutrition Department in the School of Health Sciences, and the School of Law bought into the idea of integrating IL into some of the modules offered in their schools. Therefore, the UNIVEN library started offering IL as part of the modules Entrepreneurship (FET 1540), Introduction to the Theory of Law (INT 1541) and Introduction Skills to Nutritionists Students (RNT 1441) offered to first-year students in the Foundation Phase in the School of Management Science, the School of Law and the Department of Nutrition in the School of Health Sciences respectively. Remarkably, as it is normal for universities to keep on changing module codes, INT 1541 changed to INT 1141; FET 1540 was changed to FET 1140; and RNT 1841, which became RNT, 1441 is now RNT 1141.

Currently, the IL programmes described above continue to be offered to the few first-year level students at the UNIVEN, while the programmes are not beneficial to all first-year level students. Each of the modules as they currently stand and which includes an IL component, is described below.

Part 4 of the UNIVEN 2022 calendar indicates that IL forms part of the INT 1141 module and is still offered to the first-year level law students. Specifically, it is stated that INT 1141 is a

“10 credit first-year module offered in the first semester. It imparts critical contextual knowledge in the law discipline and initiates students into the different aspects of the law and their classifications. Students are also trained in how to search for legal materials in the law library” (UNIVEN 2022a).

The IL content in INT 1141 entails basic computing, the library catalogue, legal databases, referencing and plagiarism, as indicated in MyUniven, the learning management system (LMS) used for teaching and learning at the UNIVEN. The IL content offered in the FET 1140 module entails:

“Introductory concepts and basic computing skills; identifying information; libraries, online databases, and construction of search queries; evaluating information and information sources; ethical and fair use of information; referencing and referencing techniques; and documenting information and creating new knowledge” (UNIVEN 2022c).

The IL component contributes 30% of the semester marks for the FET 1140 module and does not contribute any credits towards examination marks. The IL skills instructor submits the contributed marks to the early adopter academic, who is responsible for the teaching of the module. This arrangement shows that the goal of integrating IL as a credit-bearing module into the academic programmes can be achieved through collaboration between librarians and academics.

The IL component contributes 30% towards both the semester and examination marks for the RNT 1141 module. Notably, the IL content offered in RNT 1141 is the same as the content offered in FET 1140. Apart from the IL programmes integrated into the above-mentioned modules, the UNIVEN library offers library instructions to undergraduate and postgraduate students. Table 1.3 indicates the IL programme for first-year students offered by the library.

*Table 1.3: Library instructions offered to the academics and students*

<b>Topic</b>	<b>Type of training</b>	<b>Responsible trainer/s</b>	<b>Time frame</b>	<b>Category</b>
Search information sources using the library catalogue	Virtual & manual	Librarians	One hour during the library orientation sessions	Groups of first-year entering students
Use electronic resources such as electronic databases (e-databases) and library guides	Virtual & manual	Librarians	As and when the need arises	Postgraduate students as per request
Use electronic resources such as electronic databases (e-databases) and library guides	Virtual & manual	Librarians	As and when the need arises	Academics as per request

As indicated in Table 1.3, during library orientation, first-year students are trained on how to search for information sources by using the university library catalogue. Apart from the IL programmes incorporated into the three modules described above, there is no other compulsory IL programme incorporated into other first-year level academic modules. The students in other schools and departments are only informally trained on the use of library resources by the librarians (Vice-chancellors state of the campus report 2018).

Training on how to access and use electronic resources, such as electronic databases (e-databases) and library guides, is provided to postgraduate students and academics during functions organised by the library or other university directorates. The information librarians are always available for training sessions organised by the academic departments on behalf of the students and academics who are interested in being trained in the access and use the library resources. The library also provides training on the access and use of library resources to the newly recruited academics during their induction.

As indicated above that the information librarians at the UNIVEN are always available for training the academics and postgraduate students on the access and use of electronic resources, this study observed little concern by the UNIVEN when it comes to training the first-year level students on the use of the available library information resources. Given that, it is envisaged that integrating IL as a credit-bearing module into first-year level academic programmes could provide the UNIVEN with the opportunity to equip the first-year level students with skills applicable throughout different study levels as well as in the workforce. The skills acquired from the IL programmes are handy when it comes to access and use of the library information resources.

### **1.3 Statement of the problem**

As previously highlighted, studies concur that library and IL instruction programmes have existed for a long time and, in most cases, they have been facilitated by librarians (Zimu 2020; Wang 2010). However, Noe (2013) and Harris (2013) report that well-organised IL programmes that involve good planning on teaching and assessing IL instruction or education have been less common. For example, Li, Chen and Wang (2021:4196) reiterate that “IL is no longer a simple universal skill but a practice skill that cannot be taught independently of the knowledge domains” in which the IL skills are needed. Given the extension of the IL concept to include emerging or new literacies, systematic and well-planned integration of IL into academic programmes or degrees has become essential.

This study is timely as it was conducted during the IL evolving time which Wang (2010) considers the explorative period. For Wang (2010) this IL evolving period (2000-) calls for the collaborative work of researchers who are keen to understand IL within various contexts, such as work, communities and cultural settings. Similarly, this study aimed to understand opportunities and challenges of integrating IL programme into the curriculum within UNIVEN context. The aim was to gather scientific evidence from various stakeholders such as the UNIVEN executive management (deans), academics, librarians and first-year students. Given the history of the education system in SA, where most students entering higher education institutions are under-prepared for their academic programmes, as they come from under-resourced basic

education and high school environments (Zimu 2020; Tiemensma 2012:162; Naidoo & Saibb 2014:185–186) this study is imperative. The basis education IL challenges has culminated into challenges of students who struggle to retrieve information from the library, have limited or lack of skills to analyse topics when engaging with their assignments, have limited or lack of critical thinking skills and high attrition rate. Notwithstanding the limited or lack of IL skills among students, the integration of IL into academic programmes is not always a priority. Given this, the importance of understanding opportunities and challenges of integrating IL programme into the first year UNIVEN academic programme cannot be over-emphasised.

Based on the researcher's observations as an employee of the UNIVEN academic library since 1996, UNIVEN cannot be completely immune from the challenges of IL as experienced in other universities in South Africa. However, there has been no scientific evidence to validate this claim hence this study. Wang's (2010) view that less research has been conducted regarding the systematic integration of IL programme across an academic programme also necessitates this study as it attempts to close that gap. For Wang (2010), IL integration across an academic programme is more effective in preparing lifelong learning and critical thinking graduates. The study is even more important within the African context as Lwehabura (2018) reports that most higher education institutions especially in countries such as South Africa and Tanzania regard IL as an optional skill, rather than an essential requirement for working efficiently. In the opinion of Derakhshan and Singh (2010:219), many IL instructions or education programmes have failed, or have not had sufficient impact, because they have been the sole responsibilities of the university libraries and librarians. Wang (2010) and Wang (2011), assert that effective IL programmes are usually not conducted independently of specific knowledge domains. In addition, they need strong partnership between various stakeholders, such as senior management, academics, librarians, and students.

It is envisaged that findings for this study might help contribute scientific evidence regarding the importance of integrating IL into the academic programme of first-year students, and related opportunities and challenges, especially at UNIVEN. This evidence is important as many studies continue to report that in Africa, IL programmes do not seem to be yielding significant results as both undergraduate and postgraduate



students continue to show limited or lack of IL skills particularly in South Africa and Tanzania (Zimu 2020; Lwehabura 2018).

## **1.4 Research purpose, objectives and questions**

The purpose of this study was to explore the opportunities and challenges of integrating IL as a credit-bearing module into first-year level academic programmes at the UNIVEN.

### **1.4.1 Research objectives**

Within the context of the overall purpose of the study, the research objectives of the study were to:

1. Establish the level of knowledge of the existing IL programmes at the UNIVEN;
2. Explore the opportunities of integrating IL into first-year level academic programmes at the UNIVEN;
3. Establish the challenges faced in integrating IL into first-year level academic programmes at the UNIVEN; and
4. Develop a model that may enhance the IL programmes for the first-year level academic programmes at the UNIVEN.

### **1.4.2 Research questions**

The research questions of the study were as follows:

1. What is the level of knowledge of the existing IL programmes at the UNIVEN?
2. What are the opportunities of integrating IL into first-year level academic programmes at the UNIVEN?
3. What are the challenges faced in integrating IL into first-year level academic programmes at the UNIVEN?
4. What model can be developed to enhance the IL programmes for the first-year level academic programmes at the UNIVEN?

## **1.5 Significance of the study**

The significance and justification for a study involve the reasons for conducting the study, and the gaps in existing knowledge that will be addressed (Brynard & Hanekom

2006; Du Plooy-Cilliers, Davis & Bezuidenhout 2014; Kumar 2014). This study is timely and highly relevant, in that it contributes to the discussion regarding opportunities and challenges on integrating IL programme into academic programme of first-year university students of UNIVEN. Given that the population in this study was representative of those in a historically disadvantaged rural-based university in SA, this study has national implications. Most universities in developing countries have populations of underprivileged students from under-resourced basic education and high school environments for whom the importance of integrating IL into academic programmes is also a concern. Therefore, it is envisaged that findings for this study might help raise awareness that IL programmes need to begin at the basic education level. This is important in preparing students for the academic programmes at the higher education levels.

As already highlighted, the study adopted ILIM model which was developed by Wang (2011). The model tries to answer questions such as: (*who*) is responsible for the IL programme, such as the key role-players or the working group; (*what*) the type of content, guidelines and resources which are used for the IL programme and (*how*) are processes conducted to promote interaction, collaboration and the success of IL programme. These three elements – what, who and how – aim at producing an information literate person. For example, literature has indicated that currently in South Africa and other developing countries, there is no home-grown IL standards that help cater for the IL local needs (Zimu 2020); lack of co-ordinated and effective IL programmes as the currently used stand-alone IL programmes do not seem to be bearing any good fruits (Mnkeni-Saurombe 2015) and lack of collaboration between academics and librarians also hinders the success of IL programme (Zimu 2020). Therefore, potential benefits for this study are that the findings might help in contributing knowledge on how the highlighted challenges might be improved.

In the context of UNIVEN, it is anticipated that findings of the study may help inform policy-makers (and the university community as a whole) to develop IL policy and standards that are relevant for the local needs; raise awareness regarding the importance of integrating IL as a credit-bearing module into the university academic programmes; particularly at the first-year level; and strengthen the collaboration between academics and librarians when conducting IL programme activities. Finally,

the research findings may have the potential to inform other universities that share the same characteristics as the UNIVEN and enable them to integrate IL into their first-year level academic programmes.

## **1.6 Originality of the study**

In the human and social sciences, *originality* is defined as the generation of new findings and new theories (Guetzkow, Lamont & Mallard 2004). Similarly, Shibayama and Wang (2020:409) explains *originality* as “the degree to which a scientific discovery provides subsequent studies with unique knowledge that is not available from previous studies”. The originality of a study generally involves the extent to which a study provides unique knowledge that is not available from previous studies (Shaheen 2021).

Several studies have been conducted into library services and IL at the UNIVEN. For example, Ndou (2021) examined the perceptions of researchers towards electronic resources provided by the UNIVEN library; Ndou and Mojapelo (2019) investigated how access to ICTs and the use of ELRs among academics and postgraduate students impacted on IL and digital literacy development; Madzhie (2010) investigated the challenges faced by the UNIVEN library in the management of library user education and IL, with a focus on the training of the university staff and students on the use of library information resources. Nematili (2014) examined the effectiveness of the online public access catalogue in helping UNIVEN students searching for and retrieving information from the library. Similar to the study of Madzhie (2010), a common thread of the above-mentioned studies was their focus on the library services and training provided at the UNIVEN.

The uniqueness for this study is based on that its main focus was not only on library IL programmes but impact thereof when integrated into the UNIVEN first-year academic programme, especially during this IL evolving period which is underpinned by the emerging innovative technologies and calls for explorative collaborative research studies among various stakeholders such as academics, librarians and students. The aim of the study was to gather empirical evidence about the phenomenon studied from the various categories of role-players, such as the senior

managers of various departments (deans); the early adopters and non-adopters academics; the librarians and the adopter students.

## **1.7 Conceptual framework**

This study adopted the combination of ILIM and Association of College and Research Libraries (ACRL) standards as its conceptual framework. The ILIM components represent the process, people and resources involved in the integration of IL into academic programmes aiming at producing an information literate student (Wang 2011; 2014a).

According to Tiemensma (2012:157–158), the ACRL IL competency standards for higher education involve the standards that an information literate student should meet, including the ability to:

“(i) determine the nature and extent of the information needed; (ii) access needed information effectively and efficiently; (iii) evaluate information and its sources critically; and (iv) incorporate selected information into his/her knowledge base; (v) use information effectively to accomplish a specific purpose; (vi) understand the economic, legal and social issues surrounding the use of information; (vii) access and use the information ethically”.

The reason for using this approach is to establish whether the existing IL programmes meet the principles illustrated for the ILIM and ACRL models; if gaps have been identified; and what can be done to improve the IL programme and its integration into the academic programmes of a historically disadvantaged institution (where social justice needs to prevail to close the gap created by the previously segregated education system). More details on the conceptual framework of the study are provided in Chapter 3.

## **1.8 Research methodology**

This study employed the pragmatist research paradigm to explore the opportunities and challenges of integrating IL as a credit-bearing module into first-year level academic programmes at the UNIVEN. Considering the research problem and objectives of the study, both qualitative and quantitative research approaches were adopted. Moseholm and Fetters (2017), assert that in a convergent design, the

quantitative and qualitative data are collected and analysed during a similar timeframe and the data compared. In agreement with these authors, a convergent research design was used to collect both quantitative and qualitative data; to analyse each data set individually; and to compare the results to determine if the research findings confirmed or disconfirmed one another (Creswell 2014; Creswell 2015; Creswell & Creswell 2018).

The target population of this study consisted of 791 respondents, the deans of schools, early adopter academics, non-adopter academics, information librarians, and adopter students at the UNIVEN – from which a sample of 117 (15%) was drawn. The sample of this study consisted of 40 non-adopter academics, three (3) adopter academics, eight (8) deans of the schools, six (6) information librarians, and 60 adopter students. This study adopted stratified and purposive sampling methods. Questionnaires, mainly consisting of closed-ended questions, were employed to collect quantitative data from non-adopter academics and adopter students. In addition, interview schedules were used to collect qualitative data from the early adopter academics, the deans of schools, and information librarians at the UNIVEN.

Creswell (2008:51–56) encourages qualitative researchers to use unstructured questions to obtain detailed information from participants. The Google Forms were used to collect both qualitative and quantitative data from early adopter academics, deans of schools, information librarians, non-adopter academics, and adopter students. The Google Forms links were sent to the participants via e-mails. The participants were able to open the link, typed in the answers to the asked questions, and click submit option after completing the forms. Furthermore, the Google Forms used as additional tool to the Statistical Package for Social Sciences (SPSS) to analyse the collected data. Chapter three provides a detailed discussion of the research methodology.

## **1.9 Scope and Limitation of the study**

Kumar (2014) and LoBiondo-Wood and Haber (2014) indicate that limitations of the study involve any difficulties or problems that may affect the interpretation of the research findings. The limitations of a study are potential weaknesses encountered in

a study over which the researcher does not have control. Some of the limitations for this study was that the purpose of the study was to explore opportunities and challenges on integrating IL programme into academic programme of first year students at UNIVEN but there was no in-depth analysis on how the IL programme has been incorporated into the academic programmes of the early adopters. Therefore, future studies can focus specifically on the intra-curricular programmes to get in-depth understanding on how ACRL standards are embedded in the content of the academic programmes. A claim can be made that the scope for the study was broad because it included various categories of participants such as executive management (deans), academics, librarians and first-year students. However, the other side of the coin is that, it was also limited as the focus was only on the specific category of the first-year students such as those that are considered earl-adopters of intra-curricular IL programme as called in this context.

In addition, the scientific evidence of this study relied more on the theoretical perspectives of the participants. Put differently, the evaluation of the improved practical IL skills of the first-year students relative to the non-adopters was not conducted to validate this claim. It is therefore recommended that further studies focus on the evaluation of the outcome of the impact of intra-curricular IL programme. The other weakness of this study is that, the bigger part of UNIVEN undergraduate and postgraduate students were not included. Therefore, the results of the study may not necessarily represent all UNIVEN students and other institutions of higher learning in SA. However, the results of this study could with caution, be generalised to the opportunities and challenges experienced by other universities with similar characteristics in SA.

### **1.10 Ethical considerations**

Encyclopaedia.com (n.d) describes research ethical conduct as an application of moral rules and professional codes of conduct to the collection, analysis, reporting, and publication of information about research subjects. According to Arifin (2018:30–32), ethical issue

“is crucial throughout all stages of study, and it is the responsibility of the researcher to ensure participants have a power of freedom of choice to be involved in the study, protect the participants’ identity throughout recruitment and dissemination process, and promote clear and honest research reporting without deception to readers”.

In a similar vein, Harriss and Atkinson (2015) remark that research involving humans as participants should be conducted ethically, and that participants should be provided with informed consent forms. Considering the ethical principle of autonomy, this study provided the participants and respondents with informed consent letters that served as proof that they were participating voluntarily in the study. Permission to collect data from the participants was obtained from the UNIVEN and ethical clearance was provided by the UNISA College of Human Sciences (CHS) Research Ethics Review Committee.

## **1.11 Definition of terms**

In the following sections, the basic concepts involved in this research are defined in the context of their use in this study.

### **1.11.1 Academics**

Academics are lecturers or scholars hired by universities and other institutions of higher learning. As the major role players in the core business of teaching and learning, academics are an essential component in the educational system in institutions of higher learning. The responsibilities of the academics include activities in education, research, community services, and other supporting activities. The role, duties and responsibilities of academics are critical in achieving educational goals (Sugiharti & Muslim 2016). Different academic ranks include professors, doctors, senior lecturers, lecturers and junior lecturers, depending on their qualifications and work experience.

### **1.11.2 Academic literacy**

*Academic literacy* is defined as “the ability to communicate competently in an academic discourse community; this encompasses reading, evaluating information, as well as presenting, debating, and creating knowledge through both speaking and writing” (Wingate 2018:350). Wingate (2018) alludes to the fact that academic literacy can be integrated into academic modules and that it should be offered to all first-year level students across disciplines.

### **1.11.3 Academic programme**

An academic programme is referred to as a basic component of the university curriculum or course undertaken by students to obtain their educational qualification certificates (Hui, Haines, Bammann, Hallandal, Langone, Williams & Mcevoy 2021). The academic programme comprises the core, required and elective courses leading to educational qualification.

### **1.11.4 Credit-bearing module**

A credit-bearing module is a course or a module designed to be included in an academic curriculum or programmes and to be passed by students , so as to meet the requirement of their academic qualifications. In order to to pass a credit-bearing course, students' activities must be assessed and credited.

### **1.11.5 Computer literacy**

Computer literacy is the technical know-how of using a computer and software programmes. Wilkinson (2006) asserts that computer literacy covers the basic skills of using a computer, as well as using a computer as a resource for searching for and saving information. Undergraduate students equipped with computer literacy may experience more success in the educational field and in the labour market, because they can easily find information with which to update and/or expand their knowledge base (Madhusanka, Rathara, Karunarathne, Wijesinghe, Madhusanka, Chandrasiri & Liyanage 2020).



### **1.11.6 Copyright literacy**

*Copyright literacy* is referred to as the “range of knowledge, skills and behaviours that individuals require when working with copyright content in the digital age” and it could be integrated into academic programmes (Morrison & Secker 2015:76).

### **1.11.7 Digital literacy**

According to Martin (2008:166–67):

“Digital literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesise digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, to enable constructive social action and to reflect upon this process”.

Digital literacy entails more than the ability to use software or to operate a digital device; it also entails a wide range of abilities, competencies and skills necessary for effective adaptation to a digital society (Eshet 2004).

### **1.11.8 Fourth Industrial Revolution**

The fourth industrial revolution (4IR) is frequently described as the result of multiple technologies' integration and compounding effects. The 4IR has had a significant impact on many industries, including libraries. The 4IR has had a significant impact on library services. This revolution is heavily reliant on data and the internet, both of which tell us how to gather data in an ever-increasing amount of information. Data and internet-connected devices capable of collecting and processing massive amounts of data power this world. This type of application is relatively new to libraries and is regarded as cutting-edge technology in the library industry. If such changes are implemented in library services in the near future, library services will gain traction (Hussain 2020).

### **1.11.9 Information literacy**

Information literacy (IL) is essentially a set of skills empowering people to recognise the need to find information, evaluate it, and use it effectively. Although the exact definition of IL varies from source to source, what is common among most of the sources is that information literate students can:

“recognize and articulate information need; develop effective search strategies; select and use information retrieval tools; locate and retrieve information sources; analyse and critically evaluate information; organize and synthesize information; [and] ethically use information” (Oberman, Lindauer & Wilson 2019).

### **1.11.10 IL integration**

This type of IL instruction programme is integrated into learning outcomes and learning activities or assessment of an academic course or a teaching programme, usually through collaborative partnerships between academic and library staff (Kanyengo & Kamau 2020; Onwuchekwa 2017; Bundy 2004). IL integration allows students to be assessed and graded, similar to any other academic programme in which students earn credit from the IL programme activities.

### **1.11.11 Media literacy**

Media literacy is a set of skills that promote critical thinking about the messages created and received through different media platforms (Bulger & Davison 2018). People, who are media literate, can recognise fake news and misinformation on social media and other platforms.

### **1.11.12 Visual literacy**

Visual literacy is an “interdisciplinary, multidisciplinary, and multidimensional area of knowledge” that equips people with the ability to interpret and evaluate images, photos, paintings and symbols critically and to use them for effective communication (Emanuel, Baker & Challons-Lipton 2016:7).

## **1.12 Structure of the thesis**

The thesis is structured in the following chapters:

### **Chapter 1: Introduction and background to the study**

Chapter 1 provided the background of the research problem, the statement of the problem, main purpose, research objectives and questions, and the significance of the study. This chapter also defined the important terms involved in the study.

### **Chapter 2: Literature review**

Chapter 2, which presents the literature review, focuses on the content of IL programmes; academics' awareness of IL; and the challenges and opportunities involved in offering IL in universities. The chapter will also focus on the perceptions of the academics towards IL programmes and it discusses some of the models applied to the integration of IL programmes into academic programmes at universities in developing and developed countries as well as the gap in the literature. Finally, the chapter explains the conceptual framework underpinning the study.

### **Chapter 3: Research methodology**

Chapter 3 presents the research methodology employed in the study. In doing so, the chapter explains and discusses the research paradigm, approach, the research design, population, sampling procedures, data collection methods, data analysis, reliability and validity and the limitation of the study. The chapter concludes with an overview of the ethical considerations.

### **Chapter 4: Presentation and analysis of the research results**

This chapter presents the research results of the study in the form of tables and figures and narratives.

### **Chapter 5: Interpretation and discussion of the findings**

Chapter 5 interprets and discusses the research findings of the study in the light of the reviewed literature and the conceptual framework.

## **Chapter 6: Summary, conclusion, and recommendations**

As the final chapter, Chapter 6 presents the summary, conclusions and recommendations of the study.

### **1.13 Summary**

This introductory chapter provided the background to IL programmes offered in institutions of higher learning; the development of IL programmes offered at the UNIVEN; and the opportunities and challenges of the IL programmes offered at the UNIVEN.

The research objectives and questions were also identified, as well as the significance and originality of the study. The chapter concluded with an outline of the thesis structure.

The next chapter discusses the literature related to the study, which includes context regarding IL programmes, opportunities of IL programmes and challenges faced in offering IL programmes, as well as the conceptual framework underpinning this study.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

This chapter presents the literature review involved in the study. According to Creswell and Creswell (2018), the literature review can take several forms such as: integrating what others have done and said; criticising previous scholarly works; building bridges between related topics; and identifying the central issues in a field.

Callahan (2014) reiterates that the literature review shows what has been studied on the topic by other researchers, as well as what has not been studied within the discipline. In addition, Bryman (2008) suggests that the literature review shows how other researchers have used different strategies to investigate a particular research problem. “A literature review primarily sets the foundation for a new research study, guides the researcher through the research process, and is also relevant in the choice of the theoretical framework or the conceptual map for the study” (Onwuchekwa 2017:30). Moreover, the literature review introduces researchers to previous studies in their discipline or field of study. Therefore, the literature review surveys books, articles and other information sources relevant to a particular research topic (Creswell & Creswell 2018).

In most dissertations and theses, the literature review integrates the literature; organises it into a series of related topics (often from general to narrower); and summarises the literature by pointing out the central issues (Creswell & Creswell 2018). “The literature review is important because it shares with the reader the results of other studies that are closely related to the one being undertaken. It relates a study to the larger ongoing dialogue in the literature, filling in gaps and extending prior studies. It provides a framework for establishing the importance of the study as well as a benchmark for comparing results with other findings. In addition, it helps to add to the already existing body of knowledge” (Creswell & Creswell 2018).

According to Ridley (2012), the literature review is the part of the thesis in which there is extensive reference to related research and theory of the related field of study. It is where connections are made between the source texts and the research conducted. Similar to Creswell and Creswell (2018), Ridley (2012) argues that the literature review opens the opportunity for the researcher to engage in a written dialogue with researchers in the same field of study, while showing insight into the debated body of knowledge. The literature review helps to identify the gap that needs to be filled regarding the topic studied (Ridley 2012). The literature review is a connecting thread to the problem statement, the research methodology and the conceptual framework adopted for a study.

Ridley (2012) emphasises that the literature review assists the researcher in formulating the research objectives and questions for the study. In this study, the literature review was guided by the following research objectives:

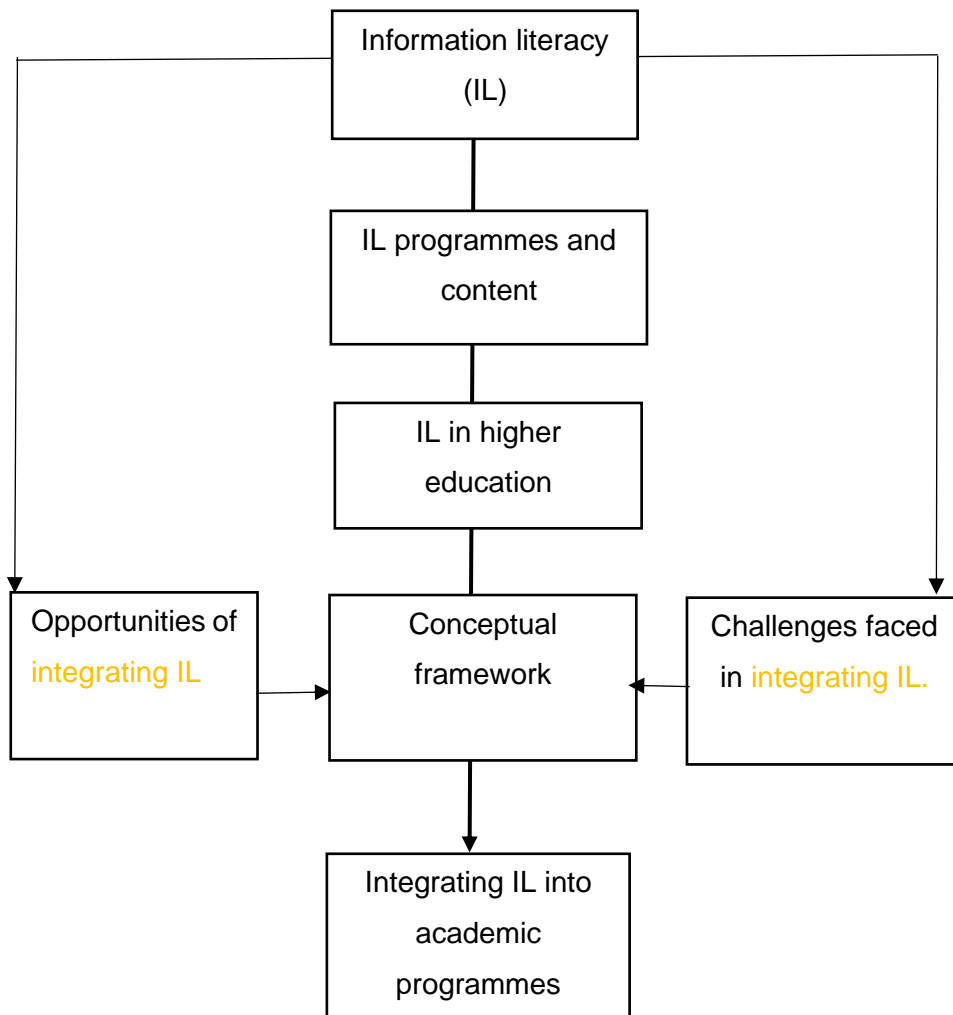
1. To establish the level of knowledge of the existing IL programmes at the UNIVEN;
2. To identify the opportunities of integrating IL into first-year level academic programmes at the UNIVEN;
3. To establish the challenges faced in integrating IL into first-year level academic programmes at the UNIVEN; and
4. To develop a model that may enhance the IL programmes for first-year level academic programmes at the UNIVEN.

The literature review and the conceptual map of this study are illustrated in Figure 2.1.

## **2.2 Literature review map**

In this study, the literature review map was used to illustrate the relationship between the research objectives and the conceptual framework that was used. Conceptual mapping helps in directing and generating a literature review. Alias and Suradi (2008) also mention the following two main purposes of the conceptual map: “to summarise the information obtained from an individual source, and to synthesise information obtained from the different sources”.

Figure 2.1 illustrates the literature review map involved in this study. It begins with the establishment of the participants' level of knowledge of the existing information literacy programmes at the UNIVEN, followed by the opportunities and challenges of integrating the IL programme into the university curriculum, with specific reference to UNIVEN. The discussion then connects to various models relevant to information literacy integration in higher education and the models that were adopted for this study. Finally, the literature review map shows the integration of IL into academic programmes. In other words, in this study, the literature review helped to select the conceptual framework.



*Figure 2.1: Conceptual map on integrating IL into academic programmes*

As indicated in Figure 2.1, the literature review focused on the literature relevant to the research objectives of the study.

## 2.3 Information literacy (IL)

The term *information literacy* was introduced in 1974 by Paul G Zurkowski to refer to people who know how to apply information in their work activities (Yevelson-Shorsher & Bronstein 2018). Numerous IL scholars concur that, since its inception during the 1970s, the IL concept has evolved to accommodate emerging technologies (Tiemensma 2012; Fullard 2016; Onyancha 2020). Onyancha (2020:107) argues that, since its inception, the concept has evolved to become one of the most common topics and core subjects; particularly in Library and Information Science (LIS) curricula throughout the world.

Because IL has become such a common topic, the literature offers numerous different definitions of the concept (Favaro 2012:216). For example, according to Favaro (2012:216) the ACRL explains IL as a set of skills needed to find, retrieve, analyse and use information. The Chartered Institute of Library and Information Professionals (CILIP) (2004) explains IL as a need for information, the resources available, how to find information, the need to evaluate results, how to work with or exploit results, ethics and responsibility of use, how to manage, communicate, share the findings. Similar to the CILIP, the Joint Information Services Committee (JISC) combines IL and information technology (IT) skills to form IL skills, which involve “the ability to identify, assess, retrieve, evaluate, adapt, organise and communicate information within an iterative context of review and reflection” (Favaro 2012).

Fullard (2016) and Onyancha (2020) seem to have reached a consensus regarding the emerging concepts underpinning the IL concept, such as transliteracy, metaliteracy and multiliteracies. For these authors, these concepts indicate the convergence of literacies needed to define an information literate person in the 21<sup>st</sup> century (Fullard 2016; Onyancha 2020). These concepts signify the importance of a plurality of literacies as critical graduate attributes for the 21<sup>st</sup> century student. Notwithstanding the emergence of new literacies, the term *information literacy* remains a popular one among information literacy scholars, followed by digital literacy and media literacy (Onyancha 2020).



Tiemensma (2012), who regards IL as a key attribute for each individual in the 21<sup>st</sup> century, highlights the fact that, at the 2003 World Summit on the Information Society (WSIS), the Geneva declaration number 29 stated that “each person must have the opportunity to acquire the necessary skills and knowledge to understand, participate actively in, and benefit fully from the Information Society” (Tiemensma 2012:157). Therefore, IL stretches further than the educational context, in that it impacts on the broader context of society, work, economic activities and well-being. For example, Sayed (1998) as cited in Tiemensma (2012) defines *IL* as the lifelong ability to access sources of information, locate information and critically evaluate information, not only in the academic environment but also on the work and home fronts. Furthermore, Tiemensma (2012) indicates that, in the United Nations Educational Scientific Cultural Organisation (UNESCO’s) concept of IL and knowledge societies, IL is viewed as the foundation on which knowledge societies must be built. Therefore, Britz and Lor (2010) opine that limited IL skills limit one’s ability to access relevant and accurate information and the ability to participate in different information based socio-economic activities. Although IL is highly significant in all sectors, whether formal or informal, this study focused on IL in higher education.

IL is considered a cornerstone to graduate attributes of the 21<sup>st</sup> century student, such as independent, critical thinking and lifelong learning (Fullard 2016). Notwithstanding that, the literature has revealed that globally, universities have displayed weak or a lack of integration of information and digital literacies with academic literacy (Fullard 2016). The evolvement of the IL concept to accommodate other literacies has created several challenges in terms of IL programmes and IL skills for librarians, academics and students (Zimu 2020). Given this fact, numerous IL scholars recommend that academics and librarians collaborate to ensure that the skills taught in IL programmes are effective and efficient for the 21<sup>st</sup> century information users; particularly for students and academics (Greef 2012; Onwuchekwa 2017:51; Lwehabura & Stilwell 2008; Zimu 2020). In the next section, IL programmes and their opportunities and challenges are discussed.

## **2.4 IL programmes and content**

Tshuma and Chigada (2018) and Zimu (2020) assert that IL programmes started as bibliographic instruction or user education, which did not cover all the aspects of technology. According to Onwuchekwa (2017:154) and Wang (2010), IL instruction programmes in tertiary institutions have taken a variety of forms, such as stand-alone courses or classes, web-based tutorials, course-related instruction, or course-integrated instruction.

### **2.4.1 Approach to IL instruction programmes**

Onwuchekwa (2017:44–45) and Wang (2010) indicate that IL instruction in higher education can be approached in the following four main ways: intra-curricular, inter-curricular, extra-curricular and stand-alone IL programmes.

#### **2.4.1.1 Intra-curricular IL instruction**

This type of IL instruction programme is offered within the curriculum . It is typically integrated into the learning outcomes, learning activities, or assessment of an academic course or teaching programme via collaborative partnerships between academics and librarians (Onwuchekwa 2017; Bundy 2004).

#### **2.4.1.2 Inter-curricular IL instruction**

The library provides this type of IL programme as an add-on session for an academic course or programme, in consultation with, or at the request of individual academic staff. Attendance is usually a requirement of the course or programme (Onwuchekwa 2017; Wang 2010).

#### **2.4.1.3 Extra-curricular IL instruction**

The library offers this type of IL programme outside of the academic programmes, and students' participation is entirely voluntary (Onwuchekwa 2017; Johnston & Webber 2005). The extra-curricular IL instruction is easier to plan, because it is not dependent on academic programmes.

#### **2.4.1.4 Stand-alone IL instruction**

Stand-alone instruction is offered as a stand-alone module that is solely dedicated to IL as part of the students' curricula. The standalone IL module is either required or taught as part of general education (Onwuchekwa 2017;Wang 2010).

#### **2.4.2 IL content in academic programmes**

Studies show the applicability of IL content in academic programmes at different levels of study (Lwehabura 2018; Mullins 2016; Gasque 2016; Jackson 2007). Mullins (2016) advocates collaboration between academics and librarians, which makes it possible to integrate the IL content into postgraduate study-level modules. Mullins (2016) suggests the following as the IL content that should be offered for university students: access and use of information resources; reference and referencing techniques; the ethical use of information resources; and thesis and dissertation writing. Aharony and Garzit (2019) and Jackson (2007) observe that the IL content offered for both undergraduate and postgraduate students at the California State University (United States of America) includes: using databases; evaluating information; developing search strategies; and avoiding plagiarism.

Jackson (2007) is of the view that integrating IL into academic programmes is critical and little is being done, due to the cost and time involved in developing the IL content. Lwehabura (2018:432) suggests that the content “should take into consideration the importance of IL aspects that enable students to acquire appropriate skills for information search, retrieval, and use”. Because it is critical for IL to be more fully integrated into academic programmes, the learning outcome of the IL content should be specific, measurable, and directly related to the content. Gasque (2016:254) remarks that “IL content is organized according to the educational institution's context, teaching-learning concepts, and human, structural, and financial resources, among others”.

In the context of this study, IL content covers the following elements: determination of information needs; the use of effective search strategies; evaluation of information; economic, legal and social issues around the use of information; and communication and presentation of information.

#### **2.4.2.1 Determination of information needs**

In this content, students are taught how to define their information needs. Studies note that students should be taught how to identify and formulate their information needs (Bawack & Kala-Kamdjoug 2020; Çoklar, Yaman & Yurdakul 2017; Kiliç-Çakmak 2010). Çoklar, Yaman and Yurdakul (2017:3) affirm that the determination of information content covers "an awareness of the features of the required information". In addition, Kiliç-Çakmak (2010) alludes that one reason for students' failure to define information needs may be the use of inappropriate cognitive strategies. – Students are not able to articulate their information needs, because they do not know when they need more information to answer a question at hand. The IL module should teach students to identify and formulate their information needs (Bawack & Kala-Kamdjoug 2020). The outcome of this content equip students with the skills to know how information is formally and informally produced, organised and disseminated. The students will be able to describe the criteria used to make formative decisions and choices (Noe 2013).

This study opines that, without the necessary IL skills, students end up using the information they want, instead of using the information they need, to answer their academic tasks. Therefore, it is important to include the determination of information as part of the content of IL programmes offered at the universities. "It is essential for students to early acquire the tools and skills they need to search for information, and for them to take into account that they should use quality sources appropriate for the situations studied" (Tarango, Evangelista, Machin-Mastromatteo & Cortés-Vera 2017:89). This content should introduce students to information sources and resources, as well as libraries and portals, so that they will be able to use quality sources of information.

#### **2.4.2.2 Effective search strategies**

Bawack and Kala-Kamdjoug (2020) affirm that, in the context of higher education institutions, information search strategy is a vital part of the learning process. "Students are constantly required to search for information that can help them do assignments, prepare for examinations, and complete/expand their knowledge on a given topic. Consequently, they need to learn information-seeking strategies that will enable them to obtain the information they need from the most relevant sources. They

also need to have the skills and competencies to be able to use digital information for their learning activities” (Bawack & Kala-Kamdjoug 2020:5).

Likewise, the prominent variables in effective and efficient internet use are online information search strategies. IL has a much stronger influence on online information search strategies than computer literacy and other literacies. In this regard, students' IL progress should be highlighted, in order for them to fully benefit from the wealth of information on the Internet. Academics play critical roles in encouraging students to use online information resources for teaching and learning. Students should first gain an understanding of the online search strategies and the factors influencing those strategies (Çoklar, Yaman & Yurdakul 2017). As it has been noted, students do use the internet to search for academic information. Lacking the skills for searching for information may result in students using misinformation or unreliable information for their academic activities. Effective search strategies should cover the construction of a search query, searching the web, and searching databases and electronic journals.

#### **2.4.2.3 Evaluation of information**

Studies reveal that students are facing difficulties in evaluating information sources. In their study, Yebowaah and Owusu-Ansah (2020) established that students at different levels in the Nusrat Jahan Ahmadiyya College of Education (Ghana) used a variety of sources to access information and they had difficulties in evaluating information. Walraven, Brand-Gruwel and Boshuizen (2009:234) mention that information from the internet is often "unreliable or incomplete, and it is important to evaluate sources and information before using them". It has been noted that students often do not evaluate the results, sources and information they use in their academic tasks. "The students had the least success improving their ability to evaluate information sources (Woitte & Mccay 2019:316).

Regarding this study, the view was that the outcomes of the IL content enable students to assess the usefulness and relevance of the information obtained; to define and apply criteria for evaluating information; and to reflect on the information-seeking process and revise search strategies as necessary. The evaluation of information content equips students with the skills of selecting an appropriate information source and evaluating other sources of information (Woitte & Mccay 2019). As remarked by

Keboh and Baro (2020:38), "presently, the evaluation of information and information resources has come to be regarded as a mainstream skill that should be promoted by teachers in the classroom, as well as by librarians in the context of IL instruction".

For the purpose of this study, the evaluation of information content will cover the following elements: process of evaluating information and information sources; and the evaluation of information from the social media.

#### **2.4.2.4 Economic, legal and social issues around the use of information**

The economic, legal and social issues around the use of information content cover the knowledge and awareness of copyright and intellectual property laws regulating the use and sharing of information (Çoklar, Yaman & Yurdakul 2017). Therefore, the ethical and fair use of information, referencing and reference techniques should be covered in IL content.

#### **2.4.2.5 Communication and presentation of information**

Students are taught about organising and retrieving information from computers, documenting information, and creating new knowledge. Learning how to communicate with people and to access and exchange data and information is one of the key areas of IL, and students in all disciplinary streams should be able to use and "communicate information in an innovative manner" (Ranaweera 2008:6).

Most of the IL content focuses on the creation and communication of information (Kapitzke 2001). Likewise, it has been noted that the use of information technology resources should form part of IL (Yustika & Iswati 2020; Leaning 2019).

### **2.5 IL programmes in higher education**

Globally, studies show that universities have focused on IL instruction (Aharony & Gazit 2019; Julien, Gross & Latham, 2018; Molepo & Bopape 2018; Lwehabura & Stillwell 2008; Virkus 2003). Nyamboga (2004:232) advocates that "the central theme of higher education institutions in many parts of the world is to develop 'information literate students' with the intellectual abilities of reasoning and critical thinking". Studies also suggest that "there is a broader issue about the uncertain position of IL in the academic programmes" (Thornton & Atkinson 2022). What has been less common is that the development and implementation of the IL programmes differ from

institution to institution. According to O'Hanlon (2007), the lack of formal programme requirements for offering IL is one of the major challenges at universities.

Most IL programmes at universities are offered as informal instructions with no "dedicated funding, no formal training, no assessment tools, and no measures of performance" (Johnson 2018).

However, it seems as if most higher education institutions in developed countries are in advanced stages concerning the integration of the IL programmes into academic programmes, as compared to most higher education institutions in developing countries. The objective of offering IL to university students in both developed and developing countries is to equip students with the skills required to improve their academic performance and the long-life skills to survive in the Fourth Industrial Revolution (4IR).

In order to improve IL programme practice at universities, one should understand the current practices of IL programmes offered at different universities. Hence, integrating IL into academic programmes should be considered a core role for the university (Moselen & Wang, 2014a:116). Students are often only prepared to make the effort if they receive some reward, usually in the form of recorded credits. Regardless of that, it is also the sensible option to integrate IL into the academic programmes of the subject discipline that the students have chosen (DaCosta 2010).

### **2.5.1 IL programmes in higher education in developed countries**

In developed countries, universities have already integrated IL as a credit-bearing module in academic programmes (Lanning & Mallek 2017; Webber & Johnston 2017; Ward & Kim 2019; Molepo & Bopape 2018; Zinn, Stilwell & Hoskins 2016). It has been noted that "IL initiatives in higher education in developed countries have taken a variety of forms: stand-alone courses or classes, Web-based tutorials, course-related instruction, or course-integrated instruction" and most studies concur that IL should be integrated into academic programmes (Virkus 2003:33).

In the United Kingdom (UK), the institutions of higher learning – such as the British Open University, Southport College, Cardiff University, Cranfield University, University College Northampton and the University of Sheffield – have developed accredited IL programmes that are compulsory for all first-year students (Virkus 2003).

Still in the UK, the Strathclyde Business School offers IL as a credit-bearing module to all its students (Webber & Johnston 2017).

In Australia, higher education institutions have a government mandate to include IL programmes in their teaching and learning programmes (Johnston & Webber 2005:111). In Canada, higher education institutions are offering IL to all undergraduate students (Erlinger 2018). Canadian IL programmes are offered across multiple disciplines at York University (Bury 2011). Still in Canada, the Mount Royal University is one of the higher education institutions that offer IL programmes to its students (Jackson, MacMillan & Sinotte 2014). In New Zealand, the University of Auckland offers IL as a credit-bearing module to legal research students (Moselen & Wang 2014).

In the United States (USA), the City University of New York (CUNY) teaches IL as a credit-bearing module (Ward & Kim 2019). The Southern Utah University (USA) offers IL as a credit-bearing module to all the first-year level students as “part of the general education program”(Lanning & Mallek 2017:1).

In Israel, IL programmes at universities are in their infancy (Simon 2013). The study conducted by Aharony and Gazit (2019) revealed that 28.7% of the universities in Israel were offering IL as a credit-bearing module and most of the instructions of IL programmes were partly informed by the ACRL standards. When comparing the objectives of IL programmes at universities in Israel and universities in other developed countries, universities in other developed countries “focus on information evaluation and developing critical thinking skills that reflect higher level thinking levels, while universities in Israeli focus on teaching students how to locate materials in the library” (Aharony & Gazit 2019:970). DaCosta (2010) compared the IL programmes at two higher education institutions in the UK and the USA – the De Montfort University (DMU) and the College of New Jersey respectively – and revealed similarities in incorporating IL into academic programmes across the two institutions. This implies



that globally, universities are still trying to find the best method of offering IL to students. In addition, universities in Israel and universities in other developed countries face similar challenges regarding the offering of IL programmes (Simon 2013).

### **2.5.2 IL programmes in higher education in developing countries**

Most universities in developing countries still face challenges in the development of IL programmes. In spite of the efforts of offering library instructions to students, many students at Indian universities decided to opt out of such training, since it was not a priority (Nyamboga 2004). After surveying the library instructions offered at six universities, Nyamboga (2004) comprehended that universities in India should offer compulsory IL programmes as credited modules to both undergraduate and postgraduate students, so that students can learn how to use the library information resources effectively. Swapna and Biradar (2017:49) maintain that the offering of IL programmes at Indian universities should be considered as a way to “go beyond the goal of producing graduates who are not simply equipped to enter the workforce and broaden their scope to produce enlightened graduates who are able to freely lead happy lives and shape the information society of which they are a part”.

Baro and Keboh (2012) reveal that several African universities have not yet seriously integrated IL programmes into their academic programmes. As observed by Baro and Zuokemefa (2011) and Abubaka and Isyaku (2012), at most African universities, IL is not integrated as a credit-bearing module into academic programmes. Baro, Endouware and Ubogu (2011:117) investigated the IL programme offered to undergraduate students at the College of Health Sciences at Niger Delta University (Nigeria) and reveal that the standard of IL programmes has not completely achieved the IL competency standards for higher education formulated and reviewed by the ARCL standards committee.

In Nigeria, there has been an “increasing interest among academics and librarians in the need to integrate IL into academic programmes as a way of facilitating skills development and imparting basic knowledge in student learning through IL programmes” and IL is eventually integrated into the general studies module which is offered as a compulsory credit-earning module by some universities (Lawal, Underwood, Lwehabura & Stilwell 2010:46).

As pointed out by Lwehabura and Stilwell (2008), university management at Tanzanian universities is in support of integrating IL into academic programmes. Lwehabura and Stilwell (2008:188) further assert that university management and students in Tanzanian universities believe that “IL is important for all students and the only way to make students attend and acquire the intended skills is to make IL compulsory for all, and making IL compulsory and credit-bearing adds more weight for ensuring that students and staff take it seriously” (Lwehabura & Stilwell 2008:188). In the study that he conducted in Zimbabwe, Chigwada (2019) established that universities still faced challenges in offering IL programmes, due to the negative attitudes of students and academics, and the lack of the resources needed to offer IL programmes.

### **2.5.3 IL programmes in higher education in South Africa**

As pointed out in Chapter 1, there are South African universities that offer IL as a stand-alone module. “Reports from South African surveys indicate that many of the library-initiated information literacy programmes are generic or stand-alone and that meaningful partnership is difficult to attain” (Tiemensma 2012:161–165; Fullard 2016:47).

As highlighted in Chapter 1, stand-alone IL programmes have not been endorsed by many IL scholars because of their disadvantages outweighing the advantages. For example, Fullard (2016) asserts that stand-alone IL programmes limit partnership between lecturers and librarians in developing IL competencies needed for academic programmes for the 21<sup>st</sup> century student. Mnkeni-Saurombe (2015) emphasises that stand-alone IL programmes are not always as successful as those that are integrated into the curriculum.

Notwithstanding the challenges of stand-alone programmes, Moyo and Mavodza (2016) reveal that South African universities continue to offer fragmented IL programmes. For example, in SA, some universities are offering IL as a stand-alone credit-bearing module, while others are offering it as an integrated or embedded module. This confirms Zimu’s (2020) view that research is yet to identify the most appropriate form of IL programme.

Furthermore, Moyo and Mavodza (2016) mention Cape Peninsula University of Technology (CPUT), Central University of Technology (CUT), Durban University of Technology (DUT), Tshwane University of Technology (TUT), University of Cape Town (UCT), University of Free State (UFS), University of Fort Hare (UFH) and University of Western Cape (UWC) as institutions offering IL as a stand-alone credit-bearing or embedded module.

Fragmented IL programmes are cause for concern, as numerous scholars agree that, in South Africa, most university students come from a disadvantaged background and they do not have IL skills needed to cope with their academic programmes (Tiemensma 2012; Zimu 2020). Although the majority of students are regarded as techno and cell-phone savvy, they struggle when it comes to using library databases, e-resources, e-services and the internet for information searches and information retrieval purposes (Greef 2012; Rantlha 2017).

It is a well-known fact that, in the modern world, information is constantly changing in terms of its volume, the technical aspects of its storage and retrieval, and the way in which it is communicated (Lwehabura & Stilwell 2008). Therefore, the *status quo* in terms of IL training programmes cannot prevail, and hence the call for strong integrated IL programmes; particularly for higher education teaching and learning environments (Onwuchekwa 2017; Lwehabura & Stilwell 2008; Zimu 2020). For Tiemensma (2012:164), this shift is even more critical in the 21<sup>st</sup> century, which pushes universities and university libraries to focus increasingly on distance education services. According to Tiemensma (2012:164), there is a need to develop more online programmes, e-resources and e-strategies.

Lwehabura and Stilwell (2008:179–180) express concern that, while, higher education institutions in other countries “have introduced IL programmes that are intended to impart the knowledge and skills that would enable students to become effective and efficient information users. However, in many African and other developing countries, IL interventions have not yet been seriously considered or implemented”. This is a serious cause for concern – particularly in South Africa – as many students, including UNIVEN students, come from disadvantaged backgrounds and they do not have the IL skills required for academic studies.

Although the situation is gradually improving, there is still an under-provision of computer and internet facilities and library resources (Tiemensma 2012:162). Where limited access to e-resources and the internet prevails, privileges are mostly enjoyed by the few, such as the academics and postgraduate students, which is also the case at the UNIVEN (Ndou 2021). Therefore, this study, which aims at understanding the opportunities and challenges of integrating IL into academic programmes of undergraduate students, is highly significant. Tiemensma (2012:163) also reports that IL programmes in South African universities are either compulsory or voluntary, ranging from basic to advanced IL teaching, while teaching methods vary from online to contact or mixed teaching methods. According to Tiemensma (2012:163), it is often a challenge to attract students to attend IL instruction sessions when the programme is not mandatory.

Given the foregoing challenges and the demands for new literacies or multiple literacies, it is not surprising that many IL scholars have advocated for collaborative integrated IL programmes that are effective and efficient (Onwuchekwa 2017; Lwehabura & Stilwell 2008; Zimu 2020). Shih (2012:285) avers that a “successful literacy education requires collaborative efforts from stakeholders such as librarians, information technologists, faculty members and media specialists”. Furthermore, Shih (2012) also indicates that, because of the emerging technologies, old IL programmes need to be merged with the new ones for the benefit of 21<sup>st</sup>-century information users. In the next section, the opportunities of IL programmes are discussed, in line with various factors such as educational, social and technological.

## **2.6 Opportunities of IL Programmes in universities**

“In the information society, IL has become a necessity for everyone; it forms the basis for lifelong learning” (Abid 2008). Everyone needs to use IL to make information-related choices that arise every day. IL skills are vital to the success in education, occupation and day-to-day communication of all citizens, which implies that IL programmes play a significant role in educational, social and technological factors. The opportunities of IL programmes are briefly explained *vis-à-vis* to IL programmes and educational factors, IL programmes and social factors, and IL and information and communication technologies (ICTs).

## **2.6.1 IL programmes and educational factors**

Onwuchekwa (2017:5 & 34) asserts that “IL skills must be incorporated throughout all areas of the university's curriculum, not just in library orientation classes or isolated skills presentations”. Likewise, IL cannot be viewed as something that should be dealt with once and then ignored. – It is an essential component of lifelong learning and must be recognised and enhanced (Hernández-Rabanal 2014). “IL plays an integral role to academic research in the discipline. Its significance is to be felt in teaching and learning processes as well” (Boon, Johnston & Webber 2007). IL programmes can be implemented by a collaborative effort of librarians and academics and with the assistance of administrative personnel (Ranaweera 2008). If properly integrated into academic programmes, IL programmes could benefit various stakeholders, such as students, academics and librarians.

### **2.6.1.1 IL benefits to students**

In South Africa, one of the aims of the education system is the improvement of students' IL skills. In this regard, Zimu (2020) points to the Core Teaching Programme for Information Skills that was introduced in 1994 to improve the IL skills of learners.

Zimu (2020) asserts that the National Curriculum Statement (2004) aims at improving critical and developmental outcomes for students, such as the ability to identify, collect, analyse, manage, critically evaluate and use information effectively; become critical thinkers; work as a team; and acquire various skills, as indicated in the broader definition of the concept of IL. This definition includes ICT and communication skills and reading, listening, writing and other literacies (Zimu 2020). Given the challenges experienced in terms of the dearth of educational resources, including at school libraries, the future seems bleak, should no aggressive remedial programmes be put into place (Zimu 2020).

Furthermore, Zimu (2020) avers that it cannot be disputed that basic education challenges are inherited by higher education in SA. To address the challenges, scholars have recommended various IL initiatives, such as stand-alone IL programmes or the integration of IL programmes into the curriculum.

Moreover, academics view “IL as fundamentally intertwined with other academic literacies and as central for the successful pursuit of much undergraduate academic research work including developing autonomous, engaged learners” (Bury 2016).

Researchers emphasise that IL programmes offered at universities should adhere to the competencies of information literate students set by the different library associations and national committees, such as the Association of College and Research Libraries (ACRL), the Chartered Institute of Library and Information Professionals (CILIP), and the Committee of Higher Education Libraries of South Africa (CHELSA) (Davids & Omar 2018; Esterhuizen & Kuhn 2010; Lwehabura 2018; Mahwasane 2016; Noe 2013). The highlighted competencies set by these different library associations and national committees are significant for students to succeed academically and in their future job opportunities. This study concludes that the content of IL programmes content offered at universities should adhere to the required standards set by a specific association or committee, which will be discussed in detail in Chapter 3.

Regardless of the discipline involved, every student should be able to access, use and communicate information in a creative way. IL programmes are critical in developing these skills among university students. Therefore, students need to be educated in the abilities and skills involved in learning, or learning to learn, by developing the aspects of reasoning and critical thinking.

#### **2.6.1.2 Collaboration of academics and librarians in offering IL**

Numerous studies recommend the need for integrated IL programmes that use a collaborative approach among various stakeholders, such as academics, librarians, faculty members, information technologists and administrators (Mackey & Jacobson 2005; Tiemensma 2012; Hernández-Rabanal 2014; Onwuchekwa 2017; Lwehabura & Stilwell 2008; Zimu 2020). Therefore, integrating IL into academic programmes requires a coordinated relationship among university stakeholders. Bury (2016) indicates that the academics in different disciplines at a public research university in Toronto (Canada) see themselves as part of the stakeholders who are responsible for collaboration in offering IL programmes to undergraduate students.

Lindstrom and Shonrock (2006) emphasise that any type of collaboration among academics and librarians in the provision of IL programmes results in the integration of IL into academic programmes.

Academics are greatly in need of IL skills, so as to conduct their occupations efficiently and successfully. According to Boon, Johnston and Webber (2007), IL possesses are based on a set of basic research skills, such as constructing a presentation or producing material for a dissertation, which are essential to academics' roles as educators and researchers. Academics could be present in the IL classes to monitor the attendance and participation of students, who, in turn, could also acquire the IL skills presented by the librarians. According to Mackey and Jacobson (2005:141), academics' involvement in IL classes is “ an opportunity to emphasize how the IL resources and skills relate to specific assignments as well as the course, major, and field itself”. Furthermore, the presence of academics in IL classes may lead to an exchange of ideas between academics and librarians. Such an exchange of ideas is considered beneficial to students, because “team teaching may offer students the best opportunity to apply IL within the context of a specific discipline” (Mackey & Jacobson 2005: 141).

Moreover, the provision of IL programmes at universities helps to “improve librarians' understanding of how academics view IL and consider their perceptions and expectations within different disciplines” (Stebbing, Shelley, Warnes & McMaster 2019).

#### **2.6.1.3 IL benefits for lifelong learning**

According to Chakrvarty (2008:17), “information competencies are a key factor in lifelong learning and they are the first step in achieving educational goals. The development of such competencies should take place throughout citizens' lives, especially during their educational years, where librarians, as a part of the learning community and, as experts in information management, have or should assume the key role of facilitating information literacy”. The information literate students should be able to apply and transfer the skills learned from IL programmes to several other areas of learning and research (Bothma, Cosijn, Fourie and Penzhorn 2014; Hernández-Rabanal 2014).

People, who know how to access, evaluate, analyse and communicate information to others efficiently and effectively, are seen as lifelong learners and are successful at solving problems, providing solutions and producing new ideas and future directions (Bothma *et al* 2014). IL skills “develop life-long learning skills which not only support students’ tertiary studies but also empower them in their future careers in the industry” (Hart & Davids 2010:24).

The attainment of IL is not only an educational goal, but also a lifelong goal. – “It is a goal that can be attained through a process that relies on the continuous learning of specific and evolving behaviours. It is a cluster of abilities that the individual can employ to cope with and to take advantage of the unprecedented amount of information which surrounds us in our daily life and work” (Onwuchekwa 2017:5).

### **2.6.2 IL programmes and social factors**

Bothma *et al* (2014) indicate that “a society that is capable to access, evaluate, use and communicating information effectively and efficiently is called an information literate society”. Moreover, IL skills assist people in different aspects of their daily lives, such as purchasing, making an investment, voting in elections, obtaining information for job interviews, etc. (Bothma *et al* 2014; Ranaweera 2008:7).

Furthermore, Burnett and White (2022:286) observe that “academics and students can apply IL skills not only to their academic sphere but also to the wider world, which enables them to see the importance of IL for study and life more generally”. Likewise, it has been observed that the dimension of IL is “the adoption of appropriate information behaviour to identify, through whatever channel or medium, information well fitted to information needs, leading to the wise and ethical use of information society” (Steinerová 2016:56; Çoklar, Yaman & Yurdakul; 2017; Sample 2020).

It is recommended that universities ensure that the content of IL programmes integrated into their academic programmes is suitable for and relevant to the 4IR workplace. This means that IL content should align with the skills required for the 4IR and its emerging technologies.



As pointed out by Buchanan, Webb, Houk and Tingelstad (2015), it is vital to consider the content of the module before integrating the module into the academic programmes. In the 21<sup>st</sup> century, the job markets are increasingly seeking information-literate people. Because IL skills have a significant impact on the workplace, it is of the utmost importance for higher education institutions not to minimise students' IL skills and competencies (Hernández-Rabanal 2014). This implies that information-literate students will be able to apply their IL skills in their careers in the 4IR era.

### **2.6.3 IL and information and communication technologies (ICTs)**

*Information and communication technology (ICT)* refers to any device or system that allows for the electronic storage, retrieval, manipulation or transmission of information (Ndou 2021:42). Personal computers, the internet and email are some examples of ICTs. ICTs are important in the provision of efficient and up-to-date information services. The use of ICTs for academic purposes at institutions of higher learning requires serious consideration. New literacies underpinning the term *information literacy* imply that an information literate student of the 21<sup>st</sup> century must be prepared for the use of 4IR digital resources and services (Fullard 2016) and, therefore, these students should also have digital literacy, media literacy, academic literacy, copyright literacy, information retrieval literacy, web literacy and internet literacy skills (Onyancha 2020).

As emphasised by Rantlha (2017:13), IL and technology are related, and the one cannot be explained without mentioning the other. For Rantlha (2017), “librarians and technology are also inextricably linked. For example, librarians buy or license research tools and materials. Furthermore, they reach out to meet their users where they are, using an ever-growing array of technologies”. Therefore, it is considered a prerequisite for an information-literate individual to develop technical skills, so as to be able to use technological resources, such as the internet, online databases and online library catalogues. This is also the reason for the literature on IL emphasising that IL and technology are critical to lifelong learning. – “Information technology skills enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related and personal goals” (Rantlha 2017:14). Boon *et al* (2007) are in agreement that information-literate people can use

ICT tools to access and retrieve information quickly and easily. Therefore, IL skills are of critical importance in the ICT environment.

ELRs in libraries provide access to information for everyone in modern society. Moreover, they have the “efficiency and capability in providing [the] right information to the right person at the right time” (Ndou 2021). ELRs are important in teaching and in learning, in that they provide platforms for information to aid in academics’ research initiatives (Ndou 2021). Therefore, the importance of the IL programme being integrated into digital literacy and academic literacy cannot be over-emphasised. This is even more important for the historically disadvantaged institutions, such as the UNIVEN, as they have been previously disadvantaged in terms of resources and skills transfer; hence the significance of this study. The next section discusses the challenges of IL programmes, with specific reference to the South African context.

## **2.7 Challenges faced in integrating IL into academic programmes**

Understandably, every institution faces challenges in the process of integrating modules into their academic programmes. The research findings of previous studies identify the following major challenges involved in universities integrating IL into their academic programmes: the lack of collaboration between academics and librarians; inadequate human resources to teach IL; informal IL programmes at universities; methods of offering IL programmes; and the lack of homegrown IL standards (Baro & Keboh 2012; Baro, Seimode & Godfrey 2013; Johnson 2018; Moyo & Mavodza 2016; O’Hanlon 2007; Omar, Haji & Mwitumbe 2014; Tewell 2018). Despite identifying these challenges, it should be noted that the challenges faced in the provision of IL may differ from one university to the other. It is critical for the university to examine the challenges that may hinder the opportunity of integrating IL as a credit-bearing into its academic programmes. The afore-mentioned challenges are outlined in the following sections.

### **2.7.1 Lack of collaboration between academics and librarians**

The lack of collaboration between academics and librarians has been identified as a major challenge involved in integrating the IL programme into academic programmes (Baro & Keboh 2012; Moyo & Mavodza 2016; Noe 2013; Omar, Haji & Mwitumbe 2014). For the purpose of this study, *collaboration* is defined as working together with

all the university stakeholders who may be involved in the provision of IL in academic programmes. Collaboration between academics and librarians is crucial, in that it could be used to align IL with disciplinary content (Noe 2013).

As observed by Moyo and Mavodza (2016), (UAE), there is a lack of collaboration between academics and librarians in the provision of IL programmes in South African and the United Arab Emirates (UAE) universities. Omar, Haji and Mwitumbe (2014) indicate that three universities in Zanzibar – i.e. the State University of Zanzibar, the University College of Education and the Zanzibar University – experience a lack of cooperation between academics and librarians. Academics tend to believe that the responsibility for developing IL lies with the librarians (Feekery, Emerson & Skyrme 2016). Although the academics are willing to assist in the offering of IL programmes, they feel that they do not have the necessary skills to do so (Bury 2016).

The lack of collaboration between academics and librarians may be caused by the tension about who should be responsible for teaching IL. Badke (2008 & 2010) notes that academics still tend to see information literacy instructors or librarians as intruders. Napp and Ballard (2013) concur that some academics are reluctant to change their modules to accommodate IL. In addition, Noe (2013:75) alludes that “librarians often do not perceive themselves as natural teachers, yet IL requires best practice in teaching”. Mitchell-Kamalie (2011) affirms that some academics at Community and Health Science at UWC (SA) questioned the librarians’ teaching capabilities.

In the 4IR, academics and librarians have a role to play in the integration of IL in academic programmes – irrespective of the practice of IL. Academics and librarians should collaborate to make a positive contribution to integrating the IL programme into academic programmes (Abubaka & Isyaku 2012).

This implies that both academics and librarians are the role players in the integration of the IL as a credit-bearing module into the academic programmes. Lindstrom and Shonrock (2006) affirm that the goal of integrating IL into academic programmes can only be achieved by collaboration between academics and librarians.

### **2.7.2 Inadequate human resources to teach IL**

Omar, Haji and Mwitumbe (2014) identify inadequate numbers of qualified IL specialists and the lack of background in teaching IL as some of the challenges facing IL at the universities. Furthermore, Baro & Zuokemefa (2011) identify the inadequate number of qualified IL instructors at 36 universities in Africa as a challenge.

Baro and Keboh (2012) identify the lack of proactive librarians, inadequate training for librarians and inadequate human resources to teach IL as a challenge faced by universities in SA, Botswana, Malawi, Nigeria and Uganda. However, the challenge of proactive and inadequate training could be avoided by providing professional development support to the librarians responsible for IL programmes. Chipeta (2010) states that librarians should be given the necessary support to teach IL effectively. Professional IL development among academics and librarians should be encouraged (Abubaka & Isyaku 2012). This points to the need to examine the requirements – i.e. both qualifications and work experience – for the personnel responsible for teaching IL at university level.

### **2.7.3 Informal IL programmes at universities**

According to O’Hanlon (2007), the lack of formal programme requirements for offering IL is one of the major challenges faced by universities. Most IL programmes at universities are offered as informal instruction, with no “dedicated funding, no formal training, no assessment tools, and no measures of performance” (Johnson 2018:98). The lack of time allocated to teaching IL skills and the nonchalant attitude of students towards attending IL classes are some of the challenges faced by universities in the UK (Baro, Seimode & Godfrey 2013). In addition, Lwehabura and Stilwell (2008) observe that IL programmes are not officially slotted included in the university timetable.

A programme that is not slotted into a university timetable should be referred to as an *informal programme*. Similarly, IL programmes offered at the UNIVEN are not officially slotted in the university timetable.

#### **2.7.4 Methods of offering IL programmes**

Finding ways to address the broader conceptions of offering IL is one of the major challenges faced by universities (Tewell 2018). However, studies recommend various methods of offering IL at universities. Davids and Omar (2018), Munn and Small (2017) and Mnkeni-Saurombe (2015:157) affirm that IL programmes may be offered as generic, embedded, integrated modules, or as stand-alone modules. Generic modules are not firmly integrated in the academic programmes and they may be less appropriate for instructing IL for lifelong learning (De Jager & Nassimbeni 2003). For the purpose of this study, generic and informal programmes are used interchangeably. Section 2.6.3 provides more information on informal modules.

Phelps and Hyde (2018) note that some universities have integrated IL into nursing and medical programmes. Sanches (2018) recognises IL as an essential skill to be integrated in education faculties. The integrated IL modules are an “extremely effective method of introducing students to print and electronic resources (e-resources) in accounting” (Jackson & Durkee 2008:88). Harris (2013) is of the opinion that the integration of IL into academic programmes requires greater scrutiny (Harris 2013). In addition, Mnkeni-Saurombe (2015:157) opines that “stand-alone IL programmes are not always as successful as those that are embedded into the curriculum”.

This study works on the assumption that offering integrated modules as stand-alone modules is an effective method of IL instruction for university students. Consequently, there is a need to scrutinise the challenges that may hinder the integration of IL as a credit-bearing module into the academic programmes at UNIVEN. Mullar (2014:96) advocates that a “properly integrated curriculum, which synergizes IL competencies with appropriate pedagogical approaches, would positively impact IL teaching and learning”.

In their study conducted in Zimbabwe, Tshuma and Chigada (2018:6) established that the IL programme had been embedded in the academic programmes at some of the institutions providing IL, and “it was pointed out that all is going well in terms of delivering IL because it is integrated into the curriculum, and it is mandatory for every student to attend the lectures for that course”. Davids and Omar (2018) state that

CPUT is in the process of integrating IL into its academic programmes. The scholars further state that “if not embedded in a course, IL may become superficial and students do not develop sufficient IL skills” (Davids & Omar 2018:4). In terms of CPUT, Lockhart (2015:23) also states that “to ensure that IL is embedded within the full curriculum of an academic programme, a departmental approach should be considered”. Lwehabura and Stilwell (2008:187) also assert that, “since the specific concepts and skills needed by students vary among disciplines it is desirable to teach IL as part of existing courses in the curriculum so that those skills can be applied to ‘real’ problems”.

### **2.7.5 Lack of homegrown IL standards**

Studies have shown that universities are implementing IL standards developed by the associations and committees based in countries such as the USA and the UK (Maybee, Doan & Flierl 2016; Swapna & Biradar 2017; Phelps & Hyde 2018). For example, universities in different countries have adopted the IL developed by the ACRL in the USA (Baro & Keboh 2012; Maybee, Doan & Flier 2016; Phelps & Hyde 2018; Shao & Purpur 2016; Swapna & Biradar 2017). In addition, the CILIP in the UK has developed the IL standards that are adopted by universities in other countries (Baro & Zuokemefa 2011; Onen 2015; Swapna & Biradar 2017; Ullah & Ameen 2014).

In the USA, most of the universities that have integrated IL in their academic programmes adopted the homegrown IL standards (Jackson & Durkee 2008). However, it has been revealed that South African universities lack homegrown IL standards (Moyo & Mavodza 2016). Abubaka and Isyaku (2012:39) declare that “librarians should be active and bold in their profession to call for full coverage of the content of information literacy instead of the use of library”.

This shows that librarians and the national library associations should start developing IL standards suitable for their own countries, and advocate the adoption of the homegrown IL standards. Yet, there is a lack of studies showing the homegrown IL standards adopted by the universities in SA.

### **2.7.6 Lack of IL policy in universities**

This study alludes that policy plays a highly significant role in the integration of a credit-bearing module into academic programmes. Andretta, Pope and Walton (2008) concur that the university policy should highlight the need for approaches to offering IL as a module. Yet, the lack of IL policy is one of the obstacles to the integration of IL in the academic programmes (Anyaoku, Ezeani & Osuigwe 2014; Moyo & Mavodza 2016; Onwuchekwa 2017).

Anyaoku, Ezeani and Osuigwe (2014) identify the lack of IL policy as one of the barriers to integrating IL into the academic programmes in the South-East Nigerian universities. Likewise, Onwuchekwa (2017) notes the “bureaucratic bottleneck” in the implementation of policies at the National Open University of Nigeria (NOUN) as one of the major challenges in the integration of IL into the university programmes.

Some of the universities in SA and the United Arab Emirates (UAE) are struggling to integrate IL into their academic programmes, due to a lack of IL policy (Moyo & Mavodza 2016). At CPUT in SA, it is anticipated that “IL will be fully embedded into curricula as stated by the institutional IL policy and for it to be part of a fully accredited course (Davids & Omar 2018:1). Mnkeni-Saurombe (2015:164) suggests the need for UNISA to “set a clear IL policy that will guide IL practices at the institution”, which implies that it could be easier to integrate IL as a credit-bearing module into the academic programmes, if the university has a clear IL policy.

### **2.7.7 Lack of resources**

Several studies indicate the lack of resources as one of the challenges faced in the offering of IL programmes in universities (Moyo & Mavodza 2016; Baro, Seimode & Godfrey 2013; Baro & Zuokemefa 2011).

In their study that compared the provision of IL skills to university students at undergraduate and graduate levels in SA and the United Arab Emirates (UAE), Moyo and Mavodza (2016) identified the lack of appropriate facilities and resources as a challenge. Likewise, a lack of facilities and resources in the offering of IL programmes was indicated as challenge at universities in Nigeria (Baro & Zuokemefa 2011). Furthermore, Baro, Seimode and Godfrey (2013) identify the time allotted to IL instructions as one of the challenges related to the lack of resources at UK universities.

Considering that UNIVEN is one of the historically disadvantaged universities in South Africa, the lack of facilities and resources required to offer IL programmes cannot be ruled out. Based on the findings of the above-mentioned studies, the existing IL programmes at UNIVEN need to be scrutinised to establish if the UNIVEN is experiencing the same challenges and to determine if the said challenges are barriers to the university offering IL programmes that are aligned with the recommended IL standards. Furthermore, as one of the historically disadvantaged universities, the UNIVEN is more limited in resources, compared to the University of Pretoria (UP). (Mukwevho & Togo 2020). Likewise, it has been commented that the lack of infrastructure in the historically disadvantaged universities in SA is a hindrance to the development of literacies (Sonn 2016).

## **2.8 Conceptual framework**

According to Ngulube (2018), conceptual or theoretical frameworks act as the glue that holds social research components together and, without this glue, the research design falls apart. These conceptual tools focus and direct empirical research; the implication is that theory is inextricably linked to research, and that conducting research without a conceptual or theoretical framework is impossible. A conceptual or theoretical framework improves the goals of research, and research without either is inadequate. Conceptual and theoretical frameworks can supplement and improve research.

Conceptual frameworks can assist researchers in reflecting on their work and developing a more critical sensitivity towards the activity of social research (Ngulube 2018). Erdelez, Basic and Levitov (2011:4) consider the possibility of each of the IL models adapting “information encountering and help students become more cognizant of handling such unpredictable opportunities within the research process”. Similarly, “more than one theoretical approach is necessary for a complete understanding of the issues involved, and for clarity, approaches are treated independently” (Taherdoost 2018:961).



Adopting more than one model is regarded as a conceptual framework (Sivathanu 2018). A conceptual framework helps researchers to identify certain standards and models that aid in integrating learning instructions into academic programmes (Tshuma & Chigada 2018). Studies show that several models exist to support the development of IL skills. Therefore, different models and frameworks may assist librarians and academics in integrating IL into academic programmes.

In this chapter, the following models were considered in guiding the research topic of integrating IL into academic programmes: the Interview, Design, Embed, Assess (IDEA) Model; IL Integration Model (ILIM); Analysis, Design, Development, Implementation and Evaluation (ADDIE) Model; the Association of College and Research Libraries (ACRL) standards; Big6; and SCONUL Seven Pillars of Information Literacy (Almelhi 2021; Tshuma & Chigada 2018; Baji, Bigdeli, Parsa & Haeusler 2018; Allen 2017; Swapna & Biradar 2017; Mullins 2016; Davis 2013; Summey & Valenti 2013). The IL models and frameworks can “help to frame IL programmes’ objectives, learning outcomes, course content and assessment criteria” (Swapna & Biradar 2017:36).

However, it should be highlighted that the emphasis will be placed on the models that were adopted for this study, such as the Association of College and Research Libraries (ACRL) and the Information Literacy Integration Model (ILIM). Before the discussing the adopted conceptual framework, a number of models relevant to understanding IL, particularly in higher education, are discussed.

### 2.8.1 IDEA model

IDEA is a “theoretical instructional design model for integrating IL in academic programmes” (Mullins 2016:55). The IDEA model is divided into the stages of interviewing, designing, embedding and assessing (Diekema, Hopkins, Patterson & Schvaneveldt 2020; 2019; Tshuma & Chigada, 2018:2; Mullins 2016; Summey & Valenti 2013):

Stage 1: Interview	Students are interviewed to identify the skills among them.
Stage 2: Design	The instructor is assisted in the design of the module according to the needs of the students.
Stage 3: Embed	Allows the IL programme to be embedded into other programmes or courses available.
Stage 4: Assess	Assessment is done to find out if the programme yielded positive results or not

Mullins (2016) applied the IDEA model in a pilot study to integrate IL into postgraduate academic programmes consisting of face-to-face and online classes. According to Mullins (2016:61), the application of the IDEA model “in its entirety is time-consuming, the return on investment is greatest when the model is applied to courses that: have significant research requirements; are frequently implemented; include motivated faculty; have reasonable development timeframes; may be applied to other closely related courses; have reasonable class sizes; have minimal face-to-face seat time and require greater virtual support”.

Diekema *et al* (2020 & 2019) used the IDEA model as one of the frameworks for integrating IL into evidence-based nursing programmes at four universities in the western United States (two public universities – Southern Utah University and the University of Utah – and two private universities – Roseman University of Health Sciences). The adoption of the IDEA model to improve IL instructions for nursing students demonstrated that “nursing students would benefit from developing critical thinking skills to quickly locate and evaluate information based on novel situations that prompt information seeking in their work” (Diekema *et al* 2019:81).

## 2.8.2 SCONUL Seven Pillars of IL

According to Bent and Stubbings (2011), the SCONUL Seven Pillars of IL was introduced by the SCONUL Working Group on IL in 1999. These SCONUL Seven Pillars of IL help librarians and academics with sufficient approaches for providing students with IL skills and increase the amount of information available to their students (Shukla 2021). The model defines the core skills, competencies, attitudes and behaviours essential to IL development in higher education, based on the following seven pillars: identity, scope, plan, gather, evaluate, manage, and present (Bent & Stubbings 2011):

<b>Identify:</b>	Individuals can identify a personal need for information.
<b>Scope:</b>	Can assess current knowledge and identify gaps in knowledge.
<b>Plan:</b>	Can construct strategies for locating information and data.
<b>Gather:</b>	Can locate and access the information and data they need.
<b>Evaluate:</b>	Can review the research process and compare and evaluate information and data.
<b>Manage:</b>	Can organise information professionally and ethically.
<b>Present:</b>	<p><i>Can apply the knowledge gained:</i></p> <ul style="list-style-type: none"> <li>• Presenting the results of their research;</li> <li>• Synthesising new and old information and data to create new knowledge;</li> <li>• Disseminating it in a variety of ways (Shukla 2021; Lockerbie &amp; Williams 2019; Bent &amp; Stubbings 2011:5–11).</li> </ul>

The framework for the Seven pillars of IL “ provides a progression from the basic skill of ability to recognise a need for information to the more sophisticated ability to synthesise and build upon existing information, contributing to the creation of new knowledge” (Johnston & Webber 2003). Studies show that the SCONUL Seven Pillars of IL have been applied in institutions of higher learning (Gowri & Padma 2018; Farzad, Mansou, Kambiz, Bahareh, Mohammad & Marjan 2014; Johnston & Webber 2003).

The SCONUL Seven Pillars of IL were used to test the level of IL skills among the engineering students of PSR Engineering College (India) and the results illustrate that the offered IL programmes should cover “the use of the internet, search engines and strategies, electronic journals, online databases, evaluation of online resources, and writing engineering projects by adopting appropriate methods” (Gowri & Padma 2018). At the Jundishapur University of Medical Sciences, the SCONUL seven Pillars of IL were used to “determine the ability rate of IL among health services administration students” and the study revealed the need to develop IL skills among the health sciences students (Farzad *et al* 2014).

### 2.8.3 ADDIE model

The ADDIE model was developed from the Instructional Systems Development (ISD) model, which was created to guide the development and delivery of military training, before Dick and Cary developed the ADDIE model as an essential model in the development of educational and training programmes in the early 1970s (Muruganantham 2015; Hannum 2005). The ADDIE model has five phases, namely: analysis, design, development, implementation and evaluation (Almelhi 2021; Allen 2017; Davis 2013).

Scholars such as Wegener (2022:4), Allen (2017:77–84) and Davis (2013) suggest that the phases in ADDIE model can be adjusted as follows:

Analysis phase:	Focuses on gaining an understanding of the target audience and the instructional goals.
Design phase:	Formulates and drafts learning goals and objectives.
Development phase:	Allows for the instruction design team to put the plans from the design phase into action.
Implementation phase:	Delivers the programme.
Evaluation phase:	Determines what has worked; what has not worked; and what needs to change.

The ADDIE model is one of the commonly recommended instructional design frameworks that may help academics and trainers to integrate modules into academic programmes. Davis (2013) remarks that ADDIE is a strategic plan for module design that can be used to integrate IL instructions and other instructional activities in academic programmes. Moreover, input from the stakeholders, such as students, academics and librarians, are required for adopting the ADDIE model for the successful integration of the new programme into existing programmes (Campbell 2014).

In a study conducted at the University of South Florida (USF), Allen (2017) proclaimed that the IL instruction team reviewed several models before opting for ADDIE as the preferred model for integrating IL instructions into academic programmes. Moreover, the ADDIE model was linked to the ACRL standards in the integration of IL into academic programmes at the USF. The adopted ADDIE model with the ACRL standards prompted the IL instruction team to suggest a combination of the ADDIE model and ACRL standards for future integration of other library instructions into academic programmes at USF (Allen 2017). The librarians at the Weill Cornell Medical College (USA) used the ADDIE model to redesign an evidence-based medicine course that was co-taught by physicians and librarians (Reinbold 2013). It was indicated that “the application of ADDIE can result in instruction that focuses on learning outcomes relevant to students, meets students’ needs, and facilitates active learning” (Reinbold 2013:244).

In Saudi Arabia, Almelhi (2021) examined the efficiency of the ADDIE model in an e-learning environment in developing creative writing in first-year level students at the English Department at the King Khalid University. The application of the ADDIE model at King Khalid University proved that it affected the students’ performance in creative writing (Almelhi 2021). This implies that the ADDIE model has been tested at universities in both developed and developing countries, thereby proving that the model can be applied in integrating new programmes into existing programmes.

## 2.8.4 Big 6

The Big 6 information problem-solving approach, which consists of six stages, is an information search process model that states how people of all ages solve an information problem. Mike Eisenberg and Robert Berkowitz created this model as an approach to information problem-solving and a set of skills that provides a strategy for effectively and efficiently meeting information needs (Arroyo 2013; Eisenberg 2003). The Big 6 combines information searches and use skills with technological tools in a systematic process for locating, using, applying and evaluating information for specific needs and tasks (Swapna & Biradar 2017).

The Big 6 model is presented in the following six steps:– task definition; information seeking strategies; location and access; use of information; synthesis and evaluation – with each step being composed of two sub-steps or components (Rahmah 2020; Swapna & Biradar 2017; Bilawar & Pujar 2011; Erdelez, Basic & Levitov 2011):

<b>Task definition:</b>	<ul style="list-style-type: none"><li>• Recognising the existence of an information need;</li><li>• Defining the problem;</li><li>• Identifying the types and amount of information needed.</li></ul>
<b>Information seeking strategies:</b>	<ul style="list-style-type: none"><li>• Considering possible information sources;</li><li>• Developing a plan to find the sources.</li></ul>
<b>Location and access:</b>	<ul style="list-style-type: none"><li>• Locating information from a variety of resources;</li><li>• Accessing specific information in individual resources.</li></ul>
<b>Information use:</b>	<ul style="list-style-type: none"><li>• Reading, viewing and listening to the information to determine its relevance;</li><li>• Extracting the relevant information.</li></ul>
<b>Synthesis:</b>	Organising and communicating the results of the information problem-solving effort.

**Evaluation:**

- Determining how well the final product meets the original task;
- Establishing how well students conducted the information problem-solving process (Rahmah 2020; Swapna & Biradar 2017; Eisenberg, Johnson & Berkowitz 2010: 24–26).

The Big 6 model advocates students taking specific steps in a particular sequence to solve the problem (Atjo & Pratama 2017; Johnston & Webber 2003). This IL model is used to assess if students have the skills to formulate the problem by using an information search strategy that includes determining and selecting the appropriate resources; allocating and accessing the information that is required; using the information, which can be done by reading, hearing, or touching; synthesising the information, which can be done by organising and presenting the information; and, finally, evaluating the information in terms of effectiveness and process efficiency (Atjo & Pratama 2017).

Toteng, Hoskins and Bell (2011) adopted the Big 6 model to examine the benefits of the IL programmes offered to undergraduate law students at the University of Botswana. The study established that most undergraduate law students at the University of Botswana rated the IL programme as “having been beneficial in equipping them with the required skills to search and use the databases (Toteng, Hoskins & Bell 2011: 72). However, Rahmah (2020) adopted the Big 6 model to investigate the level of IL at the students of Universitas Negeri Padang and found that students’ IL skills were at a low level.

### **2.8.5 IL Integration Model (ILIM)**

The IL Integration Model (ILIM) is “based on sociocultural theories and practitioners’ experiences in IL curriculum integration in higher education”, which was developed by Li Wang in 2010 (Wang 2014a:3). The ILIM, which has been used or adopted at institutions of higher learning to integrate IL into academic programmes, can be applied in different undergraduate academic programmes (Wang 2011).

The ILIM represents the process (*what*), people (*who*) and resources (*how*) involved in the integration of IL into academic programmes. These three elements – what, who and how – aim at producing an information literate person (Wang 2011 & 2014b).

As illustrated in Figure 2.1, the three inter-connected ILIM elements represent the processes, people and resources leading to the integration of IL in academic programmes. The guidelines of the ILIM show what (IL content) the university wants the students to be taught in IL programmes, and what IL students should be able to do after the programmes (Wang 2011). The IL Curriculum Working Group referred to all stakeholders to be involved in the integration of IL in academic programmes. Stakeholders, such as librarians, academics and policymakers, play a significant role in the integration of IL in academic programmes (Wang 2011).

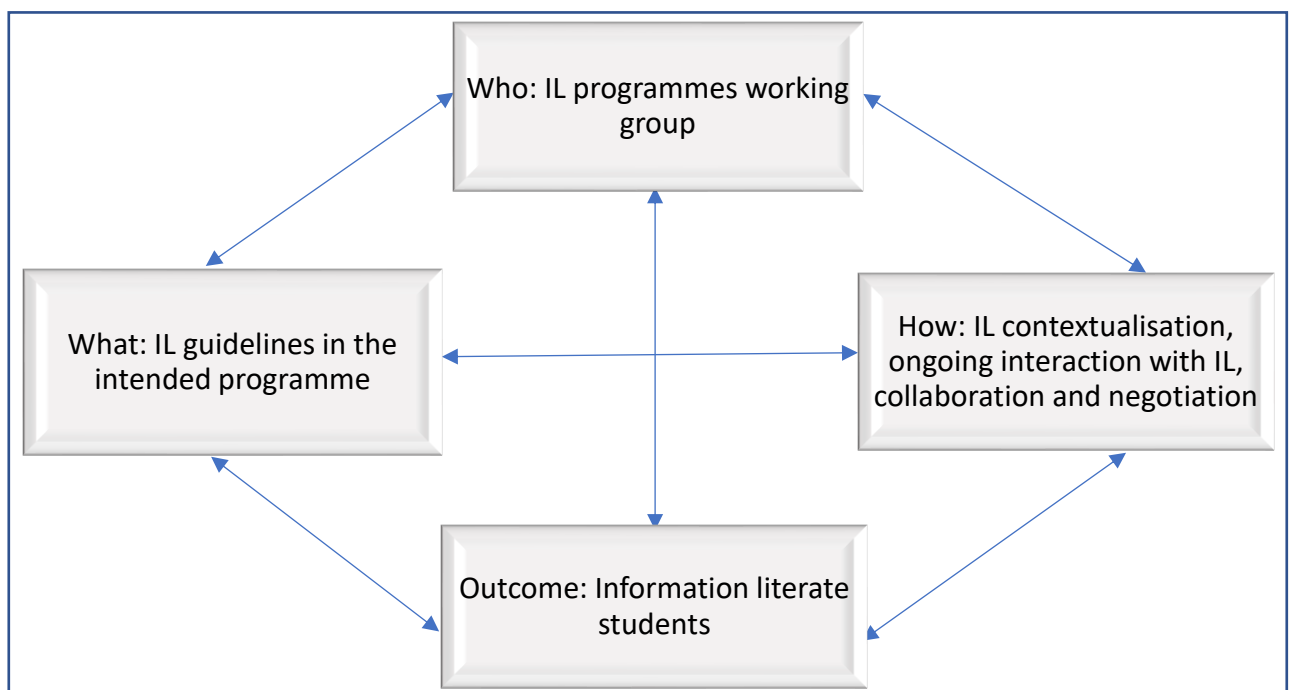


Figure 2.2: ILIM

(Source: Wang 2011:707)

As advocated by Johnston and Webber (2003:343), “IL may be taught and learnt at a deeper level”, if integrating IL into the academic programmes is conducted through a partnership with academics.



Moreover, Bawack & Kala-Kamdjoug (2020:12) allude that the university's top management should understand "the information needs of the students well enough to design the right training curricula, design an adequate information system, secure the right budget, and enforce strong information cultures in their institutions". This implies that universities should consider using effective strategies that minimise learning disruption in IL content.

The ILIM was developed for integrating IL into undergraduate academic programmes at the University of Auckland, New Zealand (Moselen & Wang 2014). In addition, Wang (2011) reports on the successful implementation of ILIM in the integration of IL in undergraduate academic programmes at three Australian universities. Moselen and Wang (2014) adopted ILIM in assessing the evolution of the subject librarians' role from being service providers to educators who are actively involved in academic programmes. It was discovered that the subject librarians were "uncertain how to promote the integration of IL to the academics and that they (subject librarians) felt they lacked the pedagogic knowledge and skills" to integrate IL into the academic programmes (Moselen & Wang 2014:116). Wang (2011) concludes that, if the ILIM can be adapted efficiently, it provides a powerful tool for the integration of IL into academic programmes in different disciplines.

#### **2.8.6 Association of College and Research Libraries (ACRL) IL standards**

The ACRL standards, which were developed evolved in 1986 to address developing concerns in academic libraries (Walch 1993), consist of the following five IL standards: (i) determining the nature and extent of the information needed; (ii) accessing needed information effectively and efficiently; (iii) evaluating information and information sources critically and incorporating selected information into a personal knowledge base; (iv) using information effectively to accomplish a particular purpose; (v) understanding the economic, legal and social issues surrounding the use of information; and (vi) accessing and using information and ethically" (Swapna & Biradar 2017; Tiemensma 2012:157–158). This entails that the proper application of the ACRL standards in IL programmes provides students with the ability to gain control over their interaction with the information available in different sources.

In their study, Baro, Seimode and Godfrey (2013) adopted the ACRL standards to compare the IL instructions offered at academic libraries in the UK, USA and Nigeria. The findings revealed that IL instructions offered in line with the ACRL standards could be achieved in academic libraries in developing countries, which implies that the ACRL standards apply to the historically disadvantaged university in SA. In the USA, Emmett and Emde (2007) adopted the ACRL standards to assess the IL skill level among the Chemistry graduates at the University of Kansas over a three-year period and discovered that the ACRL standards could be appropriate to any discipline and a variety of IL instructional settings.

The Durban University of Technology (SA) adopted the ACRL standards in integrating IL into the General Education Module (GEM) because of its deeper levels support enhanced teaching, learning and research (Neerpath 2016). Still, in SA, Fullard (2016) adopted ACRL standards to develop a short course to help academics to integrate literacies within the academic programmes at the University of Western Cape (UWC). Fullard (2016) indicated that the ACRL standards were relevant for collaboration between academics and librarians in literacies instructions in academic programmes. This implies that some of the universities in SA have already applied the ACRL standards, in an attempt to integrate instructions such as IL into academic programmes.

Several studies agree that a well-developed IL programme has the potential to develop lifelong learners, who are critical thinkers (Onyancha 2020; Mnkeni-Saurombe 2015; Favaro 2012; Tiemensma 2012; Lwehabura & Stilwell 2008). For Neerpath (2012:259), IL integration in an academic programme has the potential to generate new ideas in a subject discipline and to improve the IL skills of students and academics. In her study, Neerpath (2012:258) explains how academics and subject librarians collaborate to integrate IL into academic programmes to help improve the IL skills of undergraduate students. In Neerpath's view (2012), academics skilled in IL may become library champions and ambassadors in integrating IL into the academic programme and in cascading IL skills down to students.

Given the evolving trend of the IL concept and the dearth of resources needed to develop IL skills in developing countries (Lwehabura & Stilwell 2008), this study aimed at understanding whether the UNIVEN IL programme encompasses the ACRL competencies needed to develop an information literate student and academic of the 21<sup>st</sup> century; to identify the opportunities and challenges experienced; and to establish what can be done to improve the situation.

As mentioned earlier, only a few models that are important in understanding IL in higher education are discussed. Although the IL models presented here are international models and standards, there has been increasing interest in some of those IL models and standards in SA. Moreover, several studies suggest that the instruction of IL should be integrated in the academic programmes by using the IL models and standards. In the next section, the ILIM and ACRL models and standards are explained as the foundation of the conceptual framework of this study.

## **2.9 Rationale for adopting ILIM and ACRL**

As noted earlier, the ILIM model is based on the principle of what the students must be taught in IL programmes, by whom, how and what information literate students should be like (Wang 2011). The ACRL model comprises the following five IL standards:

- i) “Determining the nature and extent of the information needed;
- ii) Accessing needed information effectively and efficiently;
- iii) Evaluating information and its sources critically and incorporating selected information into a personal knowledge base;
- iv) Using information effectively to accomplish a specific purpose; and
- v) Understanding the economic, legal and social issues surrounding the use of information and accessing and using information ethically” (Swapna & Biradar 2017; Tiemensma 2012:157–8).

Therefore, the rationale for adopting these models was to establish whether the existing IL programmes at the UNIVEN meet the principles of the ILIM and ACRL models and if gaps have been identified; and what can be done to improve the IL programme and its integration into the academic programmes.

The ILIM model was used in this context to understand the views of deans of the academic departments and of the librarians responsible for IL instructions regarding the importance of integrating IL as a credit-bearing module into first-year academic programmes at the UNIVEN.

Derakhshan and Singh (2011:218) emphasise that “more knowledge is needed to integrate IL into the academic programmes to prepare information literate students who can effectively learn IL skills and research strategies to be lifelong learners”. This implies that the adopted conceptual frameworks in the integration of IL into the academic programmes at universities should be concerned with who are responsible for offering the IL; how the IL programmes are offered; and what is offered as IL content. Therefore, consideration of the ILIM and ACRL cannot be undermined in the integration of IL as a credit-bearing module in academic programmes.

In addition, it is significant for this model to examine how those involved in the existing IL programmes are contextualising the IL guidelines. In addition, this model aims at exploring the existing IL programmes; enhancing the IL programmes for first-year level academic programmes; and addressing the challenges involved in the integration of IL into the first-year academic programmes at the UNIVEN. Furthermore, the outcome of the intended model is to develop information literate students, who know when there is a need for information; who are able to identify, locate and effectively create information; and who can use and ethically communicate information.

This model shows that different university stakeholders should be involved in the process of integrating IL into the university curriculum. In this study, it was perceived that ILIM could be useful to accommodate the research objectives and the IL learning outcomes based on ACRL IL standards, which stipulate that a literate student should be able to find the information needed, evaluate information sources, and use the information for a specific purpose in an ethical manner. Therefore, it is not only the responsibility of the UNIVEN library to integrate a successful and sustainable IL credit-bearing module into the academic programmes.

In the context of this study, the following elements represent the IL content: (i) determination of information; (ii) effective search strategies; (iii) evaluation of information; (iv) economic, legal and social issues around the use of information; and (v) communication and presentation of information.

The ACRL standards are important for this study, as they are employed to determine if the existing IL programmes at the UNIVEN familiarise students with recognising the need for information; finding information effectively and efficiently; evaluating the usefulness and relevancy of information; understanding ethical and legal issues about the use of information; and documenting information and creating new knowledge. Several studies assert that the ACRL standards are suitable for assessing the level of IL among university students (Swapna & Biradar 2017; Schulte & Knapp 2017; Neerpath 2016; Emmett & Emde 2007). In considering ACRL competencies, ACRL is underpinned by both the social sciences and social justice frameworks of mixed methods research. The reason for using this approach is that the study aimed at establishing whether the IL programme (independent variable) affected any behavioural changes (IL competencies) of first-year university students at a historically disadvantaged institution (where social justice needs to prevail to close the inequalities created by the previously segregated education system).

Notably, the ACRL standards are not suitable for one-shot IL instruction and, therefore, full implementation of the ACRL standards requires a restructuring of the way in which IL programmes are integrated into the academic programmes (Gross, Latham & Julien 2018). The existing IL programmes offered to the first-year level students in the Foundation Phase in the School of Management Sciences, the Nutrition Department in the School of Health Sciences, and the School of Law at the UNIVEN are not offered as a one-shot slot. Therefore, the ACRL standards are applicable in integrating IL into the first-year level academic programmes at the UNIVEN. The ACRL standards are appropriate to be used as the guidelines for “the creation of valid and reliable assessment tools to measure student IL competencies” (Willson & Angell 2017:105).

## 2.10 Summary

Having pondered on the discussions and conclusions of other researchers, it became clear that the integration of IL programmes as credit-bearing modules into academic programmes required proper investigation. Well-developed IL programmes at universities benefit both academics and librarians. The literature on IL demonstrates that collaboration between academics and librarians is required to enhance IL programmes at universities. Furthermore, the existing literature demonstrated that, in order to find effective solutions to the challenges in offering IL programmes at universities, the views of other stakeholders should be taken into consideration. It seems that different university stakeholders should be involved in enhancing the provision of IL programmes, rather than leaving it to the librarians. In the context of integrating IL into academic programmes, it is anticipated that the university policy-makers and other stakeholders such as librarians and academics should focus on developing IL policy and standards that are relevant for the local needs. Finally, the research findings may have the potential to inform other universities that share the same characteristics as the UNIVEN and enable them to integrate IL into their first-year level academic programmes.

As South African universities do not have IL standards, they should adhere to international standards in developing conceptual frameworks (Rantlha 2017). Furthermore, considering the IL models and standards adopted by other researchers, it was clear that the use of a combination of models and standards could be applicable in integrating IL as a credit-bearing module into academic programmes. In addition, some of South African universities adopted international standards to integrate IL into their academic programmes (Rantlha 2017; Neerputh 2016; Fullard 2016). The achievement of integrating IL as a credit-bearing module at UNIVEN could be achieved through the adoption of ACRL standards and the ILIM as a conceptual framework. "Diverse models and approaches to IL instruction are important, with some academics being open to co-teaching with librarians or other literacy specialists, while others are not" (Bury 2016:249). Yet, South African universities are still struggling to integrate IL into academic programmes. Chapter 3 presents the research methodology that was employed in the study.

## CHAPTER 3: RESEARCH METHODOLOGY

### 3.1 Introduction

Applied research and basic research are identified as the main two types of research. Applied research attempts to improve the researcher's understanding of the investigated problem and provide them with the solution to the investigated problem (Kiruna & Kubina 2017). This implies that applied research generates new knowledge and contributes to theory. The primary focus of applied research is collecting and generating data to further the researcher's understanding of the problems. Basic research, which is theoretical in nature, is generally concerned with hypothesis testing, new knowledge production, and theory construction (Blanche, Durrheim & Painter 2006). This study employed applied research, as it explored and contributed to the expansion of existing knowledge, while providing solutions to the challenges faced by universities in integrating IL as a credit-bearing module into academic programmes. Therefore, the results of the current study can be used by the university policy-makers in the integration of IL into the academic programmes.

This chapter details the research methodology used to investigate the opportunities and challenges involved in integrating IL as a credit-bearing module into the first-year level academic programmes at the UNIVEN. Strang (2013) defines *methodology* as the procedure followed in conducting research. It has been indicated that Ioannidis, Greenland, Hlatky, Khoury, Macleod, Moher, Schulz & Tibshirani (2014) point out that inappropriately conducted research may produce misleading results. This section signifies the research paradigm, research design, research methods and data analysis techniques used to achieve the research objectives of the study.

### 3.2 Research paradigm

A research paradigm is the “conceptual lens through which the researcher examines the methodological aspects of their research project to determine the research methods that will be used and how the data will be analysed” (Kiruna & Kubina 2017:26). The dominant research paradigms include positivism, interpretivism, pragmatism and the critical research paradigm (Rehman & Alharthi 2016; Kiruna & Kubina 2017).

This study employed the pragmatist research paradigm to explore the opportunities and challenges involved in integrating IL as a credit-bearing module into the first-year level academic programme at the UNIVEN. Kiruna and Kubina (2017) maintain that a pragmatic paradigm allows the use of mixed methods to determine the actual behaviour of participants. This opted for pragmatist research paradigm because the study opined that the opportunities of the IL content and the challenges faced by universities in integrating IL modules into the academic programmes can be explored by using different types of research approaches and different techniques of data collection. According to Creswell (2009: 11; 2014: 11) pragmatist research paradigm provides the researchers with the opportunities of applying “multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis”. In addition, Creswell and Poth (2018: 27) assert that in pragmatist research paradigm, researchers have freedom “to choose the methods, techniques, and procedures of research” to answer their research questions.

### **3.2.1 Philosophical perspective of the study**

Studies show that there are critical issues such as ontology, epistemology, methodology, and axiology that need to be considered in the dominant research paradigms (Creswell & Poth 2018; Blanche, Durrheim & Painter 2014; Du Plooy-Cilliers, Davids & Bezuidenhout 2014). This study considered as ontology, one of the major philosophical perspectives. Ontology explained as “the study of being, existence or reality, and includes the assumptions that are made about certain phenomena (Du Plooy-Cilliers *et al.*, 2014: 23). It is concerned with the type of universe under consideration, the state of reality, and the structure of realism. “Ontology specifies the nature of reality that is to be studied, and what can be known about it” (Blanche et al., 2014). Likewise, ontology is more concerned with the issues that researchers opine that they exist in the world, and how those issues should be researched (Thomas 2013). This study observed that IL exists as informal programmes in most of the institutions of higher learning in African countries. Institutions of higher learning in most of African countries need to know what is required to integrate IL into academic programmes, who should be involved in the process of integrating IL into academic programmes, and how could IL be integrated as a credit-bearing module into academic programmes.



### **3.3 Research approach**

The mixed methods research approach was employed in this study. The mixed methods research approach involves the researcher combining elements of the qualitative and quantitative research approaches (Brink, Van der Walt, Van Rensburg 2012; Creswell & Creswell 2018; Kowalski, McHugh, Sabiston & Ferguson 2018; Urban & Van Eeden-Moorefield 2018).

#### **3.3.1 Mixed methods research approach**

The qualitative research approach, which is mainly concerned with the behaviour or experience of participants, requires a close relationship between the researcher and participants, whereas the quantitative approach deals with how many participants have a particular opinion and, therefore, it does not require a close relationship between the researcher and participants (Kothari & Garg 2014; Kumar 2014; Daniel 2016). The quantitative research approach is less time-consuming than the qualitative research approach, and its results can be generalised to an entire population (Rahman 2017). In addition, Urban and Van Eeden-Moorefield (2018) remark that there is a low level of interaction between the researcher and participants in the quantitative approach. However, as observed by Babbie (2016), each research approach has its strengths and weaknesses.

The mixed methods research approach is used to determine if the quantitative and qualitative results validate each other (Bryman 2012; Watkins & Gioia 2015). Moreover, the mixed methods research approach is suitable for the studies involving participants from any educational level, language and culture (Mitchell-Kamalie 2011). UNIVEN academics, librarians and students were involved in the process of exploring the opportunities of the IL content and the challenges faced in integrating IL into the academic programmes. Both qualitative and quantitative research methods were used to collect data from UNIVEN academics, librarians and first-year students in the School of Law, first-year students in the Department of Nutrition, as well as first-year students in the Foundation Phase in the School of Management Sciences.

### **3.3.2 Rationale for using mixed methods**

This study opted for mixed methods by using the quantitative method, complemented by the qualitative method. Qualitative methods can be integrated at different points throughout a study. A particular qualitative method may be included at the start of a study as formative research and to identify the characteristics and behaviours of target populations. The qualitative approach can also be integrated at the end of the study to explain quantitative results. The use of mixed method can be well executed in convergent research design. A convergent research design requires the researcher to conduct the quantitative and qualitative elements concurrently in the same phase of the research process, to weigh the methods equally, to analyse the two components independently, and to interpret the results together (Creswell & Pablo-Clark 2011).

The qualitative research method was used, because it allowed an in-depth interviewing process with the participants (Creswell & Creswell 2018). An in-depth interview can be either unstructured or semi-structured and serves to collect data on personal experiences and individuals' perspectives on particular topics. Therefore, this study used the qualitative research method to interview the early adopter academics. These academics were three (3) academics (lecturers) from three departments that had already integrated IL programmes into their academic modules at the UNIVEN. The aim was to elicit information on the advantages and disadvantages of integrating IL into academic programmes. The qualitative research method was also used to interview the deans of schools and information librarians to determine their perspectives on the integration of IL into first-year academic programmes.

The quantitative research method was used to quantify the number of positive versus negative feedback from students and non-adopter academics about the IL programmes offered to first-year level students. Moreover, when mixed methods research is used, the findings complement one another throughout the data interpretation stage (Creswell 2014). The non-adopter academics were those academics who had not yet accommodated IL into their academic modules, whereas the adopter students were the first-year level students who attended IL programmes at the School of Law, the Foundation Phase in the School of Management Sciences, and Nutrition Department in the School of Health Sciences at the UNIVEN.

### **3.4 Research design**

Research design is defined as a plan or structure of “how the research will be conducted and includes ideas about measurement, sampling, data collection, and data analysis methods that may be used in a particular type of research” (Babbie & Mouton 2001; Bertram & Christiansen 2014; Kumar 2014). There are several mixed-methods designs, including the explanatory, exploratory, triangulation and embedded designs (Venter, Van Zyl, Van Rensburg, Joubert, Pellissier & Stack 2017).

This study used a convergent research design to explore the opportunities and challenges faced by the UNIVEN in the integration of IL as a credit-bearing module into first-year academic programmes. In convergent design, a study gathers both quantitative and qualitative data, analyses each individually, and then compares the results to establish if the findings confirm or disconfirm each other (Creswell 2014 & 2015; Creswell & Creswell 2018).

In this study, the collected qualitative data from the deans of schools, early adopter academics and information librarians was analysed to confirm the findings of the quantitative data collected from non-adopter academics and adopter students. This was conducted to gain insight into existing IL programmes and whether there was a need for the full integration of IL into other departments that had not yet adopted the IL programme or integrated it into first-year academic programmes.

### 3.4.1 Study population and sampling procedures

Babbie (2013), Okeke and Van Wyk (2015) and Polit and Beck (2014) define the study *population* as the mass of participants or respondents selected by the researcher. The target population of this study was the deans of schools, early adopter academics, non-adopter academics, information librarians, and adopter students at the UNIVEN. Table 3.1 shows the target population distribution involved in this study.

Table 3.1: Accessible population distribution of respondents

Target group	Population
Deans of schools	8
<i>Early adopter academics:</i>	
• School of Law;	1
• Foundation Phase in School of Management Sciences;	1
• Department of Nutrition in School of Health Sciences).	1
Non-adopter academics	364
Information librarians	6
<i>Adopter students:</i>	
• School of Law;	274
• Foundation Phase in School of Management Sciences, Department of Nutrition in School of Health Sciences.	106
	30
<b>TOTAL</b>	<b>791</b>

### 3.4.2 Sample and sampling method

Okeke and Van Wyk (2015), Campbell (2016) and Kowalski *et al.* (2018) define a sample as a group of participants selected from a study population. It is arguably less costly and less time-consuming to survey a sample than to survey an entire population (Williamson 2018 cited in Williamson & Johanson 2018).

#### 3.4.2.1 Sampling method for quantitative study

Thomas (2013) emphasises that sampling is a process of selecting a subset from the population of a study, so that individuals represent the larger group from which they have been selected. Probability and non-probability sampling are the two basic types of sampling (Babbie 2013; Williamson 2018 cited in Williamson & Johanson 2018).

Sample techniques, such as simple random sampling, stratified random sampling, cluster sampling, and systematic sampling are examples of probability sampling, which is mainly used in quantitative studies (Babbie 2013 & 2016:206–209). Probability sampling ensures that each element has a better chance to be included in the sample (Somekh & Lewin 2005; Grove, Gray & Burns 2015).

Stratified random sampling was adopted to ensure that all non-adopter academics at the eight schools at the UNIVEN were represented in this study. The sample of this study was stratified into strata according to schools. Brink, Van der Walt & Van Rensburg (2012); Creswell (2014) and Grove, Gray & Burns (2015) indicate that stratified random sampling involves the sample being divided into small groups, known as *strata*, to ensure that all categories in a population are represented. Likewise, stratified random sampling was used to ensure that adopter students from the School of Law, the Foundation Phase in School of Management Sciences, and the Department of Nutrition in the School of Health Sciences were presented in this study. Brink, Van der Walt & Van Rensburg (2012:137) mention that demographic characteristics such as age, gender, educational level and income level are examples of variables that may be used as criteria for dividing a sample or a population into strata.

This study used the following eight schools at the UNIVEN as criteria for dividing 40 non-adopter academics into strata: the School of Agricultural Sciences, School of Education, School of Environmental Sciences, School of Health Sciences, School of Human and Social Sciences, School of Law, School of Management Sciences, and the School of Mathematical and Natural Sciences. At the time of the research, the IL programme was only integrated at the Department of Nutrition in the School of Health Sciences and at the Foundation Phase Level in the School of Management Sciences. In the School of Law, IL was compulsory for all first-year level students. However, the School of Health Sciences, School of Law and the School of Management Sciences were also included, although they had integrated IL into some of the programmes in departments.

### **3.4.2.2 Sampling method for the qualitative study**

Kumar (2019) asserts that all non-probability sampling methods are suitable for use in qualitative studies. The non-probability sampling methods in the qualitative study are purposive sampling, judgemental sampling, expert sampling, convenience sampling, accidental sampling and snowball sampling" (Babbie 2013 & 2016; Du Plooy-Cilliers, Davids & Bezuidenhout 2014; Kumar 2019).

This study adopted stratified random sampling and purposive sampling methods. Purposive sampling is used when researchers choose the participants for a particular purpose (Monette, Sullivan, Dejong & Hilton 2014; Du Plooy-Cilliers, Davids & Bezuidenhout 2014; Lochmiller & Lester 2017; Kumar 2019). This study intentionally selected the deans of schools and information librarians as a way of collecting information on the integration of IL as a credit-bearing module in the respective programmes. Sharma, Amir, Veeriah, and Kannan (2016) assert that deans of schools are responsible for coordinating the smooth functioning of the academic programmes offered within their schools at a university. Furthermore, the deans are responsible for setting the priorities and directions for the schools and communicating the goals of the schools to academics (Sharma *et al* 2016).

Because the researcher has been employed as UNIVEN information librarian for more ten years, a claim can be made that information librarians have strived to maintain awareness of IL-related issues, curricular support and educational technologies (Ndou 2020). They also served as advocates for the schools within the library. Therefore, it was important to include all the information librarians purposively in the sampling procedure.

### **3.4.2.3 Sample size**

It has been argued that quantitative and qualitative studies do not use the same sampling strategies (Malterud, Siersma & Guassora 2016; Lochmiller & Lester 2017). Dantzker, Hunter and Quinn (2018) suggest that pre-existing tables can be used for determining sample size. Sim, Saunders, Waterfield and Kingstone (2018:1) identify the following four distinct approaches to determining sample size in the qualitative study: rules of thumb, conceptual models, guidelines derived from empirical studies,

and statistical methods. Kumar (2019:311–112) alludes that "sample size and sampling strategy do not play a significant role in the selection of a sample in a qualitative study". Yin (2016:98) affirms that "there are no rules for sample size in the qualitative study". As the qualitative method allows for an in-depth interviewing process with the participants, it is more time-consuming and resource-intensive and, therefore, a smaller sample size would be acceptable.

As indicated in Table 3.2, stratified sampling method was used to select 40 non-adopter academics, five (5) each from the eight schools at the UNIVEN. Furthermore, a stratified random sampling method was used to identify 60 adopter students: 20 first-year students in the School of Law; 20 first-year in the Department of Nutrition in the School of Health Sciences; and 20 first-year students in the Foundation Phase in the School of Management Sciences. Purposive sampling was used to identify three (3) early adopter academics, eight deans of schools and six information librarians at the UNIVEN.

*Table 3.2: Sample size*

<b>Sample group</b>	<b>Population</b>	<b>Quantitative sample</b>	<b>Qualitative sample</b>
Deans of schools	8	0	8
Early adopter academics	3	0	3
Non-adopter academics	364	40	0
Information librarians	6	0	6
Adopter students	410	60	0
<b>TOTAL</b>	<b>791</b>	<b>100</b>	<b>17</b>

### **3.5 Pilot study**

Bertram and Christiansen (2014), Du Plooy-Cilliers, Davids and Bezuidenhout (2014), and Lochmiller and Lester (2017) assert that a pilot study should be conducted to test the data collection instrument and to obtain comments and suggestions for modifying the questions. Du Plooy-Cilliers, Davids and Bezuidenhout (2014:152) further instruct researchers to "always pre-test questionnaire to see whether it is understandable and clear".

In this context, a pilot study was conducted to collect data from one early adopter academic in the Foundation Phase in the School of Management Sciences, a dean in the School of Education, and one information librarian. The aim of the pilot study was to obtain the perceptions of the IL programme of the early adopter academics and information librarians to determine the need for full adoption of the IL programme. In addition, it was conducted to determine the relevancy of questions asked, the time taken to answer the questions, and whether similar questions could be used with the other groups who were to be interviewed. The findings from a pilot study revealed a positive perception from the early adopter academic, dean of the School of Education, and information librarian towards the integration of IL into first-year level academic programmes at UNIVEN.

### **3.6 Data collection**

Collecting relevant data is one of the requirements for answering the research question successfully (Somekh & Lewin 2005; Grove, Gray c & Burns 2015). Arguably, both qualitative and quantitative studies need to collect, analyse and interpret the collected data to answer the research questions. However, the methods of collecting, analysing and interpreting data are specific to each study type (Creswell & Creswell 2018). Grove, Gray and Burns (2015) indicate that data collection methods need to be clearly described.

Dantzker, Hunter & Quinn (2018) mention questionnaires, interviews, observation, analysis of secondary data and content analysis as data collection methods used in research. Additionally, Watkins and Gioia (2015) identify mail, telephone, in-person interviews and the internet as some of the quantitative data collection methods.

This study used both qualitative and quantitative data collection methods to collect the primary data. It is worthwhile for a study to use both qualitative and quantitative data collection methods to strengthen the weakness of each method (Creswell & Creswell 2018). Because both qualitative and quantitative data collection methods have weaknesses, the use of both qualitative and quantitative data makes it easier to explain and justify the results of the study (Bryman 2012; Creswell 2013; Thomas 2013; Creswell & Poth 2018).



### **3.6.1 Quantitative data collection method**

Due to the COVID-19 pandemic lockdown, this study used questionnaires with mainly closed-ended questions to collect quantitative data from 40 non-adopter academics and 60 adopter students using online surveys. The links to Google Forms were sent to the non-adopter academics and adopter students via the university e-mail addresses. Dantzker, Hunter & Quinn (2018) aver that the researcher does not need to be present when collecting data from the participants or respondents. In this study, the use of questionnaires was deemed useful to both the researcher and the respondents, because the respondents were able to complete the questionnaires in their own time and space, without interference by the researcher. The researcher's absence when the respondents were completing the questionnaire also enabled the non-adopter academics and adopter students to reveal their preparedness in integrating IL as a credit-bearing module into first-year level academic programmes at the UNIVEN.

However, as pointed out by Kumar (2019:227), the use of questionnaires in data collection has several weaknesses, such as "low response rate, self-selecting bias, lack of opportunity to clarify issues, no opportunity for spontaneous responses, the response to a question may be influenced by the response to other questions, a response cannot be supplemented with other information". The advantage of using Google Forms is that the respondents just have to click the "submit" icon on their devices to submit the completed questionnaires. In addition, follow-up e-mails were sent as reminders to maximise the response rate and to provide opportunities to clarify the issues that the respondents might have been encountered.

### **3.6.2 Qualitative data collection method**

Due to the COVID-19 pandemic lockdown, which required social distancing, the qualitative data was collected online by sending the interview guides via Google Forms links to the early adopters, deans of schools and the information librarians. The review of existing records, individual interviews, focus groups and participant observations are commonly used methods for collecting qualitative data (Watkins & Gioia 2015). This study used both unstructured and semi-structured interviews to collect qualitative data. For the collection of qualitative data, this study used the unstructured interviews

to interview the deans of schools as a way of exploring and describing the challenges faced in integrating IL as a credit-bearing module into first-year academic programmes. An unstructured interview generates rich data, because the participants usually explore their thoughts and interests in depth (Doody & Noonan 2013). However, the semi-structured interview was conducted with the early adopters and information librarians.

### **3.7 Data analysis and presentation**

Studies identify the following seven types of statistical analysis: descriptive, inferential, predictive, prescriptive, exploratory, causal and mechanistic analysis (Lochmiller & Lester 2017; Burton, Brundrett & Jones 2014;). This study used the descriptive statistical analysis by means of the latest version of the Statistical Package for Social Sciences (SPSS) to analyse the collected quantitative data from UNIVEN non-adopter academics and adopter students. As indicated by Lochmiller and Lester (2017), SPSS is one of the computer software packages that can be used to analyse quantitative data. Researchers can use descriptive statistics to summarise quantitative data of any size (Knapp 2018). This study used descriptive statistical analysis to quantify the participants' positive and negative feedback about the IL programmes offered to first-year level students.

There are several computer software packages available for analysing qualitative data (Creswell 2014). This study used Google Forms and SPSS to analyse the collected qualitative data from the early adopter academics, deans of schools and information librarians. This study used the qualitative data results (Google Forms and SPSS) to enhance and clarify the quantitative data.

Okeke and Van Wyk (2015) assert that data can be best presented in graphs and tables. In addition, displayed tables, graphs and figures can effectively define information correlated to the collected primary data (Brink, Van der Walt & Van Rensburg 2012; Greenfield & Greener 2016). Reay, Zafar, Monteiro and Glaser (2019) point to the fact that qualitative data can be presented in tabular or narrative forms. This study presented the analysed data in the form of graphs, charts, tables and narratives.

### **3.8 Reliability and validity**

Research is credible and dependable if the research instruments used are dependable and valid. Therefore, it is important to consider the reliability and validity of the data in the research process. Reliability is a tool for measuring the consistency of the collected data by using the same instrument used to collect the data from the same population (Golafshani 2003). The pilot study on early adopter academics, deans of schools and information librarians demonstrated that the interview guide questions were reliable.

*Validity* refers to the degree to which the outcomes of the data collection accurately reflect what they are intended to reflect (Creswell & Guetterman 2021; Kottler & Sharp 2018). It is significant to consider the validity of the data collection tool in the research process (Babbie 2016; Yin 2016). In this study, the questionnaire was given to a professor at the UNIVEN for scrutiny and expert judgement before proceeding to data collection. This was done to ensure that the data collection tools covered all the research objectives of the study.

### **3.9 Ethical considerations**

As observed by Henning, Van Rensburg and Smit (2004), a researcher must follow research ethics at all times. On a fundamental level, ethics involves conduct or behaviour, based on respect for oneself, others and the environment, and it is governed by the principles or assumptions underpinning the way in which individuals or organisations should conduct themselves. *Research ethics* refers to the application of fundamental ethical principles to research activities, such as research design and implementation, respect for society and others, the use of resources and research outputs, scientific misconduct, and research regulation (Emmerich 2016). Bertram and Christiansen (2014) suggest that autonomy, non-maleficence and beneficence are three ethical principles that should be followed in research and research activities.

Autonomy is concerned with the respect of all participants in research studies. This principle implies that studies should obtain consent from the participants; participation in the research should be voluntary; and participants must have the right to withdraw from the research at any time, should they choose to. No-maleficence addresses the protection of the participants from any physical, emotional, social and any other form

harm that may be involved in the research. Reid, Hart and Peters (2014) allude that research should, by all means, try to minimise the risk that may occur in the course of the research processes. Beneficence is concerned with the benefits emerging from the research (Bertram & Christiansen 2014). This study provided the participants with consent form indicating that participants in this study is voluntary and participants have the right to withdraw from the study at any time, should they choose to.

Williamson and Johanson (2018:484) indicate that "most prestigious research universities and institutions have research ethics committees to set guidelines and monitor the practices of staff and higher degree students". Permission to conduct this study was obtained from both the UNIVEN and the UNISA ethics and research committees.

Research involving human participants should be conducted ethically and participants should be provided with consent forms (Harriss & Atkinson 2015). Considering the autonomy ethical principle, this study provided the participants and respondents with informed consent letters that served as proof that their participation was voluntarily.

Bertram and Christiansen (2014) further indicate that some participants do not anticipate that their details will be disclosed in a study, while other participants do not mind if their details are disclosed to the public. Reid, Hart & Peters (2014: 459) indicate that people "should know when they are to be research participants, be asked for their informed consent, and be entitled to withdraw at any time". Taking the non-maleficence ethical principle into consideration, this study did not disclose the personal details of the participants and all information provided by the participants was treated with confidentiality. Furthermore, there was no physical, emotional, or social harm to the participants of this study.

### **3.10 Summary**

The mixed methods research approach was employed and the qualitative method was adopted as complementarity to the quantitative method to explore the integration of IL as a credit-bearing module in first year academic programmes at the UNIVEN. A convergent research design was used to collect both quantitative and qualitative data;

to analyse the quantitative and qualitative data individually; and to compare the results to determine if the findings confirmed or disconfirmed each other. A convergent design was adopted to gain insight into the existing IL programmes at the UNIVEN.

This chapter explained the rationale for adopting the mixed methods research approach, the convergent research design, and it presented the data collection methods. The reliability and validity of the collected data were also addressed, as well as the ethical principles that were considered in the research. The next chapter presents the analysis of the research results.

## **CHAPTER 4: PRESENTATION AND ANALYSIS OF THE RESEARCH RESULTS**

### **4.1 Introduction**

This chapter presents the results of the collected primary data and extracted from the questionnaires and the interview guides, which were completed by 106 respondents and participants from a sample size of 117, consisting of six (6) deans of schools, three (3) early adopter academics, 37 non-adopter academics, six (6) information librarians, and 54 adopter students. The results were derived from five sets of respondents – namely, early adopter academics, deans of schools, information librarians, non-adopter academics and adopter students. The qualitative data was collected from the early adopter academics, deans of schools and information librarians, whereas quantitative data was collected from the non-adopter academics and the adopter students.

This chapter presents the results of the collected primary data in the context of the following research objectives involved in the study:

- To establish the level of knowledge of the currently existing IL programmes at the UNIVEN;
- To identify the opportunities of integrating IL into first-year level academic programmes at the UNIVEN;
- To establish the challenges faced in integrating IL into first-year level academic programmes at the UNIVEN; and
- To develop a model that may enhance the IL programmes for the first-year level academic programmes at the UNIVEN.

### **4.2 Response rate**

Table 4.1 presents the response rate of 90% of the total number of 106 respondents from the sample size of 117. Of these responses, 54 were adopter students; 37 were non-adopter academics; six were deans of schools, six were information librarians; and three were early adopter academics.

Table 4.1: Respondents (N = 105)

Respondents	Target numbers	Actual number	Response rate in %
Early adopter academics	3	3	100%
Deans of schools	8	6	75%
Information librarians	6	6	100%
Non-adopter academics	40	37	93%
Adopter students	60	54	90%
<b>TOTAL</b>	<b>117</b>	<b>106</b>	<b>90%</b>

### 4.3 Demographic information of the respondents

The demographic information of the respondents is divided into five sections (Appendices A–E) – the section for the early adopter academics, deans of schools, information librarians, non-adopter academics, and the adopter students. These sections sought to establish background information on the respondents, such as gender, age, academic field, academic position, and years of experience in their employment fields at the UNIVEN.

#### 4.3.1 Demographic information of the early adopter academics

Table 4.2 presents the distribution of demographics of the early adopters of the IL programmes at the UNIVEN. As shown in Table 4.2, early adopter academics consisted of two males and one female. Two of the early adopter academics were between the ages of 41 and 51 years old. In addition, Table 4.2 shows that two of the early adopter academics had been employed at the UNIVEN for ten years or more.

Table 4.2: Demographic information of the early adopter academics (N = 3)

School	Gender	Age	Academic experience	Frequency	Percentage
Health Sciences	Female	30–40	6–9 years	1	33.3%
Law	Male	40–50	10 years & more	1	33.3%
Management	Male	40–50	10 years & more	1	33.3%
<b>TOTAL</b>				<b>3</b>	<b>100%</b>

### 4.3.2 Demographic information of deans of schools

The deans of schools comprised of four (67%) males and two (33%) females, as indicated in Table 4.3. Most (4) deans of schools were between the ages of 51 and 60 years. Two of the deans of schools indicated that they had been in the dean's position for a duration of 6–9 years, and three of the deans of schools had been in their position for less than three years.

Table 4.3: Demographic information of deans of schools (N = 6)

School	Gender	Age	Experience as dean of the school	Frequency	Percentage
Education	Male	51–60	Less than a year	1	16.7%
Environmental Sciences	Male	51–60	Less than a year	1	16.7%
Health Sciences	Female	51–60	3–5 years	1	16.7%
Law	Male	41–50	1–2 years	1	16.7%
Management Sciences	Male	61 years and older	6–9 years	1	16.7%
Mathematical and Natural Sciences	Female	51–60	6–9 years	1	16.7%
<b>TOTAL</b>				6	100%

### 4.3.3 Demographic information of information librarians

As reflected in Table 4.4, the information librarians comprised of four (67%) females and two (33%) males, where half three (50%) of the information librarians were between the ages of 51 and 60 years. Similarly, three (50%) of the information librarians had been working as information librarians at the UNIVEN for 10 years and more.



Table 4.4: Demographic information of information librarians (N = 6)

Variables	Respondents	Frequency	Percentage
Gender	Male	2	33%
	Female	4	67%
<b>TOTAL</b>		<b>6</b>	<b>100%</b>
Age group	31–40 years	2	33%
	41–50 years	1	17%
	51–60 years	3	50%
<b>TOTAL</b>		<b>6</b>	<b>100%</b>
Duration at UNIVEN	More than 10 years	3	50%
	6–9 years	2	33%
	1–2 years	1	17%
<b>TOTAL</b>		<b>6</b>	<b>100%</b>

#### 4.3.4 Demographic information of non-adopter academics

The existing IL programmes offered at the UNIVEN were integrated into following modules: Introduction Skills to Nutritionist Students (RNT 1141), Entrepreneurship (FET 1140), and Introduction to the Theory of Law (INT 1141). However, it was observed that most of the academics, including some of the academics in the Health Sciences, Law, and Management Sciences Schools, were not aware of the integration of IL into the above-mentioned modules. Therefore, this study considered the academics who were not yet aware of the offered IL programmes as part of the non-adopter academics. This implied that the questionnaire were also distributed to the academics from the Health Sciences, Law, and Management Sciences Schools.

Table 4.5 shows the demographic information on the non-adopter academics. As shown in the results, 26 (70%) of the non-adopter academics were males and 11 (30%) were females. Table 4.5 also shows that 16 (43%) of non-adopter academics were between the ages of 51 and 60 years old, with only one (3%) between the ages of 21 and 30 years old. Table 4.5 further shows that one of the non-adopter academics did not indicate his/her position, as the position variable indicated N = 36. However, 17 (47%) of the non-adopter academics held lecturer positions, and 15 (42%) were senior lecturers.

In addition, Table 4.5 reflects a cumulative percentage of 68% of the non-adopter academics in Agricultural Sciences, Education, Environmental Sciences, Health Sciences, and Human and Social Sciences Schools, with non-adopter academics from

each school making up five (13.5%). While 32% is a cumulative percentage of the non-adopter academics in Law, Management Sciences, and Mathematical and Natural Sciences Schools, with the non-adopter academics from each school making up a total of four (10.8%). Less than half of 12 (32%) of the responding non-adopter academics had been employed at the UNIVEN for 10 and more years: 6–9 years. As shown in Table 4.5, less than half of 11 (30%) of the non-adopter academics, who had been at the UNIVEN for six to nine years, had a percentage relative to those who had been at the university for 3–5 years.

*Table 4.5: Demographic information of non-adopter academics (N = 37)*

<b>Variables</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Male	26	70%
	Female	11	30%
Age	21–30	1	3%
	31–40	13	35%
	41–50	7	19%
	51–60	16	43%
Position (N = 36)	Junior Lecturer	3	8%
	Lecturer	17	47%
	Senior Lecturer	15	42%
	Professor	1	3%
School	Agricultural Sciences	5	13.5%
	Education	5	13.5%
	Environmental Sciences	5	13.5%
	Health Sciences	5	13.5%
	Human and Social Sciences	5	13.5%
	Law	4	10.8%
	Management Sciences	4	10.8
	Mathematical and Natural Sciences	4	10.8%
Duration	< 1 year	2	5%
	1– years	1	3%
	3–5 years	11	30%
	6–9 years	11	30%
	≥ 10 years	12	32%

### 4.3.5 Demographic information of adopter students

Table 4.6 indicates the demographic information on adopter students. As shown in the results, 33 (61%) of the adopter students were female, and 21 (39%) were male. A majority of 38 (70%) of the adopter students were under the age of 20, while 16 (30%) of the adopter students were between the ages of 21 and 30 years. In addition, Table 4.6 shows that 20 (37%) of the adopter students attended the IL programme integrated in Introduction Skills to Nutritionist Students (RNT 1141); 18 (33%) of the adopter students attended an IL programme integrated in Entrepreneurship (FET 1140); and 16 (30%) of the adopter students attended IL programmes that were integrated in Introduction to the Theory of Law (INT 1141). A majority of 53 (98%) of the adopter student respondents registered for IL programmes for the first time, and only one (2%) of the adopter students were attending the IL programme for the second time, because they failed INT 1141 in the previous year.

*Table 4.6: Demographic information of adopter students (N = 54)*

Variables	Respondents	Frequency	Percent
Gender	Female	33	61%
	Male	21	39%
Age group	18 - 20 years	38	70%
	21–30 years	16	30%
(IL) programme	RNT 1141	20	37%
	FET 1140	18	33%
	INT 1141	16	30%
First registered	Yes	53	98%
	No	1	2%

### 4.4 Quantitative data results

The results of the quantitative instruments are presented in the following sections: current existing IL programmes at the UNIVEN; opportunities for IL programmes at the UNIVEN; challenges faced in offering IL programmes at universities; and strategy in enhancing the IL programmes for first-year level academic programmes at the UNIVEN.

#### **4.4.1 Current IL programmes at UNIVEN**

This is the first research objective of the study, which sought to establish the level of knowledge of the existing IL programmes at the UNIVEN. In order to establish the level of knowledge of the existing IL programmes offered at the UNIVEN, the data presentation and analysis of this research objectives are presented in the following sections.

##### **4.4.1.1 IL offered to first-year students**

This section focused on the content offered in IL programmes, the suitability of IL content for the first-year level students, and the duplication of IL content offered to the first-year students, so as to gain deeper insight into the existing IL programmes offered at the UNIVEN.

###### ***4.4.1.1.1 Content in IL programmes offered to first-year level at UNIVEN***

The non-adopter academics were provided with questionnaires consisting of a list of content offered in the existing IL programmes at the UNIVEN and asked to indicate the content that they recommend being offered to first-year level students, if the UNIVEN decided to integrate IL as an accredited-bearing module into all first-year level academic programmes.

Figure 4.1 illustrates that 35 (95%) of the non-adopter academics preferred plagiarism to be offered to first-year students as part of the content covered in IL programmes, followed by 34 (92%) and 28 (76%) of the non-adopter academics, who preferred searching databases and e-journals, referencing and referencing techniques, respectively.

Remarkably, slightly less than half of 18 (49%) of the non-adopter academics preferred the construction of search queries to be included in IL content, while less than half of 18 (33%) of the non-adopter academics indicated the construction of search queries as content to be offered in the IL programmes at the UNIVEN.

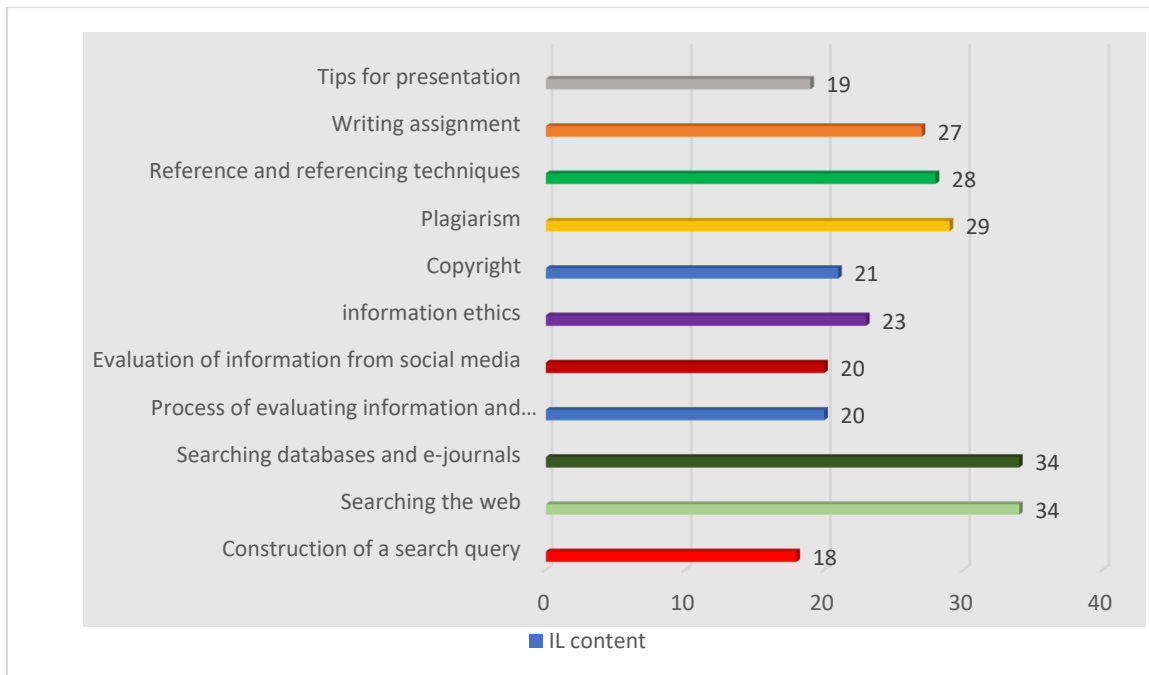


Figure 4.1: Content recommended for IL programmes by non-adopter academics (N = 37)

Likewise, the adopter students were provided with a questionnaire consisting of a list of IL content and were asked to indicate the content covered in the IL instructions. Figure 4.2 outlines the responses of adopter students regarding the content that was covered when they attended the IL programmes at the UNIVEN.

The results illustrated in Figure 4.2 show that the majority – 49 (91%), 47 (87%), and 44 (81%) of the adopter students respectively indicated that referencing and referencing techniques, plagiarism and writing assignments were covered in IL programmes attended. In addition, Figure 4.2 portrays that less 23 (43%), 21 (39%) and 18 (33%) of the adopter students indicated that information ethics, evaluation of information from social media, and construction of search queries were covered in IL programmes attended.

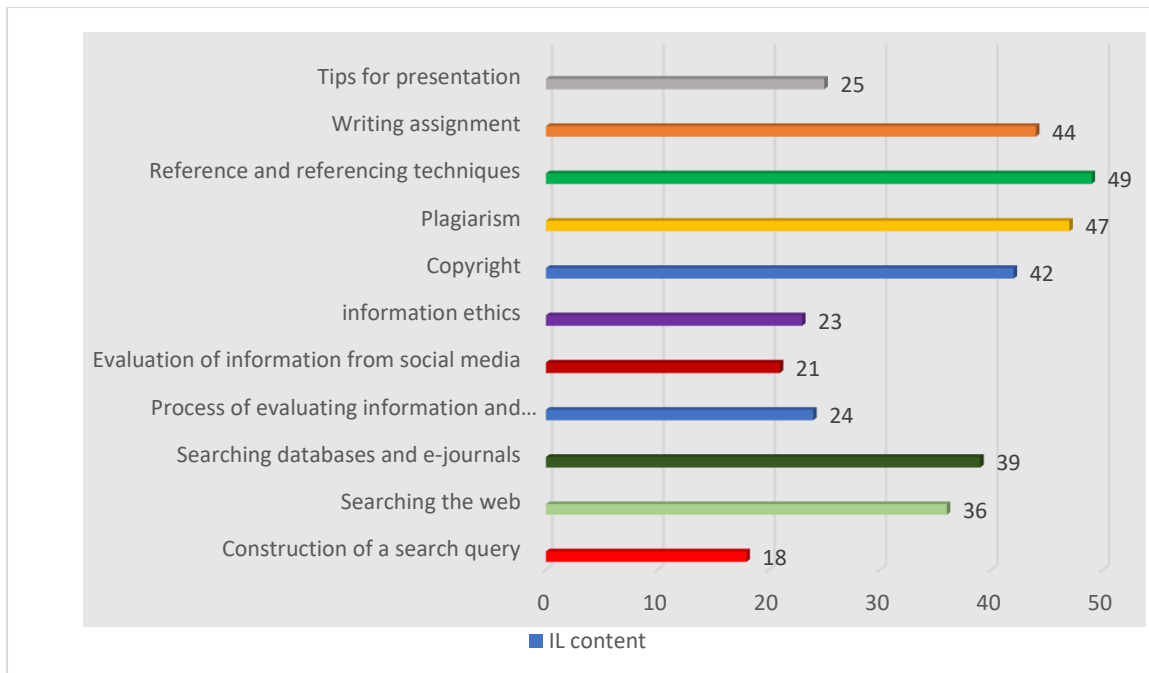


Figure 4.2: IL content offered in existing IL programmes at the UNIVEN (N = 54)

#### 4.4.1.1.2 Suitability of IL content offered to first-year students

This study asked the adopter students whether the currently offered IL content was suitable for first-year level students at UNIVEN. The aim was to align the question to gain insight into the currently existing IL programmes at the UNIVEN. The adopter students were given three options – suitable for first-year level students; not suitable for first-year level students; and overloading academic activities – and asked to indicate the option that best described the currently offered IL content.

Figure 4.3 shows that a majority – 50 (93%) – of the adopter students viewed the currently offered IL content as suitable for first-year level students, while three (5%) of the adopter students indicated that the currently offered IL content was overloading their academic activities. Figure 4.3 illustrates that only 1 (2%) of the adopter students indicated that the currently offered IL content was not suitable for first-year level students.

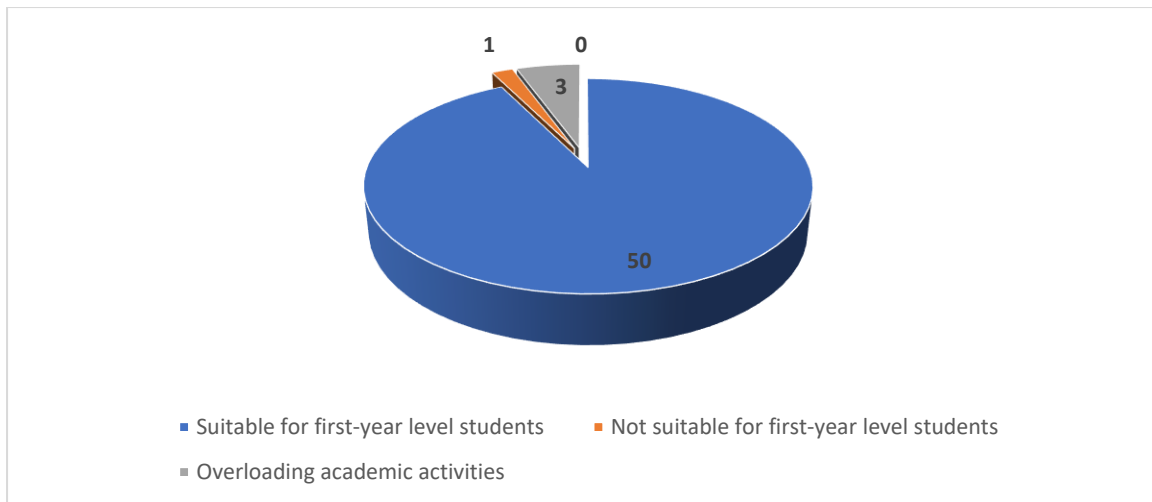


Figure 4.3: Suitability of IL content offered to first-year students at the UNIVEN (N = 54)

#### 4.4.1.1.3 Duplication of IL content offered to first-year students

Furthermore, the adopter students and early adopter academics were asked if there was any duplication of the content covered in IL, with content covered in some of the modules offered at the UNIVEN. Figure 4.4 illustrates that 46 (85%) of the adopter students indicated that there was duplication of content, while eight (15%) adopter students indicated that there was no duplication of the content offered in IL programmes with content offered in some of the modules at the UNIVEN.

On the contrary, Figure 4.4 indicates that all three (100%) of the early adopter academic respondents believed that there was no duplication of content covered in IL with the content covered in some of the modules offered at the UNIVEN. The deans of schools, non-adopter academics, and information librarians were not asked about the duplication of IL content.

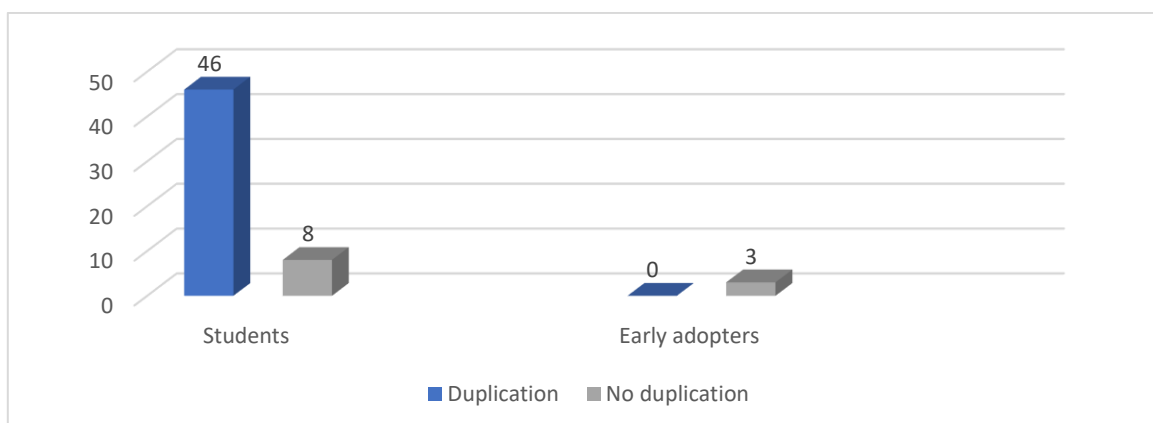


Figure 4.4: Duplication of IL content

#### 4.4.1.2 IL programmes offered to first-year students at the UNIVEN

To establish the level of knowledge regarding the existing IL programmes offered at the UNIVEN, this study further examined the views of the respondents on IL programmes offered as mandatory for all first-year level students; the possibility of integrating IL programmes into first-year level academic programmes; the responsibility of offering IL instruction; suitable qualifications for IL instruction; the mode of IL instruction at the UNIVEN; and awareness of the offered IL programmes to non-adopter academics.

##### 4.4.1.2.1 IL programmes as mandatory for all first-year students

All the categories were asked if IL programmes should be mandatory for all first-year level students at the UNIVEN. As shown in Table 4.7 all (100%) adopter students, deans of schools, early adopter academics, and information librarians agreed that IL programmes at the UNIVEN should be mandatory for all first-year level students. Table 4.7 indicates that two (5%) of the non-adopter academics were neutral in terms of offering IL as mandatory programmes to all first-year students. However, the majority 35 (95%) of the non-adopter academics agreed that IL programmes should be mandatory for all first-year level students at UNIVEN.

Table 4.7: IL offered as mandatory to all first-year level students

	<b>Adopter students (N = 54)</b>	<b>Non-adopter academics (N = 37)</b>	<b>Deans of schools (N = 6)</b>	<b>Early adopter academics (N = 3)</b>	<b>Information librarians (N = 6)</b>
Agree	54 (100%)	35 (95%)	6 (100%)	3 (100%)	6 (100%)
Disagree	0	0	0	0	0
Neutral	0	2 (5%)	0	0	0

##### 4.4.1.2.2 Integrating IL into first-year level academic programmes

In addition, the non-adopter academics were asked to indicate “Yes” or “No” to whether it was possible to integrate IL as a credit-bearing module into first year-level academic programmes. In response, the majority 27 (73%) of the non-adopter academics indicated that it was possible to integrate IL as a credit-bearing module in first-year level academic programmes at the UNIVEN. While a few 10 (27%) indicated that it was not possible to integrate IL as a credit-bearing module in first-year level academic programmes at the UNIVEN, as demonstrated in Figure 4.5.



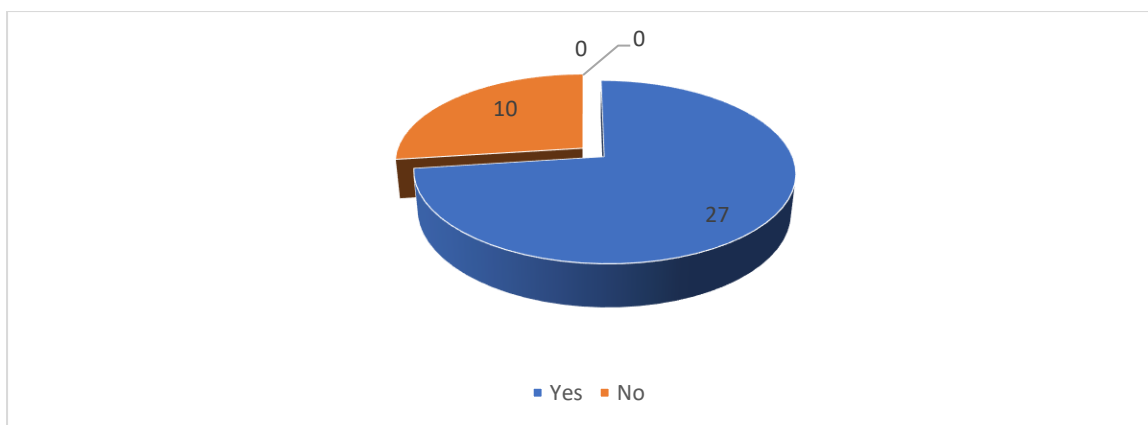


Figure 4.5: Possibility of integrating IL into first-year level academic programmes: non-adopter academics (N = 37)

#### 4.4.1.2.3 Responsibility for offering IL instructions

All categories of respondents were asked their views on who should be responsible for IL instructions to first-year students at the UNIVEN. As indicated in Table 4.8, all six (100%) deans of schools and all three (100%) early adopter academics indicated that the responsibility of IL instructions to the first-year students at the UNIVEN should be based on collaboration with the academics and librarians. Similarly, a majority of 22 (61%) of the non-adopter academics and 28 (54%) of the adopter students respectively indicated that the offering of IL instructions to first-year students at the UNIVEN should be in collaboration with academics and librarians. However, Table 4.8 shows that a majority of five (83%) of the information librarians indicated that librarians should be responsible for IL instructions to the first-year level students at the UNIVEN.

Table 4.8: Responsibility for offering IL instructions

	Non-adopter academics (N = 36)	Adopter students (N = 52)	Deans of schools (N = 6)	Early adopter academics (N = 3)	Information librarians (N = 6)
Academics	4 (11%)	12 (23%)	0	0	0
Librarians	10 (28%)	12 (23%)	0	0	5 (83%)
Collaboration of academics and librarians	22 (61%)	28 (54%)	6 (100%)	3 (100%)	1 (17%)

#### 4.4.1.2.4 Current mode of IL instructions at UNIVEN

This study provided the adopter students with options on different modes of IL instructions and asked them to choose the mode that was currently applied in IL instructions at the UNIVEN. Table 4.9 reveals that the majority of 35 (67%) of adopter students indicated that both theoretical and practical modes were used as modes of IL instructions. Likewise, the majority of 35 (69%) adopter students indicated that IL was instructed by librarians.

Table 4.9: Adopter students' responses to the current modes of IL instructions (N = 52)

		Adopter students (N = 52)
Mode of IL instructions	Theoretical mode	6 (11%)
	Practical mode	11 (21%)
	Both theoretical and practical modes	35 (67%)
How is being IL offered in classes	Instructions by librarians	35 (69%)
	Lecture by lecturers	15 (29%)
	Other	1 (2%)

#### 4.4.1.2.5 Awareness of IL programmes to the non-adopters academic

This study asked the non-adopters academics if they were aware of the currently offered IL programmes, and if the currently offered IL programmes were integrated into one of their departmental modules. Table 4.10 shows that more than half of the non-adopter academic respondents were not aware of the existing IL programmes offered to first-year level students at the UNIVEN, while 16 (43%) non-adopter academic respondents were not sure if the currently offered IL programmes were integrated into one of the modules offered in the first-year level academic programmes. Fifteen (41%) non-adopter academic respondents indicated that the currently offered IL programmes were not integrated into first-year level academic programmes.

Table 4.10: Non-adopter academics' awareness of IL programmes (N = 37)

Awareness	Aware	16 (43%)
	Not aware	21 (57%)
Integrated into first-year level academic programmes	Yes	6 (16%)
	Not sure	16 (43%)
	No	15 (41%)

#### **4.4.2 Opportunities of integrating IL into academic programmes at UNIVEN**

This section involves the second research objective of the study, which addressed the opportunities of integrating IL into academic programmes at the UNIVEN. The adopter students and non-adopter academics were provided with a list of statements on the opportunities of integrating IL into first-year level academic programmes.

The following options were available for adopter students to choose from:

1 = Strongly Agree

2 = Agree

3 = Neutral

4 = Disagree

5 = Strongly disagree.

Table 4.11 shows the options from the adopter students, with mean values between 1.56 to 1.93.

Table 4.11: Opportunities of integrating IL into academic programmes indicated by the adopter students (N = 54)

	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Standard Deviation
IL programme adequately equip me with the skills for writing assignments and other academic related tasks.	30 (55.6%)	15 (27.8%)	5 (9.3%)	3 (5.6%)	1 (1.9%)	1.70	.983
Ever since I attended IL instructions, I learnt new skills.	33 (61.1%)	13 (24.1%)	5 (9.3%)	2 (3.7%)	1 (1.9%)	1.61	.940
The skills gained from IL instructions are useful for the first-year university students.	35 (64.8%)	13 (24.1%)	3 (5.6%)	1 (1.9%)	2 (3.7%)	1.56	.965
The skills gained from IL could be applied up to the postgraduate level.	27 (50%)	19 (35.2%)	5 (9.3%)	1 (1.9%)	2 (3.7%)	1.74	.975
Skills gained from IL can be applicable for the workplace.	28 (51.9%)	18 (33.3%)	3 (5.6%)	3 (5.6%)	2 (3.7%)	1.76	1.045
IL programme should be compulsory for all first-year students.	36 (66.7%)	11 (20.4%)	0 (0%)	2 (3.7%)	4 (7.4%)	1.62	1.180
Attending IL programme increased my academic performance.	22 (40.7%)	19 (35.2%)	9 (16.7%)	3 (5.6%)	1 (1.9%)	1.93	.988
IL programme afforded me with an opportunity to acquire skills on the use of library resources.	34 (63%)	9 (16.7%)	8 (14.8%)	0 (0%)	3 (5.6%)	1.69	1.096

Similarly, the non-adopter academics were provided with a list of statements indicating the opportunities of integrating IL into academic programmes to first-year level students. Table 4.12 shows a mean value of 1.30 in the only way to make students attend and acquire the intended IL skills is to make the IL programme compulsory for all students.

In addition, Table 4.12 indicates the mean values of 1.51, 1.59, 1.73, and 2.00 respectively in the IL programme allowing students to acquire skills in the use of library resources, IL programme can adequately equip students with the skills for writing assignments, doing research and other information related tasks, IL programme increases students' academic performance, and offering of the IL programme can lead to the integration of IL as a credit-bearing module into academic programmes.

Table 4.12: Opportunities of integrating IL programmes indicated by the non-adopter academics (N = 37)

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Mean</b>	<b>Standard deviation</b>
Offering of IL programme can lead to integration of IL as a credit-bearing module into academic programme.	14 (37.8%)	14(37.8%)	6 (16.2%)	1 (2.7%)	2 (5.4%)	2.00	1.080
Only way to make students attend and acquire the intended IL skills is to make IL programme compulsory for all.	28 (75.7%)	8 (21.6%)	0 (0%)	1 (2.7%)	0 (0%)	1.30	.618
IL programmes increase students' academic performance.	15 (40.5%)	19(51.4%)	2 (5.4%)	0 (0%)	1 (2.7%)	1.73	.804
IL programmes afford students an opportunity to acquire skills on the use of library resources.	23 (62.2%)	11(29.7%)	2 (5.4%)	0 (0%)	1 (2.7%)	1.51	.837
IL programme can adequately equip students with the skills for writing assignment, do research and other information related tasks.	20 (54.1%)	14(37.8%)	1 (2.7%)	2 (5.4%)	0 (0%)	1.59	.798

#### **4.4.3 Challenges faced in integrating IL into academic programmes in university**

This section addressed third research objective of the study, which sought to establish the challenges that could be faced in integrating IL into academic programmes at the UNIVEN. Quantitative data was collected from the non-adopter academics and adopter students.

Non-adopter academics and adopter students were provided with a list of some of the challenges faced in integrating IL into academic programmes at universities, and they were asked to indicate their responses according to the following options: strongly agree, agree, neutral, disagree, and strongly disagree to the statements.

Table 4.13 outlines the responses of non-adopter academics concerning the challenges faced in integrating IL into academic programmes at universities. The results in Table 4.13 indicate that inadequate lecturer venues with facilities needed to teach IL scored a mean value of 1.92, and a lack of collaboration between academics and librarians had a mean value of 2.19. Notably, Table 4.13 also shows mean values of 2.51 and 2.73 respectively in offering IL as informal programmes and the lack of home-grown IL standards.

Table 4.13: Views of the non-adopter academics on the challenges faced in integrating IL into academic programme at the university (N = 37)

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Mean</b>	<b>Standard deviation</b>
Lack of collaboration between academics and librarians	15 (40.5%)	6 (16.2%)	11 (29.7%)	4 (10.8%)	1 (2.7%)	2.19	1.175
Inadequate human resources to teach IL	11 (29.7%)	9 (24.3%)	16 (43.2%)	0 (0%)	1 (2.7%)	2.22	.976
Offering IL as informal programme	5 (13.5%)	9 (24.3%)	17 (45.9%)	3 (8.1%)	3 (8.1%)	2.73	1.071
Methods of offering IL programme	5 (13.5%)	15 (40.5%)	13 (35.1%)	4 (10.8%)	0 (0%)	2.43	.867
Lack of home-grown IL standards	10 (27.0%)	5 (13.5%)	16 (43.2%)	5 (13.5%)	1 (2.7%)	2.51	1.121
Lack of IL policy in university	10 (27.0%)	11 (29.7%)	11 (29.7%)	2 (5.4%)	3 (8.1%)	2.38	1.187
Inadequate lecturer venues with facilities needed to teach IL	16 (43.2%)	14 (37.8%)	3 (8.1%)	2 (5.4%)	2 (5.4%)	1.92	1.115



Similar to the non-adopter academics, adopter students were provided with a list of statements and asked to make a selection of the following options: strongly agree, agree, neutral, disagree, and strongly disagree in response to the statements mentioned as challenges.

Table 4.14, which captures the adopter students' responses, shows a mean value of 2.04 for both IL instructions requiring collaboration between academics and librarians, and venues that were used for IL instructions being well equipped with teaching facilities, as compared to the lecture halls used in teaching other modules. Moreover, Table 4.14 indicates a mean value of 1.96 for the librarian/lecturer responsible for IL instructions being well informed with the IL content offered to the students, while a mean value of 3.13 for the IL programme should be offered as an informal programme.

Table 4.14: Views of adopter students on challenges faced in integrating the IL into academic programme (N = 54)

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Mean</b>	<b>Standard deviation</b>
IL instructions require collaboration between academics and librarians.	26 (48.1%)	10 (18.5%)	11 (20.4%)	4 (7.4%)	3 (5.6%)	2.04	1.228
The librarian/lecturer responsible for IL instructions was well informed with the IL content/s.	19 (35.2%)	23 (42.6%)	9 (16.7%)	1 (1.9%)	2 (3.7%)	1.96	.971
IL programme should be offered as informal programme.	12 (22.2%)	3 (5.6%)	19 (35.2%)	6 (11.1%)	14 (25.9%)	3.13	1.454
The university should change the method of offering IL programme to the first-year level students.	11 (20.4%)	6 (11.1%)	15 (27.8%)	5 (9.3%)	17 (31.5%)	3.20	1.509
Integration of IL into academic programme is overloading students with more academic activities.	6 (11.1%)	9 (16.7%)	13 (24.1%)	6 (11.1%)	20 (37%)	3.46	1.424
Students are aware of UNIVEN IL policy.	13 (24.1%)	4 (7.4%)	24 (44.4%)	9 (16.7%)	4 (7.4%)	2.76	1.212
The venue/s that were used for IL instructions are well equipped with teaching facilities as compared to lecture halls that are used in teaching other modules.	23 (42.6%)	17 (31.5%)	5 (9.3%)	7 (13%)	2 (3.7%)	2.04	1.181

#### 4.4.4 Strategy that may enhance IL programmes for first-year academic programmes at UNIVEN

The last research objective of this study was to develop a strategy that may assist in enhancing the IL programmes for first-year level academic programmes at the UNIVEN. All five categories of the respondents were asked to indicate the method that the university should use to integrate IL into first year-level academic programmes.

As shown in Table 4.15, less than half of 25 (46%) of the adopter students indicated that IL programmes should be offered to first-year level students as a stand-alone credited module, and another half of 25 (46%) indicated that IL should be integrated in other credited modules. Table 4.15 also indicates that the majority of three (60%), 26 (70%) and five (83%) of the deans of schools, non-adopter academics and information librarians preferred the UNIVEN to offer IL to the first-year level students as an integrated module with other credit-bearing modules. Moreover, Table 4.15 reveals that all three (100%) of the early adopter academics preferred the university to integrate IL into other credit-bearing modules.

*Table 4.15: Methods for integrating IL programmes into first-year academic programmes*

	<b>Students' respondents (N = 54)</b>	<b>Academics' respondents (N = 37)</b>	<b>Deans of schools (N = 5)</b>	<b>Early adopters' respondents (N = 3)</b>	<b>Information librarians (N = 6)</b>
Stand-alone credit modules	25 (46%)	7 (19%)	2 (40%)	0	1 (17%)
Integrated to other credit modules	25 (46%)	26 (70%)	3 (60%)	3 (100%)	5 (83%)
Non-credited informal programmes	3 (6%)	4 (11%)	0	0	0
Other	1 (2%)		0	0	0

In addition, the information librarians were asked to choose one of the listed IL standards that they could recommend being followed if the UNIVEN decided to integrate IL as a credit-bearing module into all first-year level academic programmes. Table 4.16 shows no major gap in the differences among the recommended IL standards by the information librarians.

*Table 4.16: Recommended IL standards by information librarians (N = 6)*

<b>IL standards</b>	<b>Respondent frequency</b>	<b>Percentage</b>
ACRL	1	17%
SCONUL	2	33%
Big6	2	33%
LSIL	1	17%

## **4.5 Qualitative data results**

The qualitative data results are presented under the following themes: current existing IL programmes at the UNIVEN; opportunities of integrating IL into academic programmes at the UNIVEN; challenges faced in integrating IL into academic programmes at universities; and strategy in enhancing the IL programmes for first-year level academic programmes at the UNIVEN. However, in some instances, the questions differed according to the respondents' categories.

### **4.5.1 Existing IL programmes at the UNIVEN**

This section focuses on qualitative questions asked from the early adopter academics, deans of schools and information librarians. To establish the level of knowledge of the currently existing IL programmes offered at the UNIVEN, the questions in this section were based on the IL content offered to first-year level students and the IL programmes.

#### **4.5.1.1 Content offered in existing IL programmes at the UNIVEN**

The early adopter academics were asked to mention the current content offered in the IL programmes to first-year level students at the UNIVEN. Their responses were as follows:

Early adopter academic A	<i>Academic writing, information search, and learning systems</i>
Early adopter academic B	<i>Students are taught how to locate relevant information for their studies. Students are also taught basic computing; how to search for articles and case law on Sabinet and SAFLII; a general orientation of the library is also conducted, teaching students how to locate law reports, dictionaries, and loose-leaf; how to use information ethically and legally as they are also taught how to reference in their work; students are further taught how to use Turnitin to avoid or discourage plagiarism</i>
Early adopter academic C	<i>Basic literature search; how to navigate the search engines relevant for each faculty; computer literacy covering the desktop, keyboard, and hardware; and reference tools.</i>

#### 4.5.1.2 Preferred IL content for IL programmes

The deans of schools and information librarians were asked to state their preference for IL content that should be offered to first-year level students at the UNIVEN, if the university decided to integrate IL in the first-year level academic programmes. As a follow-up question, only the deans of schools were further asked to explain why such content should be offered in IL programmes. Five deans of schools responded to this question, although some of the deans of schools did not provide the reasons for their preference of content. The following responses from the deans of schools and librarians were captured

<b>Deans of schools</b>	
Dean of school B	<i>How to do a literature search.</i>
Dean of school C	<i>Web surfing and search abilities, web design abilities, and book and journal retrieval abilities. The reason is that we are now in the 4IR era.</i>
Dean of school D	<i>Gathering and retrieving information from primary and secondary sources, digital and other information, technical aspects of computer use, Microsoft Office, internet, and email, using search engines, data management and processing, using online interactive platforms, such as Zoom and Microsoft Teams, privacy and data issues, cyber security, and the 4IR</i>

	<i>and its innovations. For obvious reasons, information should be biased towards computers and technology.</i>
Dean of school E	<i>Subject information search on online databases; job search and career choices; current competencies required in today's career; verbal, written, and graphic communication</i>
Dean of school F	<i>Searching for information on the web, how to use the information, Boolean searching and keywords</i>
<b>Information librarians</b>	
Information librarian A	<i>How to bold a word, underline it, tabulate a document, and reference using the Harvard system's various styles</i>
Information librarian B	<i>The ability to find, evaluate, organise, use and communicate information in all its various formats, most notably in situations requiring decision-making, problem-solving, or the acquisition of knowledge</i>
Information librarian C	<i>The ability to search for books in the catalogue, typing skills, being able to analyse and synthesize information, being able to use information</i>
Information librarian D	<i>Finding information efficiently. Thinking critically about the resources available and being able to find the information available, being able to use information ethically, also be able to articulate the need for information. Using information accurately and creatively be able to evaluate information critically</i>
Information librarian E	<i>Library catalogue and databases</i>
Information librarian F	<i>Computer keyboard, mouse movement, CPU and screen</i>

#### **4.5.1.3 IL programmes offered as mandatory**

The early adopter academics were asked if they agreed that IL programmes should be mandatory for all first-year students at the UNIVEN and to provide reasons for their answers. Three (100%) of the early adopter academics agreed that IL programmes should be mandatory for all first-year level students at the UNIVEN. The reasons for offering IL as a mandatory module to all first-year level students at UNIVEN provided by the early adopter academics were as follows:

Early adopter academic A	<i>Most students do not have an IL background, which is important for their studies and careers</i>
Early adopter academic B	<i>Most students come to UNIVEN with no clue about information literacy. The module would benefit them a lot and prepare them for navigating their entire programmes</i>
Early adopter academic C	<i>Newly enrolled students get to be oriented about the library and get to understand that library staff are available to provide relevant help. It enables new students to locate and use relevant information from the library and different internet platforms. It enables students to use information ethically by acknowledging the sources from which the information was extracted; it promotes computer literacy and technological competence at an early stage, especially given that the majority of our students are from poor backgrounds</i>

The information librarians were asked to state “Yes” or “No” if IL should be offered as a mandatory module to all first-year level students at the UNIVEN, and to provide reasons for their answers. Six (100%) of the information librarians agree that IL should be offered as a mandatory module to all first-year level students at the UNIVEN. The information librarians offered following reasons for offering IL as a mandatory module to all first-year level students at the UNIVEN:

Information librarian A & C	<i>All students should have an equal opportunity to learn IL skills.</i>
Information librarian B	<i>IL equips them with the critical skills necessary to become independent, lifelong learners. They know how to learn because they know how knowledge is organised, how to find information, and how to use information in such a way that others can learn from them.</i>

Information librarian D	<i>IL forms the basis for lifelong learning. It is common to all disciplines, to all learning environments and all levels of education. IL promotes problem solving approaches and thinking skills.</i>
Information librarian E	<i>So that the students can find enough information to assist them in their studies.</i>
Information librarian F	<i>Because IL is the basic course to familiarise the students with library information resources.</i>

#### 4.5.1.4 Integrating IL programmes into first-year level academic programmes

This study sought to determine the deans of schools' and early adopter academics' preference for integrating IL into first-year academic programmes, should the UNIVEN decide to offer IL as a credit-bearing module to all first-year students. The researcher asked the deans of schools to explain briefly how they would prefer IL to be integrated as a credit-bearing module into all first-year level academic programmes in their schools, and to indicate the number of credits that should be credited to the IL module. The responses from the deans of schools were as follows:

Dean of School A	<i>At least 4 credits in each module, so that IL is applied in all modules.</i>
Dean of School B	<i>I will give it a credit of 5 and add it as a first or second semester level module. If students did not take it in the first semester, then they can take it in the second semester.</i>
Dean of School C	<i>No answer</i>
Dean of School D	<i>Separate modules, each bearing 10 credits, may be integrated into legal research and writing.</i>
Dean of School E	<i>Holistic integration in terms of both content and credits.</i>
Dean of School F	<i>This should form part of the life skills module with 10 credits.</i>

Early adopter academics were given two options for integrating IL into academic programmes: stand-alone credit-bearing modules or integrated with other modules, and they were also asked to provide a reason(s) for their choice. However, the early adopter academics were not asked to mention how many credits should be contributed by IL.



All three (100%) of the early adopter academics opted for the integration with other modules method. The early adopter academics provided the following reasons for their choices:

Early adopter academic A	<i>Students will be able to see the link between IL and other modules.</i>
Early adopter academic B	<i>It is easier to manage and more cost-effective for the students.</i>
Early adopter academic C	<i>Because some of the aspects it covers are also covered in Legal Research Methodology (LRM 1641). But this may mean that LRM 1641 needs to be moved from the second semester to the first semester since IL is a very critical orientation module.</i>

#### **4.5.1.5 Responsibility for offering IL instructions**

The deans of schools, early adopter academics and information librarians were asked to provide their reasons for preferring either academics, librarians or collaboration of academics and librarians as suitable candidates for offering IL instructions at the UNIVEN. This qualitative question was a follow-up to the quantitative question indicated in Section 5.4.1.2.3 as to who should be responsible for IL instructions for first-year level students at the UNIVEN.

As all the deans of schools preferred the collaboration between the academics and librarians as the option for offering IL instructions to first-year level students at the UNIVEN, although they offered different reasons for their preferences, as indicated below:

Dean of school A	<i>Academics can teach both theory and practical, but librarians show the students 'live' scenarios.</i>
Dean of school B	<i>Librarians develop content, teach in the form of workshops, and suggest relevant prescribed books and other reading material. Academics develop content and align it with other content in the module, check credits, and assess.</i>
Dean of school C	<i>Academics teach theory and librarians would then help students to apply.</i>

Dean of school D	<i>Each subject is different and has different requirements.</i>
Dean of school E	<i>Librarians will play a general role, while academics can help with discipline-specific interventions.</i>
Dean of school F	<i>Both should play a role in the design of module content through teaching and grading.</i>

Furthermore, the deans of schools were asked to indicate which department should be responsible for the design and formulation of the IL programmes, and to provide reasons for their answers. All the deans of schools indicated that the responsibility should be shared between the academic and library departments. Only three of the deans of schools who responded, provided their reasons, and their reasons are quoted as follows:

Dean of school C	<i>Academic departments should design theory and library departments should design practical.</i>
Dean of school E	<i>Academics and librarians' expertise in IL is important for effective collaboration.</i>
Dean of school F	<i>Librarians and academics possess certain skills, competencies, and knowledge (same and different) in which if they work together, they will be able to assist and close gaps in the development and delivery of the IL programme.</i>

When asked for the reasons for their preference for the collaboration of academics and librarians in offering IL instructions to first-year level students at the UNIVEN, the early adopter academics provided the following reasons:

Early adopter academic A	<i>Job enlargement for librarians and avoiding over-staffing.</i>
Early adopter academic B	<i>Librarians as custodians of IL and academics would provide context for the study area.</i>
Early adopter academic C	<i>These stakeholders specialise in different fields, so there is a need to make sure that their efforts are mutually reinforcing to get the work effectively and efficiently done.</i>

However, the information librarians had different views on who should be suitable for IL instructions for first-year students at the UNIVEN. The information librarians' responses were as follows:

Information librarian A	<i>Information librarians, because they will be servicing their schools.</i>
Information librarian B	<i>It should be a collaborative exercise. Librarians play a unique role in contributing to societal progress. The evolving role of the librarian in the 21st century demands that they be involved in inculcating IL skills that will help users apply information for personal and human development.</i>
Information librarian C	<i>Librarians, because they are qualified professionals in the field.</i>

#### **4.5.2 Opportunities of IL programmes at the UNIVEN**

The deans of schools were asked to explain the opportunities of which they were aware for integrating IL into academic programmes to university students. The responses from six of the deans of schools are quoted below.

Dean of school A	<i>To easily get the required learning materials.</i>
Dean of school B	<i>Students will be able to easily search sources, whether digital or print, know what keywords to use, understand different databases, and distinguish between scientific and non-scientific material.</i>
Dean of school C	<i>There are IT labs, and all students in education do a computer literacy module.</i>
Dean of school D	<i>Not sure.</i>
Dean of school E	<i>Information persons in both public and private sector e.g., law firms.</i>
Dean of school F	<i>IL programmes can be incorporated into the current selected modules.</i>

The early adopter academics were also asked to mention the opportunities of integrating IL into first-year level academic programmes at the UNIVEN. Only early adopter academics A and C provided answers to this question, and they mentioned the opportunities of offering IL programmes to first-year level students at the UNIVEN as follows:

Early adopter academic A	<i>Coronavirus 2019 (COVID-19) pushed us to online learning and no turning back, so IL will expose students to such platforms and introduce them to online information search.</i>
Early adopter academic C	<i>Newly enrolled students get an orientation about the library and get to understand that library staff are available to provide relevant help. It enables new students to locate and use relevant information from the library and different internet platforms. It enables students to use information ethically by acknowledging the sources from which the information is extracted; it promotes computer literacy and technological competence at an early stage, especially given that the majority of our students are from poor backgrounds.</i>

The information librarians were also asked to explain the opportunities of the currently offered IL instructions to first-year students at the UNIVEN. All six information librarians responded to this question and their responses were as follows:

Information librarian A	<i>It is a bridge into their qualifications; it introduces them to university life. They get to know how to search for relevant information for their studies.</i>
Information librarian B	<i>Finding information, forming opinions, evaluating sources, and making decisions foster successful learners, effective contributors, and confident individuals.</i>
Information librarian C	<i>Students become information literate.</i>
Information librarian D	<i>Professional development, focusing on technology in the classroom and internet access, promoting digital literacy and interactivity.</i>
Information librarian E	<i>Students become information literate, and they can search for and use the information they obtain.</i>

Information librarian F	<i>Information literate students</i>
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### 4.5.3 Challenges faced in integrating IL into academic programmes at the UNIVEN

Similar to the quantitative data, this study collected qualitative data from the deans of schools, early adopter academics and information librarians with regard to the challenges faced in integrating IL into academic programmes at the UNIVEN. The deans of schools were asked to identify the challenges that they expected could hinder the integration of IL as a credit-bearing module in first-year level programmes in their schools. The deans of schools are quoted as follows:

Dean of school A	<i>Most of the students are from rural schools where information technology (IT) is not taught.</i>
Dean of school B	<i>Students may undermine it the same way they do with English Language Communication. The solution would be to integrate its content with another module that they value.</i>
Dean of school C	<i>Labs have few computers. The IT labs are also few. Sometimes the internet is not available. There are not enough lecturers in the school of education.</i>
Dean of school D	<i>It is not yet a formal arrangement, so it is hard to comment.</i>
Dean of school E	<i>It is partially integrated, and we should do more. Challenges will be due to the current congested syllabus and the lack of instructors who can transcend disciplinary laagers; resources will also be a challenge, as will be the attitudes of old school academics.</i>
Dean of school F	<i>Proliferation of module numbers that are already high; large and overcrowded classes; inflating numbers of credits and notional hours may present a financial and physical burden to students who are still in transition from high schools.</i>

The early adopter academics were asked to indicate the challenges that they were currently facing in the integrating of IL into academic programmes at the UNIVEN. The early adopter academics mentioned the following challenges:

Early adopter academic A	<i>Lack of facilities, e.g., computer centres. A solution could be for each department to have its computer centre.</i>
Early adopter academic B	<i>Delays by the university in giving students the necessary gadgets such as tablets as well as data to be able to connect and attend IL classes offered online. The university needs to arm the students with the necessary equipment/instruments in time to avoid the inconveniences associated with connectivity problems.</i>
Early adopter academic C	<i>The availability of designated staff and the number of students that can be accommodated in a venue</i>

The early adopter academics were asked to indicate the challenges that they thought could hinder the integration of IL as a credit-bearing module in first-year level academic programmes at the UNIVEN, if the university decided to offer IL programmes to all first-year level students. The following challenges were mentioned by the early adopter academics:

Early adopter academic A	<i>Students already have more workload, and it might mean cancelling certain modules to meet the required credits for qualification. We still do not have enough resources to cater to large classes.</i>
Early adopter academic B	<i>Finance, and overload to the degree Credits.</i>
Early adopter academic C	<i>Lack of commitment by the responsible authorities and budgetary concerns.</i>

The information librarians were also asked to list some of the challenges that they currently faced in the integrating of IL into academic programmes to first-year level students at the UNIVEN. Below are the responses from the information librarians:

Information librarian A	<i>There is little support and teamwork from the library's top management. Academics do not trust the library to offer these skills. The programme is not credit-bearing.</i>
Information librarian B	<i>Internet connectivity</i>
Information librarian C	<i>Cooperation from academics. Attend school board meetings and talk about the importance of information literacy.</i>
Information librarian D	<i>There is an inadequate number of teaching staff to facilitate IL programmes, a lack of sufficient orientation for students on the subject and practice of IL, and the time allocated to the programmes is not enough. Another factor is that of poor infrastructure, which is also a challenge.</i>
Information librarian E	<i>Students are not coming to attend the IL programme seriously.</i>
Information librarian F	<i>IL not being part of the student curriculum.</i>

Furthermore, the information librarians were asked to mention the challenges that could be faced by the library as a department, if the UNIVEN decided to integrate IL as a credit-bearing module in all first-year academic programmes. The six information librarians are quoted as follows:

Information librarian A	<i>Infrastructure, will there be enough staff members to perform this activity? Will there be teamwork among library staff members? Will there be enough venues for this project?</i>
Information librarian B	<i>Connectivity of Wi-fi</i>
Information librarian C	<i>Preparing and deciding on how many credits IL will carry</i>
Information librarian D	<i>There is a lack of resources necessary to successfully offer IL programmes. Other challenges include budget and staff shortages, as well as relevant facilities such as computers and computer laboratories. There is a lack of support as well as ignorance about IL programmes between the two parties, i.e., the library and academic department.</i>
Information librarian E	<i>They will need to hire additional librarians.</i>
Information librarian F	<i>Appointing additional staff in the library department.</i>

#### 4.5.4 Strategy for enhancing IL programmes for first-year academic programmes at the UNIVEN

The deans of schools were asked for brief explanations of a strategy that the UNIVEN should consider for implementing IL programmes to first-year students in their schools, if the university decided to integrate IL as a credit-bearing module in all first-year level academic programmes. Five (83%) of the deans of schools responded to this question as follows:

Dean of school B	<i>This should form part of the life skills module with 10 credits.</i>
Dean of school C	<i>At least 4 credits in each module so that IL is applied in all modules.</i>
Dean of school D	<i>I will give it a credit of five (5) and add it as a first or second semester level module. If students did not take it in the first semester, then they can take it in the second semester.</i>
Dean of school E	<i>A separate module bearing 10 credits may be integrated into legal research and writing.</i>
Dean of school F	<i>Holistic integration in terms of both content and credits.</i>

Furthermore, this study asked the information librarians to provide the reasons for recommending the following IL standards: ACRL, Big6, Law Student Information Literacy (LSIL), and SCONUL. The reasons provided by the information librarians are quoted as follows:



Information librarian A	<i>Although American, LSIL is a very helpful and relevant standard for law students.</i>
Information librarian B	<i>The Big6 is a research process and is also commonly known as an information problem-solving strategy, because using the Big6, students should be able to handle any problem, assignment, decision, or task.</i>
Information librarian C	<i>ACRL is a reliable and widely used standard.</i>
Information librarian D	<i>The SCONUL model has been adopted by librarians and teachers around the world as a means of implementing the seven pillars of IL.</i>
Information librarian E	<i>I prefer the Big6 because it is the best and covers everything.</i>
Information librarian F	<i>SCONUL is in line with the standard qualification framework.</i>

#### 4.6 Summary

This chapter presented the analysed research results from data collected using questionnaires and interview guides. These results were obtained from quantitative data collected from adopter students and non-adopter academics via questionnaires and were supplemented by qualitative and quantitative data collected through interview guides.

In terms of demographic information, non-adopter academics from all eight schools at the UNIVEN were represented. Notably, males outnumbered female counterparts in the deans of schools, early adopter academics and non-adopter academics, with adopter students and information librarians being the exceptions. Almost half (16: (43%) of the non-adopter academics were in the ages between 51 and 60 years, while the majority (38: 70%) of the adopter students were below the age of 20 years.

The data presentation of this study focused on IL programmes offered to first-year level students, non-adopter academics awareness of IL programmes, the responsibility of offering IL programmes, the mode of IL programmes, IL content offered to first-year level students, the suitability of IL content to first-year level students, opportunities of integrating IL into academic programmes, and challenges

faced in integrating IL into academic programmes at UNIVEN. In the context of the literature review, the next chapter interprets the research findings, which are based on the research results presented in this chapter.

## **CHAPTER 5: INTERPRETATION AND DISCUSSION OF RESEARCH FINDINGS**

### **5.1 Introduction**

The interpretation of research results focuses on what the analyses of a study mean and how reliable or valid the analyses are. Cals and Kotz (2021) and Bavdekar (2015) indicate that the discussion chapter uses the interpretations to answer the research questions of a study and to compare the findings of a particular study with those of the previously conducted studies.

The interpretation of these research findings is compared to the findings in other studies on IL programmes offered at universities. The quantitative and qualitative data results presented in the previous chapter, the literature review (Chapter 2), and other documents, such as UNIVEN academic calendars, were used for the interpretation and discussion of these research findings.

This chapter interprets and discusses the research findings of the study, based on the presentation and analysis of the research results presented in the previous chapter (Chapter 4). To avoid derailing from the key themes of this study, the interpretation of the findings are discussed in line with the following research questions:

- What is the level of knowledge of the existing IL programmes at UNIVEN?
- What are the opportunities of integrating IL into first-year level academic programmes at the UNIVEN?
- What are the challenges faced in integrating IL into first-year level academic programmes at the UNIVEN?
- Which model can be developed to enhance the IL programmes for the first-year level academic programmes at the UNIVEN?

### **5.2 Demographic information of the respondents**

Although this study collected data on the demographic information of respondents, the focus was not on the demographic information of the respondents. Hence, this study interpreted and discussed the age and gender of the respondents.

### 5.2.1 Gender

The findings on demographic information of the respondents represented the dominance of the male gender among the academics (i.e. early adopter academics, non-adopter academics and deans of schools) and information librarians, whereas the adopter students and information librarians were dominated by females. Other studies conducted at the UNIVEN showed the dominance of the male gender in academics (Mashile, Munyeka & Ndlovu 2021; Ndou & Chilimo 2021). A study that examined the perceptions of academics regarding electronic resources (e-resources) provided by the library at the UNIVEN showed a dominance of 67% of males against 33% of female counterparts (Ndou & Chilimo 2021).

The data presented in Table 4.6 showed a significant gap between the 61% female and 39% male gender among the adopter students. This study found that the students registered at the UNIVEN are dominated by females. The finding of the dominance of female students *versus* male students was also determined in other studies conducted at the UNIVEN, e.g. those conducted by Ndou and Mojapelo 2019, Kyei and Ramagoma 2013, Anyanwu, Goon and Tugli 2013, and Sikhwari 2007.

Ndou and Mojapelo (2019), who investigated access to and use of e-resources by postgraduate students at the UNIVEN, recorded 55% female students against 45% male students. Kyei and Ramagoma (2013) surveyed the use of alcohol among UNIVEN students, with a sample of 52.6% female and 47.4% male students. Furthermore, a sample characterised by 57% females and 43% males was noted in a study investigating the relationship between affective factors and the academic achievement of students at the UNIVEN (Sikhwari 2007). A slight difference of 50.49% female and 49.51% male was noted in gender distribution in a study that was conducted to examine the socio-demography and sexual experiences among UNIVEN students (Anyanwu, Goon & Tugli 2013).

### **5.2.2 Age**

Regrettably, this study did not consider obtaining more details on the age of the academics, librarians and students at the UNIVEN. However, it was noted that 38 (70%) of the adopter students were under the age of 20 years. Concerning the age of the respondents, the majority of the academics (i.e. early adopter academics, non-adopter academics and deans of schools) were older than 40.

## **5.3 Existing IL programmes at the UNIVEN**

This section interprets and discusses the research findings on the level of knowledge of the existing IL programmes at the UNIVEN. It covers the findings and interpretation of the IL content and programmes offered to the first-year students; the suitability of IL content for first-year students; the duplication of IL content offered to first-year students; offering mandatory IL programmes to first-year students; integrating IL into first-year level academic programmes; the responsibility of offering IL instructions; the current modes of IL instructions; and awareness of IL programmes among non-adopter academics at the UNIVEN.

### **5.3.1 IL content offered to first-year students at the UNIVEN**

As indicated earlier, this study adopted ILIM as part of the conceptual framework. The ILIM explains the interconnectedness of the three elements, “what”, “who” and “how”. These elements represent the processes (what), people (who) and resources (how) leading to the integration of IL into academic programmes (Wang 2011 & 2014a). The “what” of ILIM links to the five standards of ACRL, which explain the skills that an information literate person must show, such as: the “ability to determine when information is needed; how to access it effectively and efficiently; evaluate information and its sources critically; incorporate selected information into his/her knowledge base; use information effectively to accomplish a specific purpose; understand the economic, legal and social issues surrounding access and use of information ethically” (Wang 2011 & 2014a). Therefore, the UNIVEN IL programme was evaluated in line with the ILIM and ACRL standards.

The results revealed that the content of the IL programme currently offered to first-year level students registered for Entrepreneurship (FET 1140), Introduction to the Theory of Law (INT 1141), and Introduction Skills to Nutritionist Students (RNT 1141) does meet the ILIM and ACRL standards to a certain level. This study concluded that UNIVEN IL programmes meet the ILIM and ACRL standards to a certain extent, because the content aims at teaching students the following key areas: how to construct search queries; searching the web; searching databases and electronic journals; the process of evaluating information; plagiarism; copyright; information ethics; referencing and referencing techniques; writing assignments; and tips for presentation. Likewise, Bothma et al (2014 & 2017) list the same IL content offered in the UNIVEN IL programmes as the suitable content for developing information literate students.

Studies show the importance of considering the IL content before integrating IL into academic programmes (Davids & Omar 2018; Buchanan *et al* 2015). Remarkably, access and use of electronic resources, such as electronic databases and journals, are available to the entire UNIVEN community, including first-year level students. In their study at two unnamed universities in the Eastern Cape Province (SA), Moyo and Okemwa (2022) determined that the IL programmes offered cover the aspects of finding information: evaluation of information; legal and ethical use of information; and communication of information as IL content. Lwoga and Sukums (2018) also advocate the inclusion of information search techniques, plagiarism and copyright issues in IL content offered to university students.

The IL content offered in the existing IL programmes at the UNIVEN can be associated with the ACRL IL standards, which stipulate that the content offered in IL programmes should equip students with the knowledge to recognise the need for information; find information effectively and efficiently; evaluate the usefulness and relevancy of information; understand ethical and legal issues about the use of information; and documenting information and creating new knowledge. The findings of the studies that were conducted by Fullard (2016); Neerputh (2016) revealed that ACRL IL standards were also adopted in assessing the IL content offered by the DUT and UWC universities.

This study also noted that the content offered in the existing IL programmes at the UNIVEN aligned with the proclamations by several other studies (Bawack & Kala-Kamdjoug 2020; Lwehabura 2018; Tarango, Evangelista, Machin-Mastromatteo & Cortés-Vera 2017; Al-Aufi, Al-Azri & Al-Hadi 2017; Mugwisi 2015). Recognising legal issues related to information use is a component of information literacy, and university students should be expected to have some level of skill in this area (Al-Aufi, Al-Azri & Al-Hadi 2017). Mugwisi (2015) alludes that the IL content should promote the use of databases and should guide students on the ethical issues of information use, whereas Bawack and Kala-Kamdjoug's (2020) point out that information search strategy is a vital part of the learning process at universities. The content of IL programmes should consider the importance of enabling students to acquire appropriate skills for information searches, retrieval and use (Lwehabura 2018). "It is essential for students to early acquire the tools and skills they need to search for information, and for them to take into account that they should use quality sources appropriate for the situations studied" (Tarango *et al* 2017:89). Moreover, Çoklar, Yaman and Yurdakul (2017) and Bothma *et al* (2017 & 2014) emphasise that the ethical and fair use of information and referencing and reference techniques should be covered in IL content.

In addition, the finding of this study showed that the deans of schools and information librarians preferred the IL content offered to first-year level students to cover the use of computer hardware and software. Aharony and Gazit (2019) also proclaim that the IL content offered to university students should include the use of computers. When students master technical computer skills and feel at ease with technology, their IL self-efficacy improves (Aharony & Gazit 2019). The inclusion of the use of computer hardware and software into IL content preference by the deans of schools and information librarians might arise from the view that most first-year level students registered at UNIVEN were coming from disadvantaged high schools, where they were not taught how to use computers. In addition, this is important in helping all the relevant stakeholders involved in IL programme activities especially students keep up with technological trend including the understanding of new literacies.

Oyedemi and Mogano (2018:175) exposed that among the first-year students registered at a rural-based South African university, “73 per cent of the students had no access to computers at their high schools and 82 per cent of students from rural high schools had no computer access and internet at their schools”. Moreover, it is impossible to teach IL without acknowledging the influence technology has on information availability, quality, and access” (Dawes 2019:557).

### **5.3.2 Suitability of IL content to first-year level students at the UNIVEN**

This study revealed that 50 (93%) of the adopter students viewed the currently offered IL content as suitable for first-year students and there were no complaints about the overloading caused by offering IL content. In another study, conducted by Bangani, Mashiyane, Moyo, Masilo and Makate (2020:399), which examined the students’ perceptions of librarians as teachers of IL at the North-West University (SA). and revealed that “students felt that a lot of the subject was presented in a short period, which could easily result in exhaustion and information overload”. Some of the studies revealed that students complained about IL programmes overloading them with academic activities (Ozor & Toner 2022; Kurelović, Tomljanović & Davidović 2016).

The suitability of the IL content offered in the existing IL programmes, as commented by adopter students, demonstrated that the content provided the students with skills relevant to the digital information era, where the students can survive in working environments with high information overload. Kurelović, Tomljanović and Davidović (2016) observe that a lower level of IL correlates with large information overload, and universities are encouraged to offer IL instructions, in order to improve students’ IL level.

This study determined that the IL content offered in the existing IL programmes at the UNIVEN is at the required IL level, which enables students to survive in the digital information era. This implies that it is worth extending the offering of existing IL programmes to all first-year level students at the UNIVEN, as the currently offered IL content will benefit the students throughout their academic and professional careers.



This study also established that the content offered in the existing IL programmes at the UNIVEN is suitable for students from different subject fields. The adopter students registered in the Foundation Phase in the School of Management Sciences, School of Law, and the Nutrition Department in the School of Health Sciences agreed that the content offered in the existing IL programmes was suitable for their studies. Willson and Angell (2017) also state that the properly applied IL content, aligned with the ACRL standards, may be suitable across disciplines and institutions. This finding further showed that the IL content offered in existing IL programmes aligned with the ACRL standards, which stipulate the five components of IL content as identifying the need for information; finding information; evaluating information; using information; and acknowledging information sources.

Willson and Angell (2017:153) indicate that the ACRL standards are useful to “guide the creation of valid and reliable assessment tools to measure student IL competencies”. Wang (2011) clearly articulates that ILIM can be applied in integrating IL programmes into different undergraduate academic programmes. Likewise, the ILIM is also applicable to the inclusion of the stakeholders and resources required in the integration of IL into academic programmes, which aims at developing information-literate students, who will be able to identify the need for information, find information, evaluate information, apply the accessed information, and acknowledge sources of information.

### **5.3.3 Duplication of IL content offered to first-year level students**

The purpose of this section was to establish if there is a duplication of the content offered in the current IL programmes with content in other modules offered at the UNIVEN. Investigating the duplication of the offered content was essential for this study, because duplication of the module content offered to the same students could be considered as overloading the students.

The responses in Figure 4.4 showed that the majority (46: 85%) of the adopter students indicated that there was a duplication of content offered in IL programmes and other modules offered to first-year level students.

Contrary to this, all three (100%) of the early adopter academics indicated that there was no duplication of content covered in IL programmes with the content covered in some of the modules offered to a first-year level students at the UNIVEN, as indicated in Figure 4.4. This may imply that the early adopter academics were referring to the duplication of IL content with the content of the modules for which they were responsible, meaning that there is a possibility of duplication of content offered in IL programmes with content offered in other modules.

This study noted that some parts of the IL content, such as reference and referencing techniques, were offered in English Communication Skills 1141 (ECS 1141), a general academic module offered to all first-year level students at the UNIVEN. In addition, from the documents analysed, it was highlighted that Computer Literacy 1141 (ICL 1141) module covered the use of Microsoft Word, Microsoft Excel, and Microsoft PowerPoint as the content offered to first-year level students in the School of Law. Hence, this study indicated that the IL content offered in INT 1141 also covered basic computing, which included the use of Microsoft Word, Microsoft Excel and Microsoft PowerPoint. In addition, the analysed documents revealed that there was a module called Legal Research Methodology (LRM 1641), which was offered to first-year law students and imparted referencing skills and practical training on how to access both print and electronic information sources.

This study did not disagree with the findings of other studies investigating duplication of the content offered at institutions of higher learning (Northwestern University 2022; Ullah & Ameen 2019; Girven 2017; Chan, Hsu, & Hong 2008). In the USA, some of the modules at Northwestern University cover substantially the same content (Northwestern University 2022). In the UK, the duplication of the content offered in the use of library resources and the content offered in academic modules was identified at the University of Portsmouth (Collinson, Porter & Work 2021). In Taiwan, the Centre for Faculty Development at Taipei Medical University strategized the integration of new content into academic programmes by firstly interacting with academics from various disciplines, so as to reduce duplication of content covered in offered modules (Chan, Hsu & Hong 2008).

#### **5.3.4 IL programmes as mandatory for all first-year level students**

Investigating the offering of IL programmes as mandatory for all first-year level students at the UNIVEN was important in this study, because of the exclusion of other students from attending the existing IL programmes. The findings study showed that the UNIVEN should offer IL programmes to all first-year level students. All (100%) the participants of this study – adopter students, deans of schools, early adopter academics, and information librarians – agreed that IL programmes at the UNIVEN should be mandatory for all first-year level students.

The findings on offering IL programmes as mandatory to all first-year level students concurred with other studies, e.g. those conducted by Bartol, Dolničar, Podgornik, Rodič and Zoranović (2018), and Ullah and Ameen (2019). A study that sought to identify strategies for the effective implementation of IL instruction for medical students at universities of Pakistan discovered that IL programmes should be mandatory for the students and designed in coordination with the students' study field (Ullah & Ameen 2019). It is critical to provide IL programmes as mandatory for all students, in order to establish a foundation for more balanced academic progress (Bartol *et al* 2018).

This study quoted one of the early adopter academics, who emphasised that it was essential to offer IL programmes to all first-year level students, because the IL programme “enables new students to locate and use relevant information from the library and different internet platforms. It enables students to use information ethically by acknowledging the sources from which the information was extracted; it promotes computer literacy and technological competence at an early stage, especially given that the majority of our students are from poor backgrounds”. Another early adopter academic stated that “most students come to UNIVEN with no clue about information literacy. The module would benefit them a lot and prepare them for navigating their entire programmes”. Additionally, one of the information librarians responded that “IL equips students with the critical skills necessary to become independent, lifelong learners. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them”.

### **5.3.5 Integrating IL as a credit-bearing module into first-year level academic programmes**

One of the essential parts of integrating IL into academic programmes is to obtain the academics' views. This study asked the non-adopter academics to indicate if it could be possible to integrate IL as a credit-bearing module into first-year level academic programmes at the UNIVEN. Although the majority 27 (73%) of the non-adopter academics agreed that it was possible to integrate IL as a credit-bearing module into all first-year level academic programmes, 10 (27%) still regarded this process as impractical at the UNIVEN. These results showed that it was possible to integrate IL as a credit-bearing module into first-year level academic programmes at the UNIVEN.

However, there might have been obstacles that triggered some of the non-adopter academics to state that integrating IL as a credit-bearing module offered to all first-year students was impractical. More information on the challenges that could deter the integration of IL as a credit-bearing module into all first-year level academic programmes is covered in Section 6.5.

### **5.3.6 Responsibility for offering IL instructions**

The research findings of this study established that the librarians were still having the perception of ownership of IL instructions, whereas the academics were of the view that there should be a collaboration between academics and librarians in offering IL instructions. This study showed that all six (100%) of the deans of schools, three (100%) early adopter academics, more than 50% of the non-adopter academics and the adopter students shifted the responsibility of offering IL instructions to the first-year level students at the UNIVEN to collaboration between academics and librarians. The views of both the early adopter academics and deans of schools were that the librarians and academics possessed certain skills, competencies and knowledge needed for collaboration in the development and delivery of IL programmes at the UNIVEN. However, the majority 5 (five) (83%) of the information librarians preferred librarians being responsible for IL instructions to first-year level students at the UNIVEN.

This finding pointed to confusion among academics and librarians at the UNIVEN as to who should be responsible for IL instructions, just like other studies determined, e.g. those of Moyo and Okemwa (2022), Dawes (2019), and Bury (2016). This study also quoted one of the information librarians expressing the view that the academics did not trust the librarians to be IL instructors. However, Feekery, Emerson and Skyrme (2016) and Bury (2016) diverged from the responses of the information librarians. According to Feekery, Emerson and Skyrme (2016), academics tend to believe that the responsibility for developing IL lies with the librarians. Similarly, Bury (2016) acknowledges that, although the academics are willing to assist in the offering of IL, they feel that they do not have the necessary skills to do so. Gross, Latham and Julien (2018) affirm that some librarians believe that academics are responsible for developing the IL programmes.

In a different study, the academics at the American Public Research University teach IL to first-year level students as part of their module content (Dawes 2019). Likewise, most of the academics at the Florence University (Italy) do not believe that librarians possess the training competencies required for formal teaching programmes (Giangrande, Cassigoli & Guisti 2022). This implies that universities should develop suitable models that clearly identify who should do what in the offering of IL programmes, and if needs be, universities should ensure that the librarians responsible for IL instructions are re-skilled with instruction competencies.

### **5.3.7 Current mode of IL instructions at the UNIVEN**

The mode of IL instructions could be determined by factors such as learning environment, IL programme components, and student demographics (Detlor, Julien, Willson, Serenko & Lavallee 2011). Likewise, “teaching styles have to accommodate learners’ learning styles” (De Boer, Bothma & Du Toit 2011).

In investigating the current mode of IL instructions, this study established that both theoretical and practical modes were applied in the existing IL programmes at the UNIVEN, as indicated by the majority (35: 67%) of the adopter students (Table 4.9).

This showed that the existing IL programmes offered at the UNIVEN were exposing the adopter students to the technologies required in the 4IR. Ottonicar, Valentim and Mosconi (2018) propose that the mode of offering IL programmes should be competitive intelligence in the context of 4IR.

### **5.3.8 Awareness of IL programmes to the non-adopters academics**

Considering that the existing IL programmes were not offered to all first-year level students, this study examined the awareness of IL programmes among non-adopter academics. Table 4.10 study indicates that 21 (57%) non-adopter academics were not aware of the existing IL programmes offered at the UNIVEN. Furthermore, Table 4.10 outlines that only six (16%) of the non-adopter academics were aware that the currently existing IL programmes were integrated into some of the modules offered to the first-year level students at the UNIVEN.

The finding was that there was a lack of awareness about existing IL programmes among the academics at the UNIVEN. This study concurred with the findings of a study conducted by Anwar and Naveed (2019), which revealed that some of the academics within their institutions of higher learning were not aware of IL programmes offered to the students. The lack of awareness of the existing IL programmes among academics should be considered as one of the obstacles that could deter the integration of IL as a credit-bearing module offered to all first-year level students. Academics' lack of awareness of the significance of IL instructions was also one of the impediments to the development of and integration of IL into academic programmes at universities in Pakistan (Anwar & Naveed 2019).

## **5.4 Opportunities of integrating IL into academic programmes at the UNIVEN**

It was essential to understand the views of the adopter students, adopter academics, non-adopter academics, deans of schools and information librarians on opportunities of offering IL programmes to students. Understanding the opportunities of offering IL to students may trigger the university management to consider the integration of IL as a credit-bearing module into all first-year level academic programmes.

The results in Tables 4.11 and 4.12 show that all the mentioned statements were regarded as opportunities for integrating IL into academic programmes at the university. The findings on the opportunities for integrating IL into academic programmes are explained in the following sections.

#### **5.4.1 IL programmes acquiring skills on the use of library resources**

The responses derived from both the quantitative and qualitative data revealed that IL programmes equipped the students with the skills to use library resources. The results in Tables 4.11 and 4.12 showed that the majority (80%) of the adopter students and (92%) of the non-adopter academics agreed that the IL programmes equipped students with the skills to use library resources, as indicated by mean values of 1.69 and 1.51 respectively. One of the responses derived from the qualitative data stated that students attending IL programmes were able to search information sources easily, whether in digital or print format; knew which keywords to use; understood different databases; and distinguished between scientific and non-scientific material. Also, the responses from the information librarians concurred that the existing IL programmes at the UNIVEN equipped the students with skills of searching for relevant information for their studies. A notable response from the qualitative data was that IL programmes equipped first-year-level students with skills to locate and use relevant information from the library and different internet platforms. These results concurred with those of the studies conducted by Tlakula and Fombad (2017), Adeleke and Emeahara (2016), Bhuvhukuvhani, Chiparausha and Zuvalinyenga (2012), in that IL programmes equip students with the skills to use library resources.

In Nigeria, a study conducted at the University of Ibadan revealed a significant relationship between IL skills and use of library resources, such as e-resources (Adeleke & Emeahara 2016). In Zimbabwe, a study that examined the use of library resources at the Bindura University of Science Education established a correlation between IL programmes and increased use of library resources (Bhuvhukuvhani, Chiparausha & Zuvalinyenga 2012). Hassasni (2015:33) acknowledges that students who attend IL modules have an opportunity to acquire the skills of effectively searching the internet or effectively using e-resources for academic purposes.

At the UNIVEN, Tlakula and Fombad (2017) examined the level of use of e-resources among undergraduate students. The study revealed that the lack of IL skills among students was one of the reasons for students not fully utilising the library e-resources.

Moreover, the research findings of this study implied that the more the IL programmes provide students with the skills to use library resources, the more the library resources are being accessed and used by the students and the university will obtain value for money in purchasing and subscription to library resources. Paterson and Gamtso (2017) affirm that students, who do not have IL skills, are easily frustrated when searching for information for their academic tasks and they turn up using information sources that are not peer-reviewed.

#### **5.4.2 IL programmes equipping students with skills for writing academic tasks**

The mean values of 1.70 and 1.59 in Tables 4.11 and 4.12 demonstrated that the majority (83%) of the adopter students and 92% of the non-adopter academics agreed that IL programmes equipped students with skills for writing assignments and doing research and other academic-related tasks. As it has been noted that IL programmes equip students with skills to use library resources, having skills in the use of library resources should be associated with equipping students with the skills for writing assignments, conducting research and other information-related tasks. In coinciding with the studies of Squibb and Zanzucchi (2020), Mnkeni-Saurombe (2015), and Neerpath (2012) studies, this study found that IL programmes equipped students with ideas that were applicable for completing their academic assignments.

Neerpath (2012) views that the integration of IL into the academic programme has the potential to generate new ideas in a subject discipline. Mnkeni-Saurombe (2015) opines that IL competent students have the potential to increase the research output of the institution, thereby contributing to raising the H-Index of the institution.



It has been noted that students with IL skills report growth in their research skills and increased confidence in the research process, compared to the students without IL skills (Squibb & Zanzucchi 2020). Likewise, universities that have properly integrated IL into the academic programmes are developing information-literate students, who effectively learn research strategies (Derakhshan & Singh 2011).

#### **5.4.3 IL programmes improving students' academic performances**

As far as IL programmes improving students' academic performance, this study supplemented those conducted by Moyo and Okemwa (2022), Banik and Kumar (2019), and Davids and Omar (2018), in that IL programmes do improve students' academic performances. Tables 4.11 and 4.12, with the mean values of 1.93 and 1.73, respectively presented that the majority of the adopter students (76%) and the non-adopter academics (92%) agreed that IL programmes improved students' academic performance.

Moyo and Okemwa (2022:9) established that students at two undisclosed universities in SA acknowledged that the IL programmes significantly helped them in their studies and "a large extent of the students confirmed that IL has a positive impact on student's academic success. Banik and Kumar (2019), who explored the level of academic performance and IL skills of undergraduate students in Bangladesh, determined that IL skills were part of the "significant factors which influence students' academic performance". Davids and Omar (2018) reiterate that a well-implemented IL programme improves students' performance. In a case study conducted at the CPUT, academics noticed that the offered IL improved the performance of first-year level students.

Several studies show that IL skills are vital to success in education (Davids & Omar 2018; Krysiwski 2018; Hernández-Rabanal 2014; 2008). It has been observed that the IL competencies have a key role in students' academic performance (Hernández-Rabanal 2014). Likewise, Krysiwski (2018) alluded that the acquired IL skills also boost students' confidence in their academic activities. The research findings of this study also pointed to the fact that the existing IL programmes offered at the UNIVEN were playing a role in the pass rate of university students.

#### **5.4.4 Skills gained from IL being applied up to postgraduate level**

The fact that skills gained from IL programmes are associated with the use of library resources, writing assignments and doing research and improving academic performance, indicates that students who have acquired IL skills at undergraduate level can also apply these skills at postgraduate level. A mean value of 1.7 in Table 4.11 study showed that the majority (85%) of adopter students agreed that the skills that they acquired in the existing IL programmes offered at the UNIVEN could be used at postgraduate level. Some of the responses obtained from the qualitative data quoted the information librarians as stating that “IL forms the basis for lifelong learning. It is common to all disciplines, to all learning environments and all levels of education” and “IL equips students with the critical skills necessary to become independent, lifelong learners”. This finding showed that the acquired skills in IL programmes were applicable for future use. Several studies comment that IL skills are regarded as the skills for lifelong learning (Onyanha 2020; Fullard 2016; Hernández-Rabanal 2014; Derakhshan & Singh 2011; Abid 2008).

Onyanha (2020) observes that IL skills as lifelong-learning skills are needed in identifying relevant information for assigned projects and evaluating and using information ethically. Derakhshan and Singh (2011) emphasise that the integration of IL in academic programmes is significant for the development of lifelong learners. In addition, IL skills are not only involved in educational goals, but also in lifelong goals, and rely on the continuous learning of specific and evolving behaviours (Abid 2008). IL is an essential component of lifelong learning and must be recognised and enhanced (Hernández-Rabanal 2014). IL has been deemed a cornerstone to graduate attributes of the 21<sup>st</sup> century student, such as independence, critical thinking, and lifelong learning (Fullard 2016).

#### **5.4.5 Skills gained from IL being applicable to the workplace**

There is a great deal of information available through technology, and IL skills are relevant to improving processes and competitive advantage in both small and large businesses and are essential skills that can contribute to the workforce in 4IR (Ottonicar, Valentim & Mosconi 2018).

When asked if the acquired skills from the existing IL programmes at the UNIVEN could be applicable to the workforce, Table 4.11 of this study showed a mean value of 1.76, which indicated that the majority (85%) of adopter students agreed with the statement. Lamentably, this study did not provide the deans of schools, early adopter academics, non-adopter academics and information librarians with an opportunity to agree or disagree with the statement. However, the views of the adopter students on the IL skills being applicable to the workforce aligned with those of Teo, Unwin, Scherer and Gardiner (2021) and Tsekeris (2019). This implied that the existing IL programmes offered at the UNIVEN were grooming the adopter students for the workforce and for lifelong learning, as previously noted.

Carter (2017) notes that the Chief Executive Officers (CEOs) of organisations and the World Economic Forum (WED) commend IL skills as the key skills that are most highly valued in the 4IR. Tsekeris (2019) alludes that IL skills would be one of the necessary job requirements in the 4IR workforce. Hernández-Rabanal (2014) pleads with higher education institutions to equip students with IL skills, since these skills have a highly significant impact on the workplace. In this way, IL skills are considered as working tools in the 21<sup>st</sup> century (Teo *et al* 2021).

#### **5.4.6 Skills gained from IL instructions being useful for first-year university students**

“First-year university students lack experience with differentiating between primary and secondary sources, locating credible information sources (both online and printed), evaluating the quality of information, and even narrowing a topic” (Manus 2009). Therefore, it was significant to determine if the existing IL programmes were useful to the adopter students. The results in Table 4.11 disclosed that the existing IL programmes at the UNIVEN were useful to first-year level students. The mean value of 1.61 (Table 4.11) indicated that the majority (85%) of the adopter students learned new skills by attending the IL instructions. In addition, a mean value of 1.56 in Table 4.11 illustrated that the majority (89%) of the adopter students agreed that the skills gained from IL instructions were useful for first-year university students.

Considering that the non-adopter academics agreed that the IL programmes increased students' academic performance and that the IL programmes afforded students an opportunity to acquire skills in the use of library resources, this study concurred that IL instructions were useful for first-year university students at the UNIVEN. Hence, a need for integrating IL as a credit-bearing module into the academic first-year level programmes. A study conducted at the Cape Peninsula University of Technology (CPUT) revealed that students perceived IL skills as very useful, as the acquired IL skills enabled them to use library e-resources on their own (Hart & Davids (2010).

#### **5.4.7 IL programme being compulsory for all**

Moyo and Mavodza (2016) proclaim that IL is offered as a compulsory module to all first-year level students at UP. At the North-West University (NWU), IL is integrated into a credit-bearing module that is compulsory for all undergraduate students (Mashiane, Bangani & Van Deventer 2020). However, Tiemensma (2012) describes the *status quo* of IL programmes at universities in South Africa as programmes offered either compulsory or voluntary.

At the UNIVEN, the existing IL programmes were not compulsory for all students. The findings of this study supported the proposal of offering IL to all first-year level students at the UNIVEN. The mean value of 1.30 in Table 4.12 indicated that the majority (97%) of non-adopter academics diametrically corresponded that the only way to make students attend and acquire the intended IL skills was to make the IL programme compulsory for all. The majority (87%) of adopter students – as indicated by the mean value of 1.62 in Table 4.11 – also advocated the compulsory IL for all first-year level students at the UNIVEN. Furthermore, the results of this study (Table 4.7) revealed that the deans of schools, early adopter academics and information librarians diametrically corresponded that IL should be compulsory for all first-year level students at the UNIVEN.

Rafiq, Ali and Khan (2020) advocate compulsory offering of IL to university students. The scholars, who examined IL practices and methods used at 11 public and 19 private universities in Pakistan, support the compulsory offering of IL as credit-bearing modules for all students at all levels of study for the benefit of developing life-long and independent students (Rafiq, Ali & Khan 2020).

#### **5.4.8 Offering of IL programme leading to the integration of IL as a credit-bearing module in academic programmes**

As Lwehabura and Stilwell (2008) remark, a concern of the initiative to integrate IL as a credit-bearing module into academic programmes not receiving the attention it deserves in developing countries – particularly in Africa, (Davids & Omar 2018; Moyo & Mavodza 2016) – reveal that some institutions of higher learning in SA have recognised the importance IL and are now offering IL as a credit-bearing module.

The results of this study demonstrated that offering of IL programme may lead to the integration of IL as a credit-bearing module into the academic programme. Table 4.12 showed a mean value of 2.00 as an indication of the majority (75%) of academics agreeing that initiating the IL programmes at a university could lead to the integration of IL into other credit-bearing modules in the academic programmes.

This finding is corroborated by other studies conducted in developed countries, e.g. the studies of Lanning and Mallek (2017), Webber and Johnston (2017), and Moselen and Wang (2014). In New Zealand, the University of Auckland integrated IL into a credit-bearing module offered for legal research students (Moselen & Wang 2014). In the UK, the Strathclyde Business School offers IL as a credit-bearing module to all its students (Webber & Johnston 2017). At the Southern Utah University (USA), IL has been integrated into the general education programmes as a credit-bearing module offered for all first-year level students (Lanning & Mallek 2017).

The existing IL programmes at the UNIVEN were part of the evidence that the university could end up integrating IL into other credit-bearing modules offered to all first-year level students, irrespective of the schools or departments. This may also be possible, considering that 100% of the deans of schools, 100% of early adopter academics, 95% of the non-adopter academics and 100% of the information librarians

diametrically agreed that IL should be compulsory for all first-year level students at the UNIVEN.

## **5.5 Challenges faced in integrating IL into academic programmes at university**

The challenges faced in offering IL programmes delay the process of integrating IL as a credit-bearing module at universities. Any challenge in the integration of IL into academic programmes should be identified and properly addressed. Therefore, establishing the challenges faced in integration of IL into academic programmes at the UNIVEN was significant for this study, as a way of navigating the possibilities of integrating IL as a credit-bearing module into all first-year-level academic programmes. Ozor and Toner (2022) proclaim that, in most African universities, the integration of the IL into the academic programmes IL are deterred by numerous challenges. The findings on the challenges faced in integration of IL into academic programmes at the UNIVEN are explained in the following sections.

### **5.5.1 Inadequate venues**

As observed by Rafiq, Ali and Khan (2020), the university should provide sufficient resources to university libraries for the smooth offering of IL programmes. Several studies raise concerns regarding the lack of resources, such as venues and ICT-related resources, as the challenges faced in the offering of IL in African countries (Lwehabura 2018; Lwehabura & Stilwell 2008; Oberprieler, Masters & Gibbs 2005).

The results of this study (Table 4.13) showed that the majority (81%) of non-adopter academics regarded inadequate lecture venues with facilities needed to teach IL as a major challenge that the UNIVEN could face in integrating IL into other credit-bearing modules offered to all first-year level academic programmes. Likewise, the responses derived from the early adopter academics, deans of schools and information librarians concurred that inadequate lecture venues with facilities needed for IL instructions were a challenge faced by the university.

The findings on inadequate venues for IL instructions are also noted in several other studies (Moyo & Okemwa 2022; Moyo & Mavodza 2016; Omar, Haji & Mwitumbe 2014; Baro & Keboh 2012). When examining the provision of IL skills to both

undergraduate and postgraduate students at universities in SA and the UAE, Moyo and Mavodza (2016) identified a lack of appropriate facilities and resources.

The mean value of 2.04 in Table 4.14 demonstrated that the majority (74%) of the adopter students perceived the venues used for IL instructions as well equipped with teaching facilities, compared to lecture halls used in teaching other modules. This study noted that the IL instructions were mostly conducted in the library training room, to which the adopter students referred as well equipped with teaching facilities, compared to other lecture venues. This did not imply that the UNIVEN had adequate lecture venues that could be used for IL instructions, should the university decide to integrate IL into all first-year level academic programmes. However, the early adopter academics indicated that the UNIVEN did not have enough resources to cater to large classes. One of the information librarians indicated that the time allocated to IL programmes was not enough and that poor infrastructure was also a challenge to offering IL programmes at the UNIVEN.

### **5.5.2 Inadequate human resources**

Baro and Keboh (2012) identify inadequate human resources to teach IL as one of the challenges faced by universities in SA, Botswana, Malawi, Nigeria and Uganda. Omar, Haji and Mwitumbe (2014) identify inadequate numbers of qualified IL specialists and the lack of background on teaching IL as some of the challenges faced at three universities of in Zanzibar: State University of Zanzibar, University College of Education, and Zanzibar University.

Table 4.13 indicated a mean value of 2.22, which showed that 54% of the non-adopter academics agreed that inadequate human resources for IL instructions could be a challenge, if the UNIVEN decided to offer IL as an integrated module into other credit-bearing modules offered in all first-year level academic programmes. The early adopter academics, deans of schools and information librarians were also quoted that inadequate human resources for IL instructions could deter the integration of IL into other credit-bearing modules offered in all first-year level academic programmes.

Moyo and Okemwa (2022), Moyo and Mavodza (2016); Omar, Haji and Mwitumbe (2014) and Baro & Keboh (2012) also discovered inadequate human resources for IL instructions at universities.

However, a mean value of 1.96 in Table 4.14 reflected that the majority (78%) of the adopter students perceived the librarians or lecturers responsible for IL instructions as being well informed about the IL content offered in the existing IL programmes at the UNIVEN. This finding showed that the librarians, who were responsible for IL instructions, were able to transfer their IL knowledge to first-year level students. Bangani *et al* (2020) proclaim that there are librarians who are able to teach IL to university students. At the NWU, librarians responsible for IL instructions are effective IL instructors (Bangani *et al* 2020).

Table 4.13 recorded a mean value of 2.22, which indicated that marginally 54% of the non-adopter academics agreed that inadequate human resources for IL instructions could be a challenge if the UNIVEN decided to offer the IL as an integrated module into other credit-bearing modules offered in all first-year level academic programmes. Moyo and Okemwa (2022), Moyo and Mavodza (2016), Omar, Haji and Mwitumbe (2014) and Baro & Keboh (2012) also discovered inadequate human resources for IL instructions at universities. Baro and Keboh (2012) identify inadequate human resources to teach IL as one of the challenges faced by universities in South Africa, Botswana, Malawi, Nigeria and Uganda. Omar, Haji and Mwitumbe (2014) identify inadequate numbers of qualified IL specialists and lack of background in teaching IL as some of the challenges faced in three universities of Zanzibar: State University of Zanzibar, University College of Education, and Zanzibar University.

The early adopter academics, deans of schools and information librarians mentioned inadequate human resources for IL instructions as a challenge that could deter the integration of IL into other credit-bearing modules offered in all first-year level academic programmes. One of the deans of schools quoted that “challenges will be due to the current congested syllabus and the lack of instructors who can transcend disciplinary laagers, resources will also be a challenge, as will be the attitudes of old school academics”.

The response derived from the qualitative data quoted one of the librarians stating that “There is an inadequate number of teaching staff to facilitate IL programmes”. However, a mean value of 1.96 in Table 4.14 study reflected that the majority (78%) of the adopter students perceived the librarians or lecturers responsible for IL



instructions as being well informed about the IL content offered in the existing IL programmes at the UNIVEN. This finding showed that the librarians currently responsible for IL instructions were able to transfer their IL knowledge to the first-year level students. This study found that inadequate human resources in the offering of IL at the UNIVEN could not be seen as a major challenge. The university library could use this as an opportunity to reskill currently employed librarians to be part of the IL instructors.

### **5.5.3 Lack of collaboration between academics and librarians**

Several studies emphasise the collaboration between academics and librarians in the offering of IL in universities (Bønløkke, Kobow & Kristensen 2015; Hassasni 2015). A study that examined the collaboration between academics and librarians at VIA University College (Denmark) discovered that “formal cooperation between librarians and academics is necessary and provides the needed access to the other’s understanding of IL, the curriculum, pedagogical professionalism, and mutual roles. A joint conceptual understanding of IL is important for making this teamwork work” (Bønløkke, Kobow & Kristensen 2015:2). The scholars also state that, “generally cooperation between library and ‘academics’ exists but it differs from library to library and from programme to programme” (Bønløkke, Kobow & Kristensen 2015:6).

Table 4.13 showed a mean value of 2.19 presented by 56% of the non-adopter academics indicating that the lack of collaboration between the academics and librarians could be regarded as one of the challenges that could hinder the integration of IL into other credit-bearing modules offered to all first-year level academic programmes at the UNIVEN.

The responses of early adopter academics, deans of schools and information librarians supported the notion that the lack of collaboration between the academics and librarians was one of the challenges that could be faced in the offering of IL as a credit-bearing module integrated into all first-year level academic programmes at the UNIVEN. One of the information librarians was quoted as expressing that “there is a lack of support as well as ignorance about IL programmes between the two parties, i.e., the library and academic departments”. The finding is that there was a lack of collaboration between academics and librarians in the offering of IL programmes at

the UNIVEN. Other studies comment on the fact that not knowing what to do is the cause of the lack of collaboration between academics and librarians in the offering of IL programmes at universities (Napp & Ballard 2013; Noe 2013; Badke 2008). “Yet another challenge is the lack of clarity as to who should be responsible for the IL programme” (Moyo & Okemwa 2022:5).

In corroboration with this finding, a mean value of 2.04 in Table 4.14 demonstrated that more than half (67%) of the adopter students agreed that IL instructions required collaboration between academics and librarians. Other studies concur that the lack of collaboration between academics and librarians is one of the challenges faced in the integration of IL into other credit-bearing modules in academic programmes (Moyo & Okemwa 2022; Moyo & Mavodza 2016; Omar, Haji & Mwitumbe 2014; Baro & Keboh 2012). Moyo and Mavodza (2016) revealed that, in South African and the United Arab Emirates (UAE) universities, there is a lack of collaboration between academics and librarians in the provision of IL programmes. A lack of collaboration between academics and librarians in the offering of IL programmes has been depicted in three universities in Zanzibar: the State University of Zanzibar, the University College of Education, and the Zanzibar University (Omar, Haji & Mwitumbe 2014). Hence, Onyancha (2020:107) alludes that “IL is dynamic and spread across many disciplines and would, therefore, require interdisciplinary and collaborative approaches for its effective delivery in what is turning out to be diverse and complex information and learning environments”.

#### **5.5.4 Lack of IL policy at the university**

Mnkeni-Saurombe (2015) advocates the need for the university to develop a clear IL policy that should be implemented as guidelines for IL practices within the institution. Table 4.13 displayed a mean value of 2.38 as an indication of (57%) of the non-adopter academics agreeing that the lack of policy in the university was one of the challenges that could hinder the integration of IL into other credit-bearing modules offered in all first-year level academic programmes. Likewise, Table 4.14 showed a mean value of 2.76, thereby indicating that slightly less than half (44.4%) of the adopter students were not quite sure if they were aware of the UNIVEN IL policy. One of the information librarians stated that some of the adopter students were not taking the IL programmes seriously and ended up not attending the IL sessions. The finding was that the lack of

a clear IL policy was the cause of delaying the integration of IL into other credit-bearing modules offered in all first-year level academic programmes at the UNIVEN.

Several studies discovered that the lack of IL policy is one of the primary impediments to the development and integration of IL into academic programmes (Anwar & Naveed 2019; Davids & Omar 2018; Onwuchekwa 2017; Moyo & Mavodza 2016; Anyaoku, Ezeani & Osuigwe 2014). In the South-East Nigerian universities, Anyaoku, Ezeani & Osuigwe (2014) depicted the lack of IL policy as one of the barriers to integrating IL into academic programmes. At the National Open University of Nigeria (NOUN), the lack of IL policy was one of the major challenges in integrating IL into the academic programmes (Onwuchekwa 2017). Some of the universities in SA and the UAE are struggling to integrate IL into their academic programmes, due to a lack of IL policy (Moyo & Mavodza 2016). Notably, Davids and Omar (2018) disclose that the institutional IL policy at CPUT (SA) clearly stipulate that IL should be part of a fully accredited module. In examining the perceptions of students on the IL at two universities in the Eastern Cape province of South Africa, Moyo and Okemwa (2022) noted the lack of clear-cut IL policies as a challenge faced by those universities in offering IL programmes. The lack of IL policy in universities is mainly caused by the non-involvement of the university management and academics in the development of IL programmes (Anwar & Naveed 2019).

### **5.5.5 Lack of home-grown IL standards**

Jackson and Durkee (2008) proclaim that most of the universities in the US adopted the homegrown IL standards in integrating IL into academic programmes. Remarkably, Moyo and Mavodza (2016) assert that universities in SA lack homegrown IL standards. Likewise, Tlakula and Fombad (2017) suggest that the UNIVEN should re-examine the IL standards used in the offering of its IL programmes.

However, the results in Table 4.13 depicted a mean value of 2.51, thereby showing that 43% of the non-adopter academics were not quite sure if the lack of home-grown IL standards could hinder the integration of IL as credit-bearing into all first-year level academic programmes. To show that there is a lack of the homegrown IL standards adopted by the universities in SA, the results (Table 4.16) demonstrated the

recommendation of the different international IL standards by the information librarians to be adopted by the UNIVEN in integrating IL as a credit-bearing module into all first-year level academic programmes. This study found that there were no IL standards used to measure the IL programmes at the UNIVEN. However, a lack of home-grown IL standards could not hinder the integration of IL as a credit-bearing module into all first-year level academic programmes at the UNIVEN, which implied that the UNIVEN should first consider its circumstances in aligning its IL programmes with the IL standards. The ACRL IL standards could be considered, as they are commanded to be applicable in different IL instruction methods.

### **6.5.6 Methods of offering IL programmes**

As Tewell (2018) asserts, it is not easy for the universities to find a better method to address broader conceptions of offering IL. Davids and Omar (2018), Tshuma and Chigada (2018), Munn and Small (2017), and Mnkeni-Saurombe (2015) advocate that there are different delivery methods that may be applicable in offering IL to university students. The results in Table 4.13 displayed a mean value of 2.43 as presenting 54% of the non-adopter academics agreeing that the methods of offering IL programmes could jeopardise the integration of IL as a credit-bearing module into all first-year level academic programmes at the UNIVEN. However, Table 4.14 reflected a mean value of 3.20 as an indication of 28% of the adopter students not being quite sure if the university had to change the methods for offering IL in the existing IL programmes. This meant that the adopter students were not sure if the university could continue with the current methods used in offering IL programmes, if the UNIVEN decided to integrate IL as a credit-bearing module into all first-year level academic programmes. The finding was that the methods used for IL instructions in the existing IL programmes were not empathised with the adopter students.

Mullar (2014) remarks that there is a need for implementing appropriate pedagogical approaches that would positively impact IL instructions. Likewise, Mnkeni-Saurombe (2015) contends that IL programmes may be offered as generic, embedded, integrated modules or stand-alone modules. According to De Jager and Nassimbeni (2003), offering IL programmes as generic modules may be less appropriate for instructing IL for lifelong learning, whereas Mnkeni-Saurombe (2015) opines that there is no

assurance that stand-alone IL programmes are more effective than the IL programmes integrated into other credit-bearing modules. Davids and Omar (2018) and Lwehabura and Stilwell (2008) advocate the integration of IL into other credit-bearing modules as the appropriate method of offering IL programmes in universities.

Consequently, there is no method that is better than other methods in offering IL programmes to university students; particularly when the intended IL programmes are aligned to IL standards. Gross, Latham and Julien (2018:262) assert that it is not easy to implement IL standards, such as the ACRL IL standards, in a single IL programme and implementing the IL standards may require re-structuring of the approach to IL programmes.

### **5.5.7 Offering IL as informal programmes**

Although O'Hanlon (2007) opines that universities should offer IL as formal programmes, other studies – e.g. those of Johnson (2018); Baro, Seimode and Godfrey (2013), and Lwehabura & Stilwell (2008) – demonstrate that some universities are offering IL programmes as informal instructions. The results in Table 4.13 showed a mean value of 2.73, presenting that 46% of the non-adopter academics were neutral that offering IL as the informal programme could jeopardise the integration of IL as a credit-bearing module into first-year level academic programmes.

In addition, the mean value of 3.13 in Table 4.14 portrayed that 35% of the adopter students were neutral in terms of offering IL as an informal programme being regarded as a challenge in integrating IL as a credit-bearing module offered in all first-year level academic programmes at the UNIVEN.

From the informal interview with the information librarian currently responsible for IL instructions to adopter students, the UNIVEN IL programmes were not officially accommodated in university timetable. It is the responsibility of the information librarian responsible for IL instructions to coordinate a suitable venue and time for IL instructions, instead of the university administration, in order to ensure that the IL instructions are reflected in the university timetable and that these instructions accommodated in the allocation of venues suitable for IL instructions. The absence of

IL instructions from the university timetable may lead students to regard the currently offered IL programmes as informal programmes.

#### **5.5.8 Integration of IL into the academic programme overloading students with more academic activities**

“It was important for the colleagues to determine if students were experiencing IL instruction overload because of the number and similarity of instruction sessions they had been exposed to over the course of their degree program” (Paterson & Gamtso 2017).

The mean value of 3.46 in Table 4.14 indicated that 52% of the adopter students took a neutral stance in terms of integration of IL into the academic programme overloading students with more academic activities. In addition, the results in Figure 4.3 illustrated that only three (5%) of the adopter students indicated that the currently offered IL content was overloading their academic activities. This result is understandable, considering that it was the first time for most of the adopter students to receive IL instructions and, therefore, they could not make decisions on the asked question.

Two of the early adopter academics were of the view that students could be overloaded if the university integrated IL as a credit-bearing module in all first-year level academic programmes.

The early adopter academics stated that “students already have more workload, and it might mean cancelling certain modules to meet the required credits for qualification”. The deans of schools articulated that considering the proliferation of module numbers that were already a high burden to students, who were still in transition from high schools, offering IL as a credit-bearing module to all first-year level academic programmes could be regarded as overloading students.

The finding of this study was that the existing IL programmes were not overloading the adopter students with academic activities. The existing IL programmes at the UNIVEN were not offered to the adopter students as one-shot slot programmes, compared to those students who only received training on the use of library resources in one-shot slots.

The overloading of IL programmes on the students' academic activities depends on the methods used by the universities. Harrison and Deans (2021:177) proclaim that, depending on the methods used for IL instructions, "some students may be demotivated in IL instruction sessions because of an overload of information, which leads to frustration and poor performance". For example, one-shot slot IL programmes could overload students, as Bangani *et al* (2020) note that IL programmes offered in a short period could easily exhaust and overload students. Remarkably, studies show that the intention of offering IL at universities is to enable students to deal with information overload – not to overload students with academic tasks (Ozor & Toner 2022; Onyancha 2020; Bangani *et al* 2020; Dawes 2019; Mullins 2016). As observed by Ozor and Toner (2022), students should acquire IL skills, so that they (students) could be able to deal with the abundance of information sources.

## **5.6 Strategies that may enhance the IL programmes for first-year level academic programmes at the UNIVEN**

The last research objective of this study involved developing a model that may enhance the IL programmes for first-year-level academic programmes at the UNIVEN. In order to integrate IL as a credit-bearing module in all first-year level academic programmes, it is essential to enhance the currently offered IL programmes at the UNIVEN.

Developing a strategy for integrating IL as a credit-bearing module into academic programmes requires methods and standards that should be followed in the offering of the programmes.

### **5.6.1 Methods for integrating IL into first-year level academic programmes**

Davids and Omar (2018) emphasise the need for South African universities to integrate IL as a credit-bearing module into their academic programmes. In the preferred method of integrating IL as a credit-bearing module into all first-year-level academic programmes, this study determined that the preferred method that the UNIVEN should implement was the integration of IL into other credit-bearing modules offered to the first-year level students. The majority (three: 100%) of the early adopter

academics; five (83%) of information librarians; 26 (79%) of the non-adopter academics; and more than half (three: 60%) of the deans of schools opted for the integration of IL into other credit-bearing modules for first-year-level academic programmes at the UNIVEN (see Table 4.15). This finding concurred with the those of other studies conducted in SA – e.g. those conducted by Tlakula and Fombad (2017) and Mnkeni-Saurombe (2015) – in that the appropriate and useful method for integrating IL into academic programmes is to integrate IL into other credit-bearing modules. IL programmes may be enhanced if the “current UNIVEN library training sessions move beyond the present basic one-off information and orientation sessions to ongoing IL instructions at all levels of study” and be fully integrated into other credit-bearing modules in academic programmes (Tlakula & Fombad 2017). Although Tlakula and Fombad (2017) are referring to UNIVEN library training, it has been noted that the UNIVEN has ongoing IL programmes that are offered to segregated students (first-year level students in the Foundation Phase in the School of Management Sciences, first-year level students in the Nutrition Department in the School of Health Sciences, and first-year level students in the School of Law). Correspondingly, Mnkeni-Saurombe (2015) emphasises the significance of integrating IL into other credit-bearing modules, rather than offering it as stand-alone IL programmes in academic programmes.

To coincide with integrating IL into other credit-bearing modules than offering it as a stand-alone programme, a response derived from the deans of schools quoted as “students may undermine it (IL) the same way they do with English Language Communication. The solution would be to integrate its content with another module that they value”.

Notably, one of the deans of schools’ responses suggested that the students should be allowed to opt for taking the IL module in the first or second semester. However, this study regarded the purpose of integrating IL into first-year-level academic programmes as to enable students to determine the nature and extent of the information needed; to access needed information effectively and efficiently; to evaluate information and its sources critically; to use information effectively to accomplish a specific purpose and; to understand the economic, legal and social issues surrounding the use of information. Therefore, instead of having options for offering the IL programmes in the first or second semester, the IL content could be



divided and offered in both semesters. This study quoted one of the early adopter academics as giving the reason for integrating IL into other credit-bearing modules as “because some of the aspects it covers are also covered in Legal Research Methodology (LRM 1641). However, this may mean that LRM 1641 needs to be moved from the second semester to the first semester since IL is a very critical orientation module”.

### **5.6.2 Standards associated with IL programmes**

It was essential to examine the information librarians’ knowledge of the IL standards aligned to the existing IL programmes offered at the UNIVEN. Tlakula and Fombad (2017) remark that UNIVEN librarians should re-examine the IL standards that will be supportive and provide new ways of teaching to develop critical thinking and independent graduate students. Likewise, universities should be guided by the national or international IL standards in the offering of IL programmes relevant for information literate students (Dawes 2019).

This study depicts that the information librarians at the UNIVEN deemed that UNIVEN IL programmes should be aligned to the international IL standards. Remarkably, the information librarians at the UNIVEN supported the use of the international IL standards in the offering of IL programmes, as indicated in Table 4.16. Studies corroborate that the IL content aligned with the ACRL IL standards is suitable for preparing students to be information literate and could be well integrated into general and specialised academic modules (Dawes 2019; Gross, Latham & Julien 2018; Schulte & Knapp 2017; Swapna & Biradar 2017; Willson & Angell 2017). The ACRL IL standards are some of the IL standards that “effectively paved the way for IL to be more easily integrated into discipline teaching” (Dawes 2019:547). Consequently, the findings in Section 5.3.1 on the content offered in existing IL programmes at the UNIVEN seemed relevant to the ACRL IL standards.

The adoption of the ACRL IL standards in the offering of IL programmes is due to its applicability to different study disciplines (Willson & Angell 2017; Neerpuuth 2016; Emmett & Emde 2007). At the Brooklyn Campus, Long Island University (USA), the ACRL IL standards were adopted in assessing the IL level in undergraduate nursing research papers to their development as health workers, and the standards were

regarded as “valid and reliable assessment tools to measure student IL competencies” (Willson & Angell 2017:153). In SA, the Durban University of Technology (DUT) adopted the ACRL IL standards in integrating IL into the General Education Module (GEM) for first-year undergraduate students across all six faculties at the university (Neerputh 2016). At the University of Kansas, the ACRL IL has proved to be an invaluable mechanism in the efficacy of an academic programme intended to foster IL skills in graduate students in the Chemistry (CHEM 720) module (Emmett & Emde 2007). Furthermore, the ACRL standards support the collaboration between academics and librarians in offering IL to university students (Fullard 2016; Mullins 2016). The ACRL standards provide clarity in the instructions of IL content and that the standards are academically inspiring (Harrison & Deans 2021).

### **5.6.3 Improved model to enhance IL programmes for first-year level academic programmes at the UNIVEN**

As this study adopted the ILIM model, which takes cognisance of the three key elements of “what” (processes), “who” (people) and “how” (resources). In addition, the current UNIVEN IL was considered relevant, as it met the five key areas of the ACRL model. Given that research results and findings of this study revealed that the IL training programmes were offered to the Foundation Phase in the School of Management Sciences only, first-year level students in the School of Law, and first-year level students in the Nutrition Department from the School of Health Sciences – not to other students. This was concerning, as the majority of the UNIVEN students were from historically disadvantaged school backgrounds, where they had not been given sufficient opportunities to access school libraries and get exposure to information searches, retrieval, evaluation and information use ethical protocols. In addition, non-adopter academics and deans were also not sufficiently knowledgeable of the UNIVEN IL programmes because of limited collaborative activities between the academics and information librarians. Figure 5.1 illustrates the model that is recommended to address the gaps identified by results and the findings of this study.

The recommended model is capable of adapting the process of designing, implementing, monitoring and evaluating IL programmes offered in all first-year level academic programmes. In addition, the ILIM is appropriate for the participation of the

required stakeholders – such as academic departments, administration departments, library departments and other university committees – in the development and monitoring of the IL programmes. Furthermore, the recommended model is capable of adapting the identification of the required resources and the five key elements of ACRL IL standards to develop and monitor well-structured IL programmes and to strengthen the existing IL programmes at the UNIVEN, with the goal of developing information-literate graduates.

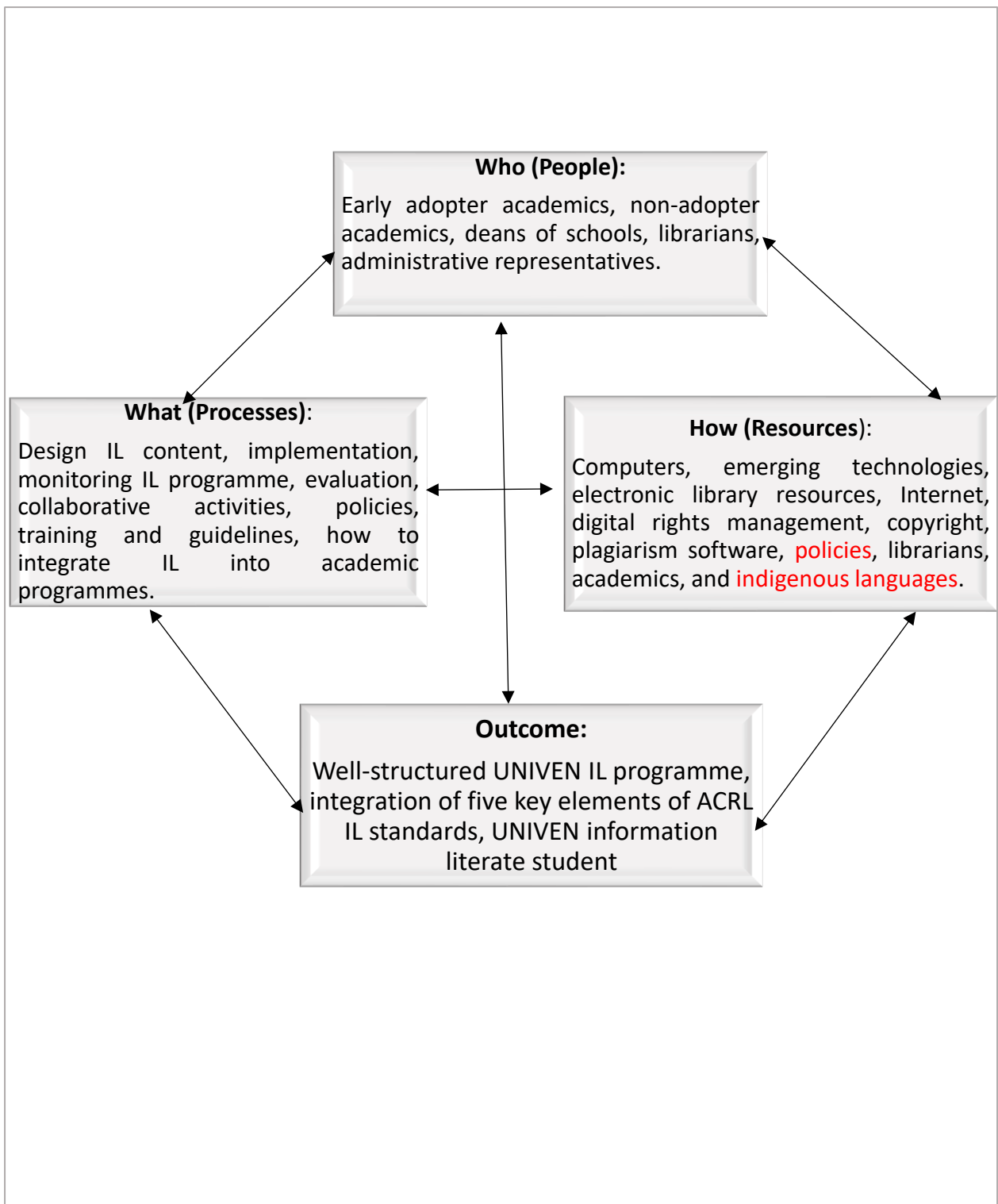


Figure 5.1: Recommended model

(Source: Adapted from Wang 2011:707)

Noll and Brown (2018) assert that frameworks and policies should be used to convince institutions of higher learning to enhance the IL programmes. Comparing the findings in Section 5.3.1 (Chapter 5) and the results in Table 4.13 (Chapter 4) showed that the lack of home-grown IL standards was not a major challenge hindering the integration of IL as a credit-bearing module into all first-year level academic programmes.

This study found that the ILIM model, which could accommodate the early adopter academics, non-adopter academics, deans of schools, librarians and students administrative representatives as the university stakeholders (the who) to be involved in developing IL content is suitable to be used in enhancing the existing IL programmes at the UNIVEN. The inclusion of non-adopter academics and the deans of schools in the development of IL content could speed up the process of integrating IL into other credit-bearing modules offered in all first-year-level academic programmes. Badia (2013) emphasises the significance of awareness of IL standards among academics. – Academics who are familiar with IL standards are eager to include IL content in the modules that they are teaching (Badia 2013). The academics and librarians should form part of the academic modules mapping team that is charged for implementing competencies and specific IL integrated modules outcomes (Noe 2013). Furthermore, it is advisable for the library to have a representative of the IL programme in the academic governance committee overseeing the academic programmes (Noe 2013). This study observed the need for collaboration in the offering of IL programmes among the university stakeholders, such as the academics, deans of schools and librarians. The involvement of the university stakeholders will also address the question of who should be responsible for IL instructions at the UNIVEN.

Furthermore, the inclusion of the administrative departments could assist in enhancing the resources required in the offering of IL programmes. The IL instructions require resources, such as venues for IL instructions, slots of IL in the university academic timetable, computers, emerging technologies, internet, and anti-plagiarism software, which require the involvement of different stakeholders of the university. This also implies that the development of IL programmes requires collaborative activities. The “what” component in ILIM shows that the integrated IL into academic programmes require developing, monitoring and evaluation processes. Hence, a need for training manuals and guidelines on the monitoring and evaluation of the integrated programme, as well as the assessment of the students’ performances. The “how”

component in ILM could include the use of indigenous languages such as Venda, Tsonga and Pedi in developing IL skills training manuals and guidelines at the UNIVEN. According to Tom, Sumida-Huaman and McCarty (2019), using indigenous language in institutions of higher learning could be used for a sustainable future.

The involvement of the non-adopter academics in the development of IL content could also be used as an opportunity for the academics at the UNIVEN to participate in the adoption of IL policy. Ullah and Ameen (2019) emphasise that academics should be part of the development and approval of the IL policies in universities. The main strategy for the implementation of IL programmes as compulsory for all students is to have the approval of all the stakeholders, including the academics of the respective schools (Ullah & Ameen 2019), and to make a concerted effort towards the realisation of an information literate society (Tlakula & Fombad 2017). It has been noted that some of the universities in South Africa are already offering IL as compulsory (Moyo & Mavodza 2016; Tiemensma 2012). At UP, a full IL model is compulsory for all first-year students, and it is a credit-bearing module offered by the Department of Information Science. At UNISA, IL is compulsory for Information Science students, although it is optional for students from the other disciplines (Tiemensma 2012).

In addition, considering the results in Tables 4.15 and 4.16, which reflected the results of integrating IL into other credit-bearing modules as the commended method and the suggested international IL standards respectively, this study found that the five key elements of ACRL IL standards were applicable to IL content integrated into other credit-bearing modules offered for first-year level academic programmes at the UNIVEN. This could be done by adopting the relationship of ILIM and ACRL standards as the conceptual framework model to strengthen the existing IL programmes. It is, therefore, recommended to adopt the ILIM and ACRL IL standards in designing and integrating IL into all first-year level academic programmes, so as to have a well-structured UNIVEN IL programme that will develop information literate graduates.

## 5.7 Summary

This chapter interpreted and discussed the results of the study, which were presented in Chapter 4. The aim of this chapter was to provide the significance of these research findings in relation to what has been already researched and to explain new insights emerging from the results. This chapter presented the research findings in the context of relevant literature and other documents related to the existing IL programmes at the UNIVEN.

The discussion focused on the existing IL programmes at the UNIVEN, with emphasis on the content offered in the existing IL programmes, the suitability of IL content to first-year level students, the duplication of IL content, responsibility of offering IL instructions, and the mode of offering IL instructions. The discussions also focused on the opportunities of integration of IL into academic programmes at universities, with reference to the benefits of all students attending the IL programmes. Inadequate venues for offering IL instructions, the lack of collaboration between academics and librarians, and inadequate human resources in integrating IL into academic programmes were identified as challenges faced in offering IL programmes. Furthermore, the findings on the methods used for integrating IL into first-year level academic programmes, standards associated with the IL programmes, and the conceptual framework as strategies that could be used in enhancing the currently existing IL programmes at UNIVEN were also deliberated.

In line with the research objectives of this study, the findings revealed that the content offered in the existing IL programmes did align with the ACRL standards and the offered IL content was suitable for first-year level students at the UNIVEN. However, this study determined that there was duplication of the content offered in IL instructions and content offered in other credit-bearing modules. *Vis-à-vis* the opportunities of offering the existing IL programmes, this study ascertained that the programmes were equipping students with skills in the use of library resources, and skills for writing assignments and other academic-related tasks, among other opportunities. In this study, it transpired that, as one of the historically disadvantaged universities, the UNIVEN still faced the challenges of inadequate infrastructures and lack of resources. The findings revealed inadequate lecture venues with facilities needed to teach IL and

inadequate human resources to teach IL as the biggest challenges to integrate IL into academic programmes at the UNIVEN. With the development of a model that may enhance the IL programmes offered at the UNIVEN, this study combined the ILIM and ACRL standards as the framework that could be used in enhancing the existing IL programmes that could be integrated into other credit-bearing modules offered to all first-year level academic programmes.

The next chapter will present the summary, conclusion and recommendations of the study.



## **CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Introduction**

Kottler and Sharp (2018:142) assert that the researcher should “assess whether there are lines of separation evident between what was found, what was restated as the findings, what the findings might mean, and what the findings do mean”. The purpose of this chapter is to summarise the research findings on the integration of IL as a credit-bearing module into first-year level academic programmes at the UNIVEN. This chapter summarises the major findings and provides conclusions and recommendations in relation to the research objectives of this study. This chapter also proposes further research possibilities on certain issues related to IL programmes at the UNIVEN, which had not been deeply investigated in this study.

### **6.2 Summary of research findings**

“The summary of the study findings should be elaborated beyond the actual findings and be consistent with the reported findings” (Kottler & Sharp 2018:144). This section presents a summary of the research findings, based on the research objectives outlined in Section 1.4.1 (Chapter 1).

#### **6.2.1 Knowledge of existing IL programmes at the UNIVEN**

The first research objective of the study was to establish the level of knowledge regarding the existing IL programmes at the UNIVEN. The findings under this objective are summarised as follows:

- The content covered in the existing IL programmes at the UNIVEN equips students with the skills to access information, evaluate information sources, use information effectively, understand legal issues surrounding the use of information, and access and use information ethically.

- The existing IL programmes at the UNIVEN equip students with the skills applicable in the 4IR, in that they can survive working with a large information overload. It was significant that 93% of the adopter students viewed the existing IL programmes as suitable for the first-year level students.
- It was also significant that 85% of the adopter students indicated that there was duplication of the content offered in existing IL programmes with content offered in other modules. Part of the IL content, such as reference and referencing techniques and plagiarism, in the existing IL programmes are also offered in ECS 1141, a general academic credit-bearing module offered to all first-year level students at the UNIVEN.
- All (100%) the participants (i.e. adopter students, early adopter academics, non-adopter academics, deans of schools and information librarians) agreed that the IL programmes should be mandatory for all first-year level students at the UNIVEN.
- It is possible for the UNIVEN to integrate IL as a credit-bearing module into all first-year level academic programmes. A total of 73% of the non-adopter academics agreed that it is possible to integrate IL as a credit-bearing module into all first-year level academic programmes, while ten (27%) still regarded this process as impractical at the UNIVEN.
- It was practically significant that the information librarians claimed that the responsibility for offering IL instructions lay with librarians, while 100% of the early adopter academics and deans of schools shifted the responsibility of offering IL instructions to a collaborative effort between academics and librarians.
- Both theoretical and practical modes of instruction are used in the existing IL programmes at the UNIVEN.
- Most of the academics (57%) at the UNIVEN were not aware of the existing IL programmes.

### **6.2.2 Summary of opportunities for integrating IL into academic programmes**

The findings regarding the opportunities for integrating IL into academic programmes are summarised as follows:

- IL programmes equip students with the skills to use library resources. The existing IL programmes equip the students with the skills to locate and use relevant information from the library and different internet platforms.
- The IL programmes equip students with skills for writing assignments, conducting research and performing other academic-related tasks. The students with IL skills have confidence in completing academic-related activities, compared to those without IL skills.
- The acquired IL competencies have a key role in students' academic performance. The existing IL programmes offered at the UNIVEN are playing a role in the pass rate of university students.
- The acquired IL skills at the undergraduate level are applicable at the postgraduate level. The acquired IL skills are significantly required in answering the research questions, searching information, evaluating information sources, and presenting information at the undergraduate and postgraduate levels.
- The existing IL programmes offered at UNIVEN are grooming students for the workforce, as well as for lifelong learning in an information society.
- Theoretically significant, the offering of the IL programme at universities may lead to the integration of IL as a credit-bearing module into academic programmes. The existing IL programmes at the UNIVEN are part of the evidence that the university could end up integrating IL into other credit-bearing modules offered to all first-year level students, irrespective of the schools or departments.

### **6.2.3 Summary of challenges faced in integrating IL into academic programmes at the UNIVEN**

The challenges involved in integrating IL into academic programmes at the UNIVEN are summarised as follows:

- The major challenges to the UNIVEN integrating IL as a credit-bearing module into all first-year level academic programmes were identified as: inadequate venues for IL instructions; inadequate human resources for IL instructions; and the lack of collaboration between the academics and librarians.
- There is no clear IL policy, and the lack of clear IL policy, which is the cause of delaying the integration of IL into other credit-bearing modules offered in all first-year level academic programmes at the UNIVEN.
- There is no official document showing the IL standards used to align the IL content offered in the existing IL programmes at UNIVEN. In addition, a lack of home-grown IL standards could not hinder the integration of IL as a credit-bearing module into all first-year level academic programmes.
- Theoretically significant is the fact that the informal IL programmes delay the integration of IL into other credit-bearing modules offered at the university.
- The properly developed IL programmes do not overload students with academic activities.

### **6.2.4 Summary of strategies that may enhance IL programmes at the UNIVEN**

The following summary addresses the strategies that may enhance IL programmes at the UNIVEN:

- The integration of IL into other credit-bearing modules offered in all first-year level academic programmes will enhance the standard of the existing IL programmes offered at UNIVEN.
- IL content aligned with the ACRL IL standards is suitable for preparing students as information literate individuals and could be well integrated into general and specialised academic modules.
- Adopting the ILIM and ACRL standards as the conceptual framework model may improve the existing IL programmes offered at UNIVEN.

### **6.3 Conclusions based on the research findings**

This study provided evidence for IL as a part of the programmes offered at university and the opportunities of integrating IL into academic programmes to university students. The enhancement and expansion of the existing IL programmes to be integrated and offered in all first-year level academic programmes ultimately depend on UNIVEN executive management and expansion. The conclusions presented in this section are drawn from the research results and findings presented in Chapters 4 and 5 and are guided by the research objectives of the study.

#### **6.3.1 Conclusion on knowledge of existing IL programmes**

The research objective was to establish the level of knowledge of the existing IL programmes offered at the UNIVEN. This study concludes that the majority of non-adopter academics were not aware of the currently existing IL programmes. However, 100% of the participants agreed that the IL programmes should be mandatory for all first-year level students at the UNIVEN.

#### **6.3.2 Conclusion on opportunities of integrating IL into academic programmes**

This section provides the conclusion on the opportunities of integrating IL into academic programmes to the students at the UNIVEN. Not knowing the opportunities of integrating IL into academic programmes may deter the integration of IL as a credit-bearing module into the academic programmes. While portraying the opportunities of integrating IL into academic programmes, this study concludes that integrating IL into academic programmes at universities has a positive impact on students' usage of library resources and contributes to the students' academic performance.

#### **6.3.3 Conclusions on the challenges faced in integrating IL into academic programmes at the UNIVEN**

The challenges that may hinder the integration of IL into academic programmes should be identified and addressed. While establishing the challenges faced in integrating IL into academic programmes at the UNIVEN, the study concludes that inadequate venues for IL instructions, inadequate human resources for teaching IL instructions,

and the lack of collaboration between the academics and librarians are the main challenges that will hinder the integration of IL as a credit-bearing module offered in all first-year level academic programmes.

#### **6.3.4 Conclusion on the identified gap and strategy that may used to close UNIVEN IL programme gap**

This section concludes the findings about the strategies that may enhance the existing IL programmes offered at the UNIVEN. The conclusion is that UNIVEN should incorporate the ILIM with the currently adopted ACRL standards in designing and integrating IL into all first-year level academic programmes, so as to have a well-structured UNIVEN IL programme that will develop UNIVEN information literate graduates. The UNIVEN IL programme is still predominantly conducted using western language. It is not accommodating to the indigenous African students and their languages particularly the Venda language which is predominate language at the university. The adoption of the homegrown IL standards should be seriously considered by the South African library and information professionals, national library associations, and institutions of higher learning.

### **6.4 Recommendations**

Recommendations were made in line with the research questions and findings of this study, as well as the findings of previously conducted studies, as reviewed in the literature.

#### **6.4.1 Recommendations on knowledge of existing IL programmes at the UNIVEN**

It is recommended that the UNIVEN develops strategies that may be used for IL programme awareness aimed at non-adopter academics and the university community in general. This will assist in intensifying the design and development of a well-structured IL programme at the UNIVEN. In addition, continuous monitoring and evaluation of the content offered in IL programmes by qualified and experienced staff from the library and academic departments is required.

#### **6.4.2 Recommendations on the opportunities of offering IL programmes**

As it has been noted that not all UNIVEN students are offered IL instructions, this study recommends that IL should be integrated into all first-year level academic programmes. Moreover, it should be noted that the main objective of offering IL at universities is to develop information-literate graduates. Therefore, the UNIVEN should focus on integrating IL as a credit-bearing module into all first-year level academic programmes.

#### **6.4.3 Recommendations on the challenges faced in integrating IL into academic programmes**

At the UNIVEN, the inadequate venues for IL instructions and inadequate human resources for teaching IL instructions need to be prioritised. The university management should source funds from government and private stakeholders that can be used for developing the infrastructure and resources, such as venues for IL instructions and emerging technologies suitable for offering IL programmes on all study levels.

#### **6.4.4 Recommendations on the model that may enhance the IL programmes**

As a solution to overcome barriers hindering the enhancement of the existing IL programmes and the integration of IL into all first-year level academic programmes, this study recommends the intensifying of ILIM and ACRL IL standards. The adoption of these standards may be used as a strategy to enhance the existing IL and to integrate IL into all first-year level academic programmes at the UNIVEN. This recommended model comprises phases that involve the processes, stakeholders, and the resources that lead to the development of a well-structured UNIVEN IL programme.

### **6.5 Suggestions for future research**

This study was limited to the integration of IL into first-year level academic programmes at the UNIVEN. There is a need for a further study that will focus on the efficiency of content in existing IL programmes offered at historically disadvantaged universities in SA. The recommended further study will investigate the strategies of

integrating IL into first-year level academic programmes and the IL content that may continue to be offered on second-year level, up to the postgraduate academic programmes. This process will involve examining the number of credits that IL programmes should contribute to students' semester and examination marks. The investigation of the efficiency IL content will identify hindrances that will deter students from engaging in developing research outputs. In addition, there is a need for a study aimed at examining the perceptions among stakeholders, such as academics, deans of schools, librarians and university management, in developing the IL policy that should be used to guide the IL programmes at the UNIVEN.

## **6.6 Final conclusion**

The UNIVEN has not been left behind in incorporating the international IL standards in the existing IL programmes. The UNIVEN initiated the IL programmes align with the ACRL standards, which explain the characteristics, competencies and behaviours that information-literature students should display. The integration of IL into other credit-bearing academic modules will play a major role in the maximisation of the utilisation of library resources at the UNIVEN.

Furthermore, the inadequate venues for IL instructions and human resources for teaching IL instructions are some of the main challenges hindering the opportunity for UNIVEN to integrate IL into other credit-bearing modules offered in all first-year level academic programmes. If these challenges are not properly addressed, it may take a decade to integrate IL as a credit-bearing module into all first-year level academic programmes. These challenges are among some of the challenges generated by the discrimination of the previous apartheid system in SA.

The UNIVEN should ensure that all appointed librarians are reskilled in the design and evaluation of library instruction, and the teaching of library instructions, such as IL in a formal pedagogy, while the academics receive training the incorporation of library instructions as credit-bearing modules into academic programmes. The UNIVEN management should formalise the collaborative approaches that can be used in improving the IL programme in line with the technological trends. The deans of schools



and library management should develop strategies that to be used for IL awareness programmes within the UNIVEN community.

The proposed ILIM has a significant relationship in terms of integrating IL into academic programmes aligned to the ACRL standards. For example, the ILIM adapts well to the stakeholders who should be involved in the process of designing, developing and monitoring the IL programmes. The model also accommodates the inclusion of the resources, such as emerging technologies and electronic library resources, which are required in IL instructions for the sake of developing well-structured IL programmes.

## REFERENCES

- Abid, A. 2008. *Information literacy for lifelong learning*. World Library and Information Congress: 70th IFLA General Conference and Council, 22–27 August 2004, Buenos Aires, Argentina. <https://archive.ifla.org/IV/ifla70/papers/116e-Abid.pdf> (Accessed 18 June 2022).
- Abubaka, UA & Isyaku, AA. 2012. Teaching information literacy skills in Nigerian universities: whose responsibility? *Journal of Research in Education and Society*, 3(2):33–42.
- Adeleke, DS & Emeahara, EN. 2016. Relationship between information literacy and use of electronic information resources by postgraduate students of the university of Ibadan. *Library Philosophy and Practice*, 1381. <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3788&context=libphilprac> (Accessed 22 July 2022).
- Aharony, N & Gazit, T. 2019. Factors affecting students' information literacy self-efficacy. *Library Hi Tech*, 37(2):183–196.
- Al-Aufi, AS, Al-Azri, HM & Al-Hadi, NA. 2017. Perceptions of information literacy skills among undergraduate students in the social media environment. *International Information & Library Review*, 49(3):163–175.
- Alias, M & Suradi, Z. 2008. *Concept mapping: a tool for creating a literature review*. Proceedings of the 3rd International Conference on Concept Mapping, Tallinn, Estonia & Helsinki, Finland, pp. 96–99.
- Allen, M. 2017. Designing online asynchronous information literacy instruction using the ADDIE model. In *Distributed learning: pedagogy and technology in online information literacy instruction*, edited by T Madison and M Kumaran. Chandos Publishing, pp. 69–91. <https://doi.org/https://doi.org/10.1016/B978-0-08-100598-9.00004-0> (Accessed 20 February 2022).
- Almelhi, AM. 2021. Effectiveness of the ADDIE model within an e-Learning environment in developing creative writing in EFL students. *English Language Teaching*, 14(2):20–36. <https://eric.ed.gov/?id=EJ1284437> (Accessed 20 February 2022).

- Andretta, S, Pope, A & Walton, G. 2008. Information literacy education in the UK: reflections on perspectives and practical approaches of curricular integration. *Communications in IL*, 2(1):36–51.  
<https://doi.org/10.15760/comminfolit.2008.2.1.55> (Accessed 12 November 2018).
- Anwar, MA & Naveed, MA. 2019. Developments in information literacy in Pakistan: background and research. *Pakistan Library & Information Science Journal*, 50 (2):7–20. <http://0-search.ebscohost.com.univen9.univen.ac.za/login.aspx?direct=true&db=lxh&AN=136486308&site=ehost-live> (Accessed 4 July 2022).
- Anyanwu, FC, Goon, DT & Tugli, A. 2013. Socio-demography and sexual experiences of University of Venda students: implications for health and fitness. *African Journal for Physical Health Education, Recreation and Dance*, 19(2):459–478. <https://doi.org/doi:10.10520/EJC137192> (Accessed 24 June 2022).
- Anyaku, EN, Ezeani, CN & Osuigwe, NE. 2014. Information literacy practices of librarians in universities in South East Nigeria. *International Journal of Library and Information Science*, 7(5):96–102.  
<http://www.academicjournals.org/journal/IJLIS/article-full-text> (Accessed 20 July 2019).
- Anyaku, EN. 2013. Hybrid library: opportunities and challenges for medical libraries in Nigeria. *Journal of Health Information*, 1(1):46–52.  
<https://works.bepress.com/ebele-anyaoku/1/> (Accessed 20 February 2020).
- Arifin, SRM. 2018. Ethical considerations in qualitative study. *International Journal of Care Scholars*, 1(2):30–33.  
<https://journals.iium.edu.my/ijcs/index.php/ijcs/article/view/82> (Accessed 14 February 2022).
- Arroyo, S. 2013. Information literacy for health professionals: teaching essential information skills with the Big6 information literacy model. *Community & Junior College Libraries*, 19(3–4):77–91.  
<http://dx.doi.org/10.1080/02763915.2014.953435> (Accessed 3 June 2022).

- Atjo, NAI & Pratama, MF. 2017. Information literacy: educate through literacy. *International Journal of Social Sciences and Education Research*, 3(1):1–8. <https://doi.org/10.24289/ijsser.283581> (Accessed 23 March 2020).
- Babbie, E. 2013. *The practice of social research*. 13th ed. Wadsworth: Cengage Learning.
- Babbie, E. 2016. *The practice of social research*. 14th ed. Boston: Cengage learning.
- Babbie, ER & Mouton, J. 2001. *The practice of social research*. South African ed. Cape Town: Oxford University Press.
- Badia, G. 2013. Faculty knowledge of information literacy standards has an impact in the classroom. *Evidence Based Library and Information Practice*, 8(2):242–244. <http://dx.doi.org/10.18438/B8W03Z> (Accessed 22 July 2022).
- Badke, W. 2008. A rationale for information literacy as a credit-bearing discipline. *Journal of Information Literacy*, 2(1):1–22. <http://jil.lboro.ac.uk/ojs/index.php/JIL/article/view/RA-V2-I1-2008-1> (Accessed 23 March 2020).
- Badke, W. 2010. Why information literacy is invisible. *Communications in Information Literacy*, 4(2):129–141. <https://doi.org/10.15760/comminfolit.2011.4.2.92> (Accessed 27 March 2022).
- Baji, F, Bigdeli, Z, Parsa, A & Haeusler, C. 2018. Developing information literacy skills of the 6th grade students using the Big 6 model. *Malaysian Journal of Library & Information Science*, 23(1):1–15. <https://mjs.um.edu.my/index.php/MJLIS/article/view/11088/7620> (Accessed 15 May 2022).
- Bangani, S, Mashiyane, DM, Moyo, M, Masilo, B & Makate, G. 2020. Students' perceptions of librarians as teachers of information literacy at a large African university. *Global Knowledge, Memory and Communication*, 69(6/7):399–415. <https://doi.org/10.1108/GKMC-09-2019-0111> (Accessed 17 May 2022).

- Banik, P & Kumar, B. 2019. Impact of information literacy skill on students' academic performance in Bangladesh. *International Journal of European Studies*, 3(1):27–33.  
<https://www.sciencepublishinggroup.com/journal/paperinfo?journalid=520&doi=10.11648/j.ijes.20190301.15> (Accessed 19 October 2022).
- Baro, EE, Endouware, BC & Ubogu, JO. 2011. Information literacy among medical students in the College of Health Sciences in Niger Delta University, Nigeria. *Electronic Library and Information Systems*, 45(1):107–120.  
[www.emeraldinsight.com/reprints](http://www.emeraldinsight.com/reprints) (Accessed 19 May 2019).
- Baro, EE & Keboh, T. 2012. Teaching and fostering information literacy programmes: a survey of five university libraries in Africa. *The Journal of Academic Librarianship*, 38(5):311–315.  
<https://www.sciencedirect.com/science/article/pii/S0099133312000973> (Accessed 19 May 2019).
- Baro, EE, Seimode, FD & Godfrey, VZ. 2013. Information literacy programmes in university libraries: a case study. *Libri*, 63(4):282–294.  
<https://doi.org/10.1515/libri-2013-0023> (Accessed 2 March 2022).
- Baro, EE & Zuokemefa, T. 2011. Information literacy programmes in Nigeria: a survey of 36 university libraries. *New Library World*, 112(11/12):549–565.  
[www.emeraldinsight.com/0307-4803.htm](http://www.emeraldinsight.com/0307-4803.htm) (Accessed 19 May 2019).
- Bartol, T, Dolničar, D, Podgornik, BB, Rodič, B & Zoranović, T. 2018. A comparative study of information literacy skill performance of students in agricultural sciences. *The Journal of Academic Librarianship*, 44(3):374–382.
- Bavdekar, SB. 2015. Writing the discussion section: describing the significance of the study findings. *Journal of the Association of Physicians of India*, 63(5):40–42.
- Bawack, RE & Kala-Kamdjou, JR. 2020. The role of digital information use on student performance and collaboration in marginal universities. *International Journal of Information Management*, 54(102179).  
<http://www.sciencedirect.com/science/article/pii/S0268401219317700> (Accessed 30 August 2020).

- Bent, M & Stubbings, R. 2011. *The SCONUL seven pillars of information literacy: core model*. [https://eprints.ncl.ac.uk/file\\_store/production/192827/156279C4-30EE-4356-A2ED-A48D9D474286.pdf](https://eprints.ncl.ac.uk/file_store/production/192827/156279C4-30EE-4356-A2ED-A48D9D474286.pdf) (Accessed 15 May 2022).
- Bertram, C & Christiansen, I. 2014. *Understanding research: an introduction to reading research*. Pretoria: Van Schaik.
- Bhuvhukuvhani, C, Chiparausha, B & Zuvalinyenga, D. 2012. Effects of electronic information resources skills training for lecturers on pedagogical practices and research productivity. *International Journal of Education and Development Using ICT*, 8(1):16–28.
- Bilawar, P & Pujar, SM. 2011. *Information literacy models: correlation and conceptual model for higher education*. <https://ir.inflibnet.ac.in/bitstream/1944/1632/1/40.pdf> (Accessed 16 May 2022).
- Blanche, MT, Durrheim, K & Painter, D. 2006. *Research in practice: applied methods for the social sciences*. 2nd ed. Cape Town: Juta.
- Boekhorst, AK & Britz, JJ. 2004. Information literacy at school level: a comparative study between the Netherlands and South Africa. *South African Journal of Libraries and Information Science*, 70:63–71. <https://journals.co.za/doi/abs/10.10520/EJC61168> (Accessed 19 June 2022).
- Bønløkke, M, Kobow, E & Kristensen, AK. 2015. Information literacy is not a one-man show. *Nordic Journal of Information Literacy in Higher Education*, 7(1):2–15. <https://doi.org/10.15845/noril.v7i1.224> (Accessed 25 June 22).
- Boon, S, Johnston, B & Webber, S. 2007. A phenomenographic study of English faculty's conceptions of information literacy. *Journal of documentation*, 63(2):204–228. <https://www.emerald.com/insight/content/doi/10.1108/00220410710737187/full/pdf> (Accessed 29 March 2022).
- Bothma, T, Cosijn, E, Fourie, I & Penzhorn, C. 2014. *Navigating information literacy: your information society survival toolkit*. 4th ed. Cape Town: Pearson.
- Bothma, T, Cosijn, E, Fourie, I & Penzhorn, C. 2017. *Navigating information literacy: your information society survival toolkit*. 5th ed. Cape Town: Pearson.

- Brink, H, Van der Walt, C & Van Rensburg, G. 2012. *Fundamentals of research methodology for health professionals*. 3rd ed. Cape Town: Juta.
- Britz, J & Lor, P. 2010. The right to be information literate: the core foundation of the knowledge society. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, (41):8–24.  
<https://doi.org/doi:10.10520/EJC46515> (Accessed 18 June 2022).
- Bryman, A. 2008. *Social research methods*. 3rd ed. Oxford: Oxford University Press.
- Bryman, A. 2012. *Social research methods*. 4th ed. Cape Town: Oxford University Press.
- Brynard, PA & Hanekom, SX. 2006. *Introduction to research in management-related fields*. 6th ed. Pretoria: Van Schaik.
- Buchanan, H, Webb, KK, Houk, AH & Tingelstad, C. 2015. Curriculum mapping in academic libraries. *New Review of Academic Librarianship*, 21(1):94–111.  
<https://doi.org/10.1080/13614533.2014.1001413> (Accessed 12 April 2019).
- Bulger, M & Davison, P. 2018. The promises, challenges and futures of media literacy. *Journal of Media Literacy Education*, 10(1):1–21.  
<https://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1365&context=jmle> (Accessed 24 February 2022).
- Bundy, A. 2004. Australian and New Zealand information literacy framework: principles, standards and practice. 2nd ed. Australia: University of South Australia.
- Burnett, E & White, R. 2022. Using a definition of information literacy to engage academics and students: a UK perspective. *portal: Libraries and the Academy* 22(2):281–287. <https://preprint.press.jhu.edu/portal/sites/ajm/files/burnett.pdf> (Accessed 29 March 2022).
- Burton, N, Brundrett, M & Jones, M. 2014. *Doing your education research project*. 2nd ed. London: SAGE.
- Bury, S. 2016. Learning from faculty voices on information literacy. *Reference Services Review*, 44(3):237–252. <https://doi.org/10.1108/RSR-11-2015-0047> (Accessed 2 April 2022).

- Callahan, JL. 2014. Writing literature review: a reprise and update. *Human Resource Development Review*, 13(3):271–275.  
<https://doi.org/10.1177/1534484314536705> (Accessed 14 June 2020).
- Cals, J & Kotz, D. 2021. *Scientific writing and publishing in medicine and health sciences: a quick guide in English and German*. Berlin: De Gruyter.
- Campbell, PC. 2014. Modifying ADDIE: incorporating new technologies in library instruction. *Public Services Quarterly*, 10(2):138–149.  
<https://www.tandfonline.com/doi/pdf/10.1080/15228959.2014.904214?needAccess=true> (Accessed 18 May 2022).
- Carter, D. 2017. Creativity in action: the information professional is poised to exploit the Fourth Industrial Revolution: the business information survey, 2017. *Business Information Review*, 34(3):122–137.  
<https://journals.sagepub.com/doi/abs/10.1177/0266382117722440> (Accessed 17 October 2022).
- Chakraborty, R. 2008. *Information literacy in the knowledge society: empowering learners for a better tomorrow*.  
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1077.9682&rep=rep1&type=pdf> (Accessed 27 July 2022).
- Chan, WP, Hsu, CY & Hong, CY. 2008. Innovative" case-based integrated teaching" in an undergraduate medical curriculum: development and teachers' and students' responses. *Annals Academy of Medicine Singapore*, 37(11):952–956.  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.513.9741&rep=rep1&type=pdf> (Accessed 7 February 2022).
- Chartered Institute of Library and Information Professionals (CILIP). 2004. *Definition of IL*. <http://www.cilip.org.uk/cilip/advocay-campaigns-awards/advocacy-campaigns/information-literacy/information-literacy> (Accessed 12 August 2019).
- Chigwada, JP. 2019. Opportunities and challenges of academic librarians in teaching information literacy in institutions of higher learning in Zimbabwe. *International Journal of Library and Information Services*, 8(1):31–40. <https://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/IJLIS.2019010103> (Accessed 24 August 2022).



- Chipeta, GT. 2010. Information literacy teaching and learning: a literature review. *Journal of Human and Social Sciences*, 2(1):21–33.
- Cobus, L. 2008. Integrating information literacy into the education of public health professionals: roles for librarians and the library. *Journal of the Medical Library Association*, 96(1):28–33.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2212327/> (Accessed 24 August 2022).
- Çoklar, AN, Yaman, ND & Yurdakul, IK. 2017. Information literacy and digital nativity as determinants of online information search strategies. *Computers in Human Behavior*, 70:1–9.  
<http://www.sciencedirect.com/science/article/pii/S0747563216308573>  
 (Accessed 24 July 2020).
- Collinson, T, Porter, H & Work, CK. 2021. University of Portsmouth library subject pages: a flexible in-house system for guidance and resource discovery. *The Journal of Academic Librarianship*, 10243:1–5.  
<https://www.sciencedirect.com/science/article/pii/S0099133321001440>  
 [Accessed 2021/10/02/ (Accessed 22 July 2022).
- Cordell, R. 2013. Information literacy and digital literacy: competing or complementary? *Communications in Information Literacy*, 7(2):117–183.  
<https://files.eric.ed.gov/fulltext/EJ1089065.pdf> (Accessed 12 November 2019).
- Creswell, JW. 2008. *Educational research: planning, conducting and evaluating quantitative and qualitative research*. 3rd ed. New Jersey: Pearson Prentice Hall.
- Creswell, JW. 2009. *Research design: qualitative, quantitative, and mixed methods approaches*. 3<sup>rd</sup> ed. London: SAGE.
- Creswell, JW. 2013. *Qualitative inquiry and research design: choosing among five approaches*. 3rd ed. London: SAGE.
- Creswell, JW. 2014. *Research design: qualitative, quantitative and mixed methods approaches*. 4th ed. London: SAGE.
- Creswell, JW. 2015. *A concise introduction to mixed methods research*. London: SAGE.

- Creswell, JW & Creswell, JD. 2018. *Research design: qualitative, quantitative and mixed methods approaches*. 5th ed. London: SAGE.
- Creswell, JW & Guetterman, TC. 2021. *Educational research: planning, conducting and evaluating quantitative and qualitative research*. 6th ed. Harlow: Pearson.
- Creswell, JW & Plano-Clark, VL. 2011. *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Creswell, JW & Poth, CN. 2018. *Qualitative inquiry and research design: choosing among five approaches*. 4th ed. London: SAGE.
- DaCosta, JW. 2010. Is there an information literacy skills gap to be bridged? An examination of faculty perceptions and activities relating to information literacy in the United States and England. *College & Research Libraries*, 71:203–222.
- Daniel, E. 2016. The usefulness of qualitative and quantitative approaches and methods in researching problem-solving ability in science education curriculum. *Journal of Education and Practice*, 7(15):91–100. <http://www.iiste.org/> (Accessed 21 May 2019).
- Dantzker, ML, Hunter, R.D & Quinn, ST. 2018. *Research methods for criminology and criminal justice*. 4th ed. Burlington: Jones & Bartlett Learning.
- Davids, Z & Omar, Y. 2018. Implementing a certificate of IL programmes and engaging with faculty: a case study of the Cape Peninsula University of Technology. *South African Journal of Libraries and Information Science*, 84(1):1–10. <http://sajlis.journals.ac.za/doi:10.7553/84-1-1716> (Accessed 21 May 2021).
- Davis, AL. 2013. Using instructional design principles to develop effective information literacy instruction: the ADDIE model. *College & Research Libraries News*, 74(4):205–207. <https://crln.acrl.org/index.php/crlnews/article/view/8934/9656> (Accessed 21 February 2021).

- Dawes, L. 2019. Faculty perceptions of teaching information literacy to first-year students: a phenomenographic study. *Journal of Librarianship and Information Science*, 51(2):545–560.  
<https://journals.sagepub.com/doi/full/10.1177/0961000617726129> (Accessed 12 July 2022)/
- De Boer, AL, Bothma, T & du Toit, P. 2011. Enhancing information literacy through the application of whole brain strategies. *Libri*, 61(1):67–75.  
<https://doi.org/doi:10.1515/libr.2011.006> (Accessed 4 July 2022).
- De Jager, K & Nassimbeni, M. 2003. An exploration of the current status of IL tuition in South African tertiary institutions and proposals for curriculum design. *South African Journal of Libraries and Information Science*, 69(2):108–114.
- De Jager, K & Nassimbeni, M. 2005. Information literacy and quality assurance in South African higher education institutions. *Libri*, 55:31–38.
- Derakhshan, M & Singh, D. 2011. Integration of information literacy into the curriculum: a meta-synthesis. *Library Review*, 60(3):218–229.  
<https://doi.org/10.1108/00242531111117272> (Accessed 17 May 2022).
- Detlor, B, Julien, H, Willson, R, Serenko A & Lavalley, M. 2011. Learning outcomes of information literacy instruction at business schools. *Journal of the American Society for Information Science and Technology*, 62(3):572–585.  
<https://onlinelibrary.wiley.com/doi/10.1002/asi.21474> (Accessed 4 July 2022).
- Diekema, AR, Hopkins, BS, Patterson, B & Schvaneveldt, N. 2019. Using information practices of nurses to reform information literacy instruction in baccalaureate nursing programs. *Evidence-Based Library and Information Practice*, 14(4):72–102. <https://scholarsarchive.byu.edu/facpub/4175> (Accessed 17 May 2022).
- Diekema, AR, Hopkins, EBS, Patterson, B & Schvaneveldt, N. 2020. Listening to alumni voices to enhance disciplinary information literacy instruction. In *International perspectives on improving student engagement: advances in library practices in higher education*. Emerald Publishing, Chapter 8.

- Doody, O & Noonan, M. 2013. Preparing and conducting interviews to collect data. *Nurse Researcher*, 20(5):28–32. <https://pubmed.ncbi.nlm.nih.gov/23687846/> (Accessed 12 October 2022).
- Du Plooy-Cilliers, F, Davids, C & Bezuidenhout, R. 2014. *Research matters*. Claremont: Juta.
- Eisenberg, M. 2003. *The Big6 approach to information and technology literacy*. <http://dx.doi.org/10.2139/ssrn.3424860> (Accessed 3 June 2022).
- Eisenberg, M, Johnson, D & Berkowitz, B. 2010. Information, communications and technology (ICT) skills curriculum based on the Big6 skills approach to information problem-solving. *Library Media Connection*, 28(6):24–27.
- Ekong, U & Ekong, V. 2018. Impact of information literacy skills on the use of e-library resources among tertiary institution students in Akwa Ibom State. *Nigerian Journal of Technology*, 37(2):423–431. <https://www.ajol.info/index.php/njt/article/view/174988> (Accessed 25 August 2022).
- Emanuel, R, Baker, K & Challons-Lipton, S. 2016. Images every American should know: developing the cultural image literacy assessment-USA. *Journal of Visual Literacy*, 35(4):215–236. <https://www.tandfonline.com/doi/abs/10.1080/1051144X.2016.1278089> (Accessed 25 February 2022).
- Emmerich, N. 2016. Reframing research ethics: towards a professional ethics for the social sciences. *Sociological Research Online*, 21(4):16–29. <https://doi.org/10.5153/sro.4127> (Accessed 29 October 2022).
- Emmett, A & Emde, J. 2007. Assessing information literacy skills using the ACRL standards as a guide. *Reference Services Review*, 35(2):210–229. <https://www.emerald.com/insight/content/doi/10.1108/00907320710749146/full/pdf> (Accessed 13 May 2022)

- Encyclopedia.com. no date. What is research ethics.  
<https://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/research> (Accessed 05 March 2023).
- Erdelez, S, Basic, J & Levitov, DD. 2011. Potential for inclusion of information encountering within information literacy models. *Information Research*, 16(3):1–11. <https://files.eric.ed.gov/fulltext/EJ946411.pdf> (Accessed 19 March 2019).
- Erlinger, A. 2018. Outcomes assessment in undergraduate IL instruction: a systematic review. *College & Research Libraries*, 79 (4):442–479.  
<https://crl.acrl.org/index.php/crl/article/view/16600> (Accessed 17 August 2019).
- Eshet, Y. 2004. Digital literacy: a conceptual framework for survival skills in the digital era. *Journal of educational multimedia and hypermedia*, 13(1):93–106.  
<https://www.learntechlib.org/primary/p/4793/> (Accessed 24 February 2022).
- Esterhuizen, E & Kuhn, R. 2010. CHELSA draft guidelines on information literacy: paving the way to a South African national framework? *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 1(41):83–106. <https://journals.co.za/content/innovation/VOL/41/EJC46511> (Accessed 18 September 2019).
- Falloon, G. 2020. From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68:2449–2472.  
<https://link.springer.com/content/pdf/10.1007/s11423-020-09767-4.pdf>  
(Accessed 26 August 2022).
- Farzad, FK, Mansou, Z, Kambiz, AA, Bahareh, M, Mohammad, V & Marjan, AR. 2014. Information literacy among undergraduate students of health services administration in Ahvaz Jundishapur University of Medical Sciences based on SCONUL seven pillars model. *Payavard Salamat*, 8(2):101–112.  
<https://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=98895754&site=ehost-live> (Accessed 15 May 2022).
- Favaro, S. 2012. Information literacy and knowledge management tools for first year students. In *The road to information literacy: librarians as facilitators of learning*, edited by R. Gwyer, R. Strubbings and G. Walton. De Gruyter, pp. 215–224.  
<https://doi.org/10.1515/9783110281002> (Accessed 18 June 2022).

- Feebery, A, Emerson, L & Skyrme, G. 2016. Supporting academics to embed information literacy to enhance students' research and writing process. In *Information literacy: research and collaboration across disciplines*, edited by B.J. D'Angelo, S. Jamieson, B. Maid and J.R. Waler. Fort Collins, CO: University Press of Colorado, pp. 345–370. <https://doi.org/10.37514/PER-B.2016.0834.2.17> (Accessed 29 March 2022).
- Fullard, A. 2016. Using the ACRL framework for information literacy to foster teaching and learning partnerships. *South African Journal of Libraries and Information Science*, 82(2):46–56. <https://journals.co.za/doi/abs/10.7553/82-2-1627> (Accessed 2 March 2022).
- Gasque, KCGD. 2016. Information literacy for inquiry-based learning. *Transinformação*, 28(3):253–262. [https://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0103-37862016000300253](https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-37862016000300253) (Accessed 9 August 2020).
- Giangrande, R, Cassigoli, A & Giusti, E. 2022. Faculty perceptions of information literacy skills: an investigation at the Florence University Campus of Social Sciences. *Digital Library Perspectives*, 38(3):362–377. <https://doi.org/10.1108/DLP-04-2021-0028> (Accessed 7 July 2022).
- Girven, WJ. 2017. Academic subject specialist and special librarians: exploring a shared interest in developing information literacy skills. *Journal of Library Administration*, 57(8):911–921. <https://doi.org/10.1080/01930826.2017.1374114> (Accessed 6 February 2022).
- Golafshani, N. 2003. Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4):597–606. <http://nsuworks.nova.edu/tqr/vol8/iss4/6> (Accessed 5 December 2019).
- Gowri, P & Padma P. 2018. SCONUL seven pillars model to test the information literacy skills of engineering students: a case study. *Library Philosophy and Practice*, 1996. <https://digitalcommons.unl.edu/libphilprac/1996/> (Accessed 1 March 2022).

- Greef, E. 2012. Forging strong links: strategies for building a collaborative information literate learning community through the school library. *The road to information literacy: librarians as facilitators of learning*, edited by R. Gwyer, R. Stubbings and G. Walton. De Gruyter, pp. 225–240.  
<https://doi.org/10.1515/9783110281002> (Accessed 18 June 2022).
- Greenfield, T & Greener, S. 2016. *Research methods for postgraduates*. 3rd ed. West Sussex: John Wiley.
- Gross, M, Latham, D & Armstrong, B. 2012. Improving below-proficient information literacy skills: designing an evidence-based educational intervention. *College Teaching*, 60(3):104–111.  
<https://www.tandfonline.com/doi/pdf/10.1080/87567555.2011.645257?needAccess=true> (Accessed 26 August 2022).
- Gross, M, Latham, D & Julien, H. 2018. What the framework means to me: attitudes of academic librarians toward the ACRL framework for information literacy for higher education. *Library and Information Science Research*, 40:262–268.  
<https://doi.org/10.1016/j.lisr.2018.09.008> (Accessed 25 July 2019).
- Grove, SK, Gray, JR & Burns, N. 2015. *Understanding nursing research: building an evidence-based practice*. 6th ed. Missouri: Elsevier.
- Guetzkow, J, Lamont, M & Mallard, G. 2004. What is originality in the humanities and the social sciences? *American Sociological Review*, 69(2):90–212.  
<https://journals.sagepub.com/doi/pdf/10.1177/000312240406900203> (Accessed 23 February 2022).
- Gwyer, R, Stubbings, R & Walton, G. (eds). 2012. *The road to information literacy: librarians as facilitators of learning*. The Hague, Netherlands: De Gruyter Saur.  
<https://doi.org/10.1515/9783110281002> (Accessed 15 April 2021).
- Hannum, W. 2005. Instructional systems development: a 30-year retrospective. *Educational Technology*, 45(4) 5–21. <https://www.jstor.org/stable/44429217> (Accessed 3 June 2022).

- Harris, BR. 2013. Subversive infusions: strategies for the integration of information literacy across the curriculum. *The Journal of Academic Librarianship*, 39(2):175–180. <https://doi.org/10.1016/j.acalib.2012.10.003> (Accessed 16 August 2019).
- Harrison, SJ & Deans, MO. 2021. The methodology used to deliver information literacy instruction by a select group of academic librarians: a case study. *Asian Association of Open Universities Journal*, 16(2):177–192. <https://www.emerald.com/insight/content/doi/10.1108/AAOUJ-01-2021-0006/full/pdf> (Accessed 6 April 2021).
- Harriss, DJ & Atkinson G. 2015. Ethical standards in report and exercise science research: 2016 update. *International Journal of Sports Medicine*, 36:1121–1124. <https://www.thieme-connect.com/products/ejournals/html/10.1055/s-0035-1565186> (Accessed 16 September 2020).
- Hart, G & Davids, M. 2010. Challenges for information literacy education at a university of technology. *INNOVATION*, 41:24–41. <https://core.ac.uk/download/pdf/62633273.pdf> (Accessed 11 November 2019).
- Hassasni, AE. 2015. The role of information literacy in higher education: an initiative at Al Akhawayn University in Morocco. *Nordic Journal of Information Literacy in Higher Education*, 7(1):32–37.
- Henning, E, Van Rensburg, W & Smit, B. 2004. *Finding your way in qualitative research*. Pretoria: Van Schaik.
- Hernández-Rabanal, C. 2014. *The benefits of integrating information literacy activities into the higher education curriculum of future healthcare professionals*. In *Information literacy, lifelong learning and digital citizenship in the 21st century*, edited by S. Kurbanoglu, S. Špiranec, E. Grassian, D. Mizrachi and R. Catts. Cham: Springer, pp. 327–337. (Accessed 18 February 2020).



- Hui, KY, Haines, C, Bammann, S, Hallandal, M, Langone, N, Williams, C & Mcevoy, M. 2021. To what extent is telehealth reported to be incorporated into undergraduate and postgraduate allied health curricula? A scoping review. *Plos One*, 16(8):e0256425.  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0256425>  
(Accessed 24 August 2022).
- Hussain, A. 2020. Industrial revolution 4.0: implication to libraries and librarians. *Library Hi Tech News*, 37(1):1-5. <https://doi.org/10.1108/LHTN-05-2019-0033>  
(Accessed 23 February 2023).
- Ioannidis, JP, Greenland, S, Hlatky, MA, Khoury, MJ, Macleod, MR, Moher, D, Schulz, KF & Tibshirani, R. 2014. Increasing value and reducing waste in research design, conduct, and analysis. *The Lancet*, 383:166–175.  
[http://dx.doi.org/10.1016/S0140-6736\(13\)62227-8](http://dx.doi.org/10.1016/S0140-6736(13)62227-8) (Accessed 12 March 2022).
- Islam, MA & Tsuji, K. 2010. Assessing information literacy competency of Information Science and Library Management graduate students of Dhaka University. *International Federation of Library Associations and Institutions*, 36(4):300–316. <http://ifl.sagepub.com/content/36/4/300> (Accessed 18 February 2020).
- Jackson, B, Macmillan, M & Sinotte, M. 2014. Great expectations: results from a faculty survey of students' information literacy proficiency. Annual IATUL Conference, Purdue University. <https://docs.lib.purdue.edu/iatul/2014/infolit/1>  
(Accessed 26 August 2022).
- Jackson, PA. 2007. Integrating information literacy into blackboard: building campus partnerships for successful student learning. *The Journal of Academic Librarianship*, 334:54–461.  
<https://www.sciencedirect.com/science/article/pii/S0099133307000869>  
(Accessed 12 June 2022).
- Jackson, S & Durkee, D. 2008. Incorporating information literacy into the Accounting curriculum. *Accounting Education*, 17(1):83–97.  
<http://dx.doi.org/10.1080/09639280601026063> (Accessed 13 February 2019).

- Johnson, AM. 2018. Connections, conversations and visibility: how the work of academic reference and liaison librarians is evolving. *Reference & User Services Quarterly*, 58(2):91–102.  
<https://journals.ala.org/index.php/rusq/article/view/6929/9356> (Accessed 10 June 2019).
- Johnston, B & Webber, S. 2003. Information literacy in higher education: a review and case study. *Studies in Higher Education*, 28(3):335–352.  
<https://www.tandfonline.com/doi/pdf/10.1080/03075070309295?needAccess=true> (Accessed 3 June 2019).
- Johnston, B & Webber, S. 2005. As we may think: information literacy as a discipline for the information age. *Research Strategies*, 20:108–121.  
<https://www.sciencedirect.com/science/article/pii/S0734331006000097> (Accessed 29 October 2022).
- Julien, H, Gross, M & Latham, D. 2018. Survey of information literacy instructional practices in US academic libraries. *College & Research Libraries*, 79(2):179–199. <https://crl.acrl.org/index.php/crl/article/view/16606> (Accessed 17 August 2021).
- Julien, H, Tan, M & Merillat, S. 2013. Instruction for information literacy in Canadian academic libraries: a longitudinal analysis of aims, methods and success. *Canadian Journal of Information and Library Science*, 37(2):81–102.  
<https://doi.org/10.1353/ils.2013.0007> (Accessed 3 September 2020).
- Kanyengo, CW & Kamau, N. 2020. Information literacy policies and practices in health science and medical libraries in Kenya. *Zambia Journal of Library & Information Science*, 4(1):39–54.  
<https://zajlis.unza.zm/index.php/journal/article/view/42/33> (Accessed 26 August 2022).
- Kapitzke, C. 2001. Information literacy: the changing library. *Journal of Adolescent & Adult Literacy*, 44(5):450–456.  
<https://link.gale.com/apps/doc/A70769712/AONE?u=anon~e86c77f7&sid=googleScholar&xid=65372066> (Accessed 24 June 2022).

- Keboh, T & Baro, EE. 2020. Library and Information Science (LIS) students competency in evaluating information and information resources in universities in Nigeria. *UNIZIK Journal of Research in Library and Information Science*, 5(1):17–41. <https://journals.unizik.edu.ng/index.php/ujolis/article/view/228> (Accessed 30 August 2020).
- Kiliç-Çakmak, E. 2010. Learning strategies and motivational factors predicting information literacy self-efficacy of e-learners. *Australasian Journal of Educational Technology*, 26(2):192–208. <https://doi.org/10.14742/ajet.1090> (Accessed 23 July 2020).
- Kiruna, C & Kubina, AB. 2017. Understanding and applying research paradigms in educational context. *International Journal of Higher Education*, 6(5):26–41. <https://doi.org/10.5430/ijhe.v6n5p26> (Accessed 2 December 2019).
- Knapp, H. 2018. *Intermediate statistics using SPSS*. California: SAGE.
- Kothari, CR & Garg, G. 2014. *Research methodology: methods and techniques*. 3rd ed. New Delhi: New Age International.
- Kottler, J & Sharp, L. 2018. *Understanding research: becoming a competent and critical consumer*. 2nd ed. Cognella Academic Publishing.
- Kowalski, KC, McHugh, TF, Sabiston, CM & Ferguson, LJ. 2018. *Research methods in kinesiology*. Canada: Oxford University Press.
- Krysiewski, R. 2018. Using an information literacy program to increase student retention. *Academy of Educational Leadership Journal*, 22(1):1–16. <https://www.proquest.com/openview/ce3fceb0b941b016d925aa658320fca/1?pq-origsite=gscholar&cbl=38741> (Accessed 16 May 2022).
- Kumar, R. 2014. *Research methodology: a step-by-step guide for beginners*. 4th ed. London: SAGE.
- Kumar, R. 2019. *Research methodology: a step-by-step guide for beginners*. 5th ed. London: SAGE.
- Kurelović, EK, Tomljanović, J & Davidović, V. 2016. Information overload, information literacy and use of technology by students. *International Journal of Educational and Pedagogical Sciences*, 10(3):917–921.

- Kyei, KA & Ramagoma, M. 2013. Alcohol consumption in South African universities: prevalence and factors at the University of Venda, Limpopo Province. *Journal of Social Sciences*, 36(1):77–86.  
<https://doi.org/10.1080/09718923.2013.11893175> (Accessed 24 June 2022).
- Lanning, S & Mallek, J. 2017. Factors influencing IL competency of college students. *The Journal of Academic Librarianship*, 43(5):1–8.  
<http://dx.doi.org/10.1016/j.acalib.2017.07.005> (Accessed 21 July 2019).
- Lawal, V, Underwood, P, Lwehabura, M & Stilwell, C. 2010. Information literacy for higher education institutions in Nigeria and Tanzania: efforts and prospects for educational reform in teaching and learning. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 41:42–61.  
<https://journals.co.za/doi/epdf/10.10520/EJC46513> (Access 23 August 2022).
- Leaning, M. 2019. An approach to digital literacy through the integration of media and information literacy. *Media and Communication*, 7(2):4–13.  
<https://www.cogitatiopress.com/mediaandcommunication/article/view/1931/1931> (Accessed 29 August 2022).
- Li, Y, Chen, Y & Wang, Q. 2021. Evolution and diffusion of information literacy topics. *Scientometrics*, 126:4195–4224. <https://doi.org/10.1007/s11192-021-03925-y> (Accessed 24 June 2025).
- Limpopo Provincial Government. 2011. *National Development Plan Vision for 2030*.  
<http://policyresearch.limpopo.gov.za/handle/123456789/941> (Accessed 24 March 2019).
- Lindstrom, J & Shonrock, DD. 2006. Faculty-librarian collaboration to achieve integration of information literacy. *Reference & User Services Quarterly*, 46(1):18–23. <http://www.jstor.org/stable/20864595> (Accessed 2 April 2022).
- LoBiondo-Wood, G & Haber, J. 2014. *Nursing research: methods and critical appraisal for evidence-based practice*. 8th ed. Missouri: Elsevier.
- Lochmiller, CR & Lester, JN. 2017. *An introduction to educational research: connecting methods to practice*. Los Angeles, CA: SAGE.

- Lockerbie, H & Williams, D. 2019. Seven pillars and five minds: small business workplace information literacy. *Journal of Documentation*, 75(5):977–994. <https://doi.org/10.1108/JD-09-2018-0151> (Accessed 4 June 2022).
- Lockhart, J. 2015. Measuring the application of information literacy skills after completion of a Certificate in Information Literacy. *South African Journal of Libraries and Information Science*, 81(2):19–25. <http://sajlis.journals.ac.za> (Accessed 11 April 2019).
- Lwehabura, MJF. 2018. An assessment of information literacy skills among first-year postgraduate students at Sokoine University of Agriculture Tanzania. *Journal of Librarianship and Information Science*, 50(4):427–434. <https://journals.sagepub.com/doi/pdf/10.1177/0961000616667802> (Accessed 19 August 2019).
- Lwehabura, MJF. & Stilwell, C. 2008. Information literacy in Tanzanian universities: challenges and potential opportunities. *Journal of librarianship and information Science*, 40(3):179–191. <https://journals.sagepub.com/doi/pdf/10.1177/0961000608092553> (Accessed 19 August 2019).
- Lwoga, ET & Sukums, F. 2018. Health sciences faculty usage behaviour of electronic resources and their information literacy practices. *Global Knowledge, Memory and Communication*, 67(1/2):2–18. <https://doi.org/10.1108/GKMC-06-2017-0054> (Accessed 7 July 2022).
- Mackey, TP & Jacobson, TE. 2005. Information literacy: a collaborative endeavor. *College Teaching*, 53(4):140–144. <https://doi.org/10.3200/CTCH.53.4.140-144> (Accessed 27 March 2022).
- Madhusanka, AW, Rathsara, AP, Karunarathne, AG, Wijesinghe, AE, Madhusanka, AA, Chandrasiri, AU & Liyanage, AP. 2020. *Appreciation of computer literacy and English language literacy of USJ Students*. [https://www.researchgate.net/profile/Kasun-Madhusanka/publication/350625899\\_Appreciation\\_of\\_Computer\\_literacy\\_and\\_English\\_Language\\_Literacy\\_of\\_USJ\\_Students/links/606a842d299bf1252e2bafd3/Appreciation-of-Computer-literacy-and-English-Language-Literacy-of-USJ-Students](https://www.researchgate.net/profile/Kasun-Madhusanka/publication/350625899_Appreciation_of_Computer_literacy_and_English_Language_Literacy_of_USJ_Students/links/606a842d299bf1252e2bafd3/Appreciation-of-Computer-literacy-and-English-Language-Literacy-of-USJ-Students) (Accessed 16 October 2022).

- Madzhie, CN. 2010. *Challenges facing academic libraries in the management of library user education and information literacy: a case study of University of Venda*. Masters' dissertation, University of Venda, Thohoyandou.
- Mahwasane, NP. 2016. Conceptualizing the importance of libraries in student academic performance: a brief review. *Journal of Social Sciences*, 48(3):259–266. <https://doi.org/10.1080/09718923.2016.11893589> (Accessed 17 April 2020).
- Majanja, MK. 2020. The status of electronic teaching within South African LIS Education. *Library Management*, 41(6/7):317–337. <https://doi.org/10.1108/LM-05-2020-0084> (Accessed 24 June 2022).
- Malterud, K, Siersma, VD. & Guassora, AD. 2016. Sample size in qualitative interview studies: guided by information power. *Qualitative Health Research*, 26(13):1753–1760. <https://journals.sagepub.com/doi/pdf/10.1177/1049732315617444> (Accessed 15 November 2019).
- Manus, SJB. 2009. Librarian in the classroom: an embedded approach to music information literacy for first-year undergraduates. *Notes*, 66(2):249–261. <https://go.gale.com/ps/i.do?p=AONE&u=googlescholar&id=GALE|A215204923&v=2.1&it=r&sid=AONE&asid=e6ed8c5f> (Accessed 16 October 2022).
- Martin, A. 2008. Digital literacy and the "digital society". In *Digital literacies: concepts, policies and practice*, edited by M.K Lankshear. New York: Peter Lang.
- Mashiane, DM, Bangani, S & Van Deventer, K. 2020. The awareness and application of multimedia tools for information literacy instruction at an African university. *The Electronic Library*, 2020. DOI 10.1108/EL-02-2020-0027 (Accessed 17 October 2022).
- Mashile, DA, Munyeka, W & Ndlovu, W. 2021. Organisational culture and turnover intentions among academics: a case of a rural-based university. *Studies in Higher Education*, 46(2):385–393. <https://doi.org/10.1080/03075079.2019.1637844> (Accessed 24 June 2022).

- Maybee, C, Doan, T & Flierl, M. 2016. IL in the active learning classroom. *The Journal of Academic Librarianship*, 42(6):1–7.  
<https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1014&context=impactpubs> (Accessed 15 March 2019).
- Mitchel-Kamalie, L. 2011. *Successful information literacy through librarian: lecturer collaboration*. Doctoral thesis, University of Western Cape, Cape Town.
- Mnkeni-Saurombe, N. 2015. Information literacy: a cornerstone for open distance learning at the University of South Africa. *Journal of Librarianship and Information Science*, 47(2):156–165. <https://lis.sagepub.com> (Accessed 14 February 2019).
- Molepo, CM & Bopape, S. 2018. Information literacy education: perceptions, proficiencies and experiences of first-entering students at tut. *Mousaion*, 36(3):1–20. <https://journals.co.za/doi/pdf/10.25159/2663-659X/5044> (Accessed 30 August 2022).
- Monette, D.R, Sullivan, TJ, DeJong, CR & Hilton, T. 2014. *Applied social research: a tool for the human services*. 9th ed. Belmont: Brooks/Cole.
- Morrison, C & Secker, J. 2015. Copyright literacy in the UK: a survey of librarians and other cultural heritage sector professionals. *Library and Information Research*, 39(121):75–97. <http://eprints.lse.ac.uk> (Accessed 24 February 2022).
- Moselen, C & Wang, L. 2014. Integrating information literacy into academic curricula: a professional development programme for librarians at the University of Auckland. *The Journal of Academic Librarianship*, 40:116–123.  
<http://dx.doi.org/10.1016/j.acalib.2014.02.002> (Accessed 13 February 2019).
- Moseholm, E & Fetters, MD. 2017. Conceptual models to guide integration during analysis in convergent mixed methods studies. *Methodological Innovations* 10(2): 1–11.
- Moyo, M & Mavodza, J. 2016. A comparative study of IL provision at university libraries in South Africa and the United Arab Emirates. *Library Review*, 65(1/2):93–107. [www.emeraldinsight.com/0024-2535.htm](http://www.emeraldinsight.com/0024-2535.htm) (Accessed 14 February 2019).

- Moyo, M & Okemwa, E. O. P. 2022. Students' perceptions of information literacy at two South African universities. *Library Philosophy and Practice*, 1 March 2022. <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=13033&context=libphilprac> (Accessed 24 June 2022).
- Mugwisi T. 2015. Role of librarians in teaching information literacy in Zimbabwean and South African universities: a comparative study. *Mousaion*, 33(1):23–42. <https://journals.co.za/content/mousaion/33/1/EJC173003> (Accessed 11 November 2019).
- Mukwevho, EE. & Togo, M. 2020. Comparative analysis of sustainable practices/innovations between University of Pretoria, Gauteng and University of Venda, Limpopo. In *Universities and sustainable communities: meeting the goals of the Agenda 2030*, edited by W. Leal Filho, U. Tortato and F. Frankenberger. Switzerland: Springer. [https://doi.org/10.1007/978-3-030-30306-8\\_35](https://doi.org/10.1007/978-3-030-30306-8_35) (Accessed 19 May 2022).
- Mullar, KR. 2014. IL for students and teachers in Indian context. *A Journal of Library and Information Science*, 8(2):88–96. [https://www.researchgate.net/publication/264673330\\_Information\\_Literacy\\_for\\_Students\\_and\\_Teachers\\_in\\_Indian\\_Context/download](https://www.researchgate.net/publication/264673330_Information_Literacy_for_Students_and_Teachers_in_Indian_Context/download) (Accessed 11 April 2019).
- Mullins, K. 2016. IDEA model from theory to practice: integrating information literacy in academic courses. *The Journal of Academic Librarianship*, 42(1):55–64. <http://dx.doi.org/10.1016/j.acalib.2015.10.008> (Accessed 28 February 2022).
- Munn, J & Small, J. 2017. What is the best way to develop information literacy and academic skills of first year Health Science students? A systematic review. *Evidence Based Library and Information Practice*, 12(3):56–94. <https://journals.library.ualberta.ca/eblip/index.php/EBLIP/article/view/28541/21414> (Accessed 19 August 2020).
- Muruganantham, G. 2015. Developing of E-content package by using ADDIE model. *International Journal of Applied Research*, 1(3):52–54.



- Naidoo, S & Saibb, MO. 2014. Information literacy, lifelong learning and digital citizenship in the 21st century. In *Worldwide commonalities and challenges in information literacy research and practice* edited by S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts and S. Špiranec. Cham: Springer, pp. 184–189. <https://link.springer.com/content/pdf/10.1007/978-3-319-03919-0.pdf> (Accessed 18 February 2020).
- Naik, MM & Padmini, L. 2014. Importance of IL. *International Journal of Digital Library Services*, 4(3):92–100.
- Napp, JP & Ballard, PJ. 2013. *Information literacy instruction assignment in an online module*. 120<sup>th</sup> ASEE Annual Conference and Exposition, Atlanta, Georgia. <https://peer.asee.org/19764> (Accessed 15 July 2021).
- Ndou, AS. 2021. Relationship between access to ICT and the use of electronic library resources by scholars and postgraduate students in a rural-based South African university. *South African Journal of Libraries and Information Science*, 87(1):42–50. <http://sajlis.journals.ac.za> (Accessed 13 February 2022).
- Ndou, AS & Chilimo, WL. 2021. Academics' perceptions of electronic resources at the University of Venda, South Africa. *DESIDOC Journal of Library & Information Technology*, 41(6):424–428. <https://publications.drdo.gov.in/ojs/index.php/djlit/article/view/16984> (Accessed 20 October 2022).
- Ndou, AS & Mojapelo, MS. 2019. Access to and use of electronic resources by postgraduate students at the University of Venda, South Africa. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, (59):41–55. <https://doi.org/doi:10.19044/esj.2018.v14n7p291> (Accessed 23 June 2022).
- Neerpath, S. 2012. Academic integration of information literacy at the Durban University of Technology in preparing for lifelong learners. In *The road to information literacy: librarians as facilitators of learning*, edited by R. Gwyer, R. Stubbings and G. Walton. The Hague, Netherlands: De Gruyter Saur, pp. 253–266. <https://doi.org/10.1515/9783110281002> (Accessed 15 April 2021).

- Neerpath, S. 2016. Integrating information literacy in the general education module at the Durban University of Technology, South Africa. *Mousaion*, 34(1):43–55. <https://journals.co.za/doi/abs/10.10520/EJC190694> (Accessed 2 March 2022).
- Nemalili, TV. 2014. *An assessment of the effectiveness of the academic library online public access catalogue by students: a case study of University of Venda*. Masters' dissertation, University of Venda, Thohoyandou.
- Ngulube, P. 2018. Overcoming the difficulties associated with using conceptual and theoretical frameworks in heritage studies. In *Handbook of research on heritage management and preservation*. IGI Global, pp. 1–23. [https://books.google.co.za/books/about/Handbook\\_of\\_Research\\_on\\_Heritage\\_Managem.html?id=fJBFDwAAQBAJ&printsec=frontcover&source=kp\\_read\\_button&hl=en&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.za/books/about/Handbook_of_Research_on_Heritage_Managem.html?id=fJBFDwAAQBAJ&printsec=frontcover&source=kp_read_button&hl=en&redir_esc=y#v=onepage&q&f=false) (Accessed 12 October 2022).
- Noe, NW. 2013. *Creating and maintaining an information literacy instruction program in the twenty-first century: an ever-changing landscape*. Oxford: Chandos Publishing.
- Noll, SD & Brown, C. 2018. Re-thinking information literacy in a postgraduate class at a South African higher education institution. *Mousaion*, 36(2):1–26. <https://journals.co.za/doi/pdf/10.25159/2663-659X/4769> (Accessed 18 June 2022).
- Northwestern University. 2022. *Course duplication*. <https://www.mccormick.northwestern.edu/students/undergraduate/advising-registration/course-duplicates.html> (Accessed 10 February 2022).
- Nyamboga, CM. 2004. Information skills and information literacy in Indian university libraries. *Program: Electronic Library and Information Systems*, 38(4):232–239. <https://doi.org/10.1108/00330330410566079> (Accessed 24 August 2022).
- O'Hanlon, N. 2007. Information literacy in the university curriculum: challenges for outcomes assessment. *Libraries and the Academy*, 7(2):169–189. <https://eric.ed.gov/?id=EJ792906> (Accessed 14 October 2022).
- Oberman, C, Lindauer, BG & Wilson, B. 2019. Conference circuit: integrating information literacy into the curriculum: how is your library measuring up? *College & Research Libraries News*, 59:347–354.

- Oberprieler, G, Masters, K & Gibbs, T. 2005. Information technology and information literacy for first health science students in South Africa: matching early and professional needs. *Medical Teacher*, 27(7):595–598.
- Okeke, C & Van Wyk, M. 2015. *Educational research: an African approach*. Cape Town: Oxford University Press.
- Omar, AM, Haji, HA & Mwitumbe, KH. 2014. Information literacy in Zanzibar universities: current situation and the way forward. *International Federation of Library Associations and Institutions*, 40(4):280–288.  
<https://journals.sagepub.com/doi/pdf/10.1177/0340035214544882> (Accessed 19 September 2019).
- Onen, MA. 2015. *Information literacy integration strategies into the curriculum of senior secondary schools in Botswana*. Doctoral thesis, University of KwaZulu-Natal, Pietermaritzburg. <https://ukzn-dspace.ukzn.ac.za/handle/10413/13451> (Accessed 19 June 2019).
- Onwuchekwa, EO. 2017. *Information literacy and lifelong learning in the National Open University of Nigeria*. Doctoral thesis, University of South Africa, Pretoria. <https://uir.unisa.ac.za/handle/10500/22484> (Accessed 13 May 2020).
- Onyanha, OB. 2020. Knowledge visualization and mapping of information literacy, 1975–2018. *IFLA Journal*, 46(2):107–123.  
<https://doi.org/10.1177/0340035220906536> (Accessed 18 June 2022).
- Ottonicar, SLC, Valentim, MLP & Mosconi, E. 2018. A competitive intelligence model based on information literacy: organizational competitiveness in the context of the 4th Industrial Revolution. *Journal of Intelligence Studies in Business*, 8(3):55–65. <https://ojs.hh.se/index.php/JISIB/article/view/329> (Accessed 27 June 2022).
- Oyedemi, T & Mogano, S. 2018. The digitally disadvantaged: access to digital communication technologies among first year students at a rural South African University. *Africa Education Review*, 15(1):175–191.  
<https://doi.org/10.1080/18146627.2017.1264866> (Accessed 14 May 2022).

- Ozor, A & Toner, J. 2022. Information literacy behavior and practice: an assessment of undergraduate students at Ada College of Education, Ghana. *Journal of Library Administration*, 62(1):132–151.  
<https://doi.org/10.1080/01930826.2021.2006992> (Accessed 15 May 2022).
- Paterson, SF & Gamtso, CW. 2017. Information literacy instruction in an English capstone course: a study of student confidence, perception, and practice. *The Journal of Academic Librarianship*, 43(2):143–155.  
<https://www.sciencedirect.com/science/article/pii/S0099133316301811>  
 (Accessed 24 June 2022).
- Phelps, SF & Hyde, L. 2018. Integrating information literacy into the academic curriculum and nursing practice. *Journal of the Medical Library Association*, 96(1):28–33. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2212327/>  
 (Accessed 13 February 2019).
- Polit, DF & Beck, CT. 2014. *Essentials of nursing research: appraising evidence for nursing practice*. 8th ed. Philadelphia: Lippincott Williams & Wilkins.
- Rafiq, M, Ali, S & Khan, MT. 2020. Information literacy instructions in university libraries of Lahore, Pakistan: practices and methods. *Library Philosophy and Practice*, 4511. <https://digitalcommons.unl.edu/libphilprac/4511> (Accessed 27 June 2022).
- Rahmah, E. 2020. Information literacy level of students of Universitas Negeri Padang using the Big 6 Model. *Proceedings of the 1<sup>st</sup> Progress in Social Science, Humanities and Education Research Symposium (PSSHERS 2019)*:146–149. Atlantis Press. <https://doi.org/10.2991/assehr.k.200824.035> (Accessed 13 May 2022).
- Rahman, S. 2017. The advantages and disadvantages of using qualitative and quantitative approaches and methods in language “testing and assessment” research: a literature review. *Journal of Education and Learning*, 6(1):102–112.  
<http://dx.doi.org/10.5539/jel.v6n1p102> (Accessed 18 May 2019).
- Ranaweera, P. 2008. *Importance of information literacy skills for an information literate society*, 2008. NACLIS 2008, Colombo, Sri Lanka, 24th June 2008.  
<http://eprints.rclis.org/11956/> (Accessed 31 August 2020).

- Rantlha, LB. 2017. *Distance students' readiness for an online information literacy programme: UNISA School of Accountancy as a case study*. Doctoral thesis, University of Pretoria. <https://repository.up.ac.za/handle/2263/61709> (Accessed 12 April 2022).
- Reay, T, Zafar, A, Monteiro, P & Glaser, V. 2019. Presenting findings from qualitative research: one size does not fit all! In *The production of managerial knowledge and organizational theory: new approaches to writing, producing and consuming theory*, edited by T.B. Zilber, J.M. Amis and J. Mair. Emerald Publishing, Chapter 10.  
[https://books.google.co.za/books/about/The\\_Production\\_of\\_Management\\_Knowledge\\_a.html?id=ycePDwAAQBAJ&printsec=frontcover&source=kp\\_read\\_button&hl=en&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.za/books/about/The_Production_of_Management_Knowledge_a.html?id=ycePDwAAQBAJ&printsec=frontcover&source=kp_read_button&hl=en&redir_esc=y#v=onepage&q&f=false) (Accessed 19 June 2021).
- Rehman, AA & Alharthi, K. 2016. An introduction to research paradigms. *International Journal of Educational Investigations*, 3(8):51–59.  
[www.ijeionline.com](http://www.ijeionline.com) (Accessed 2 December 2019).
- Reid, AD, Hart, EP & Peters, MA. 2014. *A companion to research in education*. London: Springer.
- Reinbold, S. 2013. Using the ADDIE model in designing library instruction. *Medical Reference Services Quarterly*, 32(3):244–256.  
<https://doi.org/10.1080/02763869.2013.806859> (Accessed 23 April 2022).
- Ridley, D. 2012. *The literature review: a step-by-step guide for students*. 2nd ed. Los Angeles, CA: SAGE.
- Sample, A. 2020. Historical development of definitions of information literacy: a literature review of selected resources. *The Journal of Academic Librarianship*, 46(2):1–8.  
<http://www.sciencedirect.com/science/article/pii/S0099133319305026> (Accessed 24 July 2020).
- Sanches, T. 2018. *Required skills for teachers: information literacy at the top*.  
[https://doi.org/10.1007/978-3-319-74334-9\\_65](https://doi.org/10.1007/978-3-319-74334-9_65) (Accessed 11 April 2019).

- Schulte, SJ & Knapp, M. 2017. Awareness, adoption and application of the Association of College & Research Libraries (ACRL) Framework for Information Literacy in health sciences libraries. *Journal of the Medical Library Association*, 105(4):347–354. <https://pubmed.ncbi.nlm.nih.gov/28983198/> (Accessed 20 October 2022).
- Secker, J. 2017. The trouble with terminology: rehabilitating and rethinking 'digital literacy'. In *Digital literacy unpacked*, edited by K. Reedy and J. Parker. London: Facet Publishing.  
[http://openaccess.city.ac.uk/id/eprint/20546/1/Secker\\_The%20trouble%20with%20terminology\\_final.pdf](http://openaccess.city.ac.uk/id/eprint/20546/1/Secker_The%20trouble%20with%20terminology_final.pdf) (Accessed 12 November 2019).
- Shaheen, M. 2021. The concept of originality in academic research of engineering. *Education Research International*, 2021.  
<https://www.hindawi.com/journals/edri/2021/9462201/> (Accessed 12 October 2022).
- Shao, X & Purpur, G. 2016. Effects of information literacy skills on student writing and course performance. *The Journal of Academic Librarianship*, 42(6):1–9.  
<https://www.sciencedirect.com/science/article/abs/pii/S0099133316301756> (Accessed 15 February 2019).
- Sharma, S, Amir, SDS, Veeriah, J & Kannan, S. 2016. Leadership behaviour of deans and its impact on effectiveness for quality in a high-ranking university. *Educational and Science*, 41(184):49–58. DOI: 10.15390/EB.27.04.2016 (Accessed 12 October 2022).
- Shibayama, S & Wang, J. 2020. Measuring originality in science. *Scientometrics*, 122(1):409–427. <https://link.springer.com/content/pdf/10.1007/s11192-019-03263-0.pdf> (Accessed 23 February 2022).
- Shih, W. 2012. Student literacy for succeeding in a pervasive digital environment. In *The road to information literacy: librarians as facilitators of learning*, edited by R. Gwyer, R. Stubbings and G. Walton. Hague, Netherlands: De Gruyter Saur, pp. 285–296. <https://doi.org/10.1515/9783110281002> (Accessed 17 March 2022).

- Shokane, AL, Nmutandani, V & Budeli, NJ. 2016. Challenges faced by fourth year social work students during fieldwork practice at a rural-based university. *Journal of Politics, Economics and Society*, 6(1):133–163. <https://journals.co.za/doi/epdf/10.10520/EJC187753> (Accessed 11 May 2021).
- Shukla, R. 2021. The SCONUL Seven Pillars of Information Literacy: core model to test the skills of LIS students, University of Jammu, India. *Library Philosophy and Practice*, 5851. <https://digitalcommons.unl.edu/libphilprac/5851> (Accessed 23 May 2022).
- Sikhwari, TD. 2007. The relationship between affective factors and the academic achievement of students at the University of Venda. *South African Journal of Higher Education*, 21(3):520–536. <https://doi.org/doi:10.10520/EJC37336> (Accessed 24 June 2022).
- Sim, J, Saunders, B, Waterfield, J & Kingstone, T. 2018. Can sample size in qualitative research be determined a priori? *International Journal of Social Research Methodology*, 21:1–16. <https://doi.org/10.1080/13645579.2018.1454643> (Accessed 15 November 2019).
- Simon, CR. 2013. Library and information literacy instruction in Israeli colleges and universities: a preliminary survey. *The International Information & Library Review*, 45(3–4):108–113. <https://doi.org/10.1016/j.iilr.2013.10.004> (Accessed 20 June 2019).
- Sivathanu, B. 2018. Adoption of digital payment systems in the era of demonetization in India: an empirical study. *Journal of Science and Technology Policy Management*, 10(1):143–171. <https://doi.org/10.1108/JSTPM-07-2017-0033> (Accessed 2 March 2022).
- Smith, PA. 2016. Information literacy integration as quality enhancement of undergraduate curriculum. *Communications in Information Literacy*, 10(2):214–244. <https://doi.org/10.15760/comminfolit.2016.10.2.25> (Accessed 24 June 2022).
- Somekh, R & Lewin, C. 2005. *Research methods in the social sciences*. London: SAGE.

- Sonn, R. 2016. The challenge for a historically disadvantaged South African university to produce more postgraduate students. *South African Journal of Higher Education*, 30(2): 226–241. <https://hdl.handle.net/10520/EJC191689> (Accessed 29 October 2022).
- Squibb, SLD & Zanzucchi, A. 2020. Apprenticing researchers: exploring upper-division students' information literacy competencies. *portal: Libraries and the Academy*, 20(1):161–185. doi:10.1353/pla.2020.0008 (Accessed 25 June 2022).
- Stebbing, D, Shelley, J, Warnes & McMaster, C. 2019. What academics really think about information literacy. *Journal of Information Literacy*, 13(1):21–44. DOI.10.11645/13.1.2338 (Accessed 20 October 2022).
- Steinerová, J. 2016. Information literacy studies and human information behaviour. *ProInflow*, 8(2):53–69. <https://doi.org/10.5817/ProIn2016-2-6> (Accessed 23 July 2020).
- Strang, KD. 2013. Risk management research design ideologies, strategies, methods and techniques. *International Journal of Risk and Contingency Management*, 2(2):1–26. <https://dl.acm.org/doi/abs/10.4018/ijrcm.2013040101> (Accessed 19 October 2022).
- Sugiharti, E & Muslim, M. 2016. On-line clustering of lecturers' performance of computer science department of Semarang State University using K-means algorithm. *Journal of Theoretical & Applied Information Technology*, 83(1):64–71. <https://www.jatit.org/volumes/Vol83No1/7Vol83No1.pdf> (Accessed 25 August 2022).
- Summey, TP & Valenti, S. 2013. But we don't have an instructional designer: designing online library instruction using ISD techniques. *Journal of Library & Information Services in Distance Learning*, 7(1–2):169–182. <https://doi.org/10.1080/1533290X.2012.705630> (Accessed 12 May 2022).
- Swapna, G & Biradar, BS. 2017. Information literacy model for higher education institutions in India. *International Journal of Digital Library Services*, 7(3):31–50. <http://www.ijodls.in/uploads/3/6/0/3/3603729/4ijodls3717.pdf> (Accessed 27 July 2019).



- Taherdoost, H. 2018. A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22:960–967.  
<https://doi.org/10.1016/j.promfg.2018.03.137> (Accessed 2 March 2022).
- Tarango, J, Evangelista, JL, Machin-Mastromatteo, JD & Cortés-Vera, J. 2017. Inclusion of information literacy in the curriculum through learning communities and action research. In *Pathways into information literacy and communities of practice*, edited by D. Sales and M. Pinto. Chandos Publishing, Chapter 4.  
<https://doi.org/10.1016/B978-0-08-100673-3.00004-6> (Accessed 22 July 2022).
- Teo, T, Unwin, S, Scherer, R & Gardiner, V. 2021. Initial teacher training for twenty-first century skills in the Fourth Industrial Revolution (IR 4.0): a scoping review. *Computers & Education*, 170(104223):1–21. –  
<https://doi.org/https://doi.org/10.1016/j.compedu.2021.104223> (Accessed 27 June 2022).
- Tewell, EC. 2018. The practice and promise of critical information literacy: academic librarians' involvement in critical library instruction. *College & Research Libraries*, 79(1). <https://doi.org/10.5860/crl.79.1.10> (Accessed 17 March 2020).
- Thomas, G. 2013. *How to do your research project: a guide for students in education and applied social sciences*. 2nd ed. London: SAGE.
- Thornton, S & Atkinson, DB. 2022. Everywhere and nowhere: Information literacy in the political science classroom. *PS: Political Science & Politics*, 55(3):597–604.  
<https://doi.org/10.1017/S1049096522000397> (Accessed 29 August 2022).
- Tiemensma, L. 2012. Information literacy education in higher education institutions in South Africa. In *The road to information literacy: librarians as facilitators of learning*, edited by R. Gwyer, R. Stubbings and G. Walton. The Hague, Netherlands: De Gruyter Saur, pp. 155–168.  
<https://doi.org/10.1515/9783110281002> (Accessed 17 March 2022).
- Tlakula, TP & Fombad, M. 2017. The use of electronic resources by undergraduate students at the University of Venda, South Africa. *The Electronic Library*, 35(5):861–881. <https://doi.org/10.1108/EL-06-2016-0140> (Accessed 23 June 2022).

- Tom, MN., Huaman, ES. & McCarty, TL. 2019. Indigenous knowledges as vital contributions to sustainability. *International Review of Education*, 65(1):1-18. <https://doi.org/10.1007/s11159-019-09770-9> (Accessed 20 March 2023).
- Toteng, B, Hoskins, R & Bell, F. 2011. Information literacy and law students at the University of Botswana. *Mousaion*, 29(1):56–75. <https://doi.org/doi:10.10520/EJC79013> (Accessed 12 May 2021).
- Tsekeris, C. 2019. Surviving and thriving in the Fourth Industrial Revolution: digital skills for education and society. *Homo Virtualis*, 2(1):34–42. <https://doi.org/10.12681/homvir.20192> (Accessed 27 June 2022).
- Tshuma, T & Chigada, J. 2018. Analysing information literacy practices at selected academic libraries in Zimbabwe. *South African Journal of Information Management*, 20(1):1–7. <https://doi.org/10.4102/sajim.v20i1.976> (Accessed 16 August 2020).
- Ullah, M & Ameen, K. 2014. Current status of information literacy instruction practices in medical libraries of Pakistan. *Journal of Medical Library Association*, 102(4):281–287. <http://dx.doi.org/10.3163/1536-5050.102.4.009> (Accessed 13 February 2019).
- Ullah, M & Ameen, K. 2019. Teaching information literacy skills to medical students: perceptions of health sciences librarians. *Health Information & Libraries Journal*, 36:357–366.
- University of Venda (UNIVEN). 2022a. *Course content and learning outcomes*. <https://myuniven-moodle.univen.ac.za/course/view.php?id=23537> (Accessed 12 March 2022).
- University of Venda (UNIVEN). 2022b. *General rules for degrees, diplomas and certificates*. [https://www.univen.ac.za/wp-content/uploads/2022/05/2022\\_Part\\_One-General\\_Calendar.pdf](https://www.univen.ac.za/wp-content/uploads/2022/05/2022_Part_One-General_Calendar.pdf) (Accessed 12 March 2022).
- University of Venda (UNIVEN). 2022. Faculty of Management, Commerce and Law. *Calendar, 2022. Part 4*. [https://www.univen.ac.za/wp-content/uploads/2022/01/2022\\_Calendar\\_MGT\\_COM\\_LAW.pdf](https://www.univen.ac.za/wp-content/uploads/2022/01/2022_Calendar_MGT_COM_LAW.pdf) (Accessed 12 March 2022).

- Urban, JB & Van Eeden-Moorefield, BM. 2018. *Designing and proposing your research project*. Washington, DC: American Psychological Association.
- Venter, P, Van Zyl, D, Joubert, P, Pellissier, R, Van Rensburg, J & Stack, L. 2017. *Economic and management research*. Cape Town: Oxford University Press.
- Vice chancellors state of the campus report. 2018. Strategic matters. *Esther Munano*. 2018. E-mail, 3 October. [Esther.munano@univen.ac.za](mailto:Esther.munano@univen.ac.za) (Accessed 3 October 2018).
- Virkus, S. 2003. Information literacy in Europe: a literature review. *Information Research*, 8(4):1–56.
- Walch, DB. 1993. The 1986 college library standards: application and utilization. *College & Research Libraries*, 54(3):217–226.  
<https://crl.acrl.org/index.php/crl/article/viewFile/14809/16255> (Accessed 4 June 2022).
- Walraven, A, Brand-Gruwel, S & Boshuizen, HPA. 2009. How students evaluate information and sources when searching the World Wide Web for information. *Computers & Education*, 52:234–246.  
<http://www.sciencedirect.com/science/article/pii/S0360131508001292> (Accessed 12 August 2020).
- Wang, L. 2011. An information literacy integration model and its application in higher education. *Reference Services Review*, 39(4):703–720.  
<https://www.emerald.com/insight/publication/issn/0090-7324> (Accessed 13 February 2019).
- Wang, L. 2014a. Curriculum and curriculum integration of information literacy in higher education. In *Developing people's information capabilities: fostering information literacy in educational, Workplace and community contexts*. Emerald Group Publishing. [https://doi.org/10.1108/S1876-0562\(2013\)0000008007](https://doi.org/10.1108/S1876-0562(2013)0000008007) (Accessed 19 March 2020).
- Wang, L. 2014b. An information literacy integration model and its application in curriculum integration and staff development in higher education. In *Worldwide commonalities and challenges in information literacy research and practice*, edited by S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts and S. Špiranec.

- Cham: Springer, pp. 100–110.  
<https://link.springer.com/content/pdf/10.1007/978-3-319-03919-0.pdf> (Accessed 18 February 2020).
- Wang, XL. 2010. *Integrating information literacy into higher education curricula: an IL curricular integration model*. Doctoral thesis, Queensland University of Technology, Brisbane.  
<https://eprints.qut.edu.au/41747/1/Xiaoli%20Wang%20Thesis.pdf> (Accessed 26 August 2022).
- Ward, L & Kim, M. 2019. Faculty perception of information literacy at Queensborough Community College. *Community & Junior College Libraries*, 23(1–2):1–15. <https://doi.org/10.1080/02763915.2018.1558899> (Accessed 18 January 2020).
- Watkins, D & Gioia, D. 2015. *Mixed methods research*. New York: Oxford University Press.
- Webber, S. & Johnston, B. 2017. Information literacy: conceptions, context and the formation of a discipline. *Journal of Information Literacy*, 11(1):156–183.  
<http://dx.doi.org/10.11645/11.1.2205> (Accessed 18 January 2020).
- Wegener, DR. 2022. Information literacy: making asynchronous learning more effective with best practices that include humor. *The Journal of Academic Librarianship*, 48(1):102482.  
<https://doi.org/https://doi.org/10.1016/j.acalib.2021.102482> (Accessed 4 June 2022).
- Wilkinson, K. 2006. Students computer literacy: perception versus reality. *Delta Pi Epsilon Journal*, 48(2):108–120.  
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=24327355&site=ehost-live> (Accessed 23 February 2022).
- Williamson, K & Johanson, G. (eds). 2018. *Research methods*. 2nd ed. Cambridge: Chandos Publishing.
- Willson, G & Angell, K. 2017. Mapping the Association of College and Research Libraries information literacy framework and nursing professional standards

- onto an assessment rubric. *Journal of the Medical Library Association*, 105(2):150–154. <https://doi.org/10.5195/jmla.2017.39> (Accessed 4 June 2022).
- Wingate, U. 2018. Academic literacy across the curriculum: towards a collaborative instructional approach. *Language Teaching*, 51(3):349–364. <https://doi.org/10.1017/S0261444816000264> (Accessed 23 April 2020).
- Woitte, S & Mccay, K. 2019. How cyclical assessment can guide information literacy instruction to best serve first-year students. *The Journal of Academic Librarianship*, 45(3):315–317. <http://www.sciencedirect.com/science/article/pii/S0099133319300278> (Accessed 24 July 2020).
- Yager, Z, Salisbury, F & Kirkman, L. 2013. Assessment of information literacy skills among first year students. *The International Journal of the First Year in Higher Education*, 4(1):59–71. <https://vuir.vu.edu.au/22399/6/140-1-1109-1-10-20130419.pdf> (Accessed 18 June 2022).
- Yebowaah, FA & Owusu-Ansah, CM. 2020. Evaluating the information access skills of students of a college of education in Ghana. *Journal of Information Science Theory and Practice*, 8(2):45–54. <https://www.koreascience.or.kr/article/JAKO202020264317475.pdf> (Accessed 30 August 2020).
- Yevelson-Shorsher, A & Bronstein, J. 2018. Three perspectives on IL in academia: talking to librarians, faculty and students. *College & Research Libraries*, 79(4):535–553. <https://crl.acrl.org/index.php/crl/article/view/16728> (Accessed 19 March 2019).
- Yin, RK. 2016. *Qualitative research from start to finish*. 2nd ed. New York: Guilford Press.
- Yustika, GP & Iswati, S. 2020. Digital literacy in formal online education: a short review. *Dinamika Pendidikan*, 15(1):66–76. <https://journal.unnes.ac.id/nju/index.php/DP/article/view/23779> (Accessed 26 August 2022).
- Zimu, AN. 2020. Information literacy skills of first-year students at the Mangosuthu University of Technology at a pre-library orientation and instruction phase.

*Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, (60):55–75. <https://doi.org/doi:10.10520/ejc-innovation-v2020-n60-a4> (Accessed 20 August 2020).

Zinn, S, Stilwell, C & Hoskins, R. 2016. Information literacy education in the South African classroom: reflections from teachers' journals in the Western Cape Province. *Libri*, 66(1):31–44.  
<https://www.degruyter.com/document/doi/10.1515/libri-2015-0102/html>  
(Accessed 29 August 2022).

Zurkowski, PG. 1974. The information service environment relationships and priorities. *Related paper*, 5:1–27. <https://files.eric.ed.gov/fulltext/ED100391.pdf>  
(Accessed 29 October 2022).

## APPENDICES

### Appendix A: Interview schedule for early adopter academics

Title: Opportunities and challenges of integrating information literacy as a credit-bearing module into first year level academic programmes at the University of Venda, South Africa

#### Dear Participant

My name is Alugumi Samuel Ndou and I am conducting a study supervised by Dr Acquinatta Zimu-Biyela, a lecturer in the Department of Information Science towards a Doctor of Philosophy in Information Science at the University of South Africa. We are inviting you to participate in a study entitled opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa.

The questions are structured as follows:

#### SECTION A: BACKGROUND INFORMATION

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

1. Please indicate your gender.

Female	
Male	
Other (specify)	

2. Please indicate your age group.

21–30 years	
31–40 years	
41–50 years	
51–60 years	
61 years and above	

3. What is your position at UNIVEN?

Junior Lecture	
Lecturer	
Senior Lecturer	
Professor	
Other (Specify)	

4. Which school are you attached to?

Agricultural Sciences	
Education	
Environmental Sciences	
Health Sciences	
Human and social Sciences	
Law	
Management sciences	
Mathematics and natural sciences	

5. How long have you been working as an academic at UNIVEN?

Less than a year	
1–2 years	
3–5 years	
6–9 years	
10 and above years	



**SECTION B: INFORMATION LITERACY CONTENT**

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

1. Are you aware of the IL content offered in the IL integrated into your module?

Yes	
No	

If your answer is yes, please list the IL content/s that are offered:

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2. Based on your experience, do you think there is duplication of the content covered in IL with content covered in some of the modules offered at UNIVEN?

Yes	
No	

*If Yes, please mention the duplicated content and the module/s that covered the duplicated content.*

**Duplicated content:**

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**Module/s:**

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3. In your opinion, please mention at least four (4) skills gained from the current offered IL programmes that are suitable for the fourth industrial revolution (4IR) workforce?

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**SECTION C: INFORMATION LITERACY OFFERED AT UNIVERSITIES**

1. Is IL adequately integrated into the module that you are currently teaching?

Yes	
No	

Please mention the module in which IL is integrated to and briefly give the reasons for your answer.

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2. How many credits is IL currently contributes to the module in which is integrated to?

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3. If UNIVEN, decides to offer IL as a credit-bearing module to all first-year students, which best way should be considered to offer IL instructions?

Stand-alone generic credit-bearing module	
Integrated/embedded to other module/s	
Other (specify	

Give reason to your answer.

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4. Do you agree that IL programmes should be mandatory to all first-year level students at UNIVEN?

Yes	
No	

Give reason to your answer.

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5. In your opinion, who should be responsible for IL instructions for the first-year level students at UNIVEN? Choose one option.

Academics	
Librarians	
Collaboration of academics and librarians	
Other (specify)	

Please, provide reason/s for your answer.

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#### **SECTION D: OPPORTUNITIES OF INFORMATION LITERACY PROGRAMMES**

1. Based on your experience as one of the early adopters of IL programmes, what are the opportunities of offering IL programmes to the first-year level students at UNIVEN?

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#### **SECTION E: CHALLENGES FACED IN OFFERING IL PROGRAMMES**

1. Please briefly describe the challenges that you faced in the offering of IL programmes at UNIVEN and provide solutions to those challenges.

<b>Challenges</b>	<b>Solutions</b>

2. Briefly explain the collaboration between the academic department and library department in the provision of IL programmes to the students.

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3. What types of complains do you receive from students about the way IL is instructed by the librarian/s? What types of complains do you receive from students about the way IL is instructed by the librarian/s?

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4. How do you handle the complains mentioned in question 3?

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5. Mention challenges that you think could hinder the integration of IL as a credit-bearing module into first-year level academic programmes at UNIVEN.

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If you would like to be informed of the final research findings, please contact Alugumi Samuel Ndou on 083 415 9938 or [40571505@mylife.unisa.ac.za](mailto:40571505@mylife.unisa.ac.za) . Should you have concerns about the way in which the research has been conducted, you may contact [zimuan@unisa.ac.za](mailto:zimuan@unisa.ac.za)

Your participation in this study is highly appreciated.

Thank you.



Alugumi Samuel Ndou

## Appendix B: Interview schedule for information librarians

Title: Opportunities and challenges of integrating information literacy as a credit-bearing module into first year level academic programmes at the University of Venda, South Africa

### Dear Participant

My name is Alugumi Samuel Ndou and I am conducting research supervised by Dr Acquinatta Zimu-Biyela, a lecturer in the Department of Information Science towards a Doctor of Philosophy in Information Science at the University of South Africa. We are inviting you to participate in a study entitled opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa.

The questions are structured as follows:

### SECTION A: BACKGROUND INFORMATION

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

6. Please indicate your gender.

Female	
Male	
Other (specify)	

7. Please indicate your age group.

21–30 years	
31–40 years	
41–50 years	
51–60 years	
61 years and above	

8. In which school/s are you assigned to? *You can mark (X) as many as you are assigned to.*

Agricultural Sciences	
Education	
Environmental Sciences	
Health Sciences	
Human and social Sciences	
Law	
Management sciences	
Mathematics and natural sciences	

9. How long have you been working as an information librarian at UNIVEN?

Less than a year	
1–2 years	
3–5 years	
6–9 years	
10 and above years	

### **SECTION B: INFORMATION LITERACY CONTENT**

Please indicate your response by a cross (X) in the appropriate box next to the question. *Where asked to provide more information, kindly do so.*

1. Based on your experience as an Information librarian, list the IL competencies that should be taught to the first-year level students?

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2. Please, mention the content/s that should be covered under the competencies mentioned above (in question 1).

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3. From the IL standards listed below, which one will you recommend to be followed if IL is integrated as a credit-bearing module into all first-year level academic programmes at UNIVEN?

Association of College and Research Libraries (ACRL)	
Standing Conference of National and University Libraries (SCONUL) seven pillars of IL	
Big6	
Other (specify)	

Provide reasons for your recommendation.

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### SECTION C: INFORMATION LITERACY OFFERED AT UNIVERSITIES

Please indicate your response by a cross (X) in the appropriate box next to the question. *Where asked to provide more information, kindly do so.*

1. Are you involved in IL programmes that the library offers at UNIVEN?

Yes	
No	

***If yes, what are your responsibilities?***

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2. Do you think IL should be offered as a mandatory module to all first-year level students at the University of Venda?

Yes	
No	

Give reason/s for your answer.

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3. Based on your experience which method would you prefer to be most effective for IL instruction for the first-year level students at UNIVEN? Choose one option.

Stand-alone generic credit-bearing module	
Integrated/embedded to other module/s	
Other (specify)	

4. Who should be responsible for IL instructions for the first-year level students at UNIVEN, and why?

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5. In your opinion, what level of educational qualification do you think an IL instructor should have?

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6. Please, explain how you are involved in the offering of IL programmes to the first-year level students.

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**SECTION D: OPPORTUNITIES OF INFORMATION LITERACY PROGRAMMES**

1. List the opportunities of the current offered IL instructions to the first-year level university students at UNIVEN.

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2. Briefly explain why IL skills are useful in the fourth industrial revolution (4IR) workforce.

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**SECTION E: CHALLENGES FACED IN OFFERING INFORMATION LITERACY PROGRAMMES**

1. List some of the challenges you are currently facing as librarians in the offering of IL programmes to the first-year level students, and briefly explain how you are dealing with those challenges.

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2. Mention the challenges that you could face as an information librarian and the library as a department if the university decides to integrate IL as a credit-bearing module into all first-year academic programmes.

Challenges that could be faced by librarians:

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Challenges that could be faced by the academic departments:

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If you would like to be informed of the final research findings, please contact Alugumi Samuel Ndou on 083 415 9938 or [40571505@mylife.unisa.ac.za](mailto:40571505@mylife.unisa.ac.za) Should you have concerns about the way in which the research has been conducted, you may contact [zimuan@unisa.ac.za](mailto:zimuan@unisa.ac.za)

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.



Alugumi Samuel Ndou

## Appendix C: Interview schedule for deans of schools

Title: Opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa

### Dear Participant

My name is Alugumi Samuel Ndou and I am doing research supervised by Dr. Acquinatta Zimu-Biyela, a lecturer in the Department of Information Science towards a Doctor of Philosophy in Information Science at the University of South Africa. We are inviting you to participate in a study entitled opportunities and challenges of integrating information literacy as a credit-bearing module into first year level academic programmes at first-year of Venda, South Africa.

The questions are structured as follows:

### SECTION A: BACKGROUND INFORMATION

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

10. Please indicate your gender.

Female	
Male	
Other (specify)	

11. Please indicate your age group.

21–30 years	
31–40 years	
41–50 years	
51–60 years	
61 years and above	

12. What is your position at UNIVEN?

Junior lecturer	
Lecturer	
Senior lecturer	
Professor	
Other (specify)	

13. Which school are you attached to?

Agricultural Sciences	
Education	
Environmental Sciences	
Health Sciences	
Human and social Sciences	
Law	
Management sciences	
Mathematics and natural sciences	

14. How long have you been occupying a dean's position at UNIVEN?

Less than a year	
1 – 2 years	
3 – 5 years	
6 – 9 years	
10 and above years	

## SECTION B: INFORMATION LITERACY CONTENT

1. Based on your experience at UNIVEN, if the university decides to integrate IL into the academic programmes, list the IL content/s that should be offered to the first-year level students, and explain why it should be offered.

Content:

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Why should it be offered?

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## SECTION C: INFORMATION LITERACY OFFERED AT UNIVERSITIES

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

1. Is IL integrated into one of the modules in your school?

Yes	
No	



2. If your answer is no to the above question (question 1), will you be interested if the university decides to integrate IL as a credit-bearing module into first-year level academic programmes in your school?

Yes	
No	

Give reason to your answer.

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3. In your opinion, who do you think should be responsible for the teaching of IL to the first-year level students? *Mark your answer (option) with X.*

Academics	
Librarians	
Collaboration of academics and librarians	

*If your answer is collaboration of academics and librarians, indicate the roles and responsibilities that should be played by each in the teaching of IL.*

Roles and responsibilities of the academic

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## Roles and responsibilities of the Librarian

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As a follow-up to the above question (question 3), what would be your preference minimum educational qualification level for the person responsible for IL teaching.

Qualification level: \_\_\_\_\_

4. If the university decides to integrate IL as a credit-bearing module into all first-year level academic programmes in your school, briefly explain how you would prefer it to be integrated into programmes.

- stand-alone credit bearing module:

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- Integrated/embedded to other module/s:

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- Other (specify)

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5. Who do you think should be responsible for the design and formulation of the IL programmes? Choose one option.

Academic department	
Library department	
Collaboration of academic department and library department	
Other (specify)	

Give reason/s to your answer.

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#### **SECTION D: OPPORTUNITIES OF INFORMATION LITERACY PROGRAMMES**

1. Kindly explain the opportunities that you are aware of, for offering IL programmes to the university students.

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2. Describe the skills required for students to acquire in the fourth industrial revolution (4IR).

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**SECTION E: CHALLENGES FACED IN OFFERING INFORMATION LITERACY PROGRAMMES**

1. If IL is already integrated into your school programmes, please mention the challenges that are faced by the academics and students, and provide possible solutions to the mentioned challenges. *If not yet integrated, explain the challenges that you expect could hinder the integration of IL as a credit-bearing module into first-year level programmes in your school and provide possible solutions.*

Challenges:

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Possible solutions:

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If you would like to be informed of the final research findings, please contact Alugumi Samuel Ndou on 083 415 9938 or [40571505@mylife.unisa.ac.za](mailto:40571505@mylife.unisa.ac.za) Should you have concerns about the way in which the research has been conducted, you may contact [zimuan@unisa.ac.za](mailto:zimuan@unisa.ac.za)

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

A small, square, light gray box containing a handwritten signature in black ink. The signature is stylized and appears to be the name 'Alugumi Samuel Ndou'.

Alugumi Samuel Ndou

## Appendix D: Questionnaire for non-adopter academics

Title: Opportunities and challenges of integrating information literacy as a credit-bearing module into first year level academic programmes at the University of Venda, South Africa

### Dear Participant

My name is Alugumi Samuel Ndou and I am doing research supervised by Dr. Acquinatta Zimu-Biyela, a lecturer in the Department of Information Science towards a Doctor of Philosophy in Information Science at the University of South Africa. We are inviting you to participate in a study entitled opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa.

The questions are structured as follows:

### SECTION A: BACKGROUND INFORMATION

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

15. Please indicate your gender.

Female	
Male	
Other (specify)	

16. Please indicate your age group.

21–30 years	
31–40 years	
41–50 years	
51–60 years	
61 years and above	

17. What is your position at UNIVEN?

Junior lecturer	
Lecturer	
Senior lecturer	
Professor	
Other (specify)	

18. Which school are you attached to?

Agricultural Sciences	
Education	
Environmental Sciences	
Health Sciences	
Human and social Sciences	
Law	
Management sciences	
Mathematics and natural sciences	

19. Please mention the department which you belong to in your school.

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20. How long have you been working as an academic at UNIVEN?

21.

Less than a year	
1–2 years	
3–5 years	
6–9 years	
10 and above years	

## SECTION B: INFORMATION LITERACY CONTENT

Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.

1. If some of the following contents should be offered in IL programmes. In your opinion, which one will you recommend being covered for first-year level students at UNIVEN? You can mark (X) as many as possible.

A. Construction of a search query	
B. Searching the web	
C. Searching databases and e-journals	
D. Process of evaluating information and information sources	
E. Evaluation of information from social media	
F. Information ethics	
G. Copyright	
H. Plagiarism	
I. Reference and referencing techniques	
J. Writing assignment	
K. Tips for presentations	
L. Other (specify)	

2. Which of the following skills are suitable for the fourth industrial revolution (4IR) workforce? You can mark as many as possible.

Articulate the specific information needed	
Access information using appropriate search tools	
Evaluate the quality, usefulness, and relevance of the information	
Ethically communicate both synthesized and new knowledge	
Other (specify)	



**SECTION C: INFORMATION LITERACY OFFERED AT UNIVERSITIES**

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

6. Please indicate your awareness about the current IL programmes offered to the first-year level students at UNIVEN.

Fully aware	
Partially aware	
Not aware	

**If fully or partially aware,** briefly explain how you become aware of the IL programmes:

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7. Is the IL integrated into one of your department's modules?

Yes	
No	
Not sure	

**If yes, in with which module?** .....

8. Do you think is possible to integrate IL as a credit-bearing module into the first-year level academic programmes at UNIVEN?

Yes	
No	

**Provide reason/s for your answer.**

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9. In your opinion, which of the following methods should be considered in offering IL to all first-year level students at UNIVEN? Please choose only one option.

Stand-alone generic credit-bearing module	
Integrated/embedded to other module/s	
Other (specify)	

If offered as a stand-alone module, how many credits should IL contribute to the achievement of UNIVEN academic qualifications? Please choose one option.

1–5 credits	
6–10 credits	
11– 5 credits	
16–20 credits	
More than 20 credits	

If integrated into other module, please mention which module should it be added to and how many credits should IL contribute to that module?

<b>Module:</b>	
<b>Credit/s:</b>	

10. Do you agree that IL programmes should be mandatory to all first-year level students at UNIVEN?

Agree	
Disagree	
Neutral	

11. In your opinion, who should be responsible for IL instructions for the first-year level students at UNIVEN?

Academics	
Librarians	
Collaboration of academics and librarians	
Other (specify)	

**SECTION D: OPPORTUNITIES OF INFORMATION LITERACY PROGRAMMES**

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

1. Based on a scale of 1–5, please indicate the extent to which you agree with the following statements with regard to the opportunities of offering IL programmes in universities. [1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree].

Statements	1	2	3	4	5
Offering of IL programmes can lead to integration of IL as a credit-bearing module into academic programmes.					
Only way to make students attend and acquire the intended IL skills is to make IL programme compulsory for all.					
IL programmes increase students' academic performance.					
IL programmes afford students an opportunity to acquire skills on the use of library resources.					
IL programmes can adequately equip students with the skills for writing assignments, do research and other information related tasks.					
Other (specify)					

## SECTION E: CHALLENGES FACED IN OFFERING IL PROGRAMMES

Please indicate your response by a cross (X) in the appropriate box next.

3. Based on a scale of 1–5, please indicate the extent to which you agree with the below listed challenges that could hinder the integration of IL as a credit-bearing module into first-year academic programmes at UNIVEN. [1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree]

Challenges	1	2	3	4	5
Lack of collaboration between academics and librarians					
Inadequate human resources to teach IL					
Informal IL programmes					
Methods of offering IL programmes					
Lack of homegrown IL standards					
Lack of IL policy in university					
Inadequate lecturer venues with facilities needed to teach IL					
Other(specify)					

If you would like to be informed of the final research findings, please contact Alugumi Samuel Ndou on 083 415 9938 or [40571505@mylife.unisa.ac.za](mailto:40571505@mylife.unisa.ac.za) Should you have concerns about the way in which the research has been conducted, you may contact [zimuan@unisa.ac.za](mailto:zimuan@unisa.ac.za)

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.



Alugumi Samuel Ndou

## Appendix E: Questionnaire for adopter students

Title: Opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa

### Dear Participant

My name is Alugumi Samuel Ndou and I am doing research supervised by Dr. Acquinatta Zimu-Biyela, a lecturer in the Department of Information Science towards a Doctor of Philosophy in Information Science at the University of South Africa. We are inviting you to participate in a study entitled opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa.

The questions are structured as follows:

### SECTION A: DEMOGRAPHIC INFORMATION

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

22. Please indicate your gender.

Female	
Male	
Other (specify)	

23. Please indicate your age group.

21–30 years	
31–40 years	
41–50 years	
51–60 years	
60 years and above	

24. In which module are you attending is IL integrated to?

Entrepreneurship (FET 1540)	
Introduction Skills to Nutritionist Students (RNT 1441)	
Introduction to Theory of Law Students (INT 1541)	
Other (specify)	

25. Are you registered for IL instructions for the first time?

Yes	
No	

If your answer is no, give a reason.

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### SECTION B: INFORMATION LITERACY CONTENT

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

3. Please indicate the content/s which is/are offered in IL programmes that you have attended. *You can mark (X) as many as possible.*

A. Construction of a search query	
B. Searching the web	
C. Searching databases and e-journals	
D. Process of evaluating information and information sources	
E. Evaluation of information from social media	
F. Information ethics	
G. Copyright	

H. Plagiarism	
I. Reference and referencing techniques	
J. Writing assignment	
K. Tips for presentations	
L. Other (specify)	

4. From the IL contents mentioned in the above question, is there any content which is covered in one of the modules you attended at UNIVEN?

Yes	
No	

5. How would you describe the content/s offered in IL instructions?

Suitable for first-year level students	
Not suitable for first-year level students	
Overloading our academic activities	
None of the above (specify)	

### **SECTION C: INFORMATION LITERACY OFFERED IN UNIVERSITY**

*Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.*

1. After attending IL instructions, do you agree that IL should be offered to all first-year level students at the University of Venda?

Yes	
No	

2. If your answer in question 1 is yes, please indicate how you will prefer IL to be offered. Choose only one option.

As a stand-alone credited module	
Integrated to other credited module	
As non-credited informal programme	
Other (specify)	

3. How would you describe the IL instruction sessions? Choose only one option.

Interesting	
Boring	
Over loading	
Other (specify)	

4. How is the IL being offered in classes?

Instructions by librarians	
Lectures by lecturers	
Other (specify)	

5. Which of the following learning modes is IL being taught in your classes?

Theoretical mode only	
Practical mode only	
Both theoretical and practical modes	

6. In your opinion, who should be responsible for IL instructions for the first-year level students at UNIVEN? Please choose one option.

Academics	
Librarians	
Collaboration of academics and librarians	
Other (specify)	



## SECTION D: OPPORTUNITIES OF INFORMATION LITERACY

Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.

- Based on a scale of 1–5, indicate extent in which you agree with the following statements in regard to the benefits of attending IL programmes. [1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree]

Statements	1	2	3	4	5
IL programme adequately equip me with the skills for writing assignments and other academic related tasks					
Ever since I attended IL instructions, I learnt new skills					
The skills gained from IL instructions are useful for the first year in university					
The skills gained from IL instructions could be applied up to the postgraduate level					
The skills gained from IL instructions can be applicable for the workplace					
IL programme should be compulsory for all first-year level students.					
Attending IL programmes increased my academic performance					
IL programmes afforded me with an opportunity to acquire skills on the use of library resources.					

## SECTION E: CHALLENGES FACED IN OFFERING INFORMATION LITERACY

Please indicate your response by a cross (X) in the appropriate box next. Where asked to provide more information, kindly do so.

- Based on a scale of 1 – 5, please indicate the extent to which you agree with the below listed challenges that could hinder the integration of IL as a credit-bearing module into first-year academic programmes at UNIVEN. [1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree]

<b>Challenges</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
IL instructions require collaboration between academics and librarians.					
The librarian/lecturer responsible for IL instructions was well informed with the IL content/s.					
IL programmes should be offered as informal programmes					
The university should change the method of offering IL programmes to the first-year level students.					
Integration of IL into academic programmes is overloading students with more academic activities.					
Students are aware of UNIVEN IL policy.					
The venues that were used for conducting IL instructions was satisfactory.					
The venue/s used for IL instructions are well equipped with teaching facilities as compared to lecture halls that are used in teaching other modules.					

If you would like to be informed of the final research findings, please contact Alugumi Samuel Ndou on 083 415 9938 or [40571505@mylife.unisa.ac.za](mailto:40571505@mylife.unisa.ac.za) Should you have concerns about the way in which the research has been conducted, you may contact [zimuan@unisa.ac.za](mailto:zimuan@unisa.ac.za)

Thank you for participating in this study.

Thank

you.



Alugumi Samuel Ndou

## Appendix F: Ethical clearance from UNISA



### COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

23 February 2021

Dear Mr Alugumi Samuel Ndou

NHREC Registration # :  
Rec-240816-052  
CREC Reference # :  
40571505\_CREC\_CHS\_2021

**Decision:**  
**Ethics Approval from 23 February**  
**2021 to 23 February 2026**

Principal Researcher(s): Mr A.S. Ndou

[40571505@mylife.unisa.ac.za](mailto:40571505@mylife.unisa.ac.za)

Supervisor: Dr A.N. Zimu

[zimuan@unisa.ac.za](mailto:zimuan@unisa.ac.za)

**Title: *Opportunities and challenges of integrating information literacy as a credit-bearing module into first year level academic programmes at the University of Venda, South Africa.***

Degree Purpose: PhD

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for five years.

The **Low risk application was reviewed** by College of Human Sciences Research Ethics Committee, on **23 February 2021** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the



University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
PO Box 392 UNISA 0003 South Africa  
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150  
[www.unisa.ac.za](http://www.unisa.ac.za)

confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date (**23 February 2026**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

*Note:*

*The reference number 40571505\_CREC\_CHS\_2021 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Signature :



Prof. Ilse Ferns  
CHS Ethics Chairperson  
Email: [fernsi@unisa.ac.za](mailto:fernsi@unisa.ac.za)  
Tel: (012) 429 8210

Signature : pp



Prof K. Masemola  
Exécutive Dean : CHS  
E-mail: [masemk@unisa.ac.za](mailto:masemk@unisa.ac.za)  
Tel: (012) 429 2298



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[www.unisa.ac.za](http://www.unisa.ac.za)

## Appendix G: Request to conduct research at the UNIVEN

Mr. A.S Ndou  
P.O. Box 845  
Dzanani, 0955

05 March 2021

The Ethic Committee  
Research and Innovation Directorate  
University of Venda  
Thohoyandou  
0950

To whom it may concern

### **RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF VENDA**

I am a registered student pursuing a Doctor of Philosophy in Information Science in Department of Information Science at the University of South Africa (UNISA).

I am hereby request to a permission to conduct my research at your institution, University of Venda (UNIVEN). My research is entitled: *opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa*. The intention of the research is to identify unknown constraints that could impact negatively in the integration of IL as a credit-bearing module into UNIVEN first-year level academic programmes.

My research requires me to collect data from UNIVEN academics, information librarians and students. To avoid the Coronavirus 2019 (Covid-19) infections, I will distribute the questionnaires through e-mail, and the interviews will be conducted telephonically. However, if a necessity of face to face interview with participants arises, I will ensure that social distance and any other Covid-19 regulations set by the South Africa government are observed at all time.

Thanking you in advance

Yours Sincerely



Alugumi Samuel Ndou (UNISA student NO: 40571505)

## Appendix H: Granted permission to conduct research at the UNIVEN

Research and Innovation  
Office of the Director

Date: 23<sup>rd</sup> March 2021

Mr. AS Ndou

P.O. Box 845

Dzanani

0955

Dear Mr AS Ndou

### Permission to conduct Research at the University of Venda

You are hereby granted permission to conduct research at the University of Venda.

The research will be based on your Doctoral research titled: *Opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the University of Venda, South Africa* registered at the University of South Africa (UNISA).

The conditions are that all the data pertaining to University of Venda will be treated in accordance with the Ethical Principles and that will be shared with the University. In addition, consent should be sought by you as a researcher from participants.

Attached is our policy on ethics.

Thank you



Prof VO Netshandama

Chairperson: UREC

Cc: Prof JE Crafford (DVC Academic)

Cc: Senior Prof GE Ekosse (Director Research and Innovation)

Cc: Prof TS Mashau (Chairperson RESSC)



UNIVERSITY OF VENDA  
PRIVATE BAG X5050, THOHOYANDOU, 0950. LIMPOPO PROVINCE, SOUTH AFRICA  
TELEPHONE 015 962 8313 / 8504. FAX 015 962 9060  
Email: [research@univen.ac.za](mailto:research@univen.ac.za)

*"A quality driven, financially sustainable, rural-based comprehensive University"*

## Appendix I: Informed consent to participate in this study



### CONSENT TO PARTICIPATE IN THIS STUDY

I, \_\_\_\_\_ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview/questionnaire.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname : ..... (please print)

Participant Signature : ..... Date.....

Researcher's Name & Surname: ..... (please print)

Researcher's signature.....Date.....

## Appendix J: Observance of Coronavirus 2019 regulations during data collection



Mr. A.S Ndou  
P.O. Box 845  
Dzanani, 0950

04 January 2021

Ethics Committee  
The College of Human Science  
University of South Africa  
Pretoria

TO WHO IT MAY CONCERN

### **RE: OBSERVANCE OF CORONAVIRUS 2019 REGULATIONS DURING DATA COLLECTION**

As the world is faced with the deadly pandemic, Coronavirus 2019 (Covid-19), I commit myself that I will at all times observe the Covid-19 regulations set by the South African government, University of South Africa and University of Venda throughout the period of data collection of my research.

To avoid the Covid-19 infection, I will distribute the questionnaires through e-mail, and the interviews will be conducted telephonically and recorded. However, if a necessity for a face-to-face interview with participants arises, I will ensure that both the participants and the research team members wear facemasks. I will also ensure that sanitiser or wipes are available at all times in case there will be physical contact between the participants and research team members. In addition, I will ensure that social distance and any other Covid-19 regulations set by the above-mentioned institutions are observed at all times.

Yours Sincerely

A small, square image containing a handwritten signature in black ink, which appears to be 'Alugumi Samuel Ndou'.

Alugumi Samuel Ndou (Student N0. 40571505)



## Appendix K: Turnitin originality report

Feedback Studio - Google Chrome  
ev.turnitin.com/app/carta/en\_us/?o=2037038247&u=1095273973&s=1&lang=en\_us&student\_user=1

feedback studio | Alugumi Samuel Ndou | OPPORTUNITIES AND CHALLENGES OF INTEGRATING INFORMATION LITERACY AS A ...

**OPPORTUNITIES AND CHALLENGES OF INTEGRATING  
INFORMATION LITERACY AS A CREDIT-BEARING MODULE INTO  
FIRST-YEAR LEVEL ACADEMIC PROGRAMMES, AT THE UNIVERSITY  
OF VENDA, SOUTH AFRICA**

by

**ALUGUMI SAMUEL NDOU**

Student number: 40571505

Submitted in accordance with the requirements

for the degree of

**DOCTOR OF PHILOSOPHY AND LITERATURE**

Page: 1 of 265 | Word Count: 65340 | Text-Only Report | High Resolution

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2023/03/14

## Appendix L: Confirmation of editing

10 Jack Nicklaus Drive

Pecanwood Golf Estate

Hartbeespoort 0216

27 October 2022

TO WHOM IT MAY CONCERN

Please be advised that I, EM (Lucia) Geyer (ID Number 580425 0023 082), edited the PhD thesis of Mr Alugumi Samuel Ndou (Student Number 40571505) entitled

***Opportunities and challenges of integrating information literacy as a credit-bearing module into first-year level academic programmes at the university of Venda, South Africa***

The editing exercise included the following:

- Language editing;
- Structuring;
- Formatting; and
- Bibliographic control: checking of text references and bibliographic entries.

I edited this dissertation to the best of my ability, based on my extensive experience as an academic in Information Science and an academic editor.

I take no responsibility for the suggestions and changes that I made to the manuscript that the student has not accepted.

Sincerely



EM (Lucia) Geyer

[lgeyer@gmail.com](mailto:lgeyer@gmail.com)

Mobile: 081 368 9014