A multiple case design for the investigation of information management processes for work-integrated learning

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The different learning offerings provided by various faculties have unique and diverse procedures which justify different work-intgrated learning (WIL) approaches. A lack of structure regarding the information management for WIL across departmental silos, results in different processes being followed. Frameworks for the information management of WIL have been developed at international higher education institutions over long periods of time, which have evolved into good practice benchmarks. In order to answer the research question 'how can information be managed to facilitate the WIL process for various faculties at a higher education institution?', three higher education institutions were studied, two in America and one in South Africa. The primary focus of these multiple-case studies was to determine how information can be managed to facilitate the WIL process for various faculties at a higher education institution. The research approach and design of the study is discussed in terms of the methodological contribution.

Keywords: Work-integrated learning, information management, qualitative research, triad partnership, multiple-case design

The rationale of this article is to explain and justify the selection of a multiple-case design using a qualitative research paradigm to address the research question 'how can information be managed to facilitate the work-integrated learning (WIL) process for various faculties at a higher education institution?' To answer this research question it is not only important to understand the current information management (IM) process used for WIL, but also understand other trialled and tested IM systems used for WIL. According to Cresswell (2013) a multiple-case design explores a real-life multiple bounded system through detailed, in-depth data collection involving multiple sources of information. Through using a multiple-case design a wider exploration of the research question and theoretical evolution will enable the researcher to understand the differences and similarities of information management of the WIL process between the the three multiple-cases studied (Eisenhardt & Graebner, 2007). This enables the researcher to address the complex issues that need to be explored in-depth, and to understand the behavioral conditions of such a system, based on comments inputs and interpretative perspectives of the participants. Using a multiple-case design, a holistic and in-depth explanation of information management of WIL allows the researcher to go beyond the quantitative statistical results of other research methods; to understand the behavioral conditions through the perspectives of the participants who are closely involved in the information management of the WIL process (Zainal, 2007).

The contexts for the three cases studied, were the University of Johannesburg (UJ), a comprehensive university in South Africa (SA), the University of Cincinnati (UC), and the Northwestern University (NWU) in Illinois in the USA. These two international higher education institutions (HEIs) were selected because of their involvement with co-operative education (co-op) since the early 1900s. Co-operative education has developed over long periods of time at each of the three higher education institutions and was included in this multiple-case design, because of their leading role in this domain. These higher education institutions are extensively engaged in the cooperative education environment and have shaped the most effective working model based on experience and decades of development.

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The continuous development resulted in the structuring of a centralized co-operative education managed solution, based on good practice frameworks for information management for co-operative education internationally. The multiple-case design was the best research design for this study, as it allowed the researcher to use best practices from the two international universities in order to develop a conceptual framework for the University of Johannesburg.

The major benefit of using a multiple-case design was that multiple perspectives of the individuals within the triad partnership could be gained. These were 1) the higher education institution lecturer and the higher education institution administrator/WIL coordinator, 2) the industry liaison and the industry mentor, and 3) the student and the student administrator/WIL in the WIL process. The primary focus was to determine how information can be managed to facilitate the WIL process for various faculties at a higher education institution.

In the next section a case study of the use of multiple-case studies for WIL research will illustrate, with examples, links to the different facets of the multiple-case design. The worldview that guided this investigation influenced not only the choice of method, but also ontologically and epistemologically underpinned the researcher's fundamental thoughts. The choice of philosophy, research approach, time dimensions, the method of data collection together with the processes of recording and data analyses are described to assist other WIL reserachers who may want to use this methodology within their own contexts.

ONTOLOGICAL ASSUMPTIONS

Ontology frames our philosophical question, of how we make sense of phenomena. With regard to this study an interpretivist approach was used, in order to make sense of the information management for WIL process. The problem being researched was influenced by the perspective of the participants, (*viz* those experiencing the phenomenon); thus the interpretation and reporting thereof, required an interpretivist approach to the research.

According to Daymon and Holloway (2011) interpretive researchers, aka interpretivists, are not interested in predicting behavior, but rather interpret human understanding of individual experiences. Interpretivists base their interpretation on multiple realities and truths that can change, because individuals interact socially, which result in multiple realities (Daymon & Holloway, 2011). In this study an empathic understanding of how the triad partners felt and interpreted their experiences regarding the management of information in the WIL process, was done through interpretivism. According to Rubin and Babbie (2013) interpretivists focus on gaining an empathic understanding of how people feel inside; interpreting experiences, feelings and seeking reasons for their behavior.

The triad partners' interpretation and sharing of experiences were based on the feelings and interpretive arguments presented by the interviewees that were the participants of the study. Myers (2009) argues that an interpretive study focuses on the complexity of human sense-making as the situation emerges and attempts to understand phenomena, through the meanings that people assign to them.

The subjective interpretation of this study relates to the psyche of the higher education institution (HEI) lecturer and industry mentor, as influenced by colleagues and sub culture groups, within their diverse environments. It is not about what the higher education institution lecturer and industry mentor experienced, but how these shared experiences were discussed with the interviewer. According to Perri and Bellany (2012) subjective interpretations of people's lives and social interaction frames and

influences people's thought processes. The objective interpretation related to how higher education institution lecturers and industry mentors interpreted the sharing of information, not from a subjective perspective, but from an objective perspective. This included the feeling and perception of the group and not just the individual. It is important to distinguish between primary and secondary interpretation.

The primary interpretation was when the higher education institution lecturer and industry mentors in the triad partnership provided feedback and shared their experience of the information management for WIL process. This sharing of information was done by way of speech, written feedback and body language. According to Perri and Bellamy (2012) sharing of information by participants by way of speech, text or behavior, which is guided by their experiences within their world, is referred to as primary interpretation.

The effectiveness of the information gathering process with the triad partners, was also based on the secondary interpretation phase principles, which required optimal levels of observation pertaining to speech, written word and body language. The interview phase was also complemented by the additional interview criteria which allowed the interviewer, for example, to observe the body language of the interviewee. This observation with the appropriate questioning can secure more critical information because of an extended interview. According to Perri and Bellamy (2012) the accuracy of secondary interpretation is based on the standard of interviewer, to fully interpret and capture the essential structure and details of the interviewees' experiences, as shared in an interview.

The emic perspective in this study relates to cultural categories which can be interpreted by the interviewee. From an etic perspective the interviewer's scientific perspective does not make sense to the interviewee, however, the interpretation does make sense to the interviewer. To address the etic perspective of the interviewer, the interviewer analyzed the information provided during the interview – should the interviewee's responses to the questions not address the concerns of the interviewer, then more clarifying questions were posed. Perri and Bellamy (2012) argue that there is a close relationship between primary and secondary interpretations, although there is a clear distinction between emic and etic interpretation. These ontological assumptions are applied through the interpretive paradigm and philosophy, influencing and linking to the epistemological, methodological and axiological assumptions discussed next.

EPISTEMOLOGICAL ASSUMPTIONS

In terms of the epistemological assumptions this study did not focus on the generalization of information and prediction of human behavior, rather it focused on the knowledge generated from the triad partners' experiences of the information management for WIL process. This assumption focuses on human knowledge and the origin thereof within the "relationship between the knower and the known" (Klenke, 2008, p. 16). This is guided through the understanding of the perceived knowledge from the triad partners involved in the information management for WIL. This study focused on the specific phenomenon of the triad partnership involved in the management of information for the WIL process at the higher education institutions. The multiple cases were investigated to determine if the good practices of University of Cincinnati and the the Northwestern University in Illinois could fit into the University of Johannesburg environment to streamline the information management for WIL. In order to thoroughly investigate the good practices of the institutions as well as the current information management for the WIL process at the University of Johannesburg, the methodological assumptions are explained next in further detail.

METHODOLOGICAL ASSUMPTIONS

The methodology assumed in this study, focused on the process flow pertaining to the data collection, interpretation, evaluation and the presentation of the results. Through this research the experience of the triad partners involved in the information management for WIL was studied. Also, the influences from both technical and personal experiences of the triad partners were valued. Klenke (2008) stated that methodology pertaining to philosophical issues relates to epistemology (cf previous section).

RESEARCH CHOICE

Qualitative research aims to understand the phenomena in context-specific settings, such as a "real world setting, where the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2002, p. 39). The triad partnership's involvement in information seeking and providing information in the WIL process encapsulates the phenomenon being studied.

The researcher used the data collected through three case studies to explore the involvement of higher education institution lecturers, industry mentors and students in the information management for WIL process. They were included in semi-structured individual interviews, group interviews and open-ended questionnaires. The four academic departments at the University of Cincinnati involved in the study were: Civil and Environmental Engineering, Architecture, Construction Management, and Information Systems. At the the Northwestern University in Illinois the three academic departments involved were: Analytical and Bio Analytical Chemistry, Electrical Engineering and Mechanical Engineering. The data collection took place in three phases as explained in Figure 1.
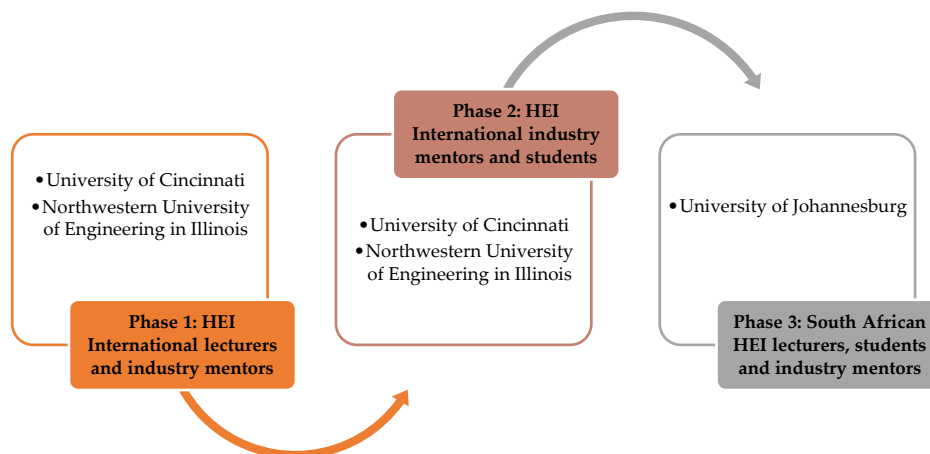

FIGURE 1: Phases of the data collection for the qualitative multiple-case design process for this study (Brink, 2014, p. 51)

Phase 1: Higher Education Institution International Lecturers and Industry Mentors

In the first phase of the study, higher education institution lecturers from the University of Cincinnati and the Northwestern University in Illinois involved in the information management for WIL process participated in this study. At the Northwestern University in Illinois industry mentors were involved in interviews to investigate the current feedback processes for information management for WIL. The University of Cincinnati and the Northwestern University in Illinois in the USA were visited in person; however, the industry partners where the students were working were spatially distributed at various

locations across the USA, hence it was impossible to conduct semi-structured interviews with industry or to conduct group interviews with the students. Therefore, the second phase of this study was adopted using an open-ended questionnaire. This questionnaire formed part of the student and industry mentor evaluation report to the University of Cincinnati and the Northwestern University in Illinois at the end of their WIL term. Having the questionnaire included in the evaluation report assisted in achieving higher response rates.

Phase 2: Higher Education Institution International Industry Mentors and Students

This part of the study was to determine whether the experience of the students and industry mentors was effective using the current feedback system that was in place for the information management for WIL. The group of respondents in this case included WIL students and industry mentors at the University of Cincinnati enrolled within the mentioned departments. At the Northwestern University in Illinois semi-structured interviews with industry mentors and faculty advisors were carried out and open-ended questionnaires were sent to students from the participating departments.

Phase 3: South African Higher Education Institution

The third phase of the study focused on seven identified University of Johannesburg faculties and 16 academic departments involved in the Information Management for WIL. The academic departments spread across faculties involved were; Electrical Engineering, Mechanical Engineering, Mining, Bio Technology, Food Technology, Analytical Chemistry, Architectural Technology, Clothing, Curriculum and Instruction, Public Relations and Communication, Tourism, Hospitality, Marketing, Radiography, Emergency Medical Care, and Environmental Health.

Higher education institution lecturers and industry mentors involved in information management for WIL were included in semi-structured individual interviews. Students from the departments involved in the WIL process took part in group interviews. In this phase the current variety of processes was investigated in the faculties and departments related to the WIL process. This phase of comparative analysis allowed the identification of the good practices for WIL. The development of data collection for Phase 3 was developed as a cross-cutting analysis to streamline the diverse processes at a higher education institution in the South African context.

This was due to the interviewer investigating the current feedback system and process at two international higher education institutions and securing the inner experiences of participants. The inputs from the two institutions good practices assisted in developing a framework for a comprehensive higher education institution such as the University of Johannesburg. This framework was used in collaboration with the complex combination of subjects from a South African perspective. Qualitative research was chosen to understand the involvement of the higher education institution lecturer, industry mentors and students in the information management for WIL process from an in-depth point of view.

Following on the research choice, it was determined how a current information management process could be developed and adjusted for a higher education institution in a South African environment.

RESEARCH APPROACH

The research approach was a set of procedures to answer the research question. The appropriate reasoning for this study is the retroductive reasoning. According to Christ (2010, p. 663) retroductive

analysis focuses on inductive and deductive reasoning and should be done to identify and verify the best solution based on participants learning experiences.

The deductive reasoning part was based on the information management for WIL process that was already in place at the University of Cincinnati and the Northwestern University in Illinois. The identified partners and structure as shown in Figure 2 was in place and gaps in this information management for WIL process were identified. The information management for WIL process had to be adjusted in order to be applied in a South African higher education institution. Deductive reasoning of the study started with a theoretical system, then developed operational definitions of the proposals and concepts of the theory. It then matched these theories to the empirically developed body of data. With deductive reasoning it needed to identify data which matched the theory and allowed the classification of statements being definitively true (Perri & Bellamy, 2012; Teddlie & Tashakkori, 2009).
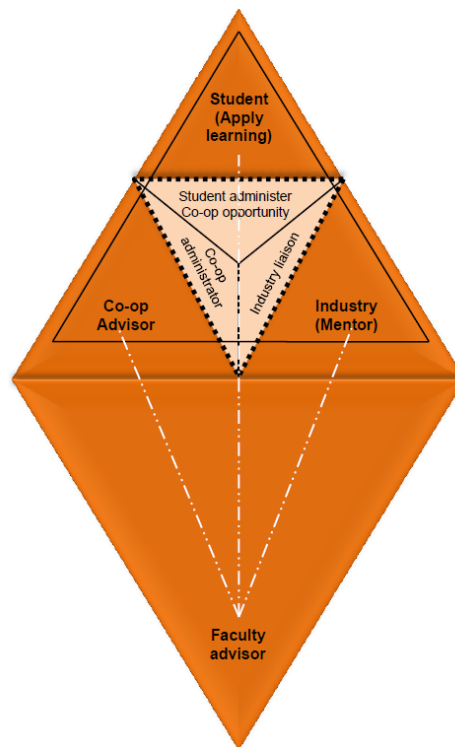
FIGURE 2: Identified partners in the information management for cooperative education process at the University of Cincinnati and the Northwestern University in Illinois (Brink, 2014, p. 70)

The inductive reasoning part was through the semi-structured individual interviews, group interviews and open-ended questionnaires. During the interviews information was gathered, analyzed and interpreted to identify good practices at the two universities in the USA. These good practices were analyzed to determine which of these could be applied to better facilitate the information management for WIL process at the University of Johannesburg and to determine if what was learned at the international higher education institutions could result in a cross-cutting process, streamlining the diverse processes of the University of Johannesburg.

With the use of the deductive and inductive reasoning certain gaps were identified. The retroductive reasoning was used to address these gaps and identify alternative solutions which may address the identified gaps. The identification of gaps, with the use of deductive and inductive information, resulted in the development of the information management system with a WIL framework for the University of Johannesburg.

TIME DIMENSIONS

The time dimension was a cross-sectional study focused at a specific point in time. It should therefore be pointed out that changes in the WIL process at any of the institutions could mean that the suggested recommendations based on the findings might have to be reviewed. The advantages of conducting cross-sectional research are that on a practical level the application of the recommendations would be relevant at that specific point in time.

METHODS AND PROCESS OF DATA COLLECTION

As indicated in the three phases in Figure 1, the first two phases consisted of the two USA universities and the third phase at the University of Johannesburg. These three institutions made up the three cases of this multiple case design. During phase 1 and the first part of phase 3 semi-structured individual interviews took place at all three universities. During phase 2, personnel at the USA universities were provided with open-ended questionnaires. Part of the third phase included group discussions which took place within the University of Johannesburg. The methodological framework in Figure 3 shows the process and methods of data collection.

Semi-Structured Individual Interviews

The data collected for phase 1 and the first part of phase 3 took place by way of semi-structured interviews. The reason for using this method is best described by De Vos, Strydom, Fouché and Delport (2005, p. 297), namely "to gain a detailed picture of a participant's beliefs about, or perceptions or accounts of, a particular topic". Semi-structured interviews are the most appropriate when the interviewer has to dig deeper in search of critical comments, design requirements, and other insights (Lazar, Feng & Hochheiser , 2010; Wilson, 2010). The semi-structured approach allowed respondents some latitude and freedom to talk about what is of interest or importance to them allowing flexibility in the interview process (Hesse-Biber & Leavy, 2011). During the sharing of information new concepts and information may emerge relevant to the study. The interviewer is then be able to ask the interviewee to clarify or expand on these aspects in more detail.

The interview process may be considered a conversation with a specific purpose. It is important for the interviewer to project an attitude that whatever the participant was saying is of value and useful (Berg 2009; Marshall & Rossman, 2011; Merriam, 2009).
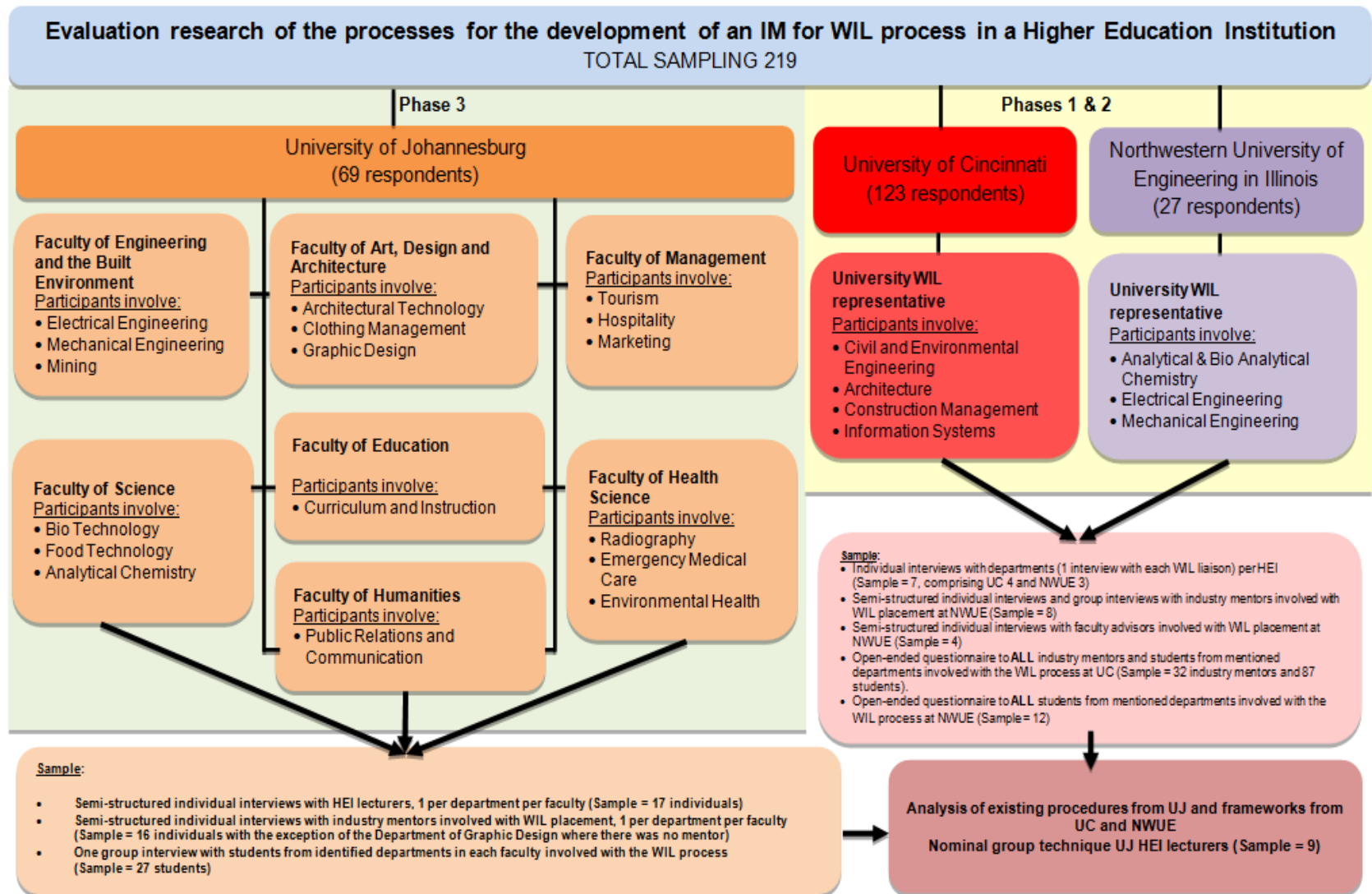
Evaluation research of the processes for the development of an IM for WIL process in a Higher Education Institution

TOTAL SAMPLING 219

Phase 3

University of Johannesburg
(69 respondents)

Faculty of Engineering and the Built Environment
Participants involve:
• Electrical Engineering
• Mechanical Engineering
• Mining

Faculty of Art, Design and Architecture
Participants involve:
• Architectural Technology
• Clothing Management
• Graphic Design

Faculty of Management
Participants involve:
• Tourism
• Hospitality
• Marketing

Faculty of Science
Participants involve:
• Bio Technology
• Food Technology
• Analytical Chemistry

Faculty of Education
Participants involve:
• Curriculum and Instruction

Faculty of Health Science
Participants involve:
• Radiography
• Emergency Medical Care
• Environmental Health

Faculty of Humanities
Participants involve:
• Public Relations and Communication

Sample:

• Semi-structured individual interviews with HEI lecturers, 1 per department per faculty (Sample = 17 individuals)
• Semi-structured individual interviews with industry mentors involved with WIL placement, 1 per department per faculty (Sample = 16 individuals with the exception of the Department of Graphic Design where there was no mentor)
• One group interview with students from identified departments in each faculty involved with the WIL process (Sample = 27 students)

Phases 1 & 2

University of Cincinnati
(123 respondents)

Northwestern University of Engineering in Illinois
(27 respondents)

University WIL representative
Participants involve:
• Civil and Environmental Engineering
• Architecture
• Construction Management
• Information Systems

University WIL representative
Participants involve:
• Analytical & Bio Analytical Chemistry
• Electrical Engineering
• Mechanical Engineering

Sample:
• Individual interviews with departments (1 interview with each WIL liaison) per HEI (Sample = 7, comprising UC 4 and NWUE 3)
• Semi-structured individual interviews and group interviews with industry mentors involved with WIL placement at NWUE (Sample = 8)
• Semi-structured individual interviews with faculty advisors involved with WIL placement at NWUE (Sample = 4)
• Open-ended questionnaire to ALL industry mentors and students from mentioned departments involved with the WIL process at UC (Sample = 32 industry mentors and 87 students).
• Open-ended questionnaire to ALL students from mentioned departments involved with the WIL process at NWUE (Sample = 12)

Analysis of existing procedures from UJ and frameworks from UC and NWUE
Nominal group technique UJ HEI lecturers (Sample = 9)

FIGURE 3: Methodological framework (Brink, 2014, p. 55)

Open-Ended Questionnaires

According to Teddlie and Tashakkori (2009) open-ended questionnaires allow research participants to express their attitudes, beliefs and feelings towards a topic of interest. Participants can respond in any way they please, allowing free sharing of information (Clark & Cresswell, 2010; Johnson & Christensen, 2010; Kumar, 2011). An open-ended questionnaire for students and industry mentors in the University of Cincinatti and students from the Northwestern University in Illinois was used for the collection of data in phase 2.

Group Interviews

Six group interviews were undertaken with students involved in the information management for WIL process at the University of Johannesburg. The group interviews allowed students to share their experience of the WIL process in their own departments by way of a conversation with each other, providing examples and/or motivations when they were not in agreement with their peers (Wodak, De Cillia, Reisigl & Liebhart , 2009). The interviewer facilitated the interview and only intervened when necessary, for example, to clarify points that arose during discussions (Boeije, 2010; Saunders, Lewis & Thornhill, 2009; Silverman, 2011). In group interviews, participants provide a broad range of viewpoints and insights which stimulate participants to further raise issues that they might not have identified in individual interviews (Lazar et al, 2010). Flick (2009) describes group interviews as a medium that allows shared group opinions which go beyond individuals' opinions. The dynamic of developing a conversation is used as the central source of knowledge. Observations of interactions among group members are also considered a major part of data collection in a group (Teddlie & Tashakkori (2009).

The major challenge for using the multiple-case design was in data collection. During the visit to the USA to the University of Cincinnati and the Northwestern University in Illinois, the researcher realised that the industry mentors where the students were working, were not in one location. These industry mentors were located in surrounding areas as well as spread all over the different states of the USA. Because of the large expanse of the country, it was not possible to travel across the USA and conduct individual interviews with the industry mentors and hold group discussions with the students. Therefore, the research method for the international students and industry mentors was adapted to an open-ended questionnaire. These open-ended questionnaires were sent out to the industry mentors, as well as to the students as part of their evaluation feedback.

DATA ANALYSIS

All the information gathered during the interviews was transcribed and analyzed using inductive content analysis. Marshall and Rossman (2011, p. 161) describe the notion of content analysis as an "objective and neutral way" to secure qualitative descriptive data, where specific words are counted. In this study, the data analysis was designed according to the structure illustrated in Figure 4.

As the current study progressed, the researcher realised that the inductive content analysis was appropriate for "describing and interpreting the written productions" of the responses (Marshall & Rossman, 2011, p. 161). Researchers who choose inductive content analysis are advised to organize the qualitative data through open coding, creating categories for abstraction (Elo & Kyngas, 2008). Open coding involves writing notes in text during the process of reading, which is then reread and headings recorded in margins, to clarify content (Elo & Kyngas, 2008).
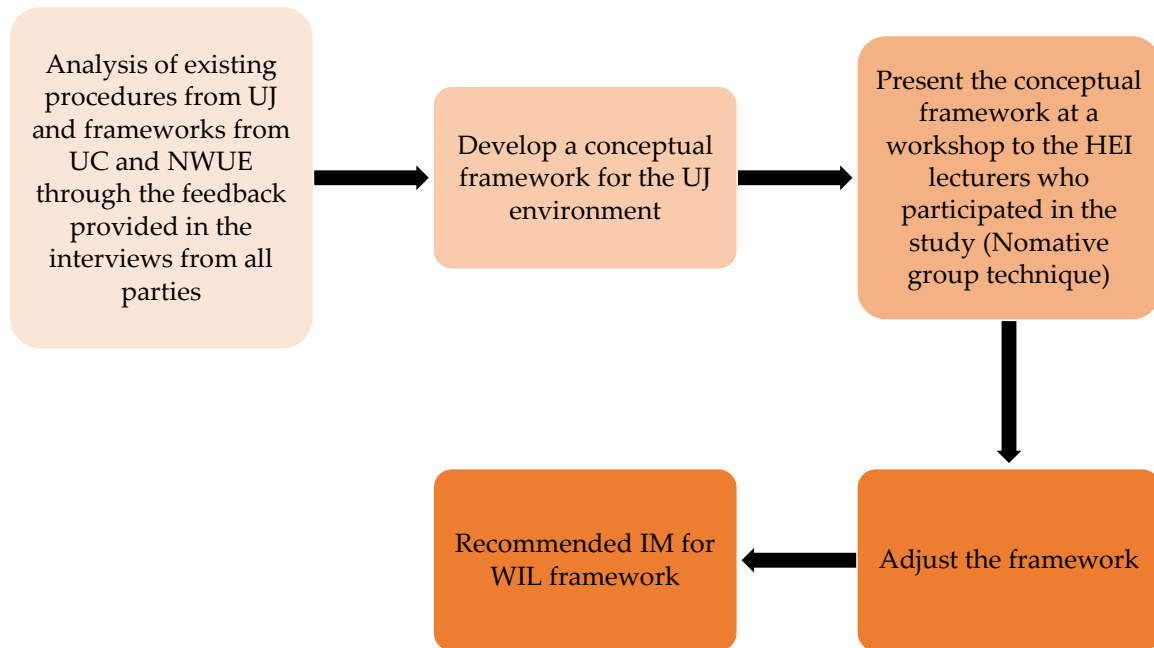
FIGURE 4: Data analysis framework (Brink, 2014, p. 59)

The transcribing of recorded data was an intricate, time-intensive task. The processes of transcribing and coding of data required judgments and interpretation on the part of the researcher and since we do not "speak in paragraphs nor do we signal punctuation" during speech, the process of inserting a comma, a full stop or a semicolon during transcription became a complex process and hence can shape or change the meaning of the data (Marshall & Rossman, 2011, p. 164). Thus, careful consideration was given to the transcribing of the data from the recorded interviews. Inductive coding begins with close reading of text and comprehensively considering the multiple meanings that are inherent in the text (Thomas, 2006).

Preparing the Data for Analysis

All interviews in the form of audio recordings and questionnaires were organized in groups. Audio data was recorded and copies were safely stored as audio files, downloaded onto a computer, and written to compact discs (CD) for archiving purposes (Clark & Creswell, 2010; Thomas, 2006). The audio interviews were transcribed verbatim into a Microsoft Word (MSWord) document. The transcribed MSWord files were uploaded into Atlas.ti™ version 6 for analysis.

Exploring the Data

The typed transcriptions were perused several times before starting the process of analysis to become familiar with the dataset – this was done according to the guidelines provided by Clark and Creswell (2010), Henning, Van Rensburg and Smit (2004), and Thomas (2006). Once familiar with the content it allowed for insight and understanding of the text and the codes, themes or categories that could be assigned to the events covered in the text. Taylor and Lindlof (2010, p. 247) further indicate that through the inductive process of data analysis the analyst must explore and do close reading, to interpret results.

Analyzing the Data

Inductive analysis was used to analyze the data. According to Teddlie and Tashakkori (2009, p. 251) inductive data analysis leads to themes or theoretical criteria that are "grounded in the data, and are not given a priority". As mentioned, the Atlas.ti™ version 6 was used as a qualitative data analysis software programme. Friese (2012, p. 4) states that "computer-assisted analysis can be thought of as a journey", while Greyling (2007) rightly points out that the construction of meaning cannot be left up to a machine, and is the responsibility of the analyst. During the transcription process the transcriptions were checked for accuracy and the files entered into the qualitative data analysis software program.

Coding helps to reduce the data into themes or categories that emerge from the analyzed data (Clark & Creswell, 2010). Saldana, (2011) describes coding of data as a complicated and advanced skill that requires the revisiting of material and recoding of information. In this study, codes were linked into categories after the first round of coding. The purpose of creating categories is to provide a means of describing the phenomenon, to increase understanding and to generate knowledge (Elo & Kyngas, 2008). The coding process "permits data to be segregated, grouped, regrouped and relinked in order to consolidate meaning and explanation" (Saldana 2011, p.8).

The material, revisited and recoded, created data from which links could be made to interpret and analyze concepts and issues relating to the Information Management for WIL at higher education institutions. According to Richard and Morse (2007) the links in the data help develop ideas from the data interpretation and analysis. Through this process the essence of the terms of the available data are captured in a written word or in short phrases (Saldana, 2011). As categories and themes were developed integrative interpretations were offered of what was learned. As Marshall and Rossman (2011, p. 219) suggest, a "story could be told" bringing meaning and coherence to the themes, patterns and categories, developing linkages that make sense and is engaging to read.

Validating the Data and Results

The credibility of the findings of this research is founded on triangulation principles which are supported by semi-structured interviews, group interviews and open-ended questionnaires. Data triangulation consists of gathering the data from different sources. According to Farquhar (2012) triangulation is a key concept in a case study research especially with reference to triangulating data sources or data methods. Marshall and Rossman (2011) argue that triangulation is the act of bringing more than one type/source of data to bear on a single point.

The multiple case study design enabled the phenomenon of the participants involved in the WIL triad partnership to be examined in different contexts. Also, more than one method was used to examine the phenomenon from different angles – this was done in an attempt to triangulate the data. Through triangulation a more accurate, comprehensive and objective representation of the data was achieved.

AXIOLOGICAL ASSUMPTIONS

Axiom assumption refers to the values and the ethics. Participants were recruited from lecturers and students from departments within faculties in the University of Johannesburg and selected industries in South Africa, as well as the University of Cincinnati and the Northwestern University. The three universities were approached by written communication. The participants were not unnecessarily classified in terms of race, age or gender. They were presented with a letter explaining all facets of what is expected and what the purpose of the study was. The participants were further allowed to

decide on their involvement and participation and could withdraw at any time without any consequence. Consent was secured from all participants, with the use of a signed informed agreement. Participants were assured of confidentiality and anonymity. Viewing of the findings (member checking) by participants was used to validate data, for ethical reasons. Written approval was obtained from the University of Johannesburg Ethical Board.

SUMMARY

This article provides insights on how multiple-case design research was conducted, within the qualitative research paradigm, with the aim to corroborate and interpret information management for WIL good practices. It is clear that a multiple-case design has its own benefits and limitations. According to Gustafsson (2017) there are more benefits than limitations to multiple-case designs. The one major limitation noted by Gustafsson (2017) is that a multiple-case design can be expensive and time consuming to implement. This was evident in this study, where the international participants were not geographically placed in one location within the USA and therefore the researcher was unable to conduct face to face interviews or group interviews due to financial restrictions and insufficient time. The benefits highlighted by Gustafsson (2017) are that a multiple-case design allows a wider discovery of theoretical evolution and research questions. Furthermore, it allows the researcher to have a deeper understanding of the exploratative subject, the evidence generated from a multiple case study is strong and reliable, and the writer can clarify if the findings from the results are valuable or not. The benefits for this multiple-case design was that multiple perspectives of the individuals within the triad partnerships were secured. The knowledge gained from two of the leading higher education institutions was based on good practice frameworks for information management for co-operative education internationally. These benefits allowed the researcher a broader discovery of the theoretical evolution and have a better understanding of the best practice framework for information management of the WIL process. This article explained with the use of examples, how the results link to the different facets of the multiple-case design. On analysis of the cases presented, based on a multiple-case design, this was the best suited research design to determine the best practice, on how information can be managed to facilitate the WIL process for various faculties at a higher education institution. The best practice model based on the two leading universities in co-operative education contributed to the development of a conceptual framework for the University of Johannesburg on information management for the WIL process.

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