

Information Literacy Assessment by Portfolio: a Case Study

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Structured Abstract

Purpose – The purpose of this paper is to report the results of a case study evaluating the revision of the assessment methods of an information literacy module. The revised assessment method took the form of a portfolio.

Methodology/approach – During 2004, all 6 credit modules at the University of Teesside had to be reviewed and restructured into 10 credit modules. Following Biggs' principles of constructive alignment, the tutors looked at the existing module aims and learning outcomes. A review of the literature and previous experience informed the selection of the new assessment method by portfolio. An evaluation of

the assessment method was undertaken after the module had run.

Findings – The paper finds that the assessment method had real strengths especially in terms of validity. It was also economical and efficient. Students knew what they were expected to do and where they needed to put in effort.

Research limitations/implications – The assessment by a portfolio method has been carried out once with a relatively small cohort of students, so the findings can only be regarded as interim.

Practical implications – The tutors believe that they have created a very useful module with an aligned assessment method which would be of benefit to a much greater number of students

Originality/value -There is a shortage of publications that report the results of the use of portfolios for the assessment of information literacy.

Keywords

Portfolio; information literacy; assessment

Classification

Case study

Introduction

What is the most effective way of assessing students' information literacy?

Librarians devote a considerable amount of time to teaching students how to search and evaluate sources of information, but how can we know that they've grasped these skills? Assessment by portfolio of evidence is increasingly being used in higher

education (Akar, 2001). Would this method bring benefits for information literacy assessment? This article reports on a case study undertaken on an information literacy module by four colleagues from the Library and Information Services department at the University of Teesside in the United Kingdom.

The literature on information literacy tends to concentrate on “discrete’ activities which are not part of a credit-bearing curriculum” (Johnston and Webber, 2003) so there is little collective knowledge available about effective assessment methods for information literacy. Therefore, this case study also drew upon the literature from education and set out to put theory into practice.

Assessment in higher education

The research literature of higher education broadly agrees that assessment, the process of measuring and judging student learning, is pivotal to the learning process itself. “Students learn what assessment assesses” (Laurillard, 2002), the reason being that “assessment defines what students define as important” (Brown, 2001). Consequently, changes to assessment methods can radically alter what and how students learn, and, if well planned, can encourage a deep approach to learning. A firm understanding of assessment issues, and current “evolutionary shifts in assessment approaches” (Van Deventer quoted in Fourie, 2001) is therefore essential for teachers in higher education.

Assessment in higher education is normally categorised as being diagnostic, judgemental or developmental. Assessment is judgemental (summative) when it gives licence to proceed or to graduate, or is aimed at selection. For students the focus is always on summative assessment:

“students fear this outcome, as futures hinge on it” (Biggs, 2003)

Diagnostic assessment attempts to diagnose the learner's current ability or knowledge and identify any potential problem areas. Developmental (formative) assessment aims to give students feedback about their performance and to develop their confidence in their abilities (Rowntree, 1987).

The group case study involved the redesign of a piece of summative assessment that also aimed to be developmental. When redesigning the assessment method one of the considerations was to find a method that matched this purpose. Brown (2001) highlights the importance of considering the purpose of assessment and not assuming that one method can be used for a number of different purposes. He cites the example of reflective diaries: a useful developmental tool but when the purpose of assessment is judgemental, and therefore the stakes are higher, students are less likely to be honest about their thoughts and feelings.

Three crucial issues in assessment are reliability, validity and feasibility or utility. Reliability is concerned with consistency of marking against the selected criteria, and is a measure of fairness. However, the most reliable methods, based on recall of knowledge, may not be the most valid. Validity is the measure of the effectiveness of an assessment method in actually measuring what it is intended to, i.e. the learning outcomes, which also requires that the criteria are appropriate for this. Consistency is needed between assessors, within the individual assessor over pieces of work, and over periods of time. (Baume, 2001; Brown, 2001). Utility is concerned with how practicable an assessment is. This could be in terms of time (students' and teachers'), resources and flexibility. Combining reliability, validity and utility takes thoughtfulness and balanced judgement.

Overview of the information literacy module and student population

At the University of Teesside the majority of students receive some information literacy instruction from Library & Information Services staff. Whether this is sufficient is doubtful, since the most common delivery pattern is a one hour talk and workshop, with only limited opportunity for students to engage practically with the material. In general there is very little formal assessment of the students' learning. Practice at Teesside appears to be fairly typical of UK higher education generally.

The information literacy module in which this case study was located was a core half module (worth 6 credits) at first year degree level for a particular flexible programme, the Negotiated Learning Scheme. Students chose their own modules from across the full range offered by the university. The information literacy module was compulsory to ensure that students received some information literacy instruction. Most Negotiated Learning students opted to take this module during their first semester of study at the university. Research suggests that information literacy should be embedded within a subject discipline (JISC, 2002) although the flexible nature of the Negotiated Learning programme made this impossible.

The module was developed with the aim of equipping students with the necessary skills to achieve graduate competencies, in particular to be information literate. The need for such a module had arisen in part because of the amount and complexity of information sources now available. Helping students develop their critical thinking skills was a key component of the course, since the growth of the World Wide Web in particular requires students to evaluate the authenticity and quality of web sources in a way which is not required for the more traditional peer-reviewed sources.

The Negotiated Learning Scheme was specifically designed to attract adult learners who would not normally engage in higher education. It did not ask for particular qualifications, on condition that the learner possessed the appropriate knowledge

and skills to benefit from the programme. Its students, then, were from non-traditional backgrounds. An analysis of the students from the academic year 2003-2004 revealed that 88% were women, 100% part timers, and 100% were mature students (13% were between 21 and 24, 26% between 25 and 35, and 61% were over 36). Only 12% came to the course with A levels, the traditional entrance qualification for higher education in the UK. The majority were classroom assistants wanting to train as teachers.

Adult learners in higher education

As the students in the group case study were adult learners returning to education often after a very long gap, their past educational experiences may have been negative. (Race, 1999). Educational research suggests a contradiction between being adult and being judged and directed by others. (Young, 2000). Anxiety about assessment is a problem for all types of students but for adult returners with low self-esteem it can be a major problem. Young found that even when receiving positive feedback a student of high ability but low self-esteem was extremely vulnerable to any perceived criticism. (Young, 2000) These findings are in line with those of Yorke (cited in Rust, 2002) who conducted research into retention and found that non-traditional students may be lacking in self-belief and require sensitive feedback. Mature students understandably are particularly anxious about their first experience of assessment in higher education (Merrill, 2001) specifically concerning what level and depth are required.

With this group of learners the tutors identified a number of issues. These students were often juggling a career, family and study. A number of the students did not have access to a computer at home and there were some who were anxious about using computers. The expectations of some students about finding and using information were initially very different to those of the tutors. The tutors' impression

was that those who were reasonably competent with information technology often believed that the only information source they needed was Google. There tended to be two main barriers to learning, either students felt they already had the skills to find information or they were very anxious about the whole process and feared failure.

However, according to Knowles' work on andragogy (the study of how adults learn) (1990) adult learners are likely to be highly motivated to learn when they can see personal relevance; are more interested in practical application than theoretical issues (i.e. learning is most helpfully problem centred rather than subject centred); prefer active participation to passive reception, and like being self directed.

With this in mind, formative assessment should be available to help students gauge their progress and alleviate anxiety about the standard required. Students should also be given the opportunity to demonstrate the practical application of skills acquired. Since they are at the start of their university careers, students should be encouraged to develop as deep learners who reflect on the learning process, and therefore assessment should consider the process as well as the product and encourage reflection on those. Giving students the opportunity to demonstrate that they can practically apply skills learned would be helpful for them, and, importantly, the teacher should provide very clear guidance about the assessment so that confusion and anxiety are kept to a minimum.

Evaluation of the original version of the module

The module's previous assessment method was a bibliography on a subject chosen by the student and a research report describing and evaluating the process of the search.

The bibliography was not a traditional list of everything that the student had read on their subject, but one which included items that the student had found and evaluated as a useful introduction to their subject. This needed to include a minimum of six books, six journal articles and six websites. The marking for this bibliography was twofold: the student needed to demonstrate both evaluative skills resulting in a useful bibliography on the subject and the ability to reference those items correctly using a recognised referencing system of their choice.

The research report was a critical evaluation of the process of creating the bibliography and should have included a short description of the subject chosen which could clarify any unfamiliar terms, the search strategy used and a description and evaluation of the process, for example, which databases the student had chosen, why they had chosen them and how they had searched them. It should also have included an evaluation of the overall search process including any problems they had encountered and any solutions they had found to those problems.

Each element counted for 50% of the final mark and both elements needed to obtain a pass in order to pass the module.

There were aspects of this assessment that worked well. In asking students to produce a bibliography on a subject of their own choice, students were given a valid task which fit well with the learning outcomes for the module. The quality of referencing within the bibliography was often quite good in terms of books and journal articles with minor mistakes such as errors in volume or issue numbers. The only area of concern was the referencing of websites as students often did not follow the guidelines and often only put down URLs, which if incorrect, made the sites impossible to find and check. The content of the bibliography was often reasonable although there were occasions where inappropriate books or journal articles were

included that were out-dated or not sufficiently relevant to the subject chosen. This experience confirmed that there needed to be a greater concentration on asking the students to demonstrate how they evaluated the items in the bibliography e.g. what rationale they gave for including an item that appeared to be dated.

Despite these concerns about the bibliography, the main area of concern was the research report. It was often of a very low standard and contained very little critical reflection and lacked the necessary detail such as what they had searched and how, which made it difficult for the tutors to assess learning. This lack of detail meant that the tutors did not know how well or thoroughly the students had searched the sources. The report often ended up as a diary of the student's thoughts and feelings rather than an assessment of the process. Even students who had produced a good bibliography struggled with reflection and evaluation, implying that the tutors' expectation of their critical skills, especially considering the profile of Negotiated Learning students, was unrealistic.

Students also appeared to have high levels of anxiety over the assessment, perhaps indicating that they were unclear as to what was expected of them. Formative feedback may have helped to overcome their anxiety but there had been few opportunities for such feedback with this assessment method. Students did not hand in drafts of their assessed work and therefore although they were given timely individual feedback on their final bibliography and research report, this was only received after they had completed the module.

Overall, it was obvious that students experienced difficulty with some areas of the module and assessment, but because of the lack of detail in their research report, it was difficult for the tutors to pinpoint what those areas were.

Some students had taken a deeper approach to their learning and provided more evidence than was required, such as print outs of searches performed, but since this was not asked for in the assessment criteria, they were not rewarded for this extra effort. The tutors wished to encourage this deeper approach and make it explicit in the assessment criteria, to ensure that it was definitely being encouraged.

Process of reviewing the module

During the summer of 2004, all 6 credit modules at the university had to be reviewed and expanded into 10 credit modules, to take into account the restructuring of the university year. This review process gave the ideal opportunity to reassess both the learning outcomes of the course and in particular the method of assessment. There were some very good elements to the previous practice that the tutors wanted to retain such as student choice of topic, group work within sessions and timely constructive summative feedback. It was hoped that these elements could be built upon but that the problems inherent in the previous assessment method, such as the lack of reflection and evaluation, could be rectified. The aim was to improve the assessment for both the students and the tutors.

Following Biggs' principles of constructive alignment (Biggs, 2003), the tutors started by looking at the existing module aims and from this looked at the module learning outcomes. The previous module had nine learning outcomes which were considered to be too many. The tutors wanted to define the minimum number of learning outcomes so that they could focus on the most important areas for teaching and assessment. Originally they devised a long list of desirable outcomes, finally streamlining these to six essential skills for the following three reasons: crucial skills for researching the literature would receive more focus, and hopefully mastery; the arithmetic of assessment suggests that minimising the number of essential outcomes

maximises the reliability of the assessment; and from the students' point of view fewer outcomes afford fewer opportunities to fail. (Baume, 2001).

The learning outcomes were that by the end of the course students should be able to:

- Identify and locate specific material, facilities and services in the LRC
- Use the LRC Catalogue to identify books, journals and other materials
- Search for and access electronic journals, online databases and Internet information on a specific topic
- Use some advanced search techniques e.g. simple use of Boolean operators, truncation
- Use a standard referencing format and compile a short bibliography on a chosen topic
- Describe the methods used to identify sources, select references and locate the documents for a particular topic

Analysis of the learning outcomes led to the identification of three distinct elements for assessment: a bibliography (the product), the ability to search effectively (the process), and the ability to employ the higher order cognitive skills of evaluation and critical reflection.

Selection of assessment method

There were many assessment methods which could have been used, though not all were of equal value for the needs of this module.

One-off tests such as multiple choice questions could have sampled a wide range of knowledge quickly. They would have been quick and easy to mark (though harder to set), and had high reliability. Validity, however, would have been more doubtful; for example, a student may have been able to select the correct search strategy from a

list of possible search strategies but not formulate an appropriate one of their own in the real world (Grassian and Kaplowitz, 2001).

Examinations and assignments such as essays could have measured understanding, synthesis and evaluation, and would have been fairly easy to mark for grading. But again the validity of the method would not have been as high as if a student had had to perform the search. Similarly, reports on literature searching may have had limited validity since they could have only measured “know how of practical skills but not the skills themselves” (Brown, 2001)

Direct observation of students performing a search would have achieved high reliability with structured observations, and validity would have been high, although it would have been difficult to observe evaluation skills at play. The major drawbacks of this method were that it could have been very intimidating for the student, and very time consuming for the tutor to observe all search stages with all sources (or sufficient to feel confident in the award of a particular mark).

Presentations as an assessment method would have had the advantage of being quick to mark based on a checklist of criteria, though feedback may have been more time consuming. As a method it could have been fairly reliable, though not particularly valid, since students talking about how they tackled a literature search would not have been quite as good as if they had provided evidence of each stage. In the tutors’ experience of using this method, students found the experience stressful, and the tutors felt that it tested many things not crucial for the learning outcomes of the module. In view of the anxiety levels likely in the students on this module it did not seem helpful to use it with them at this stage in their academic careers.

Group projects appeared to have much to recommend them, and it would have been possible to set an assignment in which a group worked through a literature search together. Brown (2001) sees group work as having the “potential for sampling wide range of practical, analytical and interpretive skills” Students have the opportunity to apply “knowledge, understanding and skills to real/simulated situations...learning gains can be high particularly if reflective learning is part of the criteria”(Brown, 2001.) It could have been a very beneficial method for helping students develop collaborative learning skills at the start of course. However, since all were part time, and most working, it could have proved difficult for students to find time to work together. In addition the personal relevance of an individual topic would have been lost.

Consideration of the outcomes to be assessed and the methods of assessment available were already disposing the tutors towards a portfolio as a vehicle for combining the three elements: a bibliography, evidence of the search processes and revisions, and a critical reflection on the process with an evaluation of the various sources used. A portfolio would allow students to record activity, show progress and aid reflection.

Portfolios in assessment

Use of portfolios in higher education has escalated in recent years (Klenowski, 2002), and there are examples in the literature of their use in the assessment of information literacy (Fourie, 1999 & 2001, Nutefall, 2005). A wide array of definitions and interpretations exist. Baume (2001) calls a portfolio “a structured collection comprising labelled evidence and critical reflection on that evidence...produced as a part of a process of learning”. Another commonly used definition is Paulson’s (1991): “A portfolio is a purposeful collection of student work that exhibits the student’s efforts, progress or achievements in one or more areas. The collection must include

student participation in selecting contents, the criteria for judging merit, and evidence of the student's self-reflection". Smith and Tillema (2003) stress the importance of defining clearly the type of portfolio required in order to avoid confusing assessment tasks which can distort selection and development of the portfolio. For the purposes of this module, according to their categories, the portfolio would be mandatory, and for learning and assessment purposes, so could therefore be described as a training portfolio (as opposed to a dossier, reflective or personal development portfolio). Most definitions and models, however, share the themes of collection, selection and reflection.

This method looked to be a reasonably authentic form of assessment, approximating closely to real life behaviours, since the whole of the task would need to be performed, with evidence of mastery of each of the component parts of a literature search. Portfolios, through their emphasis on process and, in this case, the revision of searches (particularly online searching) should encourage students to see that there is more than one successful search strategy, and that literature searching is an art as much as a science. Searching requires flexibility and creativity, and it is important to learn to experiment with different searching styles and processes. A portfolio would allow students to show what steps they have taken and why, what capabilities they have developed, and the progress they are making towards achieving the learning outcomes of the course. Recognising the extent and limits of what they know would help students identify areas for future development, useful in their continuation as lifelong learners.

A portfolio can emphasise a holistic approach to studying by allowing students to see each part of the process in its wider context, encouraging student self-assessment. It could also prove to be a powerful tool in helping students to develop a template for

present and future information gathering aspects of their research (Snaveley and Wright, 2003).

In terms of efficiency for students, there is some agreement in the literature that production of a portfolio can take a long time, but this is outweighed by the “profoundly educational and developmental” nature of the method (Baume, 2001). In theory all the work produced for the portfolio should have been done for the previous method of assessment, but extra time would be required to record this, and for the student to formulate their thinking more formally. The module was, however, now worth ten instead of six credits, for which this workload did not seem unduly onerous.

The sectional nature of the portfolio lends itself to formative assessment, since it would be easy to submit piece by piece, allowing students to adapt their work and improve the final version. Designing the portfolio around discrete learning outcomes also means that it would be possible for students to fail on certain parts only, rather than the whole thing, making resubmission quicker and easier.

From the tutors’ point of view it should be easier to assess both the individual components of the portfolio and the totality of it, and easier to assess the extent of graduate qualities achieved, such as the formulation of the problem, the finding of information, evaluation of alternatives, analysis, and solving of problems (van Niekerk quoted in Fourie, 1999). The portfolio structure may also produce benefits for the tutors in terms of efficiency and the time taken for marking. Certainly, the structure should help tutors identify more readily gaps in student knowledge and understanding, allowing fine tuning of the teaching in future. Therefore, the decision was made to use a portfolio as the assessment method.

Nature of the portfolio

The portfolio would still include a bibliography on a topic of the student's choice comprising at least six books, journal articles and websites, but replacing the research report would be a collection of evidence to demonstrate the process which had been undertaken to lead to this bibliography. The students were required to provide evidence that they could formulate a search strategy based on an information need, identify potential sources of information, evaluate those sources and use evaluative skills gained to determine the quality of information found on a number of web sites. The tutors felt it was important to ask students to provide evidence of evaluation of individual items, as there had previously not been sufficient proof as to why items had been included in the bibliography and they also wanted to see what criteria students gave to rejecting items they had found in their searching. The tutors also wanted evidence that the students could actually locate the books and journals found on their search and reference them appropriately. Finally the tutors wanted students to reflect on the whole process and as part of this reflection, identify what they had learnt on the module and areas for future development of their information skills. The tasks involving reflection and evaluation would reward a deep approach to learning.

Careful consideration was given as to how closely the form, structure, size and content of the portfolio should be specified. Use of proformas, (template documents) was decided upon after an internet search for similar modules and their assessment methods turned up a portfolio used in the United States (Empire State College, 2001), composed partly of proformas for the student to complete (for example, "list all possible key phrases, concepts or synonyms that can be used to help you find additional information on your research question" and "provide the search statements you used for your catalogue search"). This guided structure looked to be extremely beneficial in allowing the students to demonstrate the learning outcomes, whilst

directing them in a logical step-by-step search process. The template can be found in Appendix 1.

The tutors did, however, have some residual qualms as to the structure and content of the portfolio. Although students should, in theory, be able to see the overall context of each piece of work, there was a possibility that they might actually miss the bigger picture through mindlessly completing the component parts of the proformas. The tutors also wondered whether, through the use of proformas, they would be spoon feeding the students too much. Conversely, there were concerns as to whether the students would feel intimidated and confused by so much paper to fill in. A further source of unease was whether students would assume from the template that this was the only possible way to perform a literature search; different disciplines may have different emphases; and there will always be a place for serendipity, asking advice, looking in bibliographies at the end of books and so on. However, this could be discussed in class, and on the whole it was judged that this would still be a very useful model for students to learn to follow in future information seeking aspects of their research.

In order to ensure fairness Baume (2001) recommends setting an upper limit on the size of the portfolio and not marking beyond that. It was deemed that this would not be necessary, since a more usual problem on this course had been getting the students to write a sufficient amount. Instead a target word count was set for the reflective piece of writing.

Many types of portfolio allow students a great deal of flexibility in terms of selecting contents. Generally, evidence is acceptable as long as students can justify that it demonstrates attainment of the learning outcomes. In the process students will develop skills of evaluation and self-assessment. However, Baume states

“Assessment will be easier if assessors specify the structure. Some students, too, on their first portfolio, may prefer to work to a given template” (2001). Given the student profile for this module, the decision was made that on balance it would be most appropriate to prescribe the contents quite tightly, even though that might mean losing one of the benefits of portfolios: a clear sense of ownership. It was hoped that the fact that students are able to select a topic of personal relevance would mean that they would more highly value the final piece of work..

Smith and Tillema (2003) define four types of portfolio. This portfolio was a clear example of a training portfolio as it had a fixed format for evidence and reflective comment.

The tutors realised that part of their teaching would need to focus on making expectations as clear as possible so that students' performances really did reflect their capabilities (Baume, 2001). This would be done via a module handbook explaining the assessment and the purpose of the portfolio, and giving assessment criteria; discussion throughout the course of the learning outcomes and criteria; giving feedback; and encouraging learners to self-assess their own developing portfolios. To help the students construct the portfolio, they were provided with a checklist of required contents. Tutors also provided an example of a good portfolio and extracts from a poorer quality portfolio, which were to be used in class at relevant points to reinforce the link between teaching content and assessment. It was hoped that by discussing the examples in class, critical thinking and evaluation skills would be encouraged.

The tutors were very conscious, however, that the module is about research information literacy “with portfolio assessment being only a means to determine whether and to what extent that has been achieved” (Fourie, 1999). They were very

keen, therefore, to ensure that teaching about the compilation of the portfolio didn't overshadow students' acquisition of these skills.

A detailed checklist was selected as the marking scheme. (See Appendix 2) Although based on the one used in the previous assessment method, this was revised considerably to reflect current learning outcomes and to provide a fair balance of marks between sections. The tutors were reasonably confident in the validity of the assessment in that the criteria matched well both the task and the learning outcomes. The assessment was to be criteria referenced in keeping with the University of Teesside's assessment regulations. The assessment criteria would be given to students and discussed with them, since "clear assessment criteria are a sine qua non of an effective assessment strategy" (Woolf, 2004).

The module in practice

Teaching methods and material were redesigned to fit in with the tutors' idea of an experiential problem solving approach. The teaching sessions followed the structure of the portfolio. The module started with how to develop a search strategy from an assignment topic, followed by adapting that strategy to search for books (week 2), journal articles (weeks 3-4) and websites (week 5) prior to a summary session in week 6. Students were encouraged to critically evaluate the results of their searches. Each session was used to build systematically upon a group literature search. The relevant section of the portfolio was used to record what was done in the session, linking the assessment directly with the teaching. Exemplar material was also used within sessions to discuss good and poorer practice. In the past students had said they felt that they could not make a start on the assessment until after the teaching had finished; now they were actively being encouraged to begin while the module was running. The students could see how what was being taught related to what they needed to do. Many of the students followed up sessions by attempting the

related section of the portfolio. The work they produced introduced the possibility of increased formative feedback because students were producing work as the module progressed. Giving students this formative feedback was helpful not just for them but also for their peers; the tutors often witnessed them showing each other what they had produced and sharing feedback. This process enabled the tutors to pick up on problems while they were teaching the course so they had time to address them. Importantly the feedback helped some students overcome their anxiety. Brown (2001) believes that “this approach is more useful for learning than a thorough marking of the final version of an assignment. It demonstrates to students that they can improve”.

Having now taught the module once and marked the portfolios, it was possible for the tutors to make some initial comments about the results of redesigning the assessment. Of the ten students in the cohort, nine undertook this assessment; care therefore needs to be taken over the interpretation of the results of such a small number. However the assessors had a greater level of confidence that students who undertook the portfolio had achieved the level reflected in their grades.

The tutors thought that this assessment method had real strengths especially in terms of validity. This form of assessment had been chosen because it was thought to be valid and the tutors continue to believe that it is, as students clearly demonstrated what they could and could not do. It was also economical and efficient. Students knew what they were expected to do and where they needed to put in effort. There was no hidden agenda, the marking criteria and templates made expectations transparent to students. Some students in this group would not have performed as well under the old assessment format. Making expectations and assessment criteria transparent meant that students did not need to be skilled at identifying cues. Taking away the anxiety about what was expected gave them time

to concentrate on what was really important. One example is a student who had attended the whole module previously but because of her anxiety had not submitted the assignment. The comment below is taken from her reflection in the portfolio:

I have a major blind spot where computers are concerned they are my Achilles heel ...At the outset of this module I would not have believed that I would learn to enjoy searching for information. This module has broken down my barriers to learning in this field and because of the learning process, I have received confidence to carry on and develop my skills and knowledge in this area.

(Extract from student portfolio)

This student not only thought she had developed skills; she was able to demonstrate them clearly in the evidence section of the portfolio. From the assessors' point of view the portfolio gave the necessary evidence to assess level of understanding. It made providing developmental feedback to students much easier as the tutors could now build confidence by pointing out what had been done well and suggest some areas that were within the students grasp for future development. Student feedback suggested that they liked the new approach to teaching and the way it was aligned with the assessment. They appreciated the level of guidance because this was their first assessment at higher education level. The more closely related the portfolio was to a genuine information need, the more it appeared to be valued by the student. Searching for information for a real purpose made students persist and motivated them. Some students did demonstrate a deep approach to this assessment and produced excellent bibliographies.

In the tutors' past experience, anxiety about assessment had been a major problem which nothing seemed to address. It would be untrue to pretend these students were not anxious about being assessed. However while some students were initially very

anxious about the assessment, this did not seem as big an issue as the module progressed and their confidence increased. Research into approaches to learning suggests that high levels of anxiety are linked to a surface approach to learning. (Ramsden, 2003). As well as reducing the level of anxiety it was hoped to encourage a deeper approach. In order to pass the module, students had to provide evidence of all stages of a literature search. Providing the evidence forced students to practise and helped them to grasp concepts.

For the tutors, a very significant benefit (which exceeded expectations) was that it was now extremely easy to identify individual or group misunderstandings or problems in grasping concepts. Several students, for example, seemed to have confused methods of searching the library catalogue with methods of searching online databases and omitted subject searches on the catalogue. Given Laurillard's belief that "Students' misconceptions are typically 'pedagogic errors' ... born of poor teaching rather than ignorance" (2002) this can be seen as "formative evaluation of teaching" (ibid), and the assessments will therefore facilitate improved teaching of the next cohort. Moreover, it became clear that not all students had seen the link between their search strategy and the rest of the process – it was necessary to make this explicit. Literature searching is an iterative process but perhaps the structure of the portfolio suggests that it is linear.

Despite the tutors' misgivings before the assessment implementation, only two issues still gave significant cause for concern. There were continuing concerns regarding reliability. When all four tutors marked the portfolio there was some discrepancy of marks awarded to students by different assessors. However the ranking of students and the feedback they should receive was agreed upon. The intention is to revisit the marking criteria and try to make further improvements. The

tutors also intend to have a marking exercise prior to marking the next batch of portfolios to try to agree on gradations.

The second issue was fairness. As expected, students came to the course with widely differing levels of IT competence and confidence. Several required very high levels of tutor input both inside and outside classes. During these interactions it was inevitable that students would also receive guidance (usually in the form of directive questioning) on the progress of their searches. This therefore worked against the interests of students who were relatively IT literate at the outset, and tackled their work by themselves to the best of their ability.

Conclusion

Reflecting on the experience of this assessment, several points emerged. Firstly, the tutors felt fortunate to be working with committed colleagues. A good team spirit prevailed, and working in a team was particularly helpful for the tasks requiring divergent thinking, such as exploring possibilities for the contents of the portfolio, and what marking criteria could be used. After marking the assignments individually, it was interesting for the tutors to come together as a group to discuss results, and realise that people had approached marking in very different ways, or interpreted criteria differently, even though these had been jointly agreed. This helped them to realise that there was still a certain amount of ambiguity in the instrument, and will therefore inform a future clarification. Working in a team therefore facilitated a broader perspective on the subject than might have occurred otherwise.

The assessment by a portfolio method has been carried out once with a relatively small cohort of students, so the findings can only be regarded as interim. However, the method seems well suited to information literacy since the method emphasises

the need “for personal growth and critical reflection, which are also essential for information skills” (Fourie, 1999).

Although this pilot was carried out with students on the Negotiated Learning Scheme, the tutors believe that they have created a very useful module with an aligned assessment method which would be of benefit to a much greater number of students as they begin their academic careers and set out to develop core, transferable, graduate skills.

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Appendix 1

Name:

Student Number:

Portfolio: Information Skills in the LRC

Module Leader: Sue Myer (L&IS)

Date:

Contents of Portfolio

Your portfolio should include:

1. Search Strategy

2. Finding Books using The Catalogue - Summary Sheet

3. Book Record 1 (1st example of included item from Catalogue search)

4. Book Record 2 (2nd example of included item from Catalogue search)

5. Book Record 3 (1st example of rejected item from Catalogue search)

6. Book Record 4 (2nd example of rejected item from Catalogue search)

7. Finding Journals using Online Databases – Summary Sheet for Database 1

8. Finding Journals using Online Databases – Summary Sheet for Database 2

9. Finding Journals using Online Databases – Summary Sheet for Database 3

10. Journal Record 1 (1st example of included item from Online Databases search)

11. Journal Record 2 (2nd example of included item from Online Databases search)

12. Journal Record 3 (1st example of rejected item from Online Databases search)

13. Journal Record 4 (2nd example of rejected item from Online Databases search)

14. Finding Websites Using a Search Engine/Information Gateway – Summary Sheet for Search Engine

15. Finding Websites Using a Search Engine/Information Gateway – Summary Sheet for Information Gateway

16. Website Record 1 (1st example of included item from search for websites)

17. Website Record 2 (2nd example of included item from search for websites)

18. Website Record 3 (1st example of rejected item from search for websites)

19. Website Record 4 (2nd example of rejected item from search for websites)

20. Your bibliography – to include about 6 books, 6 journal records and 6 websites, and to be presented in a consistent, accurate style

21. Reflective summary – of approximately 500 -1000 words summarising your literature search

Search Strategy

Research Topic

1. Write down the topic that you will be researching (you could state this as a question or as a phrase).
2. Reason for choice of this topic. Include definitions of any unfamiliar terms:

Subject Area

3. Broader Subject Area – *here I mean really broad areas e.g. education, psychology*. Most topics have information published about them by more than one subject area. Write in the space below the broad subject areas you feel your search might fall into:

Keywords

4. Split your phrase or question (in 1 above) into the key concepts. For example if you were searching for *fear of crime amongst elderly people* the concepts (or keywords) are *fear, crime* and *elderly*

In the top row of the table below write each of your keywords. Below each keyword make a list of alternative keywords or phrases that describe that concept. Think also about plurals, alternative spellings (eg color, colour) etc. See example below:

Concept 1	Concept 2	Concept 3
fear	crime	elderly
anxiety	victim	aged
	mugging	pensioner
		oap

Concepts for your search:

You may not need all the columns or rows – it is okay to leave some blank or add more if required.

Concept 1	Concept 2	Concept 3

5. Write down the details of 3 searches you intend to use. Include one example of a broad search; the other examples should be narrower searches. You will also need to provide details of the Boolean operators (AND, OR, NOT) that you will use to connect your keywords. See example below:

Search 1	fear AND crime	Broad Search
Search 2	fear AND mugging AND elderly	
Search 3	fear AND crime AND elderly	

Your Search:

Search 1		Broad Search
Search 2		
Search 3		

Fill in the final 2 sections only if appropriate.

Limits to the search

6. Do you want to limit your search in any way? Examples of limits would be date, language etc.

Example: For my search for *fear of crime amongst elderly people* I would ideally like information about the UK from the last 10 years.

Other Useful Notes

7. Do you already know the names of authors or organisations that might have published information on your topic? If you do note these down below:

Finding Books Using The Catalogue – Summary Sheet

Search Number	Part of The Catalogue searched (eg Subject, Keyword, Author)	Search terms used (Include any Boolean operators used to link your concepts, or limits used to refine your search)	How many results?	Comments (eg how useful were the results of this search?)

Book Record - Included (of 2)

Which of the searches you listed previously on the summary sheet retrieved this particular book?

(The search number is sufficient)

Provide book details as follows:

Author:

Title:

Place of publication:

Publisher:

Year of publication:

Edition:

LRC shelfmark (or class number):

Attach to this sheet a photocopy of the title page of the book, or a printout of The Catalogue screen showing that the book is on loan (or include other explanation eg book on order)

Write a one-paragraph description of the book. How useful was it for providing information on your topic? Explain why you chose either to include it or reject it for your bibliography.

Book Record - Rejected (of 2)

Which of the searches you listed previously on the summary sheet retrieved this particular book?

(The search number is sufficient)

Provide book details as follows:

Author:

Title:

Place of publication:

Publisher:

Year of publication:

Edition:

LRC shelfmark (or class number):

Attach to this sheet a photocopy of the title page of the book, or a printout of The Catalogue screen showing that the book is on loan (or include other explanation eg book on order)

Write a one-paragraph description of the book. How useful was it for providing information on your topic? Explain why you chose either to include it or reject it for your bibliography.

Finding Journals using Online Databases – Summary Sheet (of 3)

Name of database searched:

Why did you choose to search this database?

Search	Describe your search: (including search terms, any Boolean operators, phrase searching or other limits if applicable)	Why did you choose this search?	How many results?	Comments: (eg how useful were the results of this search?)
1				
2				

3				
---	--	--	--	--

Which was the most successful of these three searches? Why?

How useful was this online database for your subject area? Good points and negative points.

Journal Record - Included (of 2)

Search which retrieved this item (name of database searched, and number of search):

Details of journal article:

Author(s)	
Year of Publication	
Article Title	
Journal Title	
Volume number	
Issue number	
Page numbers	

Attach to this sheet a copy of the first page of the journal article, or if this is not available, a copy of the abstract (summary) of the journal article.

Write a one-paragraph description of the journal article. How useful was it for providing information on your topic? Explain why you chose either to include it or reject it for your bibliography.

Journal Record - Rejected (of 2)

Search which retrieved this item (name of database searched, and number of search):

Details of journal article:

Author(s)	
Year of Publication	
Article Title	
Journal Title	
Volume number	
Issue number	
Page numbers	

Attach to this sheet a copy of the first page of the journal article, or if this is not available, a copy of the abstract (summary) of the journal article.

Write a one-paragraph description of the journal article. How useful was it for providing information on your topic? Explain why you chose either to include it or reject it for your bibliography.

Finding Websites Using a Search Engine/Information Gateway – Summary Sheet (of 2)

Name and URL of search engine or information gateway searched:

Why did you choose to search this search engine or information gateway?

Search	Describe your search: (including search terms, any Boolean operators, phrase searching or other limits if applicable)	How many results?	Comments: (eg how useful were the results of this search?)
1			
2			
3			

Which was the most successful of these three searches? Why?

Website Record - Included

(of 2)

Name of Website

URL (Website Address)

Date Accessed

Search which retrieved this item (name of Search Engine/Information Gateway searched, and number of search):

What does the URL (Website address) tell you about this site?

Authority

Who is the Author of this site and does it tell you what their qualifications are for writing it? Do they belong to, or are they writing on behalf of any organisation?

Bias

Does the site present information in an objective manner? Are both sides of the issue represented? (if appropriate)

Accuracy

Does the information on the site appear to be reliable? Can you see any errors? Are there any sections that give you more details? e.g. bibliographies

Currency

**Does the site have any indication of how recently it was written or updated?
Does this matter for your chosen search?**

Relevance

**Who is the intended audience and does the site make this clear?
Does the site provide you with useful information for your subject?**

Brief description of the site and your reasons for choosing/rejecting it

Website Record - Rejected

(of 2)

Name of Website

URL (Website Address)

Date Accessed

Search which retrieved this item (name of Search Engine/Information Gateway searched, and number of search):

What does the URL (Website address) tell you about this site?

Authority

Who is the Author of this site and does it tell you what their qualifications are for writing it? Do they belong to, or are they writing on behalf of any organisation?

Bias

Does the site present information in an objective manner? Are both sides of the issue represented? (if appropriate)

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Currency

**Does the site have any indication of how recently it was written or updated?
Does this matter for your chosen search?**

Relevance

**Who is the intended audience and does the site make this clear?
Does the site provide you with useful information for your subject?**

Brief description of the site and your reasons for choosing/rejecting it

Appendix 2

Assessment Criteria

CRITERIA	MARKS	ACTUAL MARKS & COMMENTS
Content of Bibliography 30%		
Books and audio-visual sources Relevance (Are the items relevant to the chosen topic?)	10	
Journal articles Relevance (Are the items relevant to the chosen topic?)	10	
Web sites Relevance (Are the items relevant to the chosen topic?)	10	
Overall content How appropriate does the content appear overall? Quality (Are the items of an appropriate academic quality?) Appropriate Number (Are there sufficient for the selected topic?)	10 10 10	
Total Marks for Content	60 = 30% of total	
Presentation of Bibliography 20%		
Books and Audio-Visual Sources Consistency and completeness of records Accuracy of records	10 5	
Journal Articles Consistency and completeness of records Accuracy of records	10 5	
Web Sites Consistency and completeness of records Accuracy of records	10 5	
Overall Presentation	10	
Total Marks for Presentation	55=20% of total	

Portfolio 50%		
Search Strategy Search Strategy Sheet	10	
Catalogue Summary Sheet Book Records	10 15	
Online Databases Summary Sheets Journal Article Records	10 15	
Internet Summary Sheets Website Records	10 15	
Reflective Summary Evaluation of the whole search process and bibliography which could include areas for future development Structure and clarity of the report	10 5	
Total Marks for the Portfolio	100=50% of total	