ABSTRACT

Higher Education Institutions (HEIs) in South Africa require teaching and learning to include Work Integrated Learning (WIL) within specific learning offerings. The different learning options provided by various faculties have unique and diverse procedures which justify different WIL approaches at HEIs. A lack of structure regarding the Information Management (IM) of WIL across departmental silos, result in different processes followed for WIL. Therefore a lack of structure for IM, can impact negatively on the optimal utilization of WIL. In order to establish an effective IM feedback process the information that currently is, and that potentially could be exchanged between the HEI, the industry partner and the student needs to be managed. This relationship is referred to as the three party relationship. Frameworks for the management of information for WIL have been developed at international HEIs. An investigation into these frameworks may offer valuable insights to be tested within the South African context. This paper will present both the planned methodology to develop and test an IM framework at a HEI in South Africa and how the investigation results will be analyzed. After research has been conducted, management of information for WIL will be based on the adapted framework that should improve IM of WIL. This developed conceptual framework may be implemented at HEIs in South Africa. With time this framework can be tested in a number of settings that can lead to the development of a model for IM of WIL.

Key words: Work Integrated Learning, Information Management Framework, Higher Education Institutions
INTRODUCTION

Work Integrated Learning (WIL) is not a new concept; as it already started in the early 1900s. Dewey’s view in 1938 was that a given experience is the result of an interaction between what the student brings to a given situation and what happens there (Chisholm, Harris, Northwood, & Johrendt, 2009, p. 326). Dewey was an education theorist of the twentieth century and one of the founding fathers and developers of experiential learning. Experience can be seen as an essential component of the academic process. Students learn through their actions and not through the actions of their lecturers (Walsh, 2007, p. 79). WIL is a multi-disciplinary approach based on four individual components namely concrete of experience, reflection, abstract conceptualization and application (Chisholm et al., 2009, p. 326).

Costa (2009, p. 37) mentions that WIL is a three party relationship between students, industry partners and Higher Education Institution (HEI), that work together to produce graduates that are more “work-ready”. The growing demand for relevant workplace skills of new graduates and potential employees have increased in years, as the linkage process improved between practice and academia (Wei, Siow & Burley, 2006, p. 125). According to the Incorporating Service-learning Model of Wei et al., (2006, p. 127) there is a flow of communication and information between the student, HEI and industry partner, the so called three parties.

Effective WIL is largely reliant on the managing of new information gained by the three parties involved. The flow of information from the WIL component has the potential to increase the usefulness and value for the three parties. WIL can only be successful if the flow of information between the three parties is managed optimally. Wei et al., (2006, p. 131) state that the success of
WIL should take into account the quality of the relationship between the three parties. Information Management (IM) is critical for improvement and benefit impact of information pertaining to WIL (Powell, 2003, p. 55).

**LITERATURE**

According to Hinton (2006, p. 2) IM should be seen as the conscious process by which information is gathered and used to assist in decision-making. The effective management of information rests on IM principles and should be based on an understanding of everyone’s potential needs for use of, creation and exchange of information (Powell, 2003, p. 2). IM is about determining which information created and received by the organization is valuable in some way. It is based on the content; ensuring that the information is properly protected, stored, shared and transmitted. Information should be easily available to the people who need it, when they need it and in a format that they can rely on (Kahn & Blair, 2009, p. 7). IM is critical to ensure optimal use of information in any organization and seeing that WIL is an information intensive procedure the management of the information would be critical.

WIL offers opportunities for students to learn through experience and relies on cooperation between different role players at HEI and industry. WIL shares the following principles with IM where each of the parties involved have a unique and critical role to play effectively and applicable to the specific circumstance (Abeysekera, 2006, p. 8). According to Spowart (2006, p. 11) HEIs are under increasing pressure to prepare their graduates for the world of work by including a component of WIL to achieve these expectations. Dressler and Keeling (2004, p. 11)
believe that students benefit academically as a result of WIL because their disciplined thinking skills will increase and their learning, problem-solving and motivation for learning will improve.

Sharing of experience, knowledge, ideas and resources based on IM good practice principles will allow the WIL experience to be evaluated and potentially improved in the areas of concern (Cooper, Orell & Bowden, 2010, p. 5). A factor measuring an optimal WIL procedural facilitation is based on communication, practical ideas and continues facilitation. Truthful and effective communication between parties involved in the WIL relationships will ensure enhanced outcomes of the WIL component (Cooper, Orell & Bowden, 2010, p. 6). The Diamond Model of Itin (1999) underpins much of what happens in WIL and can be used to explain the three party relationship of WIL as shown in Figure 1. The information flows between the three parties involved with WIL and can be seen as good feedback (Chisholm et al., 2009, p. 327). This feedback allows the parties involved in the WIL relationship to support an efficient allocation of educational resources (Cates & Cedercreutz, 2008, p. 28). Therefore it is clear that the information process needs to be recorded, verified, archived and managed in a way that will render the best results to ensure WIL success.

Figure 1: Itin Diamond Model (1999) from Chisholm et al., 2009, p. 327
DISCUSSION OF IMPORTANT ISSUES

HEI within specific learning offerings require teaching and learning to include WIL. Often a lack of structure regarding the WIL process across departmental silos, result in different processes followed for the WIL component. The different learning options provided by various faculties have unique and diverse processes which justify the different WIL processes in this HEI. According to Powell (2003, p. 55) IM ensures that information of lasting relevance is recorded and placed in a well-structured organizational archive. A lack of structure for IM can impact negatively on the optimal utilization of the WIL process. Hence, the focus of this paper will be the methodology involved in designing an IM framework for the WIL process. According to Cates and Cedercreutz (2008, p. 28) a feedback process will allow the three parties involved an efficient allocation of educational resources. In order to establish an effective feedback process the information that currently is, and that potentially could be exchanged between the HEI, the industry partner and the student needs to be managed. The research therefore aims to develop and test a conceptual framework to manage the information of the WIL process at a HEI. The question must, therefore, be asked: How can information be managed to facilitate the Work Integrated Learning process for various faculties at a Higher Education Institution?

RESEARCH DESIGN

A qualitative method design will be used in this study. Qualitative researchers study phenomena in their natural settings to make sense and interpret meaning (Creswell, 1998). A phenomenological approach will be used, which can be described as a type of research that seeks to explore, describe and analyze the meaning of individual lived experience (Marshall &
Rossman, 2009, p. 19). An in depth research will be undertaken of literature relevant to the IM for WIL at a HEI. A thoughtful and insightful discussion of related literature builds logical foundations for this study (Marshall & Rossman, 2009, p. 77). The research, study and analysis of literature will advise, guide, clarify and identify material that supports evidence of weaknesses and strengths of IM for WIL. It will also highlight the latest thinking and strategies on IM for WIL in HEI all over the world.

An evaluation research design was chosen in this study as data will be collected by studying the policy and process of WIL at a HEI in South Africa (SA). The IM process of two international universities namely the University of Cincinnati in the United States of America (USA) and the North-Western University of Engineering in Illinois, USA will be evaluated pertaining to their WIL processes. The mentioned international universities have unique systems in place pertaining to WIL. The University of Cincinnati in the United States of America developed a WIL feedback system after receiving extensive funding from government. The second university namely the North-Western University of Engineering in Illinois have been using an active and successful WIL process since 1940. The information management feedback at these universities will be investigated and related to the needs assessed at the University of Johannesburg.

RESEARCH METHODS

According to Miles and Huberman (1984, p. 42), knowing what you want to find, leads inexorably to the question of how you will get that information. Data collection for qualitative research can take place in many ways, for example through interviews, observations and document studies (Henning, Van Rensburg & Smith, 2004, p. 5). The University of
Johannesburg (UJ), a comprehensive university in SA, the University of Cincinnati (UC) in and the North-Western University of Engineering (NWUE) in Illinois will be investigated. The study will focus on the management of information for WIL within the mentioned HEIs.

Collection of data at UJ will be drawn from the various faculties mentioned in the methodological framework (Figure 2). Individual interviews will be conducted with the WIL liaisons of each department and industry representatives involved with WIL placements. On completion of the individual interviews the data of these interviews will be transcribed and analyzed. Hereafter focus groups will be identified within each faculty involved with WIL. The sampling will be restricted to ten students per focus group.

The process of data collection pertaining to the identified international universities will be conducted on the proven success of WIL. Specific departments as mentioned in the methodological framework (Figure 2) will be approached for individual and focus group interviews. The sample for individual interviews will be selected on one WIL liaison per department. Hereafter focus groups will be identified of industry representatives per department. The sampling will result in five individual interviews and five focus group interviews of 10 participants per focus group per university. The sampling for the interviews will result in 55 participants per university.

The methodological framework (Figure 2) indicates the research process to be undertaken to collect the relevant data to address the research question as discussed above.
The data collected through the various research methods will be meaningless if not analyzed. According to (Merriam, 2009, p. 175) data analysis is the process of making sense and meaning of data collected. The data will be meaningful after interpretation by the researcher on completion of interviews. Data analysis gives order, structure, and interpretation to the mass of collected data: “It is a messy, ambiguous, time-consuming, creative, and fascinating process” (Marshall & Rossman, 2009, p. 210).

The analysis framework in Figure 3 indicates the process to be undertaken to analyze the relevant data for the research. Each aspect of the research process is discussed following the analysis framework.
Evaluation research will be done to assess the processes/systems for the development of an Information Management process for Work Integrated Learning in a Higher Education Institution.

Sampling in UJ (104 respondents in total), Sampling in University of Cincinnati (55 respondents in total) and North Western University of Engineering in Illinois (55 respondents in total)

TOTAL SAMPLING 214

**Faculty of Engineering and the Built Environment**

- Participants involve:
  - Electrical (1), (1)
  - Mechanical (1), (1)
  - Mining (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**Faculty of Science**

- Participants involve:
  - Bio Technology (1), (1)
  - Food Technology (1), (1)
  - Analytical Chemistry (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**Faculty of Management**

- Participants involve:
  - Tourism (1), (1)
  - Hospitality (1), (1)
  - Marketing (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**Faculty of Art, Design and Architecture**

- Participants involve:
  - Architectural Technology (1), (1)
  - Clothing Management (1), (1)
  - Graphic Design (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**Faculty of Education**

- Participants involve:
  - Curriculum and Instruction (1), (1)

(2 Individual interviews and 2 x 10 focus group interview)

**Faculty of Health Science**

- Participants involve:
  - Radiography (1), (1)
  - Emergency Medical Care (1), (1)
  - Environmental Health (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**Faculty of Humanities**

- Participants involve:
  - Public Relations and Communication (1), (1)

(2 Individual interviews and 1 x 10 focus group interview)

**Faculty of Education**

- Participants involve:
  - Curriculum and Instruction (1), (1)

(2 Individual interviews and 2 x 10 focus group interview)

**Faculty of Management**

- Participants involve:
  - Tourism (1), (1)
  - Hospitality (1), (1)
  - Marketing (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**Faculty of Art, Design and Architecture**

- Participants involve:
  - Architectural Technology (1), (1)
  - Clothing Management (1), (1)
  - Graphic Design (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**University WIL representative**

- Participants involve:
  - Civil and Environmental Engineering (1), (1)
  - Architecture (1), (1)
  - Construction Management (1), (1)
  - Accounting (1), (1)
  - Information Systems (1), (1)

(5 Individual interviews and 5 x 10 focus group interviews)

**Faculty of Science**

- Participants involve:
  - Bio Technology (1), (1)
  - Food Technology (1), (1)
  - Analytical Chemistry (1), (1)

(6 Individual interviews and 1 x 10 focus group interview)

**University WIL representative**

- Participants involve:
  - Architecture (1), (1)
  - Analytical & Bio analytical Chemistry (1), (1)
  - Electrical Engineering (1), (1)
  - Economics and environmental health (1), (1)
  - Mechanical engineering (1), (1)

(5 Individual interviews and 5 x 10 focus group interviews)

**University of Cincinnati**

**North Western University of Engineering in Illinois**

**Sample:**

- Individual interviews with WIL liaisons, 1 per department per faculty (Sample = 17 individuals).
- Individual interviews with industry involved with WIL placement, 1 per department per faculty (Sample = 17 individuals).
- After the individual interviews with the WIL liaisons and the industry. The data will be analysed and thereafter the sampling for the focus groups will be determined for each faculty involved in the WIL process. The focus group sample will be 10 students per focus group. (Sample = 70)

**Figure 2: Methodological Framework**
According to guidelines as suggested by Berg (2009, p. 339) transcribed audio interviews from the individual interviews will be analyzed by simple content analysis. Data coding will be used to develop categories of WIL experience by the three parties. This reduction of data into themes is a simple but effective form of data analysis that will lead to the identification of these themes (Creswell, 2003). A conceptual framework for IM of WIL will be developed for the UJ environment.

An open ended questionnaire will be developed to test the conceptual framework of identified departments within UJ. Individual questionnaires will be provided to the WIL liaisons of the various departments. The completed questionnaires will be analyzed and data interpreted. The result
of data analyzed will be used to adjust the conceptual framework. The adjusted conceptual framework with the same questionnaire will be distributed within the same departments for comments. The results of the questionnaire will then be interpreted to present a framework for IM of WIL for the UJ environment.

The duration of the study is proposed to be completed over two years. The wide range of the study is necessary to investigate the possibility of standardizing the current diverse approaches of the various Departments to WIL at the University of Johannesburg

CONCLUSION

WIL have become a critical tool to manage and process student exposure and access to information and processes which allows access to industry. The current process of WIL has not resulted in the level of employment which is expected of HEI. Liaison and communication based on a workable solution have become critical and needs strategic intervention as WIL needs prioritization. The study and analysis of the WIL process have reached a level which requires urgent intervention and guidance. WIL is a response to government strategy for decreasing critical levels of unemployment so that the development of work opportunities can be created. It is of utmost importance that WIL is driven successfully to manage the expectations of industry and graduates and to develop the relationship which may result in opportunities for work. This study has come at a time when there is strategically never been more opportune time to develop and implement an information management system for WIL that can aid in assisting students to be employed. The process of WIL, based on IM good practice principles, will result in what is expected of HEI. Now is the time to
ensure with the proper analysis process and researching workable solutions, the result is expected that an information management benchmark can be implemented at HEI in South Africa to aid the relationships of WIL.

This paper provides a planned methodology to develop and test an IM framework at a HEI in South Africa and how the investigation results will be analyzed. This research will establish an effective feedback process of information that could potentially be exchanged between the three parties. After research has been conducted, management of information for WIL will be based on the adapted framework that should improve IM of WIL. This developed conceptual framework may be implemented at HEIs in South Africa. With time this framework can be tested in a number of settings that can lead to the development of a model for IM of WIL.

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