



**LECTURERS' PERCEPTIONS OF KNOWLEDGE INTEGRATION WITHIN ART
AND DESIGN UNIVERSITY CURRICULA**

BY

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DECLARATION

By signing this declaration, I certify that this thesis, which is being submitted for consideration for the degree of Master of Technology in design at the Cape Peninsula University of Technology, is my original work, and that it has not been submitted to any other institution, and that all sources that were consulted or quoted have been indicated and acknowledged through references, which are presented in the reference section.

Signature: E. Ludude

Date: 7 September 2023

DEDICATION

I wish to dedicate this thesis to my loving wife Mrs E. Ludude, my beautiful children and the rest of the Ludude family.

ACKNOWLEDGEMENTS

My heartfelt thanks go to my supervisor, Dr K. Booi for his support and motivation, which made me realise my potential and gain confidence in my work. Thanks to my co-supervisor, Dr A. Chisin, for the guidance and support throughout my study. I am very fortunate to have a strong and supporting wife who has given me strength when I wanted to quit, and I am grateful to Mrs E. Ludude for believing in me. Most significantly, I want to thank God for providing me with the chance and the strength to carry out this research.

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ABSTRACT

The purpose of this study was to explore how Art and Design lecturers perceived knowledge integration when teaching and training Art and Design to students at a Higher Learning Institution. Concentrating on individual subjects without integrating knowledge generates a certain type of person who is conditioned to think in a specific way, making it difficult for them to think beyond the box. Tertiary education is designed to provide students with the skills and abilities required to compete in the labour market (Mbataru, 2015). Students face various hurdles in transitioning from a student to working-class individuals with critical thinking and quick decision-making abilities. This could be due to a lack of knowledge integration, and they may suffer considerably, particularly in terms of diversified thinking. Data for this study was collected through semi-structured interviews with Arts and Design discipline lecturers from University X. Data was analysed using thematic analysis. The study found that participants displayed divergent views of what the principle of knowledge integration entails at the Art and Design department of University X. Some participants favoured the Arts discipline to reside within the department, suggesting that disciplinary knowledge should be kept pure while other participants showed a keen interest on pursuing knowledge integration between disciplines offered in the department of Arts and Design. In addition, others suggesting knowledge mix between disciplines offered in the Faculty of Humanities at University X. If subject specialisation instead of hybridization of knowledge is pursued, graduates produced would not meet the current changing market and technological development because they are mostly geared to think in one specific dimension. The study concluded that there was some knowledge integration among participants at University X. To some extent, lecturers in Art and Design at University X required knowledge integration in Art and Design disciplines to enhance a broader application within their department and other subject offerings in the Faculty of Humanities at University X. It was recommended that lecturers in Art and Design should be proactive in knowledge integration if they are to produce graduates suitable for the existing job market driven by new technological needs. This study could be used as a springboard for further research to achieve curriculum transformation at South Africa's HEIs to support knowledge integration.

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CHAPTER 1 Introduction

1.1. Background to the study

According to Booi and Khuzwayo (2019), the principle of knowledge integration is the process of merging new information into a body of existing knowledge. The integration of knowledge is essential because no single discipline should exist on its own, but as a subset of several disciplines that exists across various knowledge domains. This argument holds if an interdisciplinary approach to curriculum programming is considered in the conceptualisation of a curriculum (Thorburn & Collins, 2003; Booi, 2018). Lunenburg (2011), defines curriculum an institution's complete educational programme and courses as the fundamental curriculum building block. Evaluating and integrating new knowledge with existing knowledge are fundamental aspects of the professional training and development of Arts and Design students at Higher Learning Institutions (HEI's). This is therefore essential for producing graduates that can meet the evolving market needs, as well as developing graduates that meet the requirements of their respective industries (Pruitt, Ingram & Weiss, 2014).

Knowledge integration in the HEI's of learning is currently impelled by the horizon of the fourth industrial revolution which has the potential to raise global income levels and improve the quality of life for populations around the world. The above trend necessitates rethinking and reconceptualization of curricula that will introduce improved synergy between existing knowledge and changes that are brought about by technological advancements, especially in the disciplines that reside within the Art and Design fields (Zhang, Liu, Luan, Xu & Sun, 2017). A great deal of creative and critical thinking abilities are expected as graduate attributes of students who are produced by such a curriculum (May & Robinson, 2015).

Through the integration of knowledge, Art and Design lecturers groom students who are creative and able to address existing societal challenges and contribute to bringing real-world solutions (Martin, Mansour, Anderson, Gibson & Liem, 2013). The advantage of broadening and extending the Arts and Design curriculum beyond the department or faculties in other HEI's has been described as a way to broaden the

curriculum to endow students with skills that will give them opportunities for exposure outside the confines of their specialization (Bergjan & Schaepe, 2016).

The argument does not imply mediocrity but rather a broadening of design graduates' inter-disciplinary knowledge and may include the fields of sociology, philosophy, anthropology and languages for example (Pruitt, Ingram & Weiss, 2014). Similarly, students who study sciences or applied sciences may lack the skills and competencies required at a postgraduate level as far as interdisciplinary knowledge is concerned if they pursue specialised knowledge of a particular discipline. This study advocates for 21st-century graduates that Zhang et. al. (2017), refer to as those who demonstrate critical, reflexive skills.

Lecturers with little understanding of the value of teaching Art and Design may be anxious about implementing knowledge integration in practices in curricula (Smith, 2019). Smilan and Miraglia, (2009) and Marshall (2010), hint that these lecturers may avoid using disciplinary knowledge informed by the principle of knowledge integration to conceal their lack of abilities and skills to use knowledge in other disciplines outside of their specialisations. Rinne, Gregory, Yarmolinskaya and Hardiman, (2011) argue that the involvement of Art and Design education specialists in curriculum research could empower lecturers to contribute to developing a relevant curriculum that will develop students to match international standards. In addition, producing critical and reflexive practitioners who will support other disciplines that are outside of Art and Design disciplines.

If Art and Design disciplines were to support the teaching and learning of other disciplines, integration of knowledge from various disciplines should be considered in the conceptualization of Art and Design curriculum. Lafer-Sousa and Conway (2009) revealed that Art and Design lecturers focused on limited knowledge linked to passion of their specialisation in their respective disciplines to the detriment of exposing their students to how they could relate the knowledge into other fields.

Art and Design lecturers operating in artificially created boundaries stifle knowledge integration with a possible consequence of leading students to learn Art and Design disciplines in silos. Art and Design subjects could be integrated within the broader

curriculum structure within the broader faculties. This could therefore be viewed as a reform strategy that has a possibility of motivating students to engage in the broader and flexible curriculum to give opportunities for students to express their skills on a broader scale (Safavi & Håkanson, 2018).

Art and Design curriculum developers and designers should embrace different views in conceptualizing the Art and Design education curriculum so that they demolish the artificial boundaries that limit students to focusing on the Art and Design subjects as the only subjects that can be offered to them. This can be made possible by engaging lecturers who have different expertise in critical engagement which will result in a curriculum that speaks to the context of Art and Design students (Thorburn, 2017). Such a curriculum could produce versatile students that can fit in different subjects offered at the HEIs' faculties including the Art and Design faculty and to some HEIs, Faculty of Humanities or Faculty of Arts, to assist them to explore knowledge without any limitations. In consideration of the above, a progressive and responsive curriculum could therefore emerge and provide students with a better quality education that will possibly address economic challenges that relate to the national and international needs (Savage, Hindle, Meyer, Hynds, Penetito & Sleeter, 2011; Gay, 2013; Ragoonaden & Mueller, 2017).

1.2. Problem Statement

Higher learning Institutions should equip students with skills and abilities to fit in the job market (Mbataru, 2015). However, the quality of education of HEI's has dropped over at the macro-economic level (Jansen & Christie, 1998). Improving the curriculum through initiatives such as the use of the principle of knowledge integration promises a positive effect on the gross domestic product and can also help the African continent to catch up with the rest of the world through technology (Savage et al., 2011; Ragoonaden & Mueller, 2017; Knight, 2018).

There is a need for a progressive and responsive curriculum that should produce students who meet the market needs or the requirements of Art and Design. The research that was conducted by Ahmad, Khaidzir, Azizan, Kadir, Zainul Ariffin, Anwar and Wan Mazlina (2014), concluded that universities must recognize and take

substantial effort to provide students with sufficient intellectual capabilities in diverse disciplines and competencies to satisfy the needs of the public and private sectors.

Barghi, Zakaria, Hamzah, Hashim and Hashimah, (2017) support a need to integrate knowledge offered by Art and Design disciplines to include various subjects that will respond to the current job requirements. Separating Art and Design subjects from other university subjects that are outside of the design field could stifle students' abilities to engage in discourses such as education for sustainable development, and indigenous knowledge systems, which are topical at this stage (Barghi et al., 2017).

1.3 Preliminary Literature Review

A preliminary literature review was undertaken to understand the arguments by scholars on the topical issues of knowledge integration in teaching and learning.

1.3.1 Art and Design discipline and curriculum conceptualization

Art and Design disciplines can be viewed as some of the most specialized fields in education that need qualified lecturers who are passionate, self-driven, motivated, and familiar with different techniques, methods, and approaches for effective teaching and learning. Such attributes in lecturers could go beyond the boundaries of the Art and Design curriculum to embrace integrated learning with other subjects to create a fertile ground for transformation of the way Art and Design disciplines are taught (Lafer-Sousa & Conway, 2009).

Art and Design have a subject pool from Higher Education in which HEI's select subjects to be incorporated into their curriculum (DoE, 1998). Electives may differ from one institution to another, but majors remain the same. Art and Design disciplines are categorized into 2-dimensional and 3-dimensional practical subjects, and disciplines that cater for theoretical aspects of Art and Design. Most higher learning institutions previously offered Art and Design in two qualifications such as a diploma or a bachelor's degree while a few offer both concurrently, however, currently, both traditional universities and universities of Technology offer bachelor's degree.

Regardless of the nature of institutions of higher learning, they still offer the same practical educational component, but they may differ in approach and techniques.

1.3.2 Knowledge Integration

Knowledge integration may be defined as the process of ascertaining how novel and available elements interrelate; as well as combining novel information into a knowledge base (Burnaford, Brown, Doherty, McLaughlin & James, 2007). This view supports research conducted globally which supports the fact that the knowledge base is established incrementally (Thorburn, 2017). Further, knowledge acquisition entails adding parts of knowledge to expand the existing body of knowledge (Kerner, 2006). Knowledge integration, therefore, entails combining numerous knowledge domains to build a new and complex schema (Kerner, 2006). The emphasis of knowledge integration is mainly on blending an understanding of specific subjects from multiple disciplines to support knowledge in different fields (Fogarty, 1991). The literature presents various assertions that justify knowledge integration. Martin et al. (2013) and Rinne et al., (2011), argue that integrated knowledge facilitates meaningful learning by enhancing students' thinking capacity and engagement in the process of knowledge construction.

Rubba, Rye, DiBiase and Crawford, (2001) ; May and Robinson (2015), argue further that knowledge integration in Art and Design education is a solution that can enable students to solve complex problems effectively using logical reasoning through various approaches and images of curriculum design and development. Synthesis of research supports the fact that Art and Design subjects can be used as a resource for teaching and learning in other disciplines (May & Robinson, 2015; Gay, 2013 & Savage et al., 2011). According to Martin et al. (2013), the cohort of Art and Design lecturers concluded that interdisciplinary work in Art and Design is crucial because it helps students solve problems and make meaningful connections within interdisciplinary curricula, giving them new ideas and chances to synthesize relationships between ideas.

The current curriculum systems in universities seem to lead different disciplines to be taught and learnt in silos even though the curriculum for the 21st Century graduates considers models that emphasize the integration of interdisciplinary subjects across different faculties (Booi, 2018). Many faculty members and academic staff in higher education institutions have started to turn to digitised Professional Learning Networks (PLNs) as a way to learn in the real world and get better at their jobs (Trust, Carpenter & Krutka, 2017). By bringing together expertise, knowledge, and training from different fields, interdisciplinary collaboration can help to teach and learn in other ways. But there are problems with effective collaboration that the partners need to talk about and understand to make a useful learning product (Miller, Jones, Graves & Sievert, 2010). Ragoonaden and Mueller (2017), assert that Art and Design disciplines could be used to support other disciplines through knowledge integration using different curriculum design and development models.

There exists structured insulation between lecturers of Art and Design and non-Art and Design lecturers (Pruitt, Ingram & Weiss, 2014). The HEI's might choose a sequence of independent subjects and different categories of lecturers. Usually, specific disciplines encompass constituents which include concepts or notions and structured principles which consist of different and unique ways of executing specific aspects. For instance, a specific way of teaching comprises a way of structuring or arranging different sites of learning.

Literature suggests that participation of students in the Art and Design disciplines or activities strengthens students' achievement in other academic areas (Ragoonaden & Mueller, 2017; Trust, Carpenter & Krutka, 2017). Statistics show that Art and Design integration programmes, also known as arts-infusion have a stimulating effect on students from all socioeconomic backgrounds, resulting in higher academic success, more community involvement, and even improved university attendance (Catterall, James, Dumais, Susan & Hampden-Thompson, 2012). Similarly, Deng, Zhang, Qin, Heng and Pheng (2019), suggest that the infusion of the arts can empower students on understanding certain concepts in other disciplines, especially science. Art and Design can assist students in studying scientific disciplines in areas such as diagrams, sketches, and illustrations which are usually used to explain certain scientific concepts. Specialist Art and Design lecturers benefit from training that includes collaboration with

professors in their Art and Design subjects as well as faculty knowledge with teaching approaches. Additionally, the Art and Design specialist lecturers need to also learn to work with other curriculum specialists to add value to curriculum design and development to ensure that the Art and Design curriculum is infused and integrated across various knowledge domains.

The research conducted by Yilmaz, Baydas, Karakus and Goktas, (2015) indicates that an imbalance between two and three-dimensional activities, such as printmaking, pottery and weaving, is conventional in most education systems. Art appreciation, art criticism, and art history tend to be neglected in Art and Design education because lecturers lack confidence in their ability to teach art theory (Rubba et al., 2010). Consequently, the Art and Design curricula became rather narrow and unbalanced.

1.3.3. Theoretical Framework: Interdisciplinary model of integration

This approach allocates a specific number of students to a team of lecturers and requires them to offer an interdisciplinary or integrated curriculum (Loepp, 1991). A single teacher or a group of lecturers can employ an interdisciplinary approach. Lecturers can use examples from other disciplines to illustrate or develop lessons that cover multiple content abilities. Several lecturers may decide to coordinate lessons on the same topic. Lecturers of English and social studies who share students may teach linked themes (Friend, 1999). Lessons or activities are planned and executed by two or more lecturers with the same group of students.

Interdisciplinary model of integration divides traditional disciplines into time blocks, assigns students to teams of lecturers, and expects them to give an interdisciplinary or integrated education. Sometimes lecturers choose to present a new topic to the entire class at once. They might also take all students on a field expedition. In practice, this model is more common in secondary schools (Cohen Miller, & Pate, 2019). Interdisciplinary model of integration supports the traditional curriculum and at the same time, offers the team scheduling freedom (Loepp, 1991). Interdisciplinarity in Art and Design disciplines can provide students with comprehensive knowledge by

grouping or inviting numerous lecturers specialized in related subjects to provide detailed information as well as their experiences on the concept (Friend, 1999). Using knowledge from several disciplines requires a lecturer's wide knowledge, experience, and ability to impart knowledge outside of his typical expertise.

1.4 Research Aim, Objectives and Questions

The study aims to explore Art and Design lecturers' perceptions of knowledge integration when teaching and training Art and Design students at one Higher Learning Institution.

1.4.1. Research Objectives

1.4.1.1. Investigate the perceptions of Art and Design lecturers on knowledge integration in the subjects offered in their curricula.

1.4.1.2. Assess how Art and Design lecturers perceive the application of the knowledge integration principle across institutional faculties' curricula.

1.4.2 Research questions

The main research question guiding this study is:

What are the perceptions of Art and Design lecturers on knowledge integration in the Art and Design curricula at University X?

The sub-questions were:

1.4.2.1. What are the perceptions of Art and Design lecturers on knowledge integration in the subjects offered in their undergraduate curricula?

1.4.2.2. How do Art and Design lecturers perceive the application of the knowledge integration principle across institutional faculties' curricula?

1.5 Significance of the study

The study was significant in providing insights into applying the principle of knowledge integration in the Art and Design curriculum in one South African higher learning institution. This study suggests ways of integrating overlapping concepts from different disciplines or departments for example integrating knowledge of Arts with Psychology which is often used for therapy by Occupational Therapists. According to Pepler, Powell, Thompson, and Catterall (2014), the integration of disciplines such as drawing, designing, painting and pottery may empower students to appreciate the importance of Art and Design programmes' integration into other HEI's programmes. The research will bring diverse knowledge to lecturers of Art and Design of how the principle of knowledge integration can benefit teaching and learning, as well as contribute towards the curricula innovations of the HEI's who have similar curricula to that of University X.

1.6 Research design and methodology

1.6.1 Research Paradigm

A paradigm is a collection of assumptions or ideas about significant parts of reality that give rise to a certain worldview (Ingleby, 2012). An interpretative paradigm was used in this investigation. According to Cohen, Manion, and Morrison (2017), interpretivism strives to comprehend the subjective realm of human experience. Smith, (2019) defines interpretivism as a paradigm that provides researchers with important knowledge in the form of subjective reasons and meanings that underpin social activity. The interpretivism research paradigm is most suited for this study because it allows the researcher to get close to the participants, acquiring their expressions, feelings, and understandings from their unique perspectives (Thanh, Thi & Thanh, 2015). An interpretivism paradigm aids the researcher in comprehending reality within a given scientific setting (Black, 2006). As a result, it is pertinent in this study, which intends to investigate lecturers' perspectives on the principle of knowledge integration in the Art and Design undergraduate university curriculum.

1.6.2 Research Design

A research design is a technique used to integrate multiple components of a study coherently and logically (Cohen, Manion & Morrison, 2017). A research design, according to Lacobucci and Churchill (2010), is a framework created to answer a specific problem. Study designs are forms of inquiry within qualitative, quantitative, and mixed methodology approaches that give explicit guidance for processes in a research design, Creswell (2014:12) states. Denzin and Lincoln (2011), define research designs as having methodologies for different forms of inquiry.

1.6.3 Qualitative approach

This study applies the principles of qualitative research. The main purpose of the qualitative research study is to fathom phenomena from the perspectives of research participants without imposing the researcher's research (Cohen, Manion & Morrison, 2017). The authors argue that a qualitative approach can assist participants to understand concepts and ideas from their perspectives. As a result, the qualitative technique adopted for this study will aid in revealing participants' perspectives on integrating knowledge in the learning and teaching of Art and Design disciplines, as well as the feasibility of applying the idea across university faculties.

1.6.4 Phenomenological study design

Creswell (2014: 38) explains a phenomenological research design as a “design of inquiry coming from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants”. This study is designed to understand the participants' perceptions on applying knowledge integration in the teaching and learning of Art and Design disciplines and the possibility of applying the principle across university faculties. According to Leedy and Ormrod (2015), the objective of phenomenological research is to understand participants from their point of view which means that the sole focus of this type of

study is on the participant's perception of an experience and how he/she interprets the experience

1.6.5 Data collection methods

1.6.5.1 Phenomenological semi-structured interviews

In this study, semi-structured interviews were employed. Maree (2007), defines semi-structured interviews as a data collection method that relies on asking questions within a predetermined thematic framework. The primary advantage of in-depth interviews is that they give significantly more particular information than other methods of data collecting (Cohen, Morrison & Manion, 2017). They may also provide a more relaxed setting in which participants might feel more comfortable speaking about the program rather than filling out a survey (Robinson, 2014). However, there were other limits and downsides, such as the fact that conducting interviews, transcribing them, and analysing the data required much time (Maree, 2007).

1.6.6. Population

The population of interest refers to the study's intended population, which it wishes to analyse or treat (Majid, 2018). A population is a grouping of all the units that share the variable under inquiry and for whom research findings may be generalized (Schumaker and McMillan, 2009). The population comprised of lecturers from Arts and Design at South African higher learning institution in the Eastern Cape.

1.6.7 Sampling Strategies

1.6.7.1 Purposive sampling and sampling size

Existing literature recommends the use of purposive sampling in instances when the researcher needs to reach a specific sample as rapidly as possible and where sampling for proportionality is not the primary aim (Cohen, Manion & Morrison, 2017).

According to Robinson (2014), a non-probability sampling strategy that selects its population based on their characteristics and the study's purpose is described as "purposive sampling." Five lecturers from the University X's Arts department, who teach in the areas of Art and Design, were specifically chosen to take part in this study. The Art and Design have a total of five academic staff members and all were selected.

1.7 Data analysis techniques

According to Judd, McClelland, and Ryan (2017), data analysis is the process of organizing, structuring, and interpreting a large amount of collected data. This study uses thematic data analysis because the data collected were qualitative. Literature emphasises that the qualitative data analysis process tends to be disorderly, inaccurate, time-demanding, innovative, and tiresome (Archer, 2018). Qualitative data analysis is not straightforward like quantitative analysis because it can be so untidy. Qualitative data analysis is pursued by the researcher to make wide and inclusive conclusions concerning interrelationships among different datasets about the same phenomenon (Marshall & Rossman, 1989). When analysing qualitative data, the research can identify, scrutinise and interpret patterns and themes in textual and verbal data to understand how the emerging patterns and themes can assist in answering the research questions (Creswell, 2014). This is made possible by the fact that it transforms the recorded conversations into text, the data was transcribed to make it easier to evaluate.

Qualitative data analysis can utilise a phenomenological approach where the researcher does not use their own beliefs about the problem being researched to avoid bias in findings (Chan, 2013).

1.8. Ethical considerations

Prior to the data collection process, the research was issued with an ethical clearance letter by the Cape Peninsula University of Technology as approval to

conduct the study. Each participant was asked to provide written consent. The goal of the study was outlined in the permission form, as was each respondent's involvement.

The anonymity of the lecturers was assured by the use of pseudonyms throughout the study. The ethics clearance documents from the Faculty of Informatics and Design (FID) were adhered to, and an ethics clearance application was served at the relevant ethics committee of the FID.

1.9. Trustworthiness

The study accepted data reliability and validity criteria and was consistent with the qualitative concept of trustworthiness. Qualitative research employs ideas and procedures related to case study methodologies, which are seen as relevant and suited for qualitative research (Morse, 2015). One of these characteristics is trustworthiness. The phrase "trustworthiness" refers to the assessment of research credibility, which indicates a researcher's belief in the validity of a study's conclusions.

Another facet of trustworthiness is transferability, which reveals how a researcher considers the extent to which findings may be applied to a different scenario or setting (Forsey, Low, & Glance, 2013). Transferability might relate to specific situations, populations, or concepts.

1.10 Structure of the study

The study is organised into six chapters as follows:

Chapter 1 was an introduction to the study that provided a general overview and background of the study, a statement of the research problem, a list of research questions, a statement of the study's purpose, the objectives, and a statement of discussion on the scope, and significance of the study will all be included in the first chapter of this research study.

Chapter 2 was important in that it provides a detailed literature review and the theoretical foundations on which the study was based.

Chapter 3: To conduct the study systematically, research design and methodology were needed and these were presented in chapter 3. Data collection and analysis techniques were discussed in detail in chapter 3 as well.

Chapter 4 provides a detailed account of the empirical part of this study including presenting, interpreting and analysing data.

Chapter 5 the findings of the study were discussed in this chapter.

Chapter 6 presents conclusions and recommendations of the study

CHAPTER 2: Literature Review

2.1. Introduction

This chapter covers an in-depth review of related literature, which is related to knowledge integration, explaining key concepts that were mentioned in chapter 1 and exposing the arguments of scholars in support of this principle. The literature review is thus conducted in a manner consistent with the following headings: Knowledge integration of a curriculum, History of knowledge integration, Benefits of adopting the knowledge integration principle in the Art and Design disciplines, comparison of Integrated Curriculum and Discipline-based Curriculum, Different approaches adopted by lecturers to arts and design integration, Considerations of the Implementation Strategy of knowledge, Lecturers' knowledge and experience with curriculum integration, Influence of Knowledge Integration on students and their professional careers, challenges in implementing an integrated curriculum, approaches to curriculum integration, interdisciplinary model and problem based model.

2.2. Knowledge integration of a curriculum

Knowledge integration promotes knowledge fusion and technology integration, and not only is it an appropriate means of improving teaching and learning, but plays a crucial role in knowledge production that promotes skills development (Du, Jiang, & Liu, 2011). Lecturers and students are therefore expanding their horizons in the teaching and learning process as they break artificial barriers that limit a multidisciplinary approach to various knowledge domains (Du, Jiang & Liu, 2011). Knowledge integration, therefore, entails using processes of incorporating knowledge to develop robust and usable understandings of ideas like scientific principles, real experience and classroom experience (Davis, 2003; Linn & Eylon, 1996). Knowledge integration was to be considered in the Art and Design discipline, lecturers would need to break the artificial boundaries that are currently imposed in the curriculum to embrace integrated learning within Art subjects (Lafer-Sousa & Conway, 2009).

Knowledge integration may be defined as the process of ascertaining how novel and available elements interrelate; as well as combining novel information into a knowledge base (Burnaford, et al, 2007). This view supports research conducted globally which denotes that the knowledge base is established incrementally (Thorburn, 2017). Further, knowledge acquisition entails adding parts of knowledge to expand the existing body of knowledge (Cohen, 2002 & Kerner, 2006). Therefore, this principle entails combining numerous knowledge domains to build a new and complex picture (Kerner, 2006). Further, Clark and Linn (2003), define the principle of knowledge integration as a process by which new ideas are added and connected to create a coherent account of scientific phenomena, while other scholars such as Whalstedt (2014) and Tell (2011) perceive it as being combined specialized but complementary knowledge. Okhuysen and Eisenhardt (2002:383) describe the integration of knowledge as a process in which "several people combine their information to generate new knowledge." Conversely, Söderlund and Tell (2011:171) suggest that "the combination of specialized but complementary knowledge to achieve specific objectives" is knowledge integration.

2.3 History of knowledge integration

Cohen (1978:127) states that "Knowledge integration is not a new concept; in the 1930s, there was a drive for a core curriculum in junior high schools". Students dropped out after the eighth grade because the adjustment from closed classrooms in elementary school to departmentalization in high school proved too challenging. According to Cohen (1978:125), a core curriculum that "disregarded subject matter boundaries and drew on multiple kinds of knowledge and handled teenage problems as an integral aspect of the curriculum" was developed". Junior high schools were established to serve as a link between elementary school's comprehensive classroom and high school's departmentalized structure (Cohen, 1978). The idea was to engage students in an integrated manner rather than to mimic the high school framework. In an integrated classroom, students collaborate to solve a problem. Their work incorporates a wide range of fields. Mathematics is not separate from social science or literature; all disciplines contribute to the solution. Furthermore, students must interact and work

together as a team (Punzalan, 2018). This structure caters to the adolescent's need to belong to a group better.

In the 1950s and 1960s, the race for space hindered the growth of this core curriculum. Students needed to thrive in mathematics and science if America was to reach the moon, and so departmentalization became firmly established in the American educational system (Fuller, 2010). In the 1990s, integration in schools became widespread. Students would be less inclined to sit silently through teacher-mandated lessons (Musa, 2020). Integration is a tactic for rekindling student enthusiasm in learning and school and stemming the tide of student indifference. The blending of disciplines, such as mathematics and physics or social studies and English, is one sort of integration. This form of curriculum exposes students to Knowledge integration between diverse subjects of study. This exposure assists students in understanding the importance of the things they must learn (Punzalan, 2018).

Other studies indicate that integrated education improves low-income students' attitudes toward school (Davison et. al., 1995; Friend, 1999). Subject integration provides these children with the necessary connection between school and the rest of their lives (Davison et. al., 1995; Friend, 1999). According to Arhar (1997), if students are to psychologically immerse themselves in the hard work of learning and mastery, that is, if they are to become intellectually engaged, they must perceive school as a valuable way of spending their time and energy. By merging disciplines like these, students will learn that courses like mathematics and physics are not distinct topics, but rather components of the world in which they live. "When combined with science, mathematics allows students to apply the subject to real-world circumstances that are relevant to the student's environment and presented from the student's perspectives" (Davidson, Miller & Metheny, 1995: 226-227). Therefore, students may pick what they want to learn and what information and skills they need to handle difficulties they encounter along the route (Fitria et al., 2018). This technique aggressively involves students from the beginning, motivating, encouraging, and making them feel like a member of the team (Friend, 1999).

(Leonard, 2012) describe integrative learning is a well-known learning theory that outlines the move toward integrated classes or lessons that are brought together as a whole, so that students may develop cross-curricular connections. The integrated curriculum is defined as an

educational system that links several areas of learning via subject-matter standards based on a guiding concept (Leonard, 2012). In 1960, the idea of an integrated curriculum began among professors, but it has gained popularity in recent years, especially in developing nations, in health professions education (Ramalingam, et.al., 2016). Since the 1950s, the Korean educational system, according to Park (2008), has taught subject matter through numerous classes focusing on diverse disciplines. This method has been severely criticized for the following reasons: information is continuously accumulating and fundamentally changing, there is a mismatch between students' holistic views of the world and artificial material fragmentation, and there is a serious problem with student alienation and lack of engagement with education. Consequently, curriculum reform initiatives in Korea have increasingly focused on curricular integration. Integrated techniques to curriculum and instruction are a repeating trend in the curriculum that has gained popularity worldwide. Countless nations have planned and conducted curriculum integration initiatives, and curriculum integration has been the subject of numerous discussions and controversies (Park, 2008).

Studies have shown that curriculum integration began in Korea in 1981, although lecturers did not actively engage in its implementation (Hwang, 1998; Park, 2008). The roles and knowledge of the curriculum held by lecturers are crucial to the successful implementation of an integrated curriculum. Even if theoretical frameworks are vast, instructive, and comprehensive, lecturers who do not grasp them will be unable to properly implement the curriculum (Leonard, 2012).

2.4. Benefits of adopting the knowledge integration principle in the Art and design disciplines

Some studies show that integrated curricula promote meaningful and less fragmented learning and improve the thinking skills of students at higher levels and facilitate the transfer of knowledge (Beane & Brodhagen, 2013). In addition, there is evidence of the positive benefits of an integrated curriculum on students' perceptions of learning and knowledge, which assist students to comprehend that knowledge and learning create an integrated system that cannot be seen as separate areas (Marshall, 2006). By structuring education around student-selected topics and allowing for choice,

students' intrinsic motivation is strengthened, helping them to acquire a stronger feeling of initiative and autonomy (Beane & Brodhagen, 2001). Knowledge integration also avoids subject-to-subject redundancy, allowing students more opportunities to explore new topics (Fogarty & Stoehr, 2008). Rabkin, (2010) claimed that because lecturers must collaborate to create, teach, and assess integrated curricula, curriculum integration has the potential to increase lecturers' knowledge, motivation, and involvement. Students get a more complete awareness of themselves, the people around them, and the history, present, and future of the world via Arts and Design education (Jacobs, 2018). Additionally, the Arts and Design field give several avenues for expressing one's emotions and views. Through the Arts and Design, students may observe and analyze things in a more sophisticated, textured, and multi-layered manner. By engaging students' brains, bodies, and emotions, the Arts and Design inadvertently encourage methods of learning and knowing that are sometimes missed in other academic subjects (Botella, Zenasni & Lubart, 2018). Considering the potential advantages of the Arts and Design on students' learning and development, some proponents of curriculum integration have developed curricula that integrate the teaching of academic topics (e.g., mathematics, science, literature) with the teaching of the Arts and Design (Jacobs, 2018). Such integrated curricula have been described using the term "Arts Integration." According to Richard and Treichel (2013: 224), "arts integration is a collaborative instructional strategy used by lecturers to teach the content and processes of two or more subject areas, including one or more Arts areas, and to increase students' ability to recognize, create, and apply authentic learning connections".

Davis (2004) asserts that the perspective of integration of knowledge was mainly used for the analysis and description of learning by students of science and other subjects to enable rich descriptions and comparisons of track records and the identification of learning-promoting mechanisms and processes. From a socio-cognitive perspective, the students have a repertoire of concepts, some of which are intuitive and others taught (Woofolk, 2011). Students detect knowledge gaps, add new insights to their repertoire, connect some of them to others and differentiate between them (Linn & Hsi, 2000). Rubba et. al. (2001) and May and Robinson (2015) argue that knowledge integration in Art and Design education is a solution that can enable students to solve complex problems effectively using logical reasoning through various approaches and

images of curriculum design and development. According to Martin et al. (2013), Art and Design scholars concluded that interdisciplinary work in Art and Design is significant because it allows students to solve problems and create meaningful connections within integrative curricula, letting students develop additional insights and opportunities to synthesize interrelated ideas.

The current curriculum systems in universities seem to lead different disciplines to be taught and learnt in silos even though the curriculum for the 21st-century graduates could consider models that emphasize the integration of interdisciplinary subjects across different faculties (Badat, 2010). Numerous faculties and academic staff in higher education institutions have resorted to digitally-enhanced Professional Learning Networks (PLNs) as a mechanism for contextual learning that may aid in the development of their varied professional duties (Trust, Carpenter & Krutka, 2017). Bringing together experience, information, and training from multiple perspectives, the collaboration of connected knowledge in disciplines can produce additive teaching-learning advantages. However, curriculum designers and developers must describe and comprehend obstacles to the implementation of successful cooperation to build a valuable learning product (Miller et. al., 2010).

Literature implies that engagement in Art and Design disciplines or activities improve students' academic performance in other subject areas (Ragoonaden & Mueller, 2017; Trust, Carpenter & Krutka, 2017). Findings from other studies demonstrate the motivational potential of Art and Design integration initiatives, also known as arts-infusion (Punzalan, 2018), resulting in higher academic attainment across the socioeconomic spectrum. Similarly, Deng et. al. (2019) propose that the incorporation of the arts can help students' comprehension of particular topics in other disciplines, particularly science. Therefore, Art and Design may benefit students studying scientific subjects in areas such as diagrams, drawings, and illustrations, which are typically employed to illustrate certain scientific topics (Snyder, Klos, and Grey-Hawkins, 2014).

2.5 A comparison of Integrated Curriculum and Discipline-based Curriculum

The nature of the curriculum and the underlying concerns that drive it to decide whether the curriculum may be classed as disciplinary or integrated. A discipline-

based curriculum approach differentiates teaching practice within a particular topic and allows lecturers to specialize, improve their material competence, and follow the traditions of their field (Kridel, 2010). An integrated approach creates educational experiences that include elements from more than one area or subject. Students can learn subject-specific skills and material more effectively within a short period, with concentration on key aspects. A single-discipline method saves time by teaching information in a logical sequence, with skills building on skills (Marshall, 2005). This helps students progress by allowing them to practice, master, and push themselves farther within the subject topic. An integrated curriculum enables students to find connections between topics or various sections of a single subject in their study (Snyder, et al, 2014).

This makes the learning environment more realistic (Kelner & Flynn, 2006). When students are taught using an integrated method, they regard issue resolution as complicated and multi-layered. Whereas single-discipline-focused education gives depth, an integrated approach adds breadth to the learning process as well as the type of depth of knowledge that comes from comprehending things in a wider context. It offers depth within breadth. Mastery is more evident to a student and can seem more instantly satisfying since it is linked to subject-specific goals, leading to a desire for more involvement (Marshall, 2005). An ordered approach to learning benefits students because it provides them with broad organizing concepts and principles that help them create the big picture rather than viewing learning as a sequence of experiences. They begin to absorb the practice of linking disciplines and/or themes within a discipline instead (Kaya & Seleti, 2013).

On the one hand, immersion in a single topic allows students to get a better understanding of the subject's design, complexity, and scope. This immersion will lead to enthusiasm and greater involvement as the learner explores further and deeper into the area of interest. When a specific subject is taught by an expert rather than a generalist, this impact is reinforced (Ingram, 2003). Through integrated learning, students, on the other hand, may absorb and understand numerous perspectives that stem not only from other people's perceptions but also from different disciplinary approaches to a problem or issue (Kelner & Flynn, 2006).

2.6. Different approaches adopted by lecturers to Arts and Design integration

Various approaches to knowledge integration in the Arts and Design disciplines have been documented in the literature. Bresler (1995), for instance classified arts integration into four categories, which are:

- i. The subordinate method, in which the primary purpose is to teach other topics and the arts are simply employed to help with that.
- ii. The emotive method, in which the arts are employed in the classroom to create a pleasurable learning environment.
- iii. The social integration strategy employs the arts to enhance the quality of social interaction within groups.
- iv. Finally, there is the coequal and cognitive approach, which believes that educating the arts is equally as important as teaching other subjects.

Krug and Cohen-Evron (2000) proposed a similar categorization system for knowledge integration by recommending:

- i. Using the arts as a platform for other disciplines.
- ii. Increase the number of coordinating centres by studying the arts.
- iii. Employ the arts to explain concepts or issues from other disciplines.
- iv. Understand life-related challenges by combining the Arts and other topics.

According to Bresler's (1995) approach, approaches confine the Arts to a supporting role in accomplishing non-Arts learning objectives, whereas approach incompletely integrates the Arts with the instructional aims of other disciplines. Krug and Cohen-Evron (2000) proposed a technique that is similar to Bresler's. They were all in agreement that combining arts and design into other courses would help to create a pleasant environment.

2.7. Considerations of the Implementation Strategy of knowledge

The lecturers are expected to teach the students according to their skills in the program setting, and the contents of the course should be separated into two parts, for example, the content of self-studying and the content of the teaching, according to the complexity of the subject. Lecturers can therefore plan sequentially to teach

disciplinary knowledge in their areas of expertise and can have sufficient energy and time at their disposal to use in imparting conceptual knowledge to students as follows:

- i. If the teaching load is significantly reduced, the lecturers can radically change the teacher-centred approach, to use divergent thinking skills in the teaching and learning of selected content and develop reflexive approaches to incorporate related knowledge across related disciplines when teaching a concept. They may also guide students to find solutions to the problem and hence enact problem-solving skills in students. In the end, students will be able to comprehend examples of knowledge and application and learn how to draw on facts through the integration of knowledge across knowledge domains.
- ii. The teaching content should be adapted according to various needs of specific professionals, and the application examples for professional needs should be improved through curriculum innovation enhanced by knowledge integration.
- iii. The main role players in practice are students. Innovative exercises are permitted for students to design so that they can find real and professional problems and can solve them successfully, through praxis (Du, Jiang & Liu, and 2011: 529).

2.8 Lecturers' knowledge and experience with curriculum integration

Ghavifekr, Wan and Wan (2015) performed a survey to assess lecturer's opinions of the usefulness of using information, communication, and technology (ICT) to help the teaching and learning process in the classroom. According to the findings of this survey, ICT integration benefits both lecturers and students. The findings also suggested that one of the main aspects of the effectiveness of integrated knowledge in teaching and learning is the well-equipped preparation of lecturers with integrated content, tools, and facilities. It was also discovered that vocational training programmes for lecturers had an important impact on boosting the quality of learning in the classroom (Mbatha, 2016).

The duties associated with a theme approach to integration might be perplexing. The most typical comments from lecturers are that the major impediments to curriculum integration are: time for preparation, research, and discussion with colleagues (Kafu-

Quvane & Chikoko, 2019). According to Suryadi, Ekayanti, and Amalia (2018), lecturers' attitudes toward and understanding of interdisciplinary studies affected the success of an integrated approach. Watanabe and Huntley (1998) mentioned time vs content coverage as a problem. In another study, it was found that various lecturers who teach practical disciplinary knowledge saw knowledge integration as an addition to an already overburdened curriculum (Friend, 1999:26). Furthermore, such lecturers believed they lacked sufficient knowledge of the material of related fields or the relevant teaching methods to teach them successfully (Friend, 1999).

Literature shows that individual people including academics are affected differently by an education system because some can gain insight and knowledge in what they are doing while others find it difficult to make connections what they learn to everyday experiences (Wilson & Berne, 1999; Lederman et. al., 1994). The results from the study conducted by Phiri and Ndhlovu, (2020:25) indicated that 88.2% of the respondents “felt that integrating Arts and Design into mathematics teaching would help students to develop an interest in the subject because Art and Design could help both lecturers and students to be creative, innovative, learn to improvise and make the learning of mathematics more interesting and practical”.

In addition to their views about the curriculum, lecturers' capacity to apply the curriculum might impact what they bring to the classroom and how they teach the content knowledge (Ghavifekr et al., 2015). According to Hinde (2005), skilled and qualified lecturers are required for the effective implementation of an integrated curriculum. Due to the complexities of implementing an integrated curriculum, both in-service and pre-service lecturers are challenged to develop overall teaching competency, which includes curriculum awareness in multiple subject areas, theoretical knowledge about integrated curriculum, and pedagogical knowledge for implementing an integrated curriculum (Yende, 2021).

Lecturers must be well-versed in a range of academic areas to effectively teach an integrated curriculum. According to research, strengthening lecturers' topic knowledge is important since they tend to exaggerate their areas of specialization and are usually ignorant of how to integrate information from other disciplines into the curriculum (Ghavifekr et al., 2015). Because of topic specialization, several researchers found that lecturers' poor content understanding in multiple subject areas impeded them from

identifying essential ideas to address in teaching an integrated curriculum (Kafu-Quvane & Chikoko, 2019). While the researchers raised red flags about the lecturers' lack of material expertise, Park (2008) underlined that such lecturers were also lacking in theoretical understanding of the integrated curriculum.

In addition to dealing with insufficient material and theoretical understanding for curricular integration, lecturers are pushed to increase their pedagogical competence. Richards and Shea (2006) investigated twenty-eight pre-service lecturers who taught kindergarten and first graders in a field-based multidisciplinary curriculum. Students grappled with two pedagogical challenges, which the researchers identified as (a) the difficulty of combining diverse topic areas into a more coherent integrated curricular framework, and (b) the difficulty of planning courses in a more creative manner. The study not only identified the challenges that pre-service lecturers faced when implementing an integrated curriculum but suggested that there is an urgent need to investigate in-service lecturers' pedagogical competencies, which scholars cited as critical for integrated curriculum implementation (Ghavifekr et al., 2015).

2.9. Influence of Knowledge Integration on students and their professional careers

A meta-analysis of 30 studies by Hartzler (2000) assesses how integrated curriculum programmes affected student accomplishment. The author found that students exposed to integrated curricula performed better than those pursuing conventional curricula on standardized and program-developed evaluations of achievement (Hartzler, 2000: 23). On nationally normed assessments, state-implemented performance examinations, and other academic results, children from schools supporting integrated curriculum programmes outperformed students from schools that did not stress a student-centered integrated curriculum approach (Shriner, Schlee & Libler, 2010).

The modern learning paradigm requires the integration of educational processes, which is focused on a critical approach to vocational education and provides students with the ability to prepare well for their future careers. The ability to solve complex

problems and the incorporation of information into practice are important for the growth of an independent learner (Kozlovskiy, Ortynsky & Pashechko, 2019). According to Goncharenko (2001), professional training aims to develop a full system of cross-sectional information, which can be accomplished by successful knowledge integration, according to the evolving philosophy of learning.

Knowledge integration should be the foundation for the future specialist's professional competencies, professional perspective, and moral and professional values structure (Kozlovskiy, Ortynsky & Pashechko, 2019). According to Shankar (2014), the humanities modules taught to medical students at Xavier University School of Medicine include the teaching of attitudes, behaviour, and professionalism, and are evaluated using a rubric module on cultural diversity and its influence on health care. This course examines students' capacity to communicate with patients with empathy and thereby help them feel at ease. Knowledge integration principles have received more attention recently concerning student professional competence development (Juceviene, 2017). Knowledge integration principle have also received attention on teacher professional competence development (Stranovská, 2017), as well as the role of multidisciplinary knowledge integration in higher education (Navickien, 2017).

2.10. Challenges in Implementing an Integrated Curriculum

According to Shankar and Dubey (2013), Xavier University School of Medicine (XUSOM) in Aruba is an off-shore medical school that was a regular medical school with a discipline-based curriculum before 2013. Since January 2013, the school has used an integrated system-based curriculum. The medical university faced many challenges after introducing the concept of curriculum integration. Some of the challenges included concerns from faculty members on how to properly implement an effective integrated curriculum, they were also concerned about self-directed learning, as well as how to provide early clinical exposure to students (Suryadi, Ekayanti & Amalia, 2018). In addition, they had concerns about how to organise activities and practical sessions for students, and how to teach the students the art of medicine in an integrated curriculum (Shankar, 2014:74). She emphasized that, although following a discipline-based curriculum, lecturers at XUSOM had great

discretion in determining what to teach and how to teach it, with multiple-choice questions being used to assess students, for example. However, an integrated curriculum throws limits on the sequence in which distinct subjects are taught, as well as the depth with which they are covered, making it difficult to develop an evaluation criterion that adequately covers the information presented.

The integrated curriculum has been accepted to have many benefits, including reduced repetition of skills and principles in various subject areas; increased significance for the students provided a real-life context, allowing the students to see the big picture rather than just the fragmented parts; allowed for teaching interdisciplinary life skills for the twenty-first century; and emphasized skills (Ramalingam et. al., 2016). Other research, however, has found that lecturers' lack of theoretical frameworks for curriculum integration, as a result of taking a pragmatic approach to curriculum integration, limits the implementation of curriculum integration (Park, 2008).

2.10.1. Approaches to curriculum integration

An integrated curriculum might signify different things to different lecturers. It may be as basic as linking one element of an issue to another or as sophisticated as including all disciplines in the resolution of a problem. An interdisciplinary study brings together expertise from several fields to examine a single topic. A cross-disciplinary study examines one discipline from the perspective of another (Bates, Ford, Brown, Richards, Hadley, Wotton, & Knowles, 2014). The word "multidisciplinary" refers to the use of many disciplines to solve a single problem without attempting to combine them. Pluri-disciplinary approaches integrate related fields, but trans-disciplinary approaches outperform interdisciplinary by starting with a problem (Friend, 1999). According to Fogarty (1991), lecturers either teach comparable concepts as a group or arrange subjects to coincide. Disciplines are combined through overlapping abilities, concepts, and attitudes in a kaleidoscope.

2.10.2 The interdisciplinary model

Fam, Clarke, Freeth, Derwort, Klaniecki, Kater-Wettstädt, Juarez-Bourke, Hilser, Peukert, Meyer, and Horcea-Milcu (2020) indicated that universities using the interdisciplinary model divide conventional courses into time blocks, allocate a set number of students to a team of lecturers and expect the lecturers to present an interdisciplinary or integrated curriculum. In addition, Ye (2022) claims that single lecturer or a group of lecturers might take an interdisciplinary approach to the teaching of their subjects. A single lecturer may utilize examples from one or more disciplines to show instances or to build courses covering a wide range of topic competencies. Two or more lecturers may elect to synchronize their classes to cover the same themes. An English and a social studies lecturer, for example, may both teach relevant topics to the same students (Killen, 2016). Two or more lecturers cooperate with a comparable group of students to develop and execute courses or activities.

Occasionally, lecturers will opt to introduce a new theme to the entire class at the same time. Alternatively, they may organize a field excursion for all their students. In practice, this strategy is becoming increasingly popular at the middle school level (Booi, 2017). This approach has numerous advantages: professors are given time to interact, there are a restricted number of students, and this model may accommodate a traditional curriculum while providing schedule flexibility to the team (Killen, 2016). Studies further argue that this paradigm's disadvantages are that it is easy for lecturers to continue doing what they have always do with little or no concern for the interdisciplinary or integrated curriculum (Booi & Khuzwayo, 2019). The paucity of standards-based integrated curricula across disciplines is the most important drawback, which means lecturers should build their curriculum. Because curriculum design and development takes so long, lecturers can only apply an integrated curriculum for a tiny period of the school year.

In Art and Design, the interdisciplinary model can work effectively in providing the students with comprehensive knowledge, either by grouping or inviting several lectures specialized in different fields related to art and design to provide in-depth information as well as their experiences on the concept. In the case of a single lecturer, drawing his teachings from several disciplines would depend on that lecturer's

extensive knowledge, experience, and ability to share the knowledge that is outside of his usual knowledge repertoire (Loep, 1991; Booi & Khuzwayo, 2018).

2.10.3 The problem-based model

In an ideal world, this strategy would centre technology instruction on the curriculum. Because we live in a technological culture, and technology is a human endeavor, this is a natural method to create the curriculum. With a technology challenge at the centre, disciplines collaborate to find a solution. A final year project course at a University can engage students in the design, development, and installation of automated tooling in a manufacturing plant. A solution to this challenge would invariably raise mathematics, scientific, and technical concerns that would have to be addressed (Azer, 2011).

Fogarty (1991) gives an example of how a community's garbage might be transformed into an asset. In this case, the social studies class could discuss the role of local government in waste collection and disposal, the science class could concentrate on breaking down and recombining materials, and the mathematics class could study measurement, area, volume, and so on. The focus of technology education may be on the numerous technologies used to categorize garbage as well as the transformation of waste into useable products (Wijnia, Loyens, & Rikers, 2019). This integration model has the advantage of having a high potential for identifying relevant, highly motivating problems. A downside of this paradigm is the difficulty in ensuring that state frameworks and/or national standards are completely covered in a given grade level.

The problem-based model is the most ideal for teaching almost all the subjects, not just art and design. According to Kho, Khoo, Wong and Koh (2008), this approach exposes students to real-life problems and equips them with the knowledge and experience to solve them. It prepares the students for their careers and real life by pre-exposing them to situations that are happening in real life and demands practical solutions from a comprehensive well-informed approach.

2.11. Summary

This chapter discussed knowledge integration of a curriculum, history of knowledge integration, benefits of adopting the knowledge integration principle in the Art and Design disciplines, the history of knowledge integration, comparison of integrated curriculum and discipline-based curriculum, different approaches adopted by lecturers to arts and design integration. The chapter further looked into considerations of the implementation strategy of knowledge, lecturers' knowledge and experience with curriculum integration, influence of knowledge integration on students and their professional careers, challenges in implementing an integrated curriculum, approaches to curriculum integration, interdisciplinary model and problem based model.

From the synthesis of literature in this chapter, it is clear that learning and teaching can be made more effective by integrating knowledge from different fields, combining knowledge, and using technology. Knowledge integration plays a significant role in the creation of new knowledge, which in turn leads to the development of skills and competencies (Du, Jiang & Liu, 2011). So, the perspectives of the people who teach and learn are expanding because they break down barriers that keep a multidisciplinary approach to multiple knowledge fields from being used (Du, Jiang & Liu, 2011).

There are programmes in Art and Design, as well as other fields of study, where knowledge integration can be used. Art and design are now seen as very specialized fields that need to be kept from getting mixed up with other subjects. However, literature reviewed in this chapter puts across a compelling argument for designing a curriculum that supports knowledge integration across knowledge domains. Fogarty (1991), posits that lecturers should either teach related concepts together as a team or organize topics through a thematic approach to teaching multidisciplinary topics. Through the use of overlapping abilities, concepts, and attitudes, disciplines are brought together in a kaleidoscope.

CHAPTER 3: Research Methodology

3.1 Introduction

The previous chapter offered a view on the literature on knowledge integration in the curriculum sequencing and programming in the Art and Design disciplines. This chapter focuses on the discourse about research paradigms and methodologies which explains how the study was carried out. The chapter also discusses the data collection methods used, research design and sample strategies used to answer the study research questions. This chapter also considered a detailed discussion of the criteria used to ensure the trustworthiness of the data collected to answer the research questions. Ethical considerations were considered to ensure that professional standards applied to all social science research involving working with human subjects.

3.2 Research paradigm

According to Cohen, Manion and Morrison (2015), a research paradigm is a theoretical or philosophical framework for research efforts. Thomas Kuhn (1962) developed the term paradigm to characterize a philosophical approach to inquiry. Fraser and Robinson (2004:59) acknowledged that a paradigm is "a collection of assumptions about how certain issues arise and a set of agreements about how these problems might be examined." In educational research, the term paradigm is used to define a researcher's perspective (Mackenzie & Knipe, 2006). This perspective informs the meaning or interpretation of study results by offering a perspective, a line of thought, a school of thought, or a collection of shared viewpoints. The research paradigm leads the researcher through the full investigation process, including issue identification, research questions, and identifying the nature and kinds of reality, information, methods, and the value of the research work (Khatri, 2020).

3.2.1 Interpretive research and social constructive paradigms

The main goal of the Interpretivist paradigm is to grasp the subjective world of human experience (Guba & Lincoln, 1989). This strategy aims to "get into the heads" of the topics or individuals being studied to grasp and interpret what the subject is thinking or interpreting of the circumstance. Every effort is made to understand the subject's perceptions about the phenomenon being studied instead of the views and opinions of the observer. The importance of understanding the individual and their interpretation of their surroundings is underlined. As a result, the essential premise of the Interpretivist paradigm is that reality is socially produced (Bogdan & Biklen, 1998). The interpretative paradigm allows the researcher to have an in-depth understanding of the problem through the subject experiences of the people involved (Bogdan & Biklen, 1998). This implies that techniques that assist in understanding meanings attached or portrayed need to be used. Such techniques include interviews and observation where the researcher can come into contact with participants and allow the researcher to be a data collecting instrument. Because this study analyzes the perspectives of Art and Design lecturers on knowledge integration in courses given in their undergraduate curriculum, an interpretative paradigm is appropriate. The interpretative paradigm holds that human experiences and social environments influence social reality.

Social constructivism emphasizes the importance of people's knowledge of the environment in which they live and work, and how these people build variable and numerous subjective meanings that are oriented toward specific experiences or occurrences (Creswell, 1995). The study's goal is to explore Art and Design lecturers' perceptions of knowledge integration when teaching and training Art and Design students at HEI's. These subjective meanings are negotiated socially and historically, which implies that they are generated via contact with others (thus social constructivism) and historical and cultural norms that function in the individual's life (Akpan et al., 2020).

The questions in constructivist research are broad and comprehensive to allow participants to build their interpretation of a situation, which is sometimes integrated with interactions with other people (Creswell, 2007). The researcher paid much consideration to the utterances, emotions and behaviour of the participants when they

described their experiences with the phenomenon and how it affects their lives. Because of this, Mbatha (2020) recognises the fact that constructivism carefully examines interpersonal interactions to understand the meanings attached to each action. Constructivists pay a lot of attention to exceptional situations where participants live and work to understand the important historical and cultural backgrounds of those involved. According to Moustakas (1994), the constructivist worldview reveals itself in phenomenological research in which individuals recount their experiences.

3.3 Phenomenological study design

A phenomenological design, according to Creswell, (2014:14) is a "philosophical and psychological design of inquiry in which the researcher describes the lived experiences of individuals about a phenomenon as recounted by participants." This phenomenological study aimed to better understand the perceptions of Art and Design lecturers on knowledge integration in their undergraduate courses. The goal of phenomenological research, according to Leedy and Ormrod (2015), is to understand participants from their perspectives, which means that the sole focus of this type of study is on the participants, i.e. perspectives of lecturers in Art and Design on knowledge integration in their undergraduate courses. This phenomenological study's purpose was to describe the meanings that lecturers assign to their knowledge and experiences in the integration of Art and Design disciplines. Because the researcher has some stake, experience, or connection in the situation, bracketing (i.e. putting aside all judgments) was essential in this form of investigation (Williams, 2007).

3.4 Research approach

According to Creswell (2003), a research approach is a collection of processes and techniques used to critically examine a problem or peculiar situation. A research approach requires a researcher to “understand all phases from wide assumptions to detailed data collection, analysis, and interpretation methodologies” (Creswell, 2003: 35). There are three categories of research approaches in the social sciences: qualitative, quantitative, and mixed methods. Quantitative research is a technique for examining the relationships between variables to evaluate objective ideas. According to Monique et al. (2011), a qualitative approach is a means for researchers to investigate people's experiences in detail using a specific set of research procedures such as interviews, focus group discussions, and observations.

A mixed-methods strategy comprises gathering both quantitative and qualitative data, combining the two types of data, and using a range of research approaches, some of which may contain philosophical assumptions and theoretical frameworks. The primary idea behind the mixed methods approach is that combining qualitative and quantitative approaches gives a more thorough grasp of a study topic than any methodology alone could produce (Creswell, 2003). Because numerical data would not have contributed significantly to the findings of this study, a qualitative investigation was conducted to gather information about the perspectives of Art and Design lecturers on knowledge integration in their undergraduate curriculum courses.

3.5 Qualitative approach

According to Merriam, Sharan, and Tisdell (2016), one of the goals of qualitative research is to uncover the meaning of an incident for those who are involved in it. This method is particularly successful in gathering detailed information on specific people's beliefs, attitudes, behaviours, and experiences. "The basic feature of qualitative research is that it investigates how individuals make meaning of their concrete real-life experiences in their minds and language" (Cropley, 2019:5). Collector and Module (2011) assert that one of the qualitative research's strengths is its capacity to produce detailed textual descriptions of people's experiences, feelings, and beliefs. As a result,

this technique will be useful in understanding the viewpoints of Arts and Design lecturers on knowledge integration in their undergraduate courses.

The efficacy of qualitative research stems from its capacity to provide thorough textual descriptions of how individuals perceive a given event, occurrence, or phenomenon of interest to the researcher. A qualitative technique yields extensive and trustworthy data about human emotions, perceptions, and beliefs. Furthermore, qualitative findings may be extended to people who have similar characteristics as the population of a research study, providing for a fuller and more nuanced knowledge of a given event, occurrence, or phenomenon in a specific social environment (Rahman, 2016). Although a qualitative approach is an excellent way to get detailed information, the data may be challenging to interpret (Flick, 2011). Furthermore, qualitative data analysis takes a long time, making qualitative research incredibly expensive (Yin, 2014). According to Willig (2008), because qualitative approaches to data collection and analysis encompass a broad range of techniques and epistemological assumptions, it is vital to carefully pick an appropriate qualitative method for conducting a research project. To avoid the above mentioned drawbacks, the researcher used audio recording to transcribe interview data into text and further used open coding to analyse the text from which themes were derived to assist in answering the research questions. Findings were then categorised from themes. The researcher used theoretical framework as a lens to analyse data.

3.6 Population and sampling methods

The population of interest refers to the study's intended population, which it wishes to analyse or treat (Majid, 2018). A population is a grouping of all the units that share the variable under inquiry and for whom research findings may be generalized (Schumaker & McMillan, 2009). Schumacker and McMillan (ibid) define a sample as a subset of a population that fully reflects it. It means that the units chosen as a sample from the population must have all of the characteristics of different types of population units (Shukla, 2020). In this study, the population comprised of lecturers of Arts and Design at South African higher learning institution. However, for the purpose of this study a purposive sampling strategy was used to select Art and Design lecturers from

a single university that offers Art and Design courses. Purposive sampling was used in this work as a non-probability sampling strategy (Shukla, 2020). This choice was driven by convenience to the researcher as the institution is situated within a location where the researcher would have easy access to participants for data collection process. In a research protocol for a clinical research project, it is necessary to specify the demographic parameters of the population of interest, such as their age, ethnicity, socioeconomic position, education level, marital status, and job status. Consider the "ideal" research participant's characteristics to better understand the target demographic, eligibility conditions, study setting, and sampling processes that will optimize recruitment and retention (Abawi, 2017:8).

The process of picking a sample from a population is known as sampling. Sampling is the process of choosing a statistically representative sample of people from a population of interest that is large enough to solve the research question. Because the population of interest is frequently too large to incorporate as participants in any study effort, sampling is an important instrument for research inquiries (Shukla, 2020; Creswell, 1998). Purposive sampling is often used in qualitative research to locate and choose information-rich individuals related to the topic of interest. This comprises discovering and choosing individuals or groups of people who are highly knowledgeable or skilled about a certain area of interest (Creswell and Clark, 2011).

The eligibility criteria are used to determine if a person is qualified to take part in a research study (Majid, 2018). Eligibility criteria are made up of inclusion criteria, which are the key features of the population of interest. A potential research participant must satisfy all of the prerequisites to participate in the study.

The following qualities were required of participants for the objectives of this study:

- i. They must be lecturers within the Arts and Design disciplines
- ii. They must have experience teaching Art and Design modules
- iii. They must belong to University X

This research selected five lecturers who teach art and design disciplines in Art and Design department at the University X. The Art and Design department have only five academic staff hence they were all selected to participate.

3.7. Methods and instruments employed to collect data

Questionnaires, interviews, and observations are examples of data collection instruments used in a research project (Census Bureau, 2010). Data collecting instruments may also be defined as procedures for finding sources and acquiring data during an evaluation (OECD, 2002). To collect data for this study, phenomenological semi-structured interviews were used.

3.7.1 Semi-structured interviews

Semi-structured interviews were used in this study. According to Robinson (2014), the fundamental benefit of such interviews is that they give far more extensive information than other data-gathering approaches. They may also give a more relaxing environment to participants allowing them to feel more comfortable conversing about the program rather than filling out a survey (Robinson, 2014). However, there were several limits and drawbacks, such as it being a time-consuming evaluation activity due to the time required to conduct interviews, transcribe them, and evaluate the data.

In-depth interviews, according to Savage et al. (2011), are face-to-face interactions between a researcher and participants aimed at comprehending the participants' experiences or circumstances as described in their words. In-depth interviews are appropriate because they allow information to flow naturally and provide the depth of information required by a researcher to allow participants to express their views and perspectives without imposing ideas or views on them (Johnson & Rowlands, 2012; Sinkovics & Alfoldi, 2012)

Johnson and Rowlands (2012) state that an interview is a conversation between two or more persons, with one of them attempting to collect thorough information about a certain topic or issue. The interviewee was contacted by phone and email to schedule an interview on a certain day. Before the interview date, the necessary processes,

such as permissions and reminders, were followed. Permission to record interview sessions was requested from all participants who took part in the study. These recordings aided in the transcription and coding of the material. A pre-prepared interview guide with semi-structured interview questions was created and sent to all participants. An identical set of questions were asked to all participants to investigate Art and Design lecturers' opinions of knowledge integration when teaching and training Art and Design graduates at Higher Learning Institutions. Five lecturers in the Art and Design department were interviewed.

3.8 Analysis of data/explication of data

Data analysis is the process of organizing, structuring, and interpreting a large amount of collected data. It is a muddled, ambiguous, time-consuming, inventive, and fascinating process. "It does not proceed in a straight line; it is not neat. Qualitative data analysis is the search for general statements about relationships between data categories" (Marshall & Rossman, 1989:111). Semi structured interview was used for data collection. For this study, thematic data analysis was utilized by the researcher. Thematic analysis is a style of qualitative analysis that is employed to evaluate classifications and present themes that relate to the data (Alhojailan, 2012). Thematic analysis helps to enrich the research meaning and its accuracy, thus giving an opportunity to understand the potential of an issue that is being investigated (Alhojailan, 2012). The researcher firstly transcribed the recordings made from the semi-structured interviews. The researcher goes through the data again and again for correctness of data, read the transcripts and take notes in order to be familiar with them. Responses were dealt with based on the research questions. This allowed the researcher to sort, organize and split the data into units, labelled using exact terms used by participants. In this research, the transcribed semi-structured interview was tape-recorded. The researcher made use of the content and thematic analysis to analyse the tape-recorded data obtained from the transcribed semi-structured interviews, document reviews and observation.

3.8.1 Transcription

As this study used a digital recording equipment during the interviews, the data was transcribed to make it easier to analyse because it converts the recorded interviews into a text-based format. This made it easier for the researcher to find the patterns. According to Widodo (2014), the first step in analysing interview data is to have the interview record transcribed.

3.8.2 Bracketing

Bracketing is defined as a “methodological device of phenomenological approach that needs the researcher to deliberately be objective about the phenomenon being studied or what one already knows about the subject before and throughout the phenomenological investigation” (Chan, 2013: 29). It is the process of putting aside your own opinions, theories, or preconceptions, as well as the results of your previous research. So, the researcher needs to be self-aware so that he or she can understand the participants' points of view instead of trying to change them to fit his or her ideas. Dibley, Dickerson, Duffy and Vandermause (2020), state that the hermeneutic-phenomenological approach acknowledges that pre-understanding cannot be completely gotten rid of. So, the researcher did two things to fill in the gaps: converse with other researchers and write memos or journals.

3.8.3 Listening to the interview to get a sense of the overall picture

After setting his expectations, the researcher tried to get a feel for the whole interview by listening to it and reading the transcripts several times (Giorgi, 1975). Widodo (2014:281) suggests that this sets the stage for the meaning of specific units of meaning and themes to be made. The main goal of the researcher is to listen to nonverbal signs of communication, such as changes in voice pitch, pauses, tears, and so on (Chan, 2013). A diary was kept to write down thoughts or other things that were noticed. This is relevant to the study because it helps the researcher to get an ideal picture of what is happening from the perspective of the participants.

3.8.4 Delineating of Units

The researcher looked at every word, phrase, sentence, and paragraph in the transcripts to write down what was said so that they could figure out what the participant meant (Widodo, 2014). This is the process of figuring out what a word, phrase, or sentence means at its core (Groenewald, 2013). This is an important step in data explanation because that is when statements that seem to shed light on the

issues being studied are extracted or singled out (Creswell, 1995). This is also when bracketing is done. Each interview led to a list of meaningful units, which were carefully looked over to get rid of units that were the same (Moustakas, 1994). The researcher examined what was said literally; how many times a meaning was mentioned, and how nonverbal or paralinguistic cues were used. The real meaning of two units of meaning that seem similar may be different in terms of weight or order of events (Groenewald, 2004).

3.8.5 Grouping of units to form themes

Again, the researcher had to put his assumptions on hold to stay true to the phenomenon. Clusters of themes are made by putting together units of meaning. This is done by finding important topics, which are also called units of significance (Moustakas, 1994). Groenewald (2013) points out that to find clusters of appropriate meaning, the researcher needs to go back to the recorded interviews and the list of non-redundant units of meaning. Neal, Neal, VanDyke and Kornbluh (2015) asserts that core themes can be found by looking at what the different clusters mean.

3.8.6 Summary of each interview, validation and modification

According to Allaham, Forbes, Knápek and Mousa, (2020), the researcher does a validity check at this step by returning to the participants to see if the substance of the interview was accurately captured and if any changes are required. The researcher returned to the participants with the recordings and his transcriptions to see if he had accurately caught the substance of their meaning, and he made modifications or revisions as instructed by the participants.

3.8.7 General and unique themes for all the interviews and combined summary

The process of searching themes common to participants' responses started immediately after completing the verification process with participants as recommended by Groenewald (2004). The unique and smaller perspectives were important counterpoints to reveal the issue being studied. The researcher took care

not to group common topics and finished the explication by producing a summary that represented the environment in which the concepts originated (Moustakas, 1994).

3.9 Ethical considerations

The Cape Peninsula University of Technology provided ethical approval for the project. Permission was requested from the targeted or chosen university to conduct research in the departments of Art and Design. Each participant was asked to provide written consent. The goal of the study was outlined in the permission form, as was the involvement of each participant. The institutions' and lecturers' anonymity was guaranteed. As a result, throughout the investigation, code names for the institution and pseudonyms for individual lecturers were adopted. The Faculty of Arts and Design's ethics clearance documents were followed, and an ethics clearance application was submitted to the FID's appropriate ethics committee. As a researcher, I met all of the ethical committee's standards. An Ethics clearance letter (Appendix B) was issued by the postgraduate research office.

3.10. Trustworthiness

Trustworthiness of qualitative data is measured through the following factors (Babbie & Mouton 2012):

1. credible,
2. transferable,
3. dependable, and
4. confirmable

Credibility

To be considered trustworthy, qualitative researchers must demonstrate that data analysis was performed precisely, consistently, and exhaustively by documenting, systematizing, and revealing the techniques of analysis in sufficient detail to allow the reader to evaluate if the process is credible (Braun & Clarke, 2006). The process used in data explication is precise and thorough, ensuring the study's trustworthiness.

Dependability

Dependability as concerned with whether we would obtain the same results if we could observe the same thing twice (Maree, 2010). The flexibility and freedom inherent in the qualitative approach makes it difficult to establish dependability unless one keeps a detailed record of the process for others to replicate (Kumar, 2011). For dependability, the researcher relied on detailing the processes involved in the research. In this study, the researcher discussed the methods, procedures, analysis and decisions taken that led to a particular conclusion in a clear manner (Denscombe, 2010). This will allow other researchers to carry out the same study and obtain same results.

Transferability

Transferability was another aspect of trustworthiness that demonstrated how a researcher considered the extent to which results could be applied to different situations or settings (Forsey, Low & Glance, 2013). Transferability may refer to situations, populations, or concepts. In this case, the researcher used a broad description to demonstrate that the study's findings apply to a variety of scenarios (Shenton, 2004). In this study the researcher discussed the different school settings, and also the participants who are lecturers and pre-service teachers, in detail (Braune& Clarke, 2013). Conformability “refers to the degree to which results could be confirmed or corroborated by others” (Maree, 2010: 45). According to Kumar (2011) and it can only be achieved if both researchers follow the procedure in a duplicate

fashion for the findings to be comparable. Therefore, data sources of this study as well as data collection tools were clearly described to ensure the conformability of the study.

3.11. Summary

This chapter provided an in-depth account of how data was gathered and analysed. It outlines a phenomenological study design, as well as qualitative procedures pertinent to this research design and data collection. The literature listed in this chapter serves as the foundation for the technique utilised during the analysis of data collected through in-depth interviews. The principles and ideas gleaned from the literature enabled the researcher to devise methods and strategies for presenting qualitative data and its interpretations as prescribed in the following sections.

CHAPTER 4: Presentation of Findings and Analysis of Data

4.1 Introduction

This study explored the perceptions of Art and Design lecturers of knowledge integration within art and design university curricula. The research questions guiding this study were:

1. What are the perceptions of Art and Design lecturers on knowledge integration in the subjects offered in their undergraduate curricula?
2. How do Art and Design lecturers perceive the application of the knowledge integration principle across institutional faculties' curricula?

The purpose of this chapter is to report the findings and analyse the collected data from semi-structured interviews. The interviews were conducted to learn about Art and Design lecturers' perspectives on knowledge integration in the courses offered in their undergraduate curriculum. Because Art and Design lecturers were explicitly required for this study, the purposive sampling technique was employed. The data were analysed thematically, and as a result, themes and sub-themes formed, which were then organized into tables. To protect the participants' identities and confidentiality, pseudonyms were used in place of their real names.

Table 4.1.1. The lecturers' experience in teaching subjects within the Art and Design programmes (n=5)

No. of years	0-3	4-6	7-10	>11	Qualification Level	Subject taught by the lecturer
<i>Lecturer 1</i>		•			PhD	Philosophy of art
<i>Lecturer 2</i>	•				Masters	Graphic design
<i>Lecturer 3</i>		•			Masters	Visual arts
<i>Lecturer 4</i>			•		Masters	Drawing

Lecturer 5				•	Masters	History of art
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The number of years these lecturers have been teaching subjects within the Art and Design programmes is shown in Table 1 as well as their highest qualifications. The lecturers were requested to disclose the number of years they had been teaching Art and Design throughout the interviews. This was done since their perspectives are informed by not just their educational qualifications only, but also their teaching experiences. Only one of the five lecturers has had less than four years of experience teaching according to the table. The other two lecturers have teaching experience ranging between four and six years. The other lecturer had been teaching for 8 years, while the other one had more than 11 years of experience.

4.2 Theme 1: Lecturers have divergent views of knowledge integration

The lecturers have different views of knowledge integration, but all of their explanations of knowledge integration involve the incorporation of either one subject with another or one discipline with another to provide comprehensive learning material to broaden the students' information and practice base as well as skills. Below are excerpts from the lecturers as they explain their understanding of knowledge integration:

“Knowledge integration in higher education has to do with one’s basic skills that are required for that particular kind of module or course that one picks. In the university setting, I think it is expected that one broadens their minds for whatever area of study and in their seeking of knowledge.” **Lecturer 1**

“Taking information or techniques of practice from other disciplines or subjects within the same discipline is known as knowledge integration”.

Lecturer 2

“In a learning process, integration refers to mixing multiple disciplines to demonstrate their relationship or to draw from other topic areas”.

Lecturer 3

“It is combination of different knowledge domains used by means of simplifying or enhancing knowledge to the listener” **Lecturer 4**

“It is the process of using information from one subject or course for a better understanding of a concept” **Lecturer 5**

When the lecturers were asked about how they perceive knowledge integration in Art and Design they indicated that knowledge integration involves taking certain aspects of an art subject and combining them with another to give a full picture of the subject. They also indicated that knowledge integration occurs naturally since subjects within the Art and Design program cannot be divorced from each other. The participants said:

“When it comes to arts, classic arts, fine arts or visual arts depending on the definition used by that institution, here at institution x, it’s in two ways: knowledge ratio that is based on how students get to be trained in particular competencies for studio practice and also for theoretical work, so that has to be perfected in the holistic approach”. **Lecturer 1.**

“ ..obviously, the constant research and what one needs to inform knowledge direction, then we can go to the details of that direction as well. So, for us, it is a matter of how the department could drive that kind of knowledge development integration within the programmes”. **Lecturer 2**

“That for us and also perhaps that is something we will be doing as well, how knowledge integration, I think by the definition of the term, is not the silos that individual knowledge is put in boxes but much more of an interdisciplinary approach where one then seeks to find basis from other disciplines within the social sciences and humanities and also across other different faculties as well that could be perhaps possible in the future. But within the department itself, there should be an integrated kind of approach in terms of the balance between the practice and the theory”. **Lecturer 3**

“We need to make a student orientation exchange, based on the first answer I gave, based on infrastructure and resources, we should be able to make the relations and collaborative way among students in terms of the exchange programme”. **Lecturer 4**

Findings: This theme shows that although these lecturers were trained in the traditional ways of subject specialization, they have a bit of knowledge about knowledge integration and some of them are open to the idea of integrating with other subjects or disciplines.

Implication 1: The implication of divergent views on knowledge integration could be detrimental because it shows the lecturers might not agree on the ways to integrate knowledge hence making the whole process a failure for them and the students.

Implication 2: On the other hand, the different views of these lecturers might bring them together if they are open-minded enough and produce a rich and comprehensive curriculum or knowledge for the students.

4.3 Theme 2: Lecturers' perceptions on application of the principle of knowledge integration in the subjects offered within the Art and Design curricula.

The lecturers were asked to rate themselves on a score of 1-10 on the integration of disciplines within the art and design curriculum and surprisingly, three of them score well above five, which means that their level of using and applying the principle of knowledge integration in their teaching methods is very high. One of the lecturers scored 8 whilst the other two scored 7 and they also gave justifications for these scores and the last one scored 5.

4.3.1. Table of Rating score

Lecturer	Rating scale 1-10
1	7
2	8
3	6
4	7
5	5

“I scale myself on 7, the reason for that is you are allocated several subjects/ modules and one way or the other, they link, for example, I teach Art history to 1st-year and 2nd-year students so in terms of one developing the curriculum or content, for 1st years you are preparing them for the next year of study which makes it easy than to have 3 different people who have their approach to the same content”. **Lecturer 1**

“In modules of art, art is a broad scarce skill course, mathematics needs art, medicine needs art, statistics needs art, and art is everything. That means when giving a lecture to students, it’s not wise for the lecture to be narrow on the lesson plan or work schedule, not to integrate the view/ global scope of art, for example, if I am giving a lesson about event project management, I can also draw on civil engineering to explain concepts such as art festivals, selling of art etc., therefore, I would score 8 out of 10 because I cannot be 100% otherwise they would lose focus”.

Lecturer 2

“Art is everywhere, in social work there is art.....everywhere you go there is art, so integration of knowledge just happens naturally because in most classes you have to be very creative in delivering the lessons, hence you tend to borrow certain elements from other subjects. This understanding makes me rate myself 6 on a score of 10”. **Lecturer 3**

“I score myself on 7 because when teaching history you cannot divorce the history of art, from the general history, for example, in South Africa during the colonial wars, art was there as one of the liberation tools in colonised countries, meaning one way or the other, planned or not an integration of knowledge takes place”. **Lecturer 4**

“I would personally score myself 5 because I cannot find time to full integrate within or across art and design department, there is just so much work with deadlines hence I do not find time” **Lecturer 5**

Findings: The level of knowledge integration is significantly high as 4 of the lecturers seem to have rating scores of 5. In addition, lecturers explain that they need to borrow from other subjects or disciplines to explain an idea or concept fully to the understanding of the students. Despite the low score of lecturer 5 and 3 but it would be fair to say there is level of knowledge integration taking place.

Implication: The knowledge integration is not formalised, and cannot determine it is done to what extent.

4.4 Theme 3: The level of knowledge integration within the Art and Design department.

“We had a resolution that when students come for any practical module, all of them would start with drawing no matter which program they are doing because drawing forms the foundation for future kinds of projects throughout all specializations and areas of focus”. Lecturer 1

“There was an agreement in the department to synchronise the program itself. There is a natural flow between drawing and the next area of study, for us, that seems to be working so if for example if it was total chaos, we could be scaling ourselves at 2 or 3 because that particular system would not be working”. Lecturer 3

“Students use the drawings for painting, it is a prerequisite to have a drawing sketch for a painting, and even in printmaking, they use the sketch drawings. It’s the drawing sketch that leads to painting and it’s that sketch that leads to printing”. Lecturer 5

Findings: According to the responses that were given by the lecturers, there seems to be some form of application of the principle of knowledge integration within the art and design department itself, even if it is informal.

Implication: Knowledge integration is not formalised within the art and design department.

4.4.1 Subtheme: Lack of inter-disciplinary collaboration among lecturers in the Art and Design department

The participants explained that there is no collaboration between lecturers even in the same department, meaning that the only form of knowledge integration that takes place is when one lecturer simply borrows from another subject by doing the research herself/himself. There are no partnerships formed to reach a certain objective in terms of delivering classes.

*“Not really, the set-up is in such a way that each academic will be responsible for a certain area”. **Lecturer 1***

*“The only collaboration that takes place among the lecturers is on awareness campaigns”. **Lecturer 2***

*“Collaboration only takes place in projects such as public community service whereby a large number of students and lecturers from different subject areas come together to take part in the project, whereby then a certain understanding between the lecturers and students come together to achieve their goal”. **Lecturer 3***

*“Personally, I think I will promote that kind of integration because you want to develop a fully molded graduate at the end of the day, but a graduate that is knowledgeable about not only what they are studying right now, we have a specialisation, but they are open-minded, we need graduate from art and design that are interested in philosophy and history and other disciplines”. **Lecturer 4***

Findings 1: There is some form of knowledge integration within the department, especially in drawing, painting, and printing which is seemingly not formalised but acknowledged in the data obtained from this study.

Findings 2: There is some form of inter-disciplinary collaboration in the Art and Design department echoed by the sentiments of various participants.

Implication: The lecturers at university X could achieve more results if they were to fully consider to use knowledge integration within the knowledge disciplines they offer.

4.5 Theme 4: The advantages of integrating knowledge

In as much as there is very limited integration interdisciplinary and across disciplines, the lecturers have an idea of the benefits that are attached to this kind of practice. Actually, they hope for a revision of the university curriculum so that it can be integrated and then be benchmarked against other institutions of higher learning.

“Personally, I think I will promote that kind of integration because you want to develop a fully moulded graduate at the end of the day, but a graduate that is knowledgeable about not only what they are studying right now, we have a specialisation, but they are open-minded, we need graduate from art and design that are interested in philosophy and history and other disciplines”. **Lecturer 4**

Implication: This implies that practicing in the traditional way, does not bear competitive and well-exposed graduates as compared to practice that includes integrating knowledge within and across subjects and disciplines.

4.6 Theme 5: The lecturers’ perspectives on the application of knowledge integration across the institutions of higher learning

The majority of lecturers feel that there should be a uniform strategy for knowledge integration across all institutions of higher learning. However, this has to be done provided they meet certain conditions such as retaining their integrity.

“Yes, I do think there should be one, but at the same time each unit or department should retain its integrity, I know as a department we have reached out to other units such as the galley within our institution for broader teaching and learning purposes, we have reached out to others like the music though not as formal as with the galley because we understand that both of these

*departments are in the creative arts environment, although they are different in terms of application". **Lecturer 1***

"The universal approach is quite important, especially if it does not deviate from the credit of the subject. For example, as I said before, we collaborated with students that are not doing art, students who are doing social work but the same student in music and the same faculty of social sciences and humanities".

Lecturer 2

*"The scope of knowledge integration is very important to highlight as it might negatively impact our department, we do not want to compromise the quality and shift the focus of our student, hence, we need to know what we incorporate into our curriculum planning " **Lecturer 3***

Findings: The lecturers do not want to compromise the integrity of their department, they have some collaborations that are outside classroom setting.

Implication: Art and design department is likely to produce students that are limited to the knowledge based on their department. To some extent, knowledge integration has a potential to compromise the integrity of the department.

4.6.1. Sub-theme: Revision of the curriculum

When lecturers were asked about the state of their curriculum: Lecturer 3 and Lecturer 4 feel that there is a great need to revise the curriculum and include aspects of knowledge integration to make it more competitive so that they can produce better graduates that have diverse knowledge and practice.

*"For now, we are looking at getting a kind of revised curriculum, we have not done an extensive benchmarking, we were just looking at the shell of it but now after that, we can try to work within the shell of the proper kind of content and benchmarking that needs to be done". **Lecturer 3***

"It would be great in the future if those other elements could be credited and the student could graduate. For someone that is doing music can take a course in

*fine art and graduate that kind of knowledge integration could work". **Lecturer 4***

*"Yes, it is, but the curriculum is set by the faculty. Maybe we can get more samples, like what we propose to do we have more evidence to support that and at the same, we can benchmark it with what other institutions of higher learning are doing". **Lecturer 5***

Findings: Lecturers see a need to revise the art and design curriculum, to benchmark it with other institutions of higher learning. There is an element of selective knowledge integration they feel should take place.

Implication: The revision of their curriculum might take time to effect as they also depend on their faculty.

4.7 Theme 6: Lecturers are keen on collaborations with other colleagues from different departments

When academics were asked if they had ever collaborated with lecturers from other disciplines, their responses showed that they had to some extent. They also indicated that they do not see the need for cross-disciplinary knowledge integration with the other departments. The participants said that:

*"No, not personally, but the department, in terms of engaging with other units e.g. the "x foundation"(a section of a department within our institution) but not in an academic way. We do not have an interdisciplinary kind of teaching and learning, we have a silo kind of approach". **Lecturer 3***

*"There has not been any collaboration between the music department and art and design but there have been talks". **Lecturer 5***

"It is kind of difficult because you are loaded, you have very little time to do many things in the department, for example, for us, our research is not only limited to writing papers but as well as to practice. So it becomes a bit tricky unless you pick up an interest informally. The background of

the students also matters in things that are outside of their curriculum”.

Lecturer 1

“That is confusing, that is wrong, that is wrong in a sense that should a student be given an opportunity for example to do a subject such as anthropology in art, and then you ask yourself how anthropology relates to art because they are not corresponding to the subject content of art and the lesson plan, of which it contradicts even to the philosophy of art.

That is a no no”. **Lecturer 2**

The lecturer went on to stress that collaboration between lecturers from different disciplines is not practical or even feasible. He said:

“No, I have never collaborated with anyone from non-art subjects, as I said before that art is a scarce skill, so it is difficult to take a layman who does not have this scarce skill to influence a fragile material like a curriculum or syllabus. Art is a scarce skill that is not easy to understand and it needs to be learnt, hence collaborating with someone who is not in this field is rare and not an easy job. **Lecturer 2**

“If art cannot be understood during a normal conversation, what more about the collaboration of a syllabus or curriculum”? **Lecturer 2**

“We should be vigilant as lectures when we integrate out of the scope not to confuse the students”. **Lecturer 4**

“But there are certain situations where that kind of integration can take place, especially in education because it’s broad, and it’s a method of an artist who expresses himself/herself for the purpose of social cohesion”. **Lecturer 3.**

Finding 1: Lecturers are reluctant to formalise knowledge integration with other departments, they have informal forms of knowledge integration. One lecturer has a strong opposing view of this notion of knowledge integration across other department.

Finding 2: Although other lecturers strongly disagree with the idea of cross-disciplinary integration, two of the lecturers seem to think that there is room for such a possibility but with the condition that the lecturers are vigilant enough and do not cause confusion among the students at the end of the lesson.

Implication 1: Integration across different departments is time consuming and lecturers have other commitments that requires they time. Lecturers who do not understand the purpose of having knowledge integrated across domains might be resistant to knowledge integration.

Implication 2: Knowledge integration has a potential to confuse students when not well effected.

4.7 Theme 7: Divergent and convergent views on knowledge integration outside the department of Art and Design

Inasmuch as the lecturers do not support cross-disciplinary integration, it is somehow inevitable and necessary as is seen by their contradicting excerpts below:

“If for example if it can be possible can we in a way to support or develop something across faculties that would allow students to select electives across faculties, for example, a social work student can use art in therapy. Can they use art in the application of their therapy sessions? Perhaps it’s still a long way because they are very few who can integrate, hence we are producing a graduate that can be a philosopher, amusician etc”. **Lecturer 1**

Lecturer 1 went further to say:

“For a psychology or social work student, art can be used as a form of depression, rehabilitation and therapy”. **Lecturer 1**

“One of the students could play a musical instrument and sing and a student from social work brought very beautiful drawings that were displayed at the exhibition”. **Lecturer 2**

“Recently we hosted a dancing exhibition at the university and we had students who are from social work and music, not doing art but were doing well in terms of natural creative arts, they are not enrolled in the arts programme but we allowed them to showcase their creative work”. **Lecturer 3**

“Students should have the liberty to choose electives because the student can express himself/herself through drawing, and for example, the human settlement module does not suit the student’s purpose, potential, and skills development requirements”. **Lecturer 4**

“For the advantage of students, it might be possible to apply our learning areas across disciplines because we find that within our student’s body if someone is gifted in music, you know as a creative person, you could also be a painter, a writer, a poet, but can you express yourself in other forms as well. So I do support integration”. **Lecturer 5**

Finding: Some of the lecturers even advocate for students to be allowed to choose their electives as long as they are still within the same faculty and if they carry the same credits as the modules they want to bypass.

“If the institution is allowed by law, why not allow students to choose their electives as long as they carry an adequate number of credits, instead of letting students suffer from courses that they are less competent in whilst they could excel in other courses that carry the same credit. Instead of the student taking the human settlement module, that student should be able to take a drawing module as long as it carries the same credit”. **Lecturer 1**

“Within the faculty of social sciences, we are saying that the students should be given the liberty to choose their electives, not the majors”.
Lecturer 2

“Students should be given more room to explore and be allowed to do more modules as long as they carry the same credits needed to graduate”. **Lecturer 3**

Findings: The lecturers believe that allowing students to choose their electives will allow them to expand their horizons and explore new possibilities that will assist them in advancing their careers. Aside from that, having this independence permits them to investigate other topics that would otherwise be outside of the area of their study.

Implication: When students are given too much freedom of choice on choosing their electives, the art and design might end having a lot of students who are registered for their qualification but attending predominantly non arts course.

4.8 Summary

Even though the notion of knowledge integration is not applied on paper, the lecturers do apply it from time to time, although at a very insignificant level. It appears from the results that they are aware of and recognize the value of Knowledge Integration, but because it is not included in the University's operation regulations, they are unlikely to put this theory into practice. Furthermore, because the majority of these lecturers were trained using the traditional system, their knowledge and experience of knowledge integration are extremely limited, and there is a pressing need for effective training of these lecturers to be provided.

Findings revealed that there is some form of knowledge integration within the department, especially in drawing, painting, and printing which is seemingly not formalised but acknowledged in the data obtained from this study. Furthermore, they showed that there is some form of inter-disciplinary collaboration in the Art and Design department echoed by the sentiments of various participants. This implies that lecturers at university X could achieve more results if they were to fully consider to use knowledge integration within the knowledge disciplines they offer. Further Knowledge integration is formalised within the art and design department. Lecturers see a need to revise the art and design curriculum, to benchmark it with other institutions of higher learning. There is an element of selective knowledge integration they feel should take place. The revision of their curriculum might take time to effect as they also depend on their faculty.

Finally, the lecturers believe that allowing students to choose their electives will allow them to expand their horizons and explore new possibilities that will assist them in advancing their careers. Aside from that, having this independence permits them to investigate other topics that would otherwise be outside of the area of their study. This implies that, when students are given too much freedom of choice on choosing their

electives, then art and design might end up having a lot of students who are registered for their qualification but attending predominantly non-arts courses.

CHAPTER 5: Discussion of Findings

5.1 Introduction

The previous chapter presented a detailed analysis of results obtained from this phenomenological case study. This chapter discusses the findings in light of the theoretical framework that served as the study's foundation. The topics will be reiterated, followed by a discussion that includes references to both current relevant literature and theoretical framework. Knowledge Integration overcomes the fragmentation of subject knowledge. It emphasizes the transfer of abilities across fields of knowledge rather than an exclusive focus on subject knowledge. Knowledge Integration promotes task-orientated and collaborative learning and it serves as the framework for a more open-ended and adaptive curriculum, which curriculum designers should employ in University X. This study explored the perceptions of Art and Design lecturers on knowledge integration in Art and Design. The research questions guiding this study were:

1. What are the perceptions of Art and Design lecturers on knowledge integration in the subjects offered in their undergraduate curricula?
2. How do Art and Design lecturers perceive the application of the knowledge integration principle across institutional faculties' curricula?

5.2 Lecturers are comfortable in artificial disciplinary silos

The results of this study show that lecturers are content to present knowledge domains in artificial silos, as their curriculum requires. This is consistent with findings of Cohen (2002) and Booi (2017). Even though the curriculum for 21st-century graduates considers models that promote the integration of interdisciplinary courses across multiple faculties, the curriculum of the institution chosen for this study appeared to lead to separate disciplines being taught and learned in silos (Cohen, 2002; Booi, 2017). To guarantee that the Art and Design curriculum is infused and integrated across many knowledge domains, Art and Design lecturers need to learn

to collaborate with other curriculum professionals to assist them with possible ways which add value to curriculum design and development (Catterall, Dumais & Hampden-Thompson, 2012).

Learning and teaching at University X, for example, is still driven by the curriculum that encourages disciplines to be taught in silos rather than encouraging knowledge integration within disciplines offered in the Art and Design department and as well as across departments of the same faculty of Humanities and other faculties within the institution of higher learning (University X). Numerous higher education teachers and academic staff have turned to digitally enhanced Professional Learning Networks (PLNs) for situational learning that can help them advance in their many professional responsibilities (Trust, Carpenter & Krutka, 2017). Collaboration across disciplines can give additive teaching-learning benefits by bringing together knowledge, information, and training from diverse perspectives. The participants from this study expressed that they cannot engage in cross-disciplinary integration because they have huge workloads, if they divert from the current ways of doing things and make use of enhanced Professional Learning Networks (PLNs), their workload could be significantly made easier.

The findings of this study demonstrate that some lecturers are still hesitant to participate in knowledge integration, particularly from other disciplines, which is comparable to the findings of a study conducted by (Booi, 2017) and Booi and Khuzwayo (2018). Booi's research (2017) showed on the perceptions and viewpoints of Life Sciences teacher lecturers on knowledge integration in the South African Department of Higher Education and Training's recommended curriculum. The results from Booi (2017) showed some hesitancy from the lecturers in integrating knowledge. The above study showed that lecturers were not keen to teach content knowledge in teacher training across different knowledge domains but insisted on teaching science education in their fields of specialisation instead of integrating knowledge in order to produce the envisaged teachers for the 21st century.

As knowledge integration is not included in the university curriculum, lecturers are denied the opportunity to learn about the inter-relatedness and inter-connections

across subject material areas in other disciplines (Booi & Khuzwayo, 2019). According to Killen (2015), without the support of a well-trained lecturer, students cannot be expected to integrate information inside and beyond academic boundaries. According to Booi and Khuzwayo (2018), knowledge fusion in teacher education establishes a paradigm for teaching and learning at universities, which is a way of connecting teacher education with school curriculum development. According to the notion, knowledge integration demands training abilities and competence across traditionally disparate subject content.

5.3 Challenges to inter-disciplinary and cross-disciplinary integration

Despite the benefits of knowledge integration in Art and Design, several lecturers stated that there are certain drawbacks, such as going off-topic or losing focus on the subject matter. Furthermore, not all lecturers are cooperative in an interdisciplinary setting, making the entire process difficult. Lecturers perceive knowledge integration as beneficial to their teaching, however, university programmes make it difficult to work as teams because of the prescribed programmes they must follow.

For example, time may not be sufficient to integrate practical and theoretical subjects or *visa versa*.

Effective collaboration has problems that must be stated and understood by the parties to generate a usable learning result (Miller, et. al. , 2010). According to Ragoonaden and Mueller (2017), Art and Design disciplines can be utilized to support other disciplines by integrating knowledge utilizing various curriculum design and development methodologies. Integrating curricula without a thorough analysis might lead to inconsistencies and pitfalls in the curriculum during a longitudinal evaluation, necessitating debate among the active partners (Ahmad et al, 2016).

5.4 Benefits of infusion of art subjects with other disciplines

Furthermore, the infusion of subjects or electives within the same faculty is associated with several favourable results, which is in line with the observations of the research conducted by Booi (2017). Participants in this research stated that allowing students in for example Social Work, Psychology, Criminology, and other related fields to choose art modules as part of their electives would benefit them in their future careers, such as art therapy, forensic art, and even social work interventions. This infusion already exposes them to a variety of fields which are essential for their careers. For example, a psychology student could benefit from art classes since art therapy is a type of psycho-corrective interaction that involves the use of various artistic mediums to help a patient communicate their emotions. It aids in the development of “emotional needs, self-acceptance, self-esteem, anxiety reduction, cognitive needs, and social skills” (Hoffmann, 2016: 45). Furthermore, studies show that Art therapy can be effective in nurturing creativity and imagination, empathy, and pro-social attitude, and, most importantly, demonstrates that artistic abilities have no bearing on the creative process (Hoffmann, 2016).

Furthermore, the incorporation of art modules such as sketching and design might be beneficial in criminal and legal jobs, particularly in producing evidence and conducting investigations (Geberth, 2020). A crime scene sketch is a valuable tool for recording investigation facts. It is a permanent record that provides extra information that would be difficult to gather just from photographs and notes taken at the crime scene. A crime scene sketch depicts the general layout of a crime scene as well as the relationships between evidence and its surroundings jury (Geberth, 2020). It can be used to reveal the path and the distances travelled by a suspect or victim. It can be used to question witnesses and criminal suspects. Throughout the trial, the crime scene map connects witness testimony and serves as a tool for transmitting reference and orientation points to the prosecutor, judge, and jury (Geberth, 2020).

5.5. The use of Art and Design in the teaching and learning processes of other subjects

According to Deng, et. al. (2019), the arts can help students understand specific concepts in other subjects, particularly science and mathematics. Students studying scientific fields can benefit from art and design in areas such as diagrams, sketches, and illustrations, which are commonly used to clarify scientific concepts. According to a study done by Phiri and Ndhlovu (2020), 30 of the 34 teachers and lecturers interviewed had positive attitudes toward incorporating art and design into the teaching and learning of mathematics. These respondents believed that incorporating art and design into the teaching of mathematics would encourage students to enjoy mathematics by allowing teachers and students to be creative, and innovative, learn to improvise, and make mathematics more interesting and practical, thereby improving student performance.

5.6. Summary

Integration of knowledge is manifested in various forms such as a coherence-building learning process involving the acquisition and interconnecting of knowledge of different types namely theoretical and practical even from diverse domains, which constitute educational expertise of a teacher or professional knowledge base for a specialist. For teachers, these include subject knowledge, pedagogical knowledge, pedagogical content knowledge, and technological knowledge needed for teaching and learning. In addition, knowledge integration refers to the professional and effective use of numerous types and fields of knowledge to educate effectively.

CHAPTER 6: Conclusions and Recommendations

6.1. Overview of the study

The study explored the perceptions of Art and Design lecturers on knowledge integration in Art and Design. The research questions guiding this study were:

3. What are the perceptions of Art and Design lecturers on knowledge integration in the subjects offered in their undergraduate curricula?
4. How do Art and Design lecturers perceive the application of the knowledge integration principle across institutional faculties' curricula?

Chapter 6, provides the conclusions made in this study followed by limitation recommendations and further research emanating from the study.

6.2. Conclusions

To answer both questions, interviews were conducted on a face-face basis with the lecturers who are in the Art and Design department at the University X. The lecturers perceive knowledge integration as a useful instrument that can equip students with adequate skills that can make them competitive in the market world. These skills allow the students to be flexible and be able to meet the demands of many jobs or positions without struggling too much as would have been the case with discipline-based studies. Discipline based studies hold in the risk of people who are harnessed to think and act in a specific way and anything outside of that proves to be a problem, which becomes a problem in terms of production.

In addition, the application of knowledge integration will help produce graduates who can create employment instead of looking for employment. The exposure to different areas of studies harnesses skills which can enable an individual to think critically and diversely to the point of taking all those different aspects into formulating brilliant business ideas that can provide both independence and employment to several people. Knowledge integration breaks the barriers that are offered by

discipline-based studies, including limited thinking capacity. Knowledge integration widens the horizons of the graduates.

On the other hand, this broad and wide thinking that is produced through knowledge integration in spheres of learning may pose a threat to employment issues in that, if one is very knowledgeable, that person can perform several tasks at the workplace, hence the employer would choose one person instead of two to do the job. For example, instead of employing two lecturers to teach art therapy in psychology and drawing in art and design, the institution may decide to employ only one lecturer who can teach both subjects, which is detrimental to employment issues, especially in South Africa.

Although the lecturers at university x understand what knowledge integration entails, their application of this notion is restricted. These lecturers, on the other hand, see the value in integrating information from other fields and are advocating for curriculum reform at this university. Knowledge Integration overcomes the fragmentation of subject knowledge. It emphasizes the transfer of abilities across fields of knowledge rather than an exclusive focus on subject knowledge. Integration promotes task-oriented and collaborative learning, and it serves as the framework for a more open-ended and adaptive curriculum, which curriculum designers should employ in all learning institutions.

It was found that students with fragmented ideas tended to dissociate new concepts and soon forget what they have learned. Students who broaden and deepen their thoughts were ready for investigative assessments that involved making conclusions by linking classroom, personal, and daily concepts. Promoting knowledge integration is the first step in establishing a firm foundation for lifetime learning, allowing students to examine and improve their understandings after finishing degree programmes.

However, for knowledge integration to be particularly effective, lecturers must avoid confusing themselves and their students at all costs. Individuals are generally responsible for integrating information across domains, courses, and practical training; hence, lecturers, lecturers, and other educational experts commonly struggle with

knowledge integration. Thus, by paying great attention to knowledge integration, the effectiveness and quality of programmes in higher education might be enhanced.

6.3 Limitations

The limitations of the study were that it was conducted at a historically black university that offers Arts and Design curriculum that likely to be outdated and not benchmarked with curricula from other universities. Therefore, the findings cannot be generalised to other institutions with different curriculum designs in the field of Art and Design. Although the findings of the study could be used as a springboard to further research in knowledge integration of Art and Design disciplines, the sample size from which data was collected limited the generalisation of such findings of this study to other situations other than then University X.

Furthermore, data collection was done during Covid 19 pandemic where both the researcher and participants were worried of possible infections as face to face interviews were planned. Covid 19 safety protocols were observed and maintained in all face to face engagements. Participants were reminded of their right to pull out of the study or if alternative means of conducting interviews were preferred, the researcher kept an open mind on this manner (like online interviews). Even these options were suggested, participants still opted for face to face interviews.

6.4. Recommendations

The study recommended that:

- knowledge integration be practised not only in art and design but in all learning spheres to improve learner performance;
- the curriculum in institutions of higher learning to be revised and modified to meet the demands of this era; and
- the principle of knowledge integration should be applied in all university programmes and including in teacher education.

- teachers and lecturers should be adequately trained in knowledge integration so that they can apply this to produce students and graduates ready for the technologically driven job markets

6.5. Recommendations for further studies

From the conclusions made, it has been recommended that knowledge integration should be considered an important aspect when designing a new curriculum. Further research can be done to provide more knowledge on how these integrations can be achieved in conventional universities.

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APPENDICES

Appendix A: Ethical Clearance



**Cape Peninsula
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creating futures

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Office of the Research Ethics Committee
Faculty of Informatics and Design
Room 2.09
80 Rowland Street
Cape Town
Tel: 021-469 1012
Email: ethics@ccof.cput.ac.za
Secretary: Mziyanda Ndaba

16 August 2021

Ezile Ludude
c/o Department of Design
CPUT

Reference no: 212148796/2021/24

Project title: Lecturers' perceptions on training Arts and Design students across different knowledge domains using the principle of knowledge integration

Approval period: 16 August 2021 – 31 December 2022

This is to certify that the Faculty of Informatics and Design Research Ethics Committee of the Cape Peninsula University of Technology approved the methodology and ethics of Ezile Ludude (212148796) for the MTech Graphic Design.

Any amendments, extension or other modifications to the protocol must be submitted to the Research Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.



A/Prof I van Zyl
Chair: Research Ethics Committee
Faculty of Informatics and Design
Cape Peninsula University of Technology



Appendix B: Letter of Consent



Introductory letter for the collection of research data

02 September 2021

Lecturers' perceptions on training Arts and Design students across knowledge domains using the principle of knowledge integration

The lack of knowledge integration breeds students who face a lot of challenges in transitioning from a student to a working-class individual that have critical thinking and quick decision-making abilities. There is a need for a progressive and responsive curriculum that should produce students who meet the job market or the requirements of Art and Design industry. The research that was conducted by Ahmad, Khaidzir, Azizan, Kadir, Zainul Ariffin, Anwar & Wan Mazlina (2014) concluded that universities must realize and take serious action in providing enough knowledge to students on various disciplines and skills that will meet the requirements of public and private sectors.

The system of specializing in those specific certain subjects without integrating knowledge creates a certain type of people that are harnessed to think specifically in a certain way, struggling to think outside of the box. Tertiary education is supposed to arm individuals with skills and abilities to fit the job market (Mbataru, 2015). However, quality university education has dropped over at macro-economic level. Improving the curriculum through initiatives such as knowledge integration has a positive effect on the gross domestic product and can also help the African continent to catch up with the rest of the world through technology, (Savage et al., 2011; Ragoonaden & Mueller, 2017; Knight, 2018).

Scholars such as Barghi, Zakaria, Hamzah, Hashim & Hashimah (2017), came up with a view that supports a need to integrate knowledge offered from Art and Design disciplines which supports inclusion of various subjects that will help in producing graduates that are able to map and express their art in trying to respond to the current needs in education and other sectors. Separating Art and Design from other university subjects that are outside of the design field could stifle students' abilities to engage in discourses such as Education for sustainable development, Indigenous Knowledge Systems, which are topical at this stage (Barghi et al., 2017).

The supervisor(s) for this research is/are:

Principal Supervisor: Dr Kwanele Boo

Co-Supervisor: Doctor Alettia Chisin

In order to meet the requirements of the university's Higher Degrees Committee (HDC) the student must get consent to collect data from organisations which they have identified as potential sources of data. In this case the student will use interviews, traditional and online surveys, observational field research and a pre-test and post-test to gather data.

If you agree to this, you are requested to complete the attached form (an electronic version will be made available to you if you so desire) and print it on your organisation's letterhead.

For further clarification on this matter please contact either the supervisor(s) identified above, or the Faculty Research Ethics Committee secretary (Ms V Naidoo) at 021 469 1012 or naidoove@cput.ac.za.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Kwanele Booi', enclosed in a thin black rectangular box.

Dr Kwanele Booi (booik@cput.ac.za)

Cape Peninsula University of Technology
PoBox 652 Cape Town 8000, South Africa

Appendix C: Letter of Permission

University of Fort Hare
OFFICE OF UNIVERSITY REGISTRAR
Alice (main) Campus:
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University of Fort Hare
Together in Excellence

01 October 2021

Mr E Ludude
Cape Peninsula University of Technology
Faculty of Informatics and Design
Email: ezziud@gmail.com

Dear Mr E Ludude,

Approval from the Registrar's Office to Conduct Research

In accordance with the University of Fort Hare Research Ethics Policy and Practice, I hereby grant you permission to conduct research relating to your study entitled "Lecturers' perceptions on training Arts and Design students across knowledge domains using the principle of knowledge integration".

As per the documentation presented to me, the study aims to establish the role played by art and design curriculum specialists as custodians of university curriculum to ensure that integration of knowledge across domains is taken into account when training art and design students.

In keeping with the Covid-19 rules and regulations, data relating to this study will be collected remotely through WhatsApp, Zoom and other forms of communication which are virtual.

Kind regards



Mr. EN Zuma
University Registrar

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Appendix D: Instruments

Instruments

1. Purpose of these data collection instruments

Data will be collected by means of in-depth interviews and document analysis, which will assist the researcher in the collection of feedback with regards to the subject matter of this research project: Lecturers' perceptions on training Arts and Design students across knowledge domains using the principle of knowledge integration.

Confidentiality and anonymity

- The researcher will use semi-structured means of individual interviews, which according to Gray (2004) builds trust and maintains confidentiality between the participants and the researcher.
- The researcher will make teachers aware of the rationale of the study so that they conduct their lessons freely. After the study the researcher will send teachers the transcribed data so that they may check if the researcher information gathered is correct.
- The researcher will make sure that the rights and welfare of the participants in the research are protected. Therefore, participants will be asked to provide all the necessary information without hesitation.

1. Participants will be urged to sign the consent form attached hereto for ethical purposes. Please attach the consent letter attached provided for agreeing to participate in this study.

Your willingness to participate and provide required information is highly appreciated

Researcher: Mr E. Ludude _____ Participant: _____

Supervisor: Dr K. Booi _____ Co-supervisor: Dr A. Chisin _____

D1: Semi structured interviews

What are the perceptions of Art and Design lecturers on knowledge integration in the Art and Design curricula in selected South African Universities?

1. What do you understand about knowledge integration in general and in Art and Design perspective?
2. What is your perception about integrated knowledge for students?

What are the perceptions of Art and Design lecturers on knowledge integration in the subjects offered in their curricula?

1. How would you score yourself on integration disciplines within Art and Design curriculum, 1-10? Explain your answer.
2. What is your perception about knowledge integration within Art and Design subjects, Justify your answer?
3. Have you ever collaborated with other subjects' lecturers within Art and Design curriculum? Explain you answer.

How do Art and Design lecturers perceive the application of the knowledge integration principle across institutional faculties' curricula?

1. Do you think there must be a universal approach in application of knowledge integration across the institutions of higher learning? Explain your answer.
2. What is your view about integration non arts subjects to lesson planning? Explain your answer.
3. Have you ever collaborated with other subjects' lecturers outside Art and Design curriculum? Explain you answer.

Appendix E: Proof of Language and Technical Editing

Proof of Technical and English language Usage Editing

This is to certify that the Masters Dissertation dissertation

**LECTURERS' PERCEPTIONS OF TRAINING ARTS AND DESIGN STUDENTS ACROSS
KNOWLEDGE DOMAINS USING THE PRINCIPLE OF KNOWLEDGE INTEGRATION**

BY

LUDUDE EZILE

(212148796)

has been technically edited and proofread for English Language usage

Date: 17 June 2022



M. Moyo

(Cert Ed, B.Ed, Mphil Ed, BSc (Hons) Infor Sys, MSc Infor Sys, PhD Infor Sys)

Appendix F: Turnitin Report

The screenshot shows the Turnitin Feedback Studio interface. The main document area displays the title "LECTURERS' PERCEPTIONS OF TRAINING ARTS AND DESIGN STUDENTS ACROSS KNOWLEDGE DOMAINS USING THE PRINCIPLE OF KNOWLEDGE" by Eziile Ludude. The document is a dissertation for a Master of Technology in Design, supervised by Dr. Kwanele Boozi and co-supervised by Dr. Alettia Chisin, dated 24 June 2022. The sidebar on the right shows a "Match Overview" with a total similarity score of 13%. The matches listed are:

Rank	Source	Similarity
1	hdl.handle.net (Internet Source)	1%
2	scholar.lib.vt.edu (Internet Source)	1%
3	repository.nie.edu.sg (Internet Source)	1%
4	Submitted to University... (Student Paper)	1%
5	www.researchgate.net (Internet Source)	<1%
6	Submitted to University... (Student Paper)	<1%
7	uir.unisa.ac.za (Internet Source)	<1%
8	ujcontent.uj.ac.za (Internet Source)	<1%
9	files.eric.ed.oov (Internet Source)	<1%

The screenshot shows the Turnitin user interface. The top navigation bar includes the Turnitin logo and user information: Moses Moyo | User info | Messages (7 new) | Instructor | English | Community | Help | Log out. The main content area shows the assignment "Thesis draft 2" with a similarity score of 13%. Below this, there is a table of submitted papers:

Submit File	Author	Title	Similarity	Grade	Response	File	Paper ID	Date
<input type="checkbox"/>	Eziile Ludude	LECTURERS' PERCEPTIONS OF TRAINING ARTS...	13%				1859163446	19-Jun-2022