Cecile Thogersen Ntoumani

Yr Adran Saesneg ac Ysgrifennu Creadigol | Department of Sport and Exercise Science

2005

SYLWER: O ganlyniad i newidiadau yng ngofynion portffolio’r TUAAU, nid oes gan bob cylch dysgu a lwythir i CADAIR yr un nodweddiwn. Mae’r bwysig bod y cyhoedd dysgu hyn yn cael eu defnyddio fel adnoddau yn unig, ac nid fel canllawiau i’r hyn sydd ei angen i fodloni gofynion y TUAAU. Os oes gennych ymholiadau, cysylltwch â thestaff@aber.ac.uk.

PLEASE NOTE: Due to changes in the requirements of the PGCTHE portfolio, not all teaching cycles uploaded to CADAIR share the same properties. It is important that these teaching cycles are only used as a resource and not a guide to what is needed to fulfill the requirements of the PGCTHE. If you have any queries, please contact thestaff@aber.ac.uk.

TYSTYSGRIF UWCHRADDEDIG ADDYSGU MEWN ADDYSG UWCH

POSTGRADUATE CERTIFICATE IN TEACHING IN HIGHER EDUCATION

Cylch Dysgu 1 | Teaching Cycle 1

Research Methods and Statistics

This Teaching Cycle of the PGCTHE portfolio has been submitted to CADAIR with the permission of the author detailed above. It is to be used as a resource for future PGCTHE candidates and other staff as part of their professional development at Aberystwyth University. It remains the property of the author and Aberystwyth University. If you wish to cite this work then please contact the author. Contact details can be found at http://www.aber.ac.uk/en/directory/.

Mae’r Cylch Dysgu hwn o’r portffolio TUAAU wedi’i gyflwyno i CADAIR gyda chaniatâd yr awdur uchod. Adnodd i’w ddefnyddio gan ymgeiswyr y TUAAU yn y dyfodol a staff eraill ydyw, fel rhan o’u datblygu proffesiynol ym Mhrifysgol Aberystwyth. Erys yn eiddo i’r awdur a Phrifysgol Aberystwyth. Os hoffech dyfymnu’r gwaith hwn neu gyfeirio ato, cysylltwch â’r awdur. Ceir y manylion cyswllt yn http://www.aber.ac.uk/cy/directory/.
Report on first teaching cycle

Introduction
The first teaching development was implemented over a four-week period as part of a Research Methods and Statistics (SS29020) module for second year undergraduate students. The modest size of the class \((n = 15)\) is due to the fact that it was the first year group who entered the Sport and Exercise Science programme at UWA.

The reason for choosing this module was two-fold. Firstly, on an anecdotal level, lecturers in Sport and Exercise Science who teach research methods often state that it is the most difficult subject to teach because it is a problem getting the students interested in Research Methods. Secondly, students consistently report difficulties with this aspect of the BSc course. The importance of the subject is evident because students need to develop and refine methodological skills to successfully carry out an independent research project for the dissertation the following year (i.e. in year 3). Indeed, their dissertation mark counts toward 40% of the mark for the whole degree!

Plan/Outline
The main aim of the teaching development was to actively engage students in the process of conceptualising an interview schedule, carrying out interviews with people ‘in the field’ and analysing their own data using a guided approach to qualitative data analysis. The approach taken goes in sharp contrast to how research methods classes are typically carried out. These usually use standard lecture-based formats with minimal student input. Students often report a lack of interest when these types of teaching approaches are used. For example, Ramsden (2003) reported that reasons for non-participation among students in class include their perceptions that ‘the tutors talk too much and are giving lectures rather than conducting dialogues’ (p. 149). Thus, in the present teaching innovation, I sought to implement a strategy that would facilitate dialogue, and enhance interest among the students.

Indeed, Biggs (1993) described interest in the subject as a key to enhancing a deep approach to learning. A deep approach to learning has been described as having the desire to engage with the task over a prolonged period of time, and to seek meaningful understanding. It is characterised by high levels of cognitive activity, interest and enjoyment. In contrast, surface level approaches to learning are characteristic when the student has the intention to get the task done quickly with as little effort as possible being exerted. It is characterised by low cognitive activity, meeting external impositions and reproducing for assessment purposes only (Biggs, 1999). Fostering a deep approach to learning is imperative to enhance student understanding and is more likely to help the student construe meaning of the outcomes that are to be learned (Biggs, 1999).

In his 3P model of learning and teaching, Biggs (1999) attempts to present a framework describing the factors that determine learning. Specifically, he describes three points in time at which learning-related factors are placed: Presage, which is the stage before learning takes place, process which is during learning, and product, the outcomes of learning (see Figure 1). Biggs suggests first of all that students’ prior knowledge, ability, and level of motivation as well as the teaching context such as the expertise of the teacher, what is intended to be taught, how it will be taught and the class climate determines the degree to which the students adopt a deep or surface approach to learning. I aim to facilitate the development of a deep approach to learning in the students, and can use the model as a framework to develop an appropriate climate to this end.
Figure 1. Biggs’ (1999) 3P Model of Learning and Teaching

**PRESAGE**

- **STUDENT FACTORS**
  - Prior knowledge
  - Ability
  - Motivation

- **TEACHING CONTEXT**
  - Objectives
  - Assessment
  - Climate/ethos
  - Teaching
  - Institutional procedures

**PROCESS**

- **LEARNER FOCUSED ACTIVITIES**
  - Appropriate/deep
  - Inappropriate/surface

**PRODUCT**

- **LEARNING OUTCOMES**
  - Quantitative (facts, skills)
  - Qualitative (structure/transfer)
  - Affective (involvement)
Although a different theoretical framework, concepts from the Self-Determination Theory proposed by Deci and Ryan (1985, 1991) share commonalities with the notion of deep versus surface approaches to learning. Specifically, self-determination is a motivational theory that suggests that motivated behaviours vary in the degree to which they are autonomous versus controlled. Behaviours that are characterised as highly autonomous have an internal perceived locus of causality (deCharms, 1968), are experienced as volitional, and are performed out of interest and personal importance or to develop the self. In contrast, controlled behaviours have an external perceived locus of causality, and are experienced as being pressured by other people or by intrapsychic demands, such as feeling that one has to achieve high grades in order to feel like a worthy person (Ryan, 1982). Research has shown that self-determined or autonomous motivation is associated with more positive motivational outcomes in learning environments, such as higher perceived competence, interest and enjoyment and lower levels of anxiety, compared to controlled motivation (Black & Deci, 2000). Therefore, if the learning environment is autonomy supportive, it is likely to develop more self-determined motivation in the students, thus facilitating better quality learning. In turn, an autonomy supportive climate is developed by providing students with choice and a sense of personal control (Ryan & Deci, 2000). Indeed, based on previous research using a Self-Determination Theory framework, Ryan and Deci (2000) state that “Students who are overly controlled not only lose initiative but also learn less well, especially when learning is complex or requires conceptual, creative processing” (p. 59). Thus, Self-Determination Theory appears to be a very useful theoretical framework to apply to my teaching practices, and the teaching cycle presented here thus aimed to incorporate elements of an autonomy supportive climate.

Kolb’s (1984) theoretical propositions were also adopted in the present teaching innovation. Grounded in the notion suggested by Kolb (1984) that ‘learning is the process whereby knowledge is created through the transformation of experience’ (p. 38), the purpose of the present teaching cycle was to facilitate student development of research skills (collecting interview data and conducting analysis) and understanding.

There are two major dimensions to Kolb’s model. One is the ‘abstract-concrete’ dimension (AC-CE) which refers to how students take in new information. The other axis constitutes the ‘active-reflective’ dimension and concerns the processing of the information that the students have taken in. Learning takes place in a four step process, namely concrete experience (CE), reflective observation (RO), abstract conceptualisation (AC) and active experimentation (AE). CE refers to situations in which the learner is actively experiencing an activity. RO is where the learner is reflecting back on the activity. During AC, the student is being presented with or trying to conceptualise a theory or model of what is to be observed. Finally, the student engages in AE in order to plan for a forthcoming experience or activity.

Jenkins (1998, p. 43) presented a modified version of Kolb’s model which is illustrated below:
The usefulness of Kolb’s model is that it can serve as a guide to developing module material that incorporates theoretical understanding of concepts as well as using experience and experimentation as a key element. Further, it serves to meet the needs of learners who have different learning styles (for more, see teaching innovation #3).

The stages of Kolb’s cycle can be entered at any point, but needs to be followed in sequence. Further, it is imperative for effective student learning that clear links are made between the different stages. As part of this report, I will demonstrate specifically how Kolb’s theory applied to the specific sessions that constitutes the present teaching cycle. The aim was to take the students around the whole cycle and to use teaching methods that were deemed to be appropriate for each stage of the cycle. The cycle is presented below:

In class March 2004:

Stage 1: Abstract conceptualisation
Lecture on the reasoning behind qualitative investigations, the use of interviews and ensuring trustworthiness.

Stage 2: Active experimentation
In pairs, following a brainstorm, students plan interview questions.

In the field, March-April 2004

Stage 3: Concrete experience
Individually in their own time, students collect interview data with five different people on ‘The meaning of health’ and subsequently transcribe the interview data.

In class April 2004

Stage 4: Reflective observation
Structured in-class discussion on how one might ensure trustworthiness of interview data.

Stage 5: Abstract conceptualisation
Lecture session on the use of different types of qualitative analyses.
Stage 6: Active experimentation
The students plan the procedure which they will use to analyse their own data in the context of content analysis.

Stage 7: Concrete experience
Individually, the students analyse their own data.

Stage 8: Reflective observation
Class discussion on the results of the analyses.

Method of evaluation

Progress notes (modification or log)
In his book ‘Becoming a Critically Reflective Teacher’, Brookfield (1995) describes the use of teaching logs as a facilitative tool in becoming a critically reflective teacher. He states ‘Keeping a log of your private reactions to, and interpretations of, the events you think are important in your life as a teacher is one way of helping you realize several things about yourself. As you review your jottings on these events over a period of time, you’ll learn that they constitute a record of your preoccupations, obsessions and commonly experienced problems’ (p. 72).

According to George and Cowan (1999) a log is the means which links information about the teaching you are doing with the actions that you take. Based on George and Cowan’s (1999) suggestions, in my log I decided to include brief comments on the programme, attendance, unexpected behaviour, apparent successes, and actions planned for the next session across each of the sessions that were included in the teaching development. Another common component of log books is feedback, but this element was not included here as it forms a separate section in the report. The logging of these elements was done straight after each of the sessions and is presented by date in Table 1 which is located at the end of this report.

Feedback
At the start of the previous session covering a different topic (i.e. a week before the planned teaching cycle), I asked the students to write down the answer to the following question: ‘What makes for a good interview?’ The students replied anonymously, and handed over the folded paper slip to me. This allowed me to check the students’ prior knowledge and understanding of the academic concept prior to starting the teaching on interviews. It allowed me enough time to modify any plans for the teaching I would do the following week. Specifically, four of the descriptions from this brief exercise included the perceptions that a good interview was ‘simple questions, related to the issue’, ‘confidence, fluent conversation, background knowledge of the subject’, ‘open questions, questions that get information out of the participants, easy to understand questions’ and ‘questioning, structure, formal’. Although not inherently wrong, reflecting on these student answers revealed to me the relative lack of in-depth understanding of the intricacies of a good research interview. Hence, prior to the start of the first session I knew that some of the fundamentals of research interviews had to be covered.

Peer assessment constituted the primary type of feedback and method of ‘objective’ evaluation in this teaching development. Specifically, a colleague of mine from the department who is an experienced University teacher and who also has expertise in the subject area was asked to evaluate the final session of this teaching innovation. Prior to my colleague attending this session, I had devised a quantitative/qualitative form containing two
different sections (see form entitled ‘Evaluation criteria for peer assessment’ following this report). One section was labelled ‘Student Involvement’ (hereafter described as ‘Section A’) and was designed to assess the assumed preparation of the students, the degree of engagement of the students during the class, and the levels of enthusiasm they exhibited. The second section concerned assessment of student competence in the area of interview design and analysis, and this section was labelled ‘Subject-Specific Knowledge and Application’ (hereafter described as ‘Section B’). The results of this section could specifically help me to evaluate the degree to which the students had gained further insight into the intricacies of interview procedures (including sampling procedures) since they had completed the exercise on ‘what makes for a good interview?’ There was also scope for the evaluator/assessor to provide additional comments.

Reviewing the completed form, it was clear that the feedback was largely positive. Out of a score of maximum 15 for Section A, I achieved a score of 12. For Section B, the maximum score was 20 and here, I achieved a score of 15. The additional comments revealed that the students found the task interesting, that some critical discussion was evident between the students and myself, and that students were not afraid to ask clarification questions. Reflecting on this feedback I can conclude that the teaching cycle was quite effective with this group.

In hindsight, it would have been useful to ask the students to re-address the question ‘what makes for a good interview’ at the end of the session to compare their responses before and after the innovation and hand it in to me as additional documentation. However, I believe that the evaluator’s comments and my own perceptions and informal conversation/discussion of interview issues with the students demonstrated their increased level of competence and understanding.

Implications for future practice
The first thing that is important to take into consideration for future practice is the size of the class. It was a very small class with only 15 students, and this may have played a role in the effectiveness of the innovation. I am not sure whether the hands-on experience with the interview analyses that was done in the final session would have been possible with a very large group of students. However, I will attempt to replicate this innovation with a larger class. Indeed, the number of students doing this class next year will be at least 43. I can then compare the effectiveness of different sized groups.

One of the problems with tasks that need to be partly completed outside class is that there will always be some students who have not completed the task when the class reconvenes. Indeed, my experience tells me that it is often a problem getting students to do tasks in their own time when the tasks are not part of a summative assessment. In the present teaching innovation, this problem was seen with those who a) had not attended the first session and therefore not collected any interview data, or b) had just not carried out the task. One of the challenges will therefore be how to encourage more students to carry out these tasks. I believe that, given the level of interest displayed by the students who did carry out the task these students are more likely to talk to those students who did not turn up for the sessions. Hopefully, this will motivate the non-attending students to show up and carry out the tasks in the future.

As stated by Biggs (2003), ‘what works for one class does not work for another’ (p. 19), but Biggs’ (1999) 3P model represents a good framework for developing teaching sessions that may enhance deep learning approaches. Further, by continuing my emphasis on facilitating autonomous motivation in the students using an autonomy supportive teaching style, the students will be more likely to become interested in the teaching material and develop a deep approach to learning. It would have been useful, however, to collect
information directly from students via a validated instrument, such as the Study Process Questionnaire (Biggs, 1987) to assess the degree to which the students favoured deep or surface level approaches to learning.

Comments about personal learning (in this development)
Prior to implementing this teaching innovation, I was worried that leaving the students with a great sense of choice and promoting autonomy in the student would mean that very few of the students would turn up for the analyses session and/or choose to opt out completely of this exercise. This was a particular concern because in the last session in this teaching cycle, students were requested to analyse their data, and hence if they had not collected any data, a large proportion of this session might have been useless to them. To an extent this concern was disproved. Although a fair number of students were not present at the last session, most of those who turned up engaged with the exercise quite readily and appeared to enjoy the process. They exuded a great sense of ownership of their data and were keen to talk about unexpected findings which stimulated a discussion that was more critical than what I had experienced with these students previously. I believe this was partly because I allowed the students a lot of choice in the development and implementation of the interview task.

The balance between quantity and quality was another initial concern. I was worried that spending several weeks on a rather specific research method might mean that less time could be spent on other important research methods. However, in hindsight, I believe that it was far better to cover fewer types of methods thereby encouraging student immersion in this type of method. It should promote a greater level of understanding in the students.

According to the 3P model of learning and teaching suggested by Biggs (2003) it is unusual for a student with no prior knowledge of a subject to initially have an approach to learning that is very deep. Hence, teachers continually face this problem with subjects that, initially, have no implicit meaning to students. However, I believe, based on my experience with implementing this teaching innovation, that a relatively deep approach to learning can develop fairly quickly by using teaching strategies that ask students to explore concepts outside class, and that develop a sense of autonomy in the students.

In conclusion, I strongly believe that developing perceptions of ‘ownership’, feelings of autonomy and personal control in the students in the future will facilitate this deeper approach to learning.
Table 1. Teaching log of individual taught sessions

<table>
<thead>
<tr>
<th>MARCH 12, 2004</th>
<th>APRIL 30, 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The programme</strong></td>
<td><strong>The programme</strong></td>
</tr>
<tr>
<td>• Introduction to one-to-one interviews in sport and exercise research and</td>
<td>• Introduction to qualitative analysis (20 minutes)</td>
</tr>
<tr>
<td>testing pre-existing knowledge (40 minutes)</td>
<td>• Identify categories and dimensions from the interviews (40 minutes)</td>
</tr>
<tr>
<td>• In pairs, students make brainstorm of ideas for possible interview questions</td>
<td>• Present results to the other students (incl. nature of sample) (20 minutes)</td>
</tr>
<tr>
<td>that relate to a pre-determined focus of inquiry. The focus of inquiry is</td>
<td>• Class discussion (10 minutes)</td>
</tr>
<tr>
<td>“The meaning of health” (15 minutes)</td>
<td></td>
</tr>
<tr>
<td>• Class discussion on interview questions (15 minutes)</td>
<td></td>
</tr>
<tr>
<td>• Individually, students are asked to develop an interview schedule in</td>
<td></td>
</tr>
<tr>
<td>their own time and carry out semi-structured interviews with five people</td>
<td></td>
</tr>
<tr>
<td>using appropriate sampling techniques (outside class, in their own time)</td>
<td></td>
</tr>
<tr>
<td><strong>Attendance</strong></td>
<td><strong>Attendance</strong></td>
</tr>
<tr>
<td>7 out of 15</td>
<td>11 out of 15</td>
</tr>
<tr>
<td><strong>Unexpected behaviour</strong></td>
<td><strong>Unexpected behaviour</strong></td>
</tr>
<tr>
<td>• Few students turned up for the session</td>
<td>• Students were interested in using more time on interview analysis</td>
</tr>
<tr>
<td>• I was surprised of students’ limited knowledge about ‘what makes for a</td>
<td></td>
</tr>
<tr>
<td>good interview?’</td>
<td></td>
</tr>
<tr>
<td><strong>Apparent successes</strong></td>
<td><strong>Apparent successes</strong></td>
</tr>
<tr>
<td>• Students liked to engage in flip-chart brainstorm activity</td>
<td>• Critical discussion was initiated</td>
</tr>
<tr>
<td>• Most students got lots of ideas for interview questions</td>
<td>• Students were keen to talk about their findings</td>
</tr>
<tr>
<td><strong>Actions planned</strong></td>
<td>• Students demonstrated increased level of competence</td>
</tr>
<tr>
<td>• Encourage students who did not attend this session to attend the following</td>
<td>• Allow more time for interview analysis and students presentation of results</td>
</tr>
<tr>
<td>session by stressing the importance of this task for their exam</td>
<td>• Review usefulness of this innovation with larger groups</td>
</tr>
</tbody>
</table>

*Note. Only two scheduled face-to-face sessions were included as part of this teaching development. The other two weeks included only self-directed learning tasks.*
Evaluation criteria for peer assessment
Evidence of competence
THE
April 30, 2004

STUDENT INVOLVEMENT
Please circle the appropriate response

Have all the students who are present in the session prepared for the task (i.e. conducted and transcribed interviews?)
None None is prepared
Only a few students are prepared
About half of students are prepared
Most students are prepared
All students are prepared

In general, to what extent do the students engage with the task in the session (i.e. work effectively in the session without disruption)?
Lack of engagement with a lot of disruption
A little bit of engagement with quite a lot of disruption
A moderate level of engagement with a moderate level of disruption
Quite a lot of engagement with minimal disruption
Complete engagement with no disruption

What level of enthusiasm do the students display towards the task?
None
A little bit
Some
Quite a lot
A lot

SUBJECT-SPECIFIC KNOWLEDGE AND APPLICATION
Please indicate your answer by circling the appropriate response

To what extent do the students...

Demonstrate a critical understanding of the data they have gathered?
Not at all
A little bit
Somewhat
Quite a lot
A lot

Demonstrate an ability to employ content analysis?

Provide evidence of using a “purposive sample”?

Demonstrate an ability to answer the question (“The Meaning of Health”)?

Please provide additional comments:
Students engaged with the task straight away & discussed the task together, actively trying to get help, and seeking clarification when problems with critical analysis evident in their sampling process. Students clearly found the topic interesting & had considered factors that affect the data collection & analysis processes

Name of assessor: Jo Thatcher
Signature of assessor: [Signature]
Date: 30-04-04
Class/Module
The module description (intended learning outcomes, teaching and learning strategies and assessment methods may be attached).

Level 2  Semester 2 (2003-2004)
Numbers in class 15
Meetings (timetable) Fridays 9.00-10.50 a.m. (March 12 – April 30, 2004)
Venue Carwyn James Psychology laboratory

The intended innovation:- Purpose
To engage students in designing, conducting, and analysing research interviews. At the end, the students are also asked to present the findings of their analyses.

Expected outcomes
By the end of these sessions, the students should have
- Gained experience with designing interview schedules
- Increased their understanding of conducting research interviews in the field
- Practised qualitative data analyses
- Presented their findings

Approach
As part of the Research Methods class (SS29020) I have to cover interviewing as a research tool as well as qualitative data analyses. Following an introduction of the use of one-to-one interviews in research (including types of interview questions, designing interview schedules/guides and sampling methods) the students are asked to each conduct semi-structured interviews with four different people (in their own time) regarding “The meaning of health”. The title is sufficiently open-ended to allow the students some flexibility in the design of the interview schedule. Subsequently (March 12), starting this task, the students are asked to brainstorm concepts relating to the focus of inquiry (i.e. “The meaning of health”) on a flipchart paper, and, following the session, in their own time to develop a short interview schedule to guide the interviews. The students are given up to four weeks (excluding the Easter holidays) to carry out this task. In a later session (April 30), students are asked to bring along their interview transcripts, and following a short introduction to qualitative types of data analyses, are asked to perform inductive content analysis using their “real-life” data. Finally, in the last part of this session, students are asked to present a short background to their interviews (e.g. reasons for choosing their participants) and the findings of their analyses. At the end of the session, I will engage in a summary discussion with all the students.

Evaluation Strategy and Criteria
1) At the beginning of the session on March 12, the students are asked to write down the answer to the following question on a piece of paper: “What makes for a good interview”. All answers are anonymous and handed in to me anonymously. This process is repeated in the final session (April 30). This can help me to identify the development of their learning over the sessions.
2) A colleague from my department who has extensive experience with teaching will observe the final session when students analyse and present their data. The evaluation
is based on a questionnaire that is prepared by me, and agreed by the evaluator. The questionnaire assesses a) student involvement and b) students' subject-specific knowledge and application (see Appendix). This form was developed specially for the purposes of this teaching innovation. The questionnaire will provide me with some data and comments that I can reflect on to improve student learning in the future.

Please ask your Mentor to countersign this form.
The top sheet should be kept in your Portfolio
The copy should be given to your Mentor.

The UWA Sept 01
Module identifier: SS29020
Module title: Research Methods and Statistics Two
Academic Year: 2004/2005
Co-ordinator: Professor Jonathan H Doust
Semester: Semester 2
Other staff: Dr Cecilie Thogersen Ntoumani

Course delivery:
- Lecture: 21 Hours 11 x 50 min lectures on statistics, 10 x 50 min lectures on research methodologies
- Seminars/Tutorials: 12 Hours 6 x 50 min sessions on abstract critique, 6 x 50 min sessions on developing and reviewing preliminary dissertation proposals
- Practical: 11 Hours 11 x 50 min computer practicals on using SPSS

Assessment:
- Semester Exam 1.5 Hours Examination: Methodological critique of research abstracts. 50%
- Semester Exam 1.5 Hours Coursework: Computer-based test of competency in SPSS and interpretation of data assessment. 50%
- Supplementary Exam 3 hour examination 100%

Learning outcomes
On completion of this module, students should be able to:
1. Demonstrate detailed knowledge of approaches to research in sport and exercise science
2. Critically analyze existing literature from a methodological viewpoint
3. Demonstrate competence in using SPSS for advanced statistical analysis and interpretation (specifically: ANOVA including one, two and repeated measures; multiple regression)
4. Develop and critique one possible investigation for a final year project

Aims
1. To develop a detailed and self-critical appreciation of possible approaches to research and of the steps involved in the process of undertaking an investigation
2. To develop advanced statistical skills using SPSS
3. To formulate a possible investigation for the final year dissertation and to critically appraise such a proposal

Brief description
This module is concerned with developing students knowledge and understanding of research methods and statistics to an advanced level, enabling them to take a more sophisticated approach to material in other modules, and to enable them to undertake with confidence an extended independent investigation in the final year of their degree. Research methodologies will be considered in detail. Examples from existing literature will be studied to help students apply concepts in practice. Just over half the module will be concerned with developing skills in data analysis using SPSS. The module finishes with preparatory work for the Level 3 dissertation.

Reading Lists
Books

{12}

**Notes**

This module is at CQFW Level 5