

Chapter 11: The ‘Workplace Experience Framework’ and Evidence-Based Information Literacy Education

This Chapter Will Discuss:

- A new approach to Information Literacy education for students and professionals based on detailed research into its experience in the workplace.
- How the ‘relational’ approach to Information Literacy education has, through research methods which yield exceptional detail, made possible the ‘Workplace Experience Framework’. This is a guide to the structure, content and method of an evidence-based Information Literacy educational intervention, based on the range of themes and complexities of experience of Information Literacy in a workplace or profession.
- How that detail of experience can be applied to formulate a new means of monitoring an individual’s Information Literacy development.

Please Note: It is strongly advised that you read Chapter 3 before reading this chapter, as many of the research findings and ideas used below are introduced there and often discussed in more detail.

1. Introduction

In order that a professional can begin a career in the workplace using information effectively, in the context of the knowledge development and learning required for individual, team and organisational functionality, part of professional education should involve Information Literacy education. In Chapter 2. Annemaree Lloyd suggests that students' Information Literacy development should involve a transition from an academic or 'preparatory' setting to a workplace one:

'librarians are placed in unique positions to mediate the educational and discipline/workplace landscapes in order to identify knowledge, competencies and skills that students will require while studying and when in transition to the workplace' (page 38).

This chapter attempts to show one way in which workplace Information Literacy education might be based on detailed experiences of Information Literacy in the workplace, so that students are inducted into information experiences relevant to their work culture or profession. The chapter may be of particular interest to Librarians attempting to develop Information Literacy in professional workers, and academics keen to develop skills in their students that new professionals need to function effectively and ethically in the workplace.

In what ways has the development of Information Literacy traditionally been encouraged? Historically, the literature describes attempts to develop what are felt to be relevant skills and knowledge, based on behaviourist or constructivist approaches (Brettell, 2003; Brettell, 2007; Elrod et al, 2012). However in more recent years relational information Literacy education (Andretta, 2007) has emerged, based on

knowledge of variation in Information Literacy experience, and exhibiting 'an integrated approach that facilitates the information-to-knowledge connection.'
(Gordon, 2009, p.58).

To find out how, why and in what contexts a group or profession finds and uses Information to create the subjective knowledge to function in its various roles, and what forms that knowledge takes, requires a study as described in Chapter 3: a study of experiences as described by a representative sample of the group or profession being studied.

The current chapter discusses how, through application of the 'evidence' provided by such a study, the structure and learning foci of an 'evidence-based' intervention can be outlined in the form of a 'Workplace Experience Framework'. The 'Workplace Experience Framework', an example of which is set out below, is based on the range of themes, forms and levels of complexity of experience of Information Literacy by a target group or profession. That range of experience is employed, together with the Variation Theory of learning, in the development of a framework of learning contexts, aims and focal points; a framework which can be used to develop the capacity of professionals to experience Information Literacy's full range of functions within their world. By extension this would increase their potential ability to function better in their roles as well as become more likely to function effectively in higher roles in the team and organisation.

The chapter concludes by showing how, in addition, such detail makes theoretically possible a method for analysing the development of Information Literacy experience, by means of a specially structured questionnaire.

2. Discovering the details of a profession's Information literacy experience

The early work of Christine Bruce (Bruce, 1997; 2006) led to the development of a 'relational' approach to Information Literacy education. That Information Literacy was experienced in a limited number of distinct ways which varied in terms of context and complexity, suggested that Information Literacy education should be structured to take account of this. In fact, it should have as its aim the expansion of the ability to experience Information Literacy to include any and all of the ways relevant to the group or profession.

As discussed in earlier chapters, variations in experience occur due to the existence of the many knowledge development purposes for which the information is sought. Each 'purpose' may require the development of knowledge of greater or lesser complexity than others, and to fulfil several different aims within certain contexts of action described as 'themes' (Forster 2015c). Such purposes range from the performance of simple tasks to the development of strategy and new philosophic approaches (Forster 2015a). For any group or profession, the relationship between variations in experience is often shown to be hierarchical in this way, with the experiences arranged from least to greatest complexity (Bruce, 1997; Lloyd, 2006; Maybee, 2006; Boon et al., 2007; Forster, 2015a). **With an understanding of the relevant themes and hierarchy, the educator is aware of the relevant Information Literacy experiences in the workplace the student must be capable of and must be facilitated into, and how they are 'related'.**

Therefore anyone interested in developing relational, evidence-based education must undertake a research study to obtain an overview of the range and hierarchy of experiences for the group or profession of interest.

As described in Chapter 3 and elsewhere, Phenomenography has been used to obtain such an overview (e.g. Bruce, 1997; Limberg 1999; Johnson and Webber 2003; Kirk, 2004; Williams 2007; Boon et al. 2007; Lupton 2008; Webber et al., 2008; Andretta, 2010; Diehm and Lupton 2012; Sayyad Abdi, 2014) - a methodology in which (in contrast to some methodologies such as Phenomenology) variation in experience is the focus of approach and analysis (Marton, 1988). However only in a small number of more recent phenomenographic studies (Akerlind, 2005; Daly 2009; Paakkari et al. 2010; Forster, 2015a; Wada et al., 2015), of which only Forster is an investigation into Information Literacy experience, was the necessary additional detail of Dimensions of Variation and Themes of Expanding Awareness sought as described in Chapter 3. This additional detail is vital in the development of a comprehensive and effective Experience Framework, as will be shown below.

3. The Workplace Experience Framework

The following sections will show how we can use the Information Literacy experiences of a profession to create a 'Workplace Experience Framework' for evidence-based Information Literacy education. To begin with we need to discuss relevant ideas of how learning occurs. The theory of learning put forward will inform the framework's structure discussed in Section 3.2.

3.1. A Theory of Learning: Understanding Through Awareness of Variations in Experience

How does learning occur? Several educational psychologists in Sweden and elsewhere, using Phenomenography to investigate the learning process, came to the conclusion that learning is learning to experience something in a new way for the first time (Marton and Booth, 1997). Variation Theory understands learning as a *development in the understanding of a concept through an increase in awareness of the ways it can be experienced, and hence of the variations in its meaning.* (Marton & Booth, 1997; Bruce et al., 2006; Runesson, 2006; Marton & Pong, 2013).

Bruce applied this approach to Information Literacy:

‘Learning is about changes in conception – teachers need to assist students in developing new and more complex ways of experiencing Information Literacy’.
(Bruce 2006 et al., p.6).

There are two stages in the development of Variation Theory based educational interventions:

1. Aninvestigation into the range and variation in the experiences of a concept by particular group.
2. The application of ... Variation Theory to the structures of data produced by that investigation, [to form the] basis for a teaching and learning programme. A programme in which the student is led to understand and experience the full range of a concept’s meanings (Åkerlind, 2008, p.638).

What accounts for variations in experience? Why can’t everyone experience Information Literacy in all the themes and complexities that are possible in the given

workplace of profession? Why are some capable of greater depth and breadth of experience of Information Literacy's knowledge generating contexts and abilities? Variation Theory suggests that this is due to variation between individuals of awareness of potential contexts and roles in which the concept [such as Information Literacy] can be experienced (Marton and Booth, 1997; Åkerlind, 2008).

How is the student led to experience the Information Literacy in new and more complex ways?

Matching and Varying Aspects of Information Literacy

Variation Theory suggests that *by varying the way the experience of Information Literacy is brought to a student's attention, by highlighting different relationships between its aspects, the student might come to appreciate new facets and possible contexts for information use* (Runesson, 2006), and therefore potential ways of 'fitting them in' to their experiences in the future. By creating learning experiences in which the different aspects of Information Literacy are experienced in differing combinations, and at varying levels of complexity, a student learns to expand their understanding of how Information Literacy can function and benefit them in their workplace.

Using the Nursing study's data as an example, if we pair Theme 2: *Relationships with patients, patients' families, colleagues and other professionals* with Theme 5: *Skills and Processes of evidence and other information gathering*, we can produce a range of learning contexts and scenarios of varying complexity (matching different Dimensions) which might focus on:

What does it mean to relationships with other professionals and with patients and family to be able to employ a range of techniques to identify and locate information for them and to share the resulting knowledge with them in differing contexts? How can they facilitate the sharing of information with patients, colleagues and other professionals; the development the trust of patients, families and colleagues; or the development of a teaching or leadership role with colleagues?

We will look at this pairing and others in more detail below.

To analyse the relationship between Themes/aspects clearly, this can only be done against a background of 'invariance' in the others. Only some of the Themes should be varied together in any one educational activity; the others should remain unvaried (Runesson, 2006). Our Information Literacy education intervention should be a sequence of different learning activities, each one focusing on a different pairing of Themes to the exclusion of the others.

3.2. How Our Learning Theory is Applied

The structure of our 'Workplace Experience Framework' now begins to take shape. Themes of Expanding Awareness are paired or grouped so that their varying relationships give a source of educational focus. The 'variation' is in terms of which Dimensions of Variation (level of complexity of experience of that aspect of Information Literacy) in each Theme are focused on and brought in to conjunction with those of other Themes.

However, which Themes should be paired and why?

There are 4 stages of variation in a complete educational programme (Marton and Tsui, 2004). These stages when taken together make sure that variation is achieved consistently, thoroughly and appropriately for maximum educational advantage.

The first stage is **Contrast**. The choice of contrast is vital. The choice of Themes to form a pairing must be meaningful, and the Dimensions of Variation from the Themes must be brought together in such a way to allow the full significance of variation within these Themes to be clear. For example, varying Nursing's Themes 3 and 4 together would show that the varying complexities of Information Literacy experience in the context of Evidence-Based Practice and in the development of Best Practice in Nursing have a very significant effect on each other. Similarly Theme 3 could be varied with 5 and 6 to vividly show the contrasting effect of the varying complexity of experience of the skills and knowledge underlying effective information gathering, on the ability of Information Literacy to initiate the knowledge and knowledge-based decision making ability needed to achieve such complex goals.

Generalisation: All Themes must be involved at some stage, and in contrast with more than one of the others if possible. There should be sufficient range of contrasts to give a complete 'picture' of Information Literacy as experienced by our group. This helps the student recognise and contextualize their own limited experiences and (hopefully) promotes learning. As well as a full use of the Themes, the variation in each Theme must be completely demonstrated. For instance, in terms of the nursing study, by allowing a nurse to be made aware of all of the potential value to patients, to her team and to her own professional expertise and standing, of the adoption of more (and in some cases less) sophisticated aspects of Information Literacy experience, considerable motivation to develop that experience may be

created. Generalization has a depth and well as a breath dimension. It requires that learning materials should focus on experiences which cover the complete range of complexity within each Theme. The capacity to experience Information Literacy in these contexts can vary from the 'simple' and day to day to the 'strategic' depending on the demands of context. The detail possible with this analysis method gives a sure description of the nature of these variations to the advantage of educators.

Separation: is the need to vary only some of the critical aspects of the phenomenon. This allows the features of the phenomenon to be distinguished clearly by the student. In our examples above and below only two or at most three Themes are varied together.

Fusion: Requires variation of aspects of the phenomenon to occur simultaneously to allow the relationship of the aspects to be made clear and therefore the whole structure of the phenomenon. Themes must be varied in pairs or threes, not individually.

The use of **contrast** and **generalisation** combined with **separation** and **fusion** should provide sufficient comprehensiveness, focus and differentiation to produce learning experiences for nursing students which are likely to be effective (Åkerlind 2008).

3.3. An example of a Workplace Experience Framework

We can now present an example of a 'Workplace Experience Framework'. In our framework the Themes are meaningfully and tellingly varied (Contrast); all Themes are introduced at least twice (Generalisation) in pairs or threes (Fusion) while invariance in some themes is maintained within individual activities (Separation).

After each pairing or grouping of Themes there is a summary of contexts, aims and themes for learning activities based on the 'interaction' of the themes.

- *Theme 2: Relationships with patients, patients' families, colleagues and other professionals and (as briefly mentioned above) Theme 5: Skills and Processes of evidence and other information gathering.*

Learning activities would address what it means for relationships with other professionals and with patients and family for nurses to be able to employ a range of techniques to identify and locate information for them and to share with them in differing contexts. Addressing Information Literacy in these related contexts might involve scenario work in which colleagues or patients are described in terms of their background and knowledge need. The students would be required to search for relevant information and reflect on the consequences for that person of the nurse providing or not providing relevant information, and for the student's relationship with them. Scenarios will vary in terms of the complexity of information and its potential significance to the patient. New Information Literacy experiences could involve both simple and complex relationships and information processes

- *Theme 3: Helping to achieve 'Best Practice' and Theme 4: Understandings and Experiences of Evidence Based Practice.*

This variation-grouping investigates the application of evidence by the nurse to her attempts to achieve the best practice possible. The latter can become more ambitious as the grasp of the role of evidence is expanded. For example, students are encouraged to see how the accumulation of a more

complex evidence-based knowledge contributes to, and is necessary for, achievement of such complex goals as 'Patient Safety'.

- *Theme 3 Helping to achieve 'Best Practice' with Theme 5 Skills and Processes of evidence and other information gathering and Theme 6: Understanding and Knowledge of the principles and concepts behind evidence and other information gathering.*

This grouping would inform scenarios which aim to show the contrasting effect of the varying complexity of experience of the skills and knowledge underlying effective information gathering, on the ability of Information Literacy to initiate the knowledge and knowledge rich judgement needed to achieve such complex goals.

- *Theme 4: Understandings and Experiences of Evidence Based Practice, Theme 6: Understanding and Knowledge of the principles and concepts behind evidence and other information gathering and Theme 7: Information Literacy experienced through Applicable conceptions of information*

This variation-grouping would examine the understanding and meaning of Information and Information gathering in each function of Evidence Based Practice. For example, one scenario might show how audit requires both knowledge of search strategy and of complex sources of information; what does Information Literacy mean when considered in terms of its role in audit; the varying conceptions of information used in Auditing; and the principles and concepts behind locating the information types that make auditing possible? A scenario addressing simpler experiences might show how ideas about

information and information gathering can effect what is regarded as valuable 'evidence'; simpler concepts of ether can suggest 'evidence' such as a patient's personal details can be easily obtained and put to valuable immediate use.

- *Theme 1: Professional Self-development and Theme 3: Helping to achieve 'Best Practice'*

This variation grouping examines the personal (ethical?) responsibility of the nurse in various professional roles to strive for Best Practice, and how Information Literacy links and forms the fabric of increasingly complex and valued professional roles and Best Practice outcomes.

- *Theme 1: Professional Self-development ; Theme 2: Relationships with patients, patients' families, colleagues and other professionals and Theme 7: Information Literacy experienced through Applicable conceptions of information*

This group concentrates on the intimate relationship between professional role and relationships with others, in the context of how the information used and exchanged in that relationship is conceptualised. For example, information conceptualised as 'A means of understanding a newly encountered clinical problem or phenomenon', for a nurse 'Becoming able to function non-dependently within the team' while 'Functioning as part of the multi-disciplinary team'.

Hence all 7 themes are covered.

Information professionals can base 'scenario' work on this framework, developing workshops in which the role of Information Literacy is shown through relevant examples of practice from the most to the least complexity of experience. 'Skills' training in such things as use of databases such as Medline can now have a meaningful context; a context which shows the real and considerable value of such skills.

3.4. Next Steps

The general principles set out above can be applied to the findings of any study into the experience of a phenomenon. Chapter 3's approach to investigating the variation in experience of a phenomenon is key to developing the Experience Framework. Variation Theory, derived from phenomenographic research as a whole, shows how variations in experience are used for educational purposes.

The Workplace Experience Framework is now employed to:

1. Develop scenarios for learning.
2. Pilot test the scenarios.

After pilot testing scenarios which cover all of the Theme groups and the varying levels of complexity expressed by the Dimensions of Variation in each pair/group, our comprehensive evidence-based educational intervention will begin to find its definitive form.

4. Assessing Progress in Information Literacy Education

This section puts forward a new method for evaluating Information Literacy capacity and development.

4.1. Finding the range of an individual's experiences of Information Literacy

The data analysis process described in chapter 3 gave us a description of the full variation in Information Literacy experience for the group. But what can be said, in terms of this newly established framework of Information Literacy experience, about each individual's experience? To answer this question, we need to look at each transcript as a record of one person's experiences, or capacity to experience. Each participant's interview transcript must be **re-analysed to determine which of the Dimensions of Variation can be detected**. In other words, which experiences of aspects (Themes) of Information Literacy, in their variety and complexity, was the participant currently capable of?

Each of the participants now has a detailed picture of their Information Literacy experiences in the form of Dimensions of Variation.

If the participant was interviewed again after an educational intervention, and the same analysis applied to the second interview transcript, might new Dimensions be discovered? Thus could it be shown which Themes and Categories (of which the new Dimensions formed part) had been reinforced? In other words, could improvement in the range and complexity of a student's ability to experience Information Literacy, and so the participant/student's educational progress, be determined?

4.2. Monitoring a Student's Development

Testing the Method

If so, a method for potentially monitoring student Information Literacy development seemed possible (Forster, 2015d).

The following is a description of a successful attempt to test this method; a description which also allows us to dwell on its stages in more detail.

1. A phenomenographic study of the range of Information Literacy experiences of a profession is undertaken. A sample (see Chapter 3) of professionals is interviewed.
2. Several of the participants have their interview transcripts re-analysed to determine which of the Dimensions of Variation were traceable in their own experiences.
3. This subgroup of participants is exposed to an Information Literacy educational intervention. An IL module was taught part-time over several months and covered contexts for information use; range of information sources; searching techniques and critique and management of information gathered.
4. Several months after the intervention, a second interview is undertaken in which the participants are asked, in a similar way to the first interview, about their Information experiences in their working lives.
5. After the second interview, the second transcript is analysed to determine which of the Dimensions of Variation could be detected.

4.3. Data Analysis

Both transcripts were now compared. Which new Dimensions were traceable in the transcript of the second interview? Could the capacity for an increased range of experiences of Information Literacy, indicated by new Dimensions of Variation in the second interview transcript, be determined and sensibly interpreted as theorised?

In addition, could increases in the complexity of the Participant's experience of Information Literacy be determined and interpreted? Further insight into the effect on the participant of the module was obtained by looking at the new Dimensions of Variation from a slightly different perspective: whether each participant was able to operate at higher Categories of Description after the module?

An example from the Nursing study: 'Participant D'

Interview 1

The following Dimensions of Variation could be traced in the first Interview transcript. Each is numbered for purely identification purposes (see below) and appears listed under the Theme of Expanding Awareness of which they in due course formed part.

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6	Theme 7
2	-	22, 24, 32	37, 41	48, 49	54, 57	66, 69

Interview 2

The following dimensions could be traced in the second Interview transcript:

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6	Theme 7
2, 3, 5, 7	12, 17	20, 21, 22 23, 24, 25 27, 32, 33	37, 40	47, 49	54, 56, 57 58	63, 66, 69

Key:

Information Literacy experienced in.....

2. Establishing knowledge of, and understanding of, current practice and associate issues
3. Showing competence in day to day work
5. Progressing professionally. Becoming a Lifelong learner
7. Becoming able to function non-dependently within the team
12. Functioning as part of the multi-disciplinary team
17. Become a patient advocate
20. Contributing evidence and other information to the Multidisciplinary team.
21. Determining the most cost-effective/efficient treatment option
22. Attempting to improve individual outcomes
23. Attempting to 'improve my practice'
24. Developing up-to-date- practice
25. Developing objectively proven/ justifiable best practice

27. Developing rationales for change
32. Focusing on the nature of patient safety
33. Achieving optimum and so ethically defensible care
37. Keeping up to date with the current evidence relevant to your job
40. Allowing an objective, evidentiary underpinning for practice
41. Auditing practice
47. Structuring evidence searches effectively
48. Finding all or sufficient evidence
49. Critiquing relevant evidence effectively
54. Having knowledge of correct / credible sources/databases
56. Having knowledge of database/ information source structure and functions
57. Having knowledge of MeSH subject headings, textwords and how they can be used
58. Having knowledge of the structuring of searches
63. An experience of information as...Clinical guidelines, protocols and care bundles
66. An experience of information as...Evidence to inform practice
69. An experience of information as...A means to facilitate change

Compared to some other participants, there was only a moderate number of new Dimensions in the second interview. The participant was one particularly difficult to help engage with the module.

10 of the 12 Dimensions from the first interview appeared in the second. The two that didn't were: 41 and 48. The reliability of the method would therefore be regarded as reasonably high from this evidence. In fact it proved to be high for the other participants also.

Theme 2 (relationships) is entirely new in the second interview and Theme 1 (professional self-development) has also been developed to some extent. Theme 3 (Best practice) has been very markedly developed compared to the others.

Considering the link between Best Practice and use of research and other evidence, perhaps development of this Theme is due to, or is in a mutually supportive relationship with, the small but significant development of Theme 6, in which knowledge of the principles of evidence gathering is the focus? There was some further development in experiences in the general context of searching for appropriate evidence (Dimensions 47, 56 and 58 reinforcing 48, 49, 54, 57, 66 from the first interview). This could conceivably contribute to best practice but perhaps also, for this participant, aid in the enriching of professional competence and so a greater ability to contribute to the team – which in turn could contribute to awareness of Information Literacy's role in developing best practice.

Complexity of experiences

The Dimensions of Variation identified above are now relabelled as the Category of Description of which they form part to allow us to more clearly see any development in capacity for complexity of experience.

Interview 1:

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6	Theme 7
Cat. B	-	Cat. C	Cat. B	Cat. D	Cat. A	Cat. E
		Cat. D	Cat. E	Cat. E	Cat. D	Cat. F
		Cat. F				

Interview 2:

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6	Theme 7
Cat. B	Cat. C	Cat. A	Cat. B	Cat. C	Cat. A	Cat. C
Cat. C	Cat. F	Cat. B	Cat. E	Cat. E	Cat. C	Cat. E
Cat. D		Cat. C			Cat. D	Cat. F
Cat. E		Cat. C			Cat. E	
		Cat. D				
		Cat. D				
		Cat. D				
		Cat. F				
		Cat. F				

Looking at each Theme, and the experiences in them which are components of higher Categories: 2 Themes have Fs and 3 have Es in the first interview; 3 have Fs and 4 have Es in the second. Only a small improvement. New Dimensions of

variation at Category F in Contexts 2 and 3 only, suggest Information Literacy in its role in developing knowledge needed for ethical and patient focused care has a relation to operating at the highest levels of awareness in professional relationships. Can it be stated as proven that complex forms of care require Information Literate leadership? There is probably insufficient evidence here to back up such a statement.

Such analysis is capable of a diagnostic function and holds out the possibility of further educational interventions of a highly focused nature.

4.4. Interview..... or Questionnaire?

However, there is the apparently 'impractical' nature of the analysis methods as they stand. Interviewing each student before and after an Information Literacy course is hardly possible. Could the process be made more time and energy efficient by the replacement of interviews with carefully developed questionnaires based on the original analysis of variations in experience? Although Phenomenography is usually an interview-based methodology, this applies to what could be described as the 'discovery' phase. Once contextual experiences and their contexts are determined for the workplace or profession by an initial investigation, then a questionnaire could be employed reasonably successfully if based on them. However, the questions would not be of a 'do you do this?' type but ones of the correct phenomenographic type: 'tell me about your experiences'.

In the questionnaire students are asked if experiences are familiar and asked to give examples. Each of the experiences in the form of a Dimension of Variation is made

the subject of a question, asking for recognition of, and most importantly proof of, experiences.

The usual limits of 'self-reporting' apply, however the questions are very focussed and evidence-based and so are more likely to stimulate memories of all potential experiences. The participant could also be prepared via preliminary communications to reflect carefully on their experiences.

Information Literacy Questionnaire

1. Professional Role

Tell us about experiences of using Information in ways which have supported and developed your role

Investigating newly encountered clinical conditions/situations

In what way?:

Finding out about the latest developments in clinical practice

In what way?:

Activities which led to you feeling particularly effective in your day to day work

In what way?:

Activities which led to you feeling confident in your role

In what way?:

Activities which helped towards progressing professionally or as part of your continuing education

In what way?:

Activities which helped you feel you were more adaptable, flexible and responsive professional

In what way?:

Activities which helped you feel able to function non-dependently within the team

In what way?:

Activities which helped you feel you were able to be innovative in practice

In what way?:

Activities which gave you a sense of a wider professional horizon

In what way?:

Et cetera through the other Themes and their Dimensions.

This would make a long questionnaire. Perhaps it would be more effective if given in stages and on-line to make it easier to complete?

4.5. Summary

The method tested here gave enough interpretable data to suggest that the progress of students in the expansion of their capacity for experiences of varying context and

complexity can be tracked and even 'measured'. Comparison of data from the two interviews allowed a detectable and, significantly interpretable, progression in Information Literacy development in terms of both range and complexity of experiences to be described.

In some of the participants the experiences of aspects of the phenomenon formed parts of the more complex Categories of Description. The educational intervention showed some ability to develop additional complex experience even in those Participants already capable of it. However the development was often small, which was to be expected in the Information Literacy module employed, a short, first year undergraduate module.

In other participants, the new experiences meant that context which had not been prominent in a participant's pre-module experience became more so – especially in those Themes such as No.6 in which skills and knowledge are the focus of experience. It could be hypothesised that experiences focused on skills and knowledge aspects of Information Literacy are 'incorporated' into experience relatively quickly in comparison to other experiences which have a more 'social' focus. Those which involved professional development and personal relationships not surprisingly showed less rapid development, but often with enough new experiences to allow developmental relationships between Themes to be suggested and interpreted.

That the detected differences can be interpreted meaningfully and plausibly in this way suggests that the method has validity.