

In a similar fashion, *The Journal of Pedagogic Development* (edited by David Mathew and Andrea Raiker) facilitates the professional development of critically reflective practitioners by encouraging pedagogic research and sharing across communities of practice. In the same way as *IJEDICT*, it offers professional development to authors writing for the journal through the peer review process. It also has an eclectic mix of research methods and disciplines – combining enquiry, practice, experience and scholarship. This edition of the journal includes an action research project on improving course related information, an article on curriculum change to transform undergraduate learning, a paper exploring the experiences of new FE teachers during their first year of teaching in the post compulsory sector, and a scholarly discussion of the pedagogy of Paulo Freire.

These two journals – *IJEDICT* and *JPD* – are just two of the many open access journals now available, and it is of the utmost importance that they are all supported by

academics and institutions in order to ensure freedom and openness in the availability of knowledge.

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Improving Course Related Information of Computing Degree Courses for Enhancing Learner Development

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Abstract

In this paper, I present action research based on Norton's ITDEM model (Norton, 2009), which I applied to investigate an observed course related information problem in the Department of Computer Science and Technology, University of Bedfordshire. The data collection was a combination of both interviews and surveys. Three lecturers and 100 students from the department participated in the action research. The collected data was analysed using thematic and content analysis. The findings of the investigation identified a problem in course related information integration and presentation. Both the lecturers and some students thought that the problem has impacted on the students' learning and development. In an effort to tackle the problem, useful approaches proposed by other universities and the valuable suggestions made by the participants have been collected for further investigation and adaptation. Overall, action research is found to be a helpful methodology to improve course related information of computing degree courses, which will not only help prospective students' course selection and enhance existing students' learning and development, but also build up the department's and university's reputation.

Keywords

Action research, computing course related information, learning experiences and skill development

Introduction

A problem was observed by the course teams of BSc Computer Animations, BSc Computer Game Development and BSc Computer Graphics – students, especially year one students, have a lack of realism on what skills are needed for the course and a lack of understanding of what the course is about, which has started to impact on the students' learning and development. The course teams think there is a need to improve the students' understanding and realism on the requirements of the course and their skills development.

I decided to carry out action research (Earl-Slater, 2002 and Norton, 2009) to investigate what causes the students' misunderstanding and lack of realism on what knowledge and skills are required to complete the course, and how the problem can be resolved. In this paper, I first explain what I believe is the root cause of the problem; second I introduce the methodology of how I investigated the problem; third I report my findings and implications from my investigation; finally a

conclusion summarises the action research to date and suggests future work.

Computing Course Related Information

How does a student decide which course to apply for? Apart from the core course information, such as the course title and the course summary, the other course information, such as satisfaction figures, employment and salary data, accommodation costs and financial information, etc., are also very important information to help the students understand the course and decide which course to apply for (HEFCE, 2012).

The course related information is 'all the information involved in the creation, quality control, marketing and subsequent management of our course products' (JISC, 2011). Here we use course related information to indicate any information related to a course: for example, all the course information that can be seen by the public on different media; all the course information that can only be seen by the registered student, e.g. course information form (CIF), course handbook, etc.

All computing degree courses at the University of Bedfordshire are designed based on the benchmark statements issued by the Quality Assurance Agency for Higher Education (QAA) and the University's Curriculum Review for 2008 (CR8), to ensure quality and to meet the institutional and national standard (QAA, 2007). The quality assurance ensures a high standard for all courses in the university. However, some course related information does not go through the same rigorous review process and sometimes does not integrate with the actual course information produced by the course team (JISC, 2011). How can students learn about the course if the course related information is not integrated with the validated course information? Many projects have started to work on integrating the course related information to develop effective course related information (JISC, 2011). In the following sections, I focus on investigating the effectiveness of course related information in the department of Computer Science and Technology, University of Bedfordshire, through action research.

Methodology

Action research has been defined many times by different people over the last fifty years. Earl-Slater (2002), Campbell and Norton (2007) and Norton (2009) critically reviewed these definitions. In general, action research is a combination of action and reflection to study what is happening now and decide how to do it differently in the future in a particular context. Action research has been commonly applied in some public services, such as education, health care, social service and policing, etc. (Earl-Slater, 2002). In education,

especially higher education, action research is also called pedagogical action research, which modifies the practitioner's own practice as well as contributes to the wider pedagogical research literature (Norton, 2009). Several models have been proposed for the process of an action research project. For example, the ITDEM (Identifying a problem/paradox/issue/difficulty, Thinking of ways to tackle the problem, Doing it, Evaluating it and Modifying future teaching) model was proposed by Campbell and Norton (2007) for action research in higher education; Earl-Slater (2002) introduced the action research cycle that includes reconnaissance, planning, actions and reflection for clinical action research; COBE (2005) identified the action research process model with four inter-related stages: plan, act, observe, reflect for the associated lecturer of distance learning institutions. I consider that the ITDEM is the most suitable model for my action research because the focus of this action research is to identify and tackle the course related information problem in a higher education setting.

To identify the problem, I first interviewed three lecturers in the Department of Computer Science and Technology, who are teaching year one units. The interview questions were:

- Do you think there is a problem that the students do not understand what the course is exactly about and have a lack of realism to their knowledge and skill development from the course? What caused the problem?
- Do you think this problem will impact on their learning?
- What do you suggest to resolve the problem?

The interview was recorded and the qualitative interview scripts were analysed using thematic analysis (Norton, 2009). Secondly, I carried out a student survey involving 100 students (63 year one students, 30 year two students and 7 Masters students) from different courses to establish whether the problem is indeed caused by the course related information, as well as how the problem impacts on their learning, and to listen to their suggestions of how course related information could be improved. I also wanted to investigate whether the student would have different opinions because they were from different courses and in different study years. The survey questions are about where the students find out about the course; how they understand the course name; how they think about the integration of the course information and whether they were satisfied with the course? The questionnaire data was analysed using qualitative content analysis (Norton, 2009).

Findings and Reflections

In the following sections, I report the findings and reflections of the interviews and the survey data analysis.

Findings of the interview

Three themes are found from the thematic analysis of the three lecturers' interview scripts on the problems that they have sensed, and suggestions.

Misunderstanding course information

The lecturers have sensed that 'The students see the word *graphic* and think it means *graphic design*'; 'Students don't understand the word *creative*'; 'Students do not understand the requirement of the learning outcomes maybe because the learning outcome is not written in a student friendly way.' (Lecturer A). Lecturer B has observed the same problem as well as 'There is confusion about the BA animation and BSc animation.'

Apart from the clear misunderstanding of course information, the students seem also to have misconceptions about what is involved in the course. 'Students see that *Game Development* needs programming skills on the website, but they still think they do not have to do any programming when they join the course.' 'There is a lack of awareness of how technical the courses can be.' 'They do not have strong art skills or programming skills, but they think that they can do something creative when they don't have any creative background.' (Lecturer A). 'Students have different expectations. For example, business information systems students are not prepared to do programming, they are happy to do the databases.' (Lecturer C). Lecturer B also thinks that 'There is confusion at the student level about what the course is exactly about.'

Lecturer B observed that 'Some students seem to know about the course well before they join the university, and these students tend to be capable and willing to find things out by themselves.' All three lecturers agreed that a lack of understanding of the course would impact on the students' learning and development.

Lack of realism for skill development

Lecturer A sensed 'a lack of realism about the depth of the skills needed in developing their career. They expect to do a course that is tangentially related to a subject and they think they can do a career related to the subject after doing the course'; furthermore, 'the students seem to think that learning how to use software packages is the only skill they will develop during the course. They list the packages for one of the learning outcomes because they think the listed

packages are the added value. We need to make them realise that the valuable skill is being able to do more and to extend what they know and apply it in a certain way.' Lecturers A, B and C all thought that many students have a lack of critical thinking skills with which to review their skills development.

To resolve the problem, Lecturer A suggested: 'As a tutor, we need to keep trying to show the students how many skills they need to develop. There is a need to persuade them that what they're learning is important to their future career. For example, make them believe programming is very important to their career, and then they are likely to do it.' (I wonder whether this has to be done by the tutors. Can the students support their peers?)

Mismatching between marketing information and actual course information

'The students understand the course from what they see, such as an Open Day, but an Open Day is not a normal day, and the students think it is a normal day.' (Lecturer B). 'It's hard to send leaflets out to prepare the students pre-entry. Maybe ask them at the admission – do you want to work on computers?' 'People come from the clearing system. Only a month or so before entry, it's hard to give the students a real taste of the course.' (Lecturer C). 'The current taster session is too short and too distant from their application, such as two years before their application.' (Lecturer A).

All three lecturers agree that there is a mismatch between marketing course information and actual course information, however, they all feel this is difficult to resolve because most of our students are from the clearing process and there is insufficient time to guide them to select the right course and to prepare them for studying the course. In general, Lecturer A and Lecturer C think we should assess the students before offering them a place, using questionnaires and tests; Lecturer A and Lecturer B suggest setting up an online community that is run by the students. I consider this to be a very useful approach to giving prospective students a more accurate sense of what skills they will need to achieve by the end of the course if they are to succeed. In order to make the showcase community successful, we would need a high level of trust by the students and guidance to support the community building. A successful online showcase community will not only provide peer support from the existing students to the prospective students, and from more experienced students to less experienced students, but also increase the reputation of the department and the university, which is beneficial to the existing students and attractive to prospective students.

Overall, the three lecturers feel that there is a problem that some students do not understand what the course is about and have a lack of realism of what skills they will develop from studying; that there is a mismatch between the marketing information and the actual course information. The lecturers sense the problems will impact on the students' learning experience and skills development. The lecturers suggested different ways to resolve the problem based on their experiences, such as to write the course information in a way that the students can understand; to show what the existing

students do to the wider community and potential students online or on open days; to interview or test potential students before offering a place to the students. However, would the students think the same? Would they agree with the lecturers? What are their suggestions to resolve the problem and to enhance their development in the university?

Findings of the survey

The findings will be reported based on different student categories to show different opinions of different student groups.

Categories	International Students (N=17)	Home Students (N=83)	All Students (N=100)
Understand the course name.	17 (100%)	83 (100%)	100 (100%)
Suggest changing the course name.	1 (6%)	6 (7%)	7 (7%)
Think the course information is different from before to after joining the course.	3 (18%)	28 (34%)	31 (31%)
Think the difference impacts on their learning.	3 (18%)	10 (12%)	13 (13%)
Apply for the course because they liked the course information.	10 (59%)	56 (67%)	66 (66%)
Think the course does not match their expectations.	4 (24%)	22 (27%)	26 (26%)
Think the mismatch impacts on their learning.	2 (12%)	14 (17%)	16 (16%)

Table 1: The different opinions of the international students and home students

Table 1 shows that more home students think the course information is different from before and after they join the course. More international students think that the course does not match their expectations. This finding implies that the course related information should be consistent and student facing.

Categories	Year One Students (N=63)	Year Two Students (N=30)	Masters Students (N=7)
Understand the course name.	63 (100%)	30 (100%)	7 (100%)
Suggest changing the course name.	2 (3%)	4 (13%)	1 (14%)
Think the course information is different from before to after joining the course.	23 (37%)	5 (17%)	3 (43%)
Think the difference impacts on their learning.	6 (6%)	4 (13%)	3 (43%)
Apply for the course because they liked the course information.	39 (62%)	21 (70%)	6 (86%)
Think the course does not match their expectations.	12 (19%)	10 (33%)	4 (57%)
Think the mismatch impacts on their learning.	7 (11%)	7 (11%)	2 (29%)

Table 2: The different opinions of the year one, year two and Masters students

Table 2 shows that more of the students in their first year of study think the course information is different before and after joining the university than the students in their second year. The students with more learning experience (e.g. year two and Masters students) are more critical when reviewing the differences than year one students. The more experienced students feel the impact more than the less experienced students. This finding implies that different year groups will have a different focus on the course related information that is provided. The personalised presentation of course related information is needed to support different year groups.

Courses	Understand the course name.	Suggest changing the course name.	Think the course information is different before and after joining the course.	Think the difference impacts on their learning.	Apply for the course because they liked the course information.	Think the course does not match their expectation.	Think the mismatch impacts on their learning.
BSc Business Information Systems (N=1)	1 (100%)						
BSc Computer Animation (N=22)	22 (100%)	3 (14%)	11 (50%)	4 (18%)	16 (73%)	7 (32%)	5 (23%)
BSc Computer Games Development (N=32)	32 (100%)	2 (6%)	6 (19%)	2 (6%)	19 (59%)	9 (28%)	5 (16%)
BSc Computer Graphics (N=6)	6 (100%)		3 (50%)		4 (67%)	1 (17%)	
BSc Computer Networking (N=12)	12 (100%)		5 (42%)	3 (25%)	6 (50%)	4 (33%)	3 (25%)
BSc Computer Science (N=2)	2 (100%)		1 (50%)	1 (50%)			
BSc Computer Science and Robotics (N=1)	1 (100%)				1 (100%)		
BSc Computer Science and software engineering (N=10)	10 (100%)		1 (10%)		7 (70%)	1 (10%)	1 (10%)
BSc Network Management (N=2)	2 (100%)	1 (50%)	1 (50%)		2 (100%)		
BSc Software engineering (N=5)	5 (100%)				5 (100%)		
MSc Computer Animation and Game Technology (N=6)	6 (100%)	1 (17%)	3 (50%)	3 (50%)	5 (83%)	4 (67%)	2 (33%)
MSc Information System and Business Management (N=1)	1 (100%)				1 (100%)		

Table 3: The different opinions of the students from different courses

Table 3 shows that the BSc Business Information Systems, BSc Computer Science and Robotics, BSc Network Management, BSc Software Engineering and MSc Information System and Business Management seem to have fewer problems than the other courses. The students from BSc Computer Animation, BSc Computer Games Development, BSc Computer Networking and MSc Computer Animation and Game Technology are impacted on the most, compared to the other courses. These findings imply that the course related information of some computing degree courses are naturally easier to understand than others. We need to make more effort to improve the effectiveness of the course related information of the confusing courses.

Overall, all of the students understand the title of the course, although a few students suggest an alternative title to better express the course. The majority of students judge which course to apply for based on the course related information on different media, such as the university website, prospectus, the UCAS website and YouTube, etc. 31% of the students think there is a difference between the course information they read before and after they join the university; 26% of the students think the actual course is different from the course information they read; and 13% and 16% of the students think the difference and mismatches have impacted on their learning (Table 1). The causes of the problem reported by the students are: the course is more difficult than they expected; they did not expect to

do as much programming; the course is not as specific as they expected; they simply do not know what to expect for next year, etc. The key solutions suggested by the students are: to provide more detailed information about what will be involved in the course before they apply, such as what will be learnt in each unit, so that they can make a better judgement and better prepare themselves for the new course.

Summary

A problem has been identified from the findings of the interview and the survey data analysis – the current course related information of some computing degree courses is not effective enough to help the students make a fully informed decision when applying to university courses. This problem has started to impact on the students' learning. It has been suggested that the course related information should be integrated, personalised and student-facing.

JISC (2011) stated that the students, potential students and their parents, administrators, external reviewers, lecturers and heads of department all need very different views of the course, in different formats and media, to support their actions and decisions. Birmingham City University (2012) is working on a problem called T-SPARC, which is trying to integrate all course related information together using Microsoft SharePoint to make sure all the course related information is consistent and up to date. The PREDICT project at City University London presented ten very useful tips for writing student facing documents (Parker, 2011), which emphasises that we should ensure the course information to the student is easy to understand and personalised. Cardiff University (2012) is carrying out a project called PALET, which emphasis both course related information integration and presentation. HEFCE (2012) proposed Key Information Sets (KIS) to meet the information needs of the prospective students. The KIS of all part-time and full-time courses will be published on the university website from September 2012 to support prospective students better understand the course. Bournemouth University (2007) worked on Stepping Stones, which helps students to adapt their previous educational experience into higher education and to prepare them for the new environment. Furthermore, the lecturers also mentioned that a student driven online showcase community will be very useful to help the prospective students understand what they should can look forward to when they join the university, and to build up the peer support community of the existing students.

I consider these proposals and projects to be of potential value to the Department of Computer Science at the University of Bedfordshire. However, when we

adapt these approaches to our university, we need to consider the challenges at the university. For example, the majority of our students come to us from the clearing process, which means there is significantly less time in which to prepare them. It may be a big and complicated process to change the infrastructure and presentation of the course related information because it is an institutional decision and will involve many departments.

Conclusion

In this paper, I have undertaken an action research based on Norton's ITDEM model (Norton, 2009) to investigate the course related information problem observed in the Department of Computer Science and Technology, University of Bedfordshire. The aim of the action research was to design effective computing related course profiles to enhance learner development. This paper covers the first two steps of the ITDEM, namely identifying the problems in the course profile design, and suggestions for improvement to increase the students' understanding of the course before or after they join the university.

Interviews and surveys were employed to investigate the problem. Three lecturers from the department and 100 students from different years and courses participated in the study. The collected qualitative data was analysed using thematic and content analysis. The findings show that there is a problem in course related information integration and presentation. The problem has impacted on the students' learning and development. We need to find ways to tackle the problem. From the collection of ideas from the literature and the suggestions from lecturers and students, I have identified a few good approaches, such as integrating the course related information together at the institutional level; presenting course related information in a student friendly way; and building up an online showcase community for students to share experiences. However, I have also realised that there are going to be many things to consider when we adapt the approach for our university.

Next I will investigate what precise approach we should adopt to resolve the problem through analysing the applicability at the University of Bedfordshire.

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Nurturing the independent-thinking practitioner: using threshold concepts to transform undergraduate learning

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Abstract

This article explores the experience of employing the theory of threshold concepts to curricular re-design to transform students' learning experiences. As part of our annual review in 2011, programme team members raised the concern that some graduates from our vocational-type degree programme – BA (Hons) Working with Children, Young People and Families – did not appear to develop the links between 'theory' and 'practice' as effectively as other graduates. Reflection on the three-year old degree programme, designed to provide a foundation for those wishing to move into, or study further, in areas such as family support and social work, revealed two areas for further consideration. First, the programme's modular format appeared to encourage students to view aspects of their studies as unconnected. Secondly, its original design had been premised on a series of 'need to know' areas of policy, theory and practice which had been added to over time, with little taken out. In short, the curriculum appeared to have become both 'stuffed' and fragmented and did not appear to provide the ideal platform from which to engage students in the development of the knowledge, skills and understanding for future professional practice. Using the theory of threshold concepts as our starting point, we were able to identify key themes, ideas and activities that we perceived to be central to nurturing and developing independent and employable practitioners. The following article recounts our journey

towards curriculum change, detailing how programme threshold concepts were identified and how these were subsequently applied in curriculum re-design.

Key Words

Threshold concepts, vocational degrees, professional identity, curriculum design, undergraduate degrees, professional development.

Introduction

The BA (Hons) in Working with Children, Young People and Families (WCYPF) at Newman University College enrolled its first students in September 2007. After three years the programme team recognised that several themes were duplicated across modules and certain students were not grasping concepts (both academic and vocational) central to the programme's aims and ethos. To address this, a two-day review of all modules and learning outcomes was conducted, using threshold concepts as the structural and theoretical basis for remodelling.

This article briefly explores the theory of threshold concepts, linking this theory to learning and teaching practice and its potential to transform the student experience within and beyond higher education. It considers the case of one undergraduate programme, recounting how the teaching team reviewed its purpose