Business Skills:

Exploring the perceptions of IT students, academics and industry

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Academic staff teaching on the Business Context paper, and advisory committee industry members have been interviewed. The results from the surveys, in-focus groups and interviews are now being analysed to form the basis of ongoing review and changes to the paper.

ABSTRACT

It is now recognised that Information Technology (IT) professionals with a combination of both technical and business knowledge are more in demand in the employment, financial and promotional stakes than those who solely focus on technology. It is because of this demand that a business course called Business Context was chosen as one of the first year compulsory papers in our Bachelor of Computing Systems degree, introduced in 1997. The evidence to date, however, highlights that students in general are not satisfied with this course.

This descriptive case study (Yin 1989) concentrates on describing and evaluating Business Context from an analysis of historical documentation, in order to gain the perceptions of stakeholders. In the process it specifies the main events, the participants and their relationship to this business course.

A survey has been also been carried out with students in year one, two and three of the degree. Student in-focus groups have been completed.

1. INTRODUCTION

In July 1995 the staff in the School of Information Systems and Computing began developing their own Bachelor of Computing Systems (BCS) three-year level 7 degree, in conjunction with wide consultation. This consultation highlights that employers, graduates and academics consider business courses to be important components of computing degree programmes.

An increasingly common theme is the need to combine technical knowledge with an understanding of how business works, and how technology can help it work better. A good example here is that Business Context is now a prerequisite for a recently introduced level 6 ecommerce paper in the degree, emphasising the need to understand the business environment, in this case in order to assist designing, constructing and maintaining an e-commerce site. This business knowledge requirement is reinforced by Steen (1999), Hanna (2000) and Mills (2000).

In the past, IT people have been considered to be too IT-focused and not sufficiently business driven. There is now a much stronger focus on business aspects of IT systems. In response to the economy, corporate restructuring, technology, and customer demands for quality and increased competition (to name a few examples), the very nature of business is also changing (De Valk 1994, Sullivan 1995). As a result individuals' jobs are also changing. This is highlighted by economists' predictions that 80 percent of all workers will have their jobs redefined

at some time in their careers (Goldberg 1998). It is therefore the role of IT in a constantly changing environment not only to help business explore new opportunities, but to be more competitive, efficient and cost effective. Thus, skilled IT professionals, who also understand business, are in general valued more. A letter of support for the degree accreditation documentation confirms this:

"The nature of the employment of IT graduates is characterised by requirements for adaptable and multiple skills as well as significant technical knowledge."

2. THE BUSINESS CONTEXT COURSE

As a result of diverse consultation a compulsory level 5 first semester course called Business Context was developed. The main aim of the course is to give students an understanding of the business environment in which they will operate as information technology specialists.

2.1 Learning Outcomes

Five main learning outcomes were identified:

♦ To distinguish between various types and purposes of organisations, describe the major functional specialisations within them, and understand the factors that are required for effective teamwork.

♦ To appreciate the role of IT in enabling organisations to implement their business strategy, and describe the range of roles available to IT people within organisations, IT vendors and IT service providers.

♦ To analyse business goals, industry and competitive environment in relation to IT initiatives, and understand the impact of cultural issues.

♦ To describe the role of IT people as professionals, and analyse the associated legal and ethical responsibilities.

♦ To describe and apply relevant information gathering techniques to facilitate business analysis for IT purposes.

2.2 Teaching and Learning Strategies

The main teaching and learning strategies currently used are lectures, case studies, individual and group exercises. There has been a change in some of the lecturers since 1997, with 2-3 lecturers in any given semester (dependent on course numbers).

2.3 Course Delivery

Lecture Hrs Weekly	1
Tutorial/Practical Hrs Weekly	2
Self-directed Learning Hrs Weekly	5
Total Learning Hrs Weekly	8
Total No. Of Weeks	15
Total Learning Hrs	120

Each course currently taught on the computing degree is 3 hours a week for 15 weeks in 2 blocks of 1.5 hour time slots (with the exception of the year 3 project at level 7). In Business Context there is a tendency in the overall 3 hours allocation to end up with 2 hours theory and 1 practical, the reverse of the table above. Some of the student dissatisfaction could possibly be alleviated by ensuring the course delivery stays within the defined theory and practical delivery times.

At a recent School operations meeting the Head presented a discussion paper on teaching hours 2000 and beyond. A suggestion is to timetable all courses in 2 blocks of 1 hour theory and 2 hours practical. This will further reinforce specific allocations of theory and practical.

3. DOCUMENTARY ANALYSIS

At the preliminary stage of this study a review of documentary evidence relating to the degree programme has been carried out to provide background information. Documents include the degree accreditation documentation, course evaluation surveys, BCS programme leader reports, exception reporting, programme and advisory committee minutes, external moderator's reports and pass rates.

3.1 Course Evaluation Survey

This is part of the institution's quality management system, where students evaluate the quality of their courses and teaching, and is carried out in approximately week 11 of a 15 week semester. On a 5-point scale, in which 3 means the student agrees with a positive statement about the course, and 2 means they disagree, scores below 3 are seen as cause for concern.

STATEMENTS	S1 1998	S2 1998	S1 1999	S2 1999
Value of course -				
Q1 The course has covered topics of value to me	2.6	2.9	3.22	2.83
Q2 The course has been demanding and stimulating	2.4	2.8	3.33	2.91
Q3 The course has extended my present knowledge and skills	2.6	3.0	3.31	3.05
Q4 There was a good balance between theory and real world application	2.5	2.7	2.94	2.55
Organisation of course -				
Q6 All necessary course information was clearly communicated to me	2.7	2.9	3.58	2.88
Q6 The course has followed a natural progression of learning	2.6	3.0	3.42	2.90
Q7 The assessment measures my learning fairly	2.4	3.0	3.31	2.72
Q8 There was sufficient time available to understand the material to be learnt	2.6	2.8	2.95	2.42
Resources of course				
Q9 The learning materials were accessible and helpful	2.4	2.9	3.20	2.80
Q10 The learning equipment and resources were adequate	2.4	2.8	3.39	2.99
Q11 The resources were up to date	2.5	3.1	3.44	3.24
Overall				
Q12 I am very satisfied with the quality of this course	2.2	2.8	3.15	2.49

Semester 2 1998 improved on semester 1 1998 in all questions. However, semester 2 1999 declined on semester 1 1999 in all questions. Question 12 of this survey gives students an opportunity to indicate their satisfaction overall with the course. In the four semesters listed above, only one semester gained over 3.

In looking at one year's ratings of all the subjects in the degree in 1999, Business Context rated 24 out of 32 subjects in the first semester, and 30 out of 32 subjects in the second semester. This further reinforces student dissatisfaction with the course.

3.2 BCS programme Leader Report

General comments over the four years since the introduction of the computing degree have indicated that some students do not find Business Context relevant. A BCS programmme leader report in September 1998 states "we continue to hear complaints from students about having to take non-computing courses like Business Context and Communication.".

3.3 Exception Reporting

A formative student questionnaire, designed by the school, is available for students to fill out in the first 4-6 weeks of a semester, with space to comment on all the courses that a student is taking. This was introduced in 1992 to pick up any early warning systems in relation to the student environment. It is a free form style, and encourages comment on any 'exceptional' matters, either of concern or merit, and also asks for suggested improvements.

On the following page is one semester's comments on Business Context from a March 1999 exception report:

In this particular report there is approximately the same number of comments for both positive and negative comments. What is interesting to note, however, is that the number of responses for this subject far outweigh any other subject reported back:

NO. OF COURSES	20
1 RESPONSE	12 courses
2 RESPONSES	3 courses
3 RESPONSES	2 courses
7 RESPONSES	2 courses
17 RESPONSES	1 course (Bus Context)

Positive comments	Negative comments
Important, relevant x 2	Remove some content
Beneficial in the long run x 3	More real life situations
Interesting x 2	More participation
Excellent	More enjoyment
Going well	Boring
	Too fast
	Overall dislike course
Good text x 2	Don't like text
	Expensive text x 2
Informative notes x 2	Notes do not flow
	Readings too much
Very clear	Assessment dates unclear
	Group assignment difficult

3.4 Programme and Advisory Committee Minutes

To help make the subject more relevant for students, there has been ongoing refinement of the content, assessment and delivery of this subject. As confirmed in extracts from programme and advisory committee minutes in 1999:

♦ A text was introduced to formalise the subject knowledge.

♦ Changes were made to the prescription due to overlap with other course subject content.

♦ The course was brought forward from the second to the first semester, because students said "there were too many non-computing courses in semester two".

♦ An advisory committee industry representative visited all the streams at the beginning of their Business Context course to emphasise the importance employers place on graduands having business knowledge (the feedback from this indicated positive student responses).

3.5 External Moderator Reports

Two courses are selected annually at the recommendation of the programme committee. A recent external moderator's report of Business Context in May 2000 emphasises the importance of Business Context within the BCS programme, and emphasises two key points:

1. Despite current and relevant teaching/learning outcomes, valid course objectives and assessed items, appropriate summative assessment items and appropriate textbook, the high level of drop-outs and failures (the highest of the BCS programme) indicate students are not satisfied with this course.

2. The course format needs to be revisited. Students need more opportunities to compare acquired knowledge with the business world. A suggestion is to present the material in the form of class discussion, case studies, and listening to real business people talking about their real experience. Formal lectures should be reduced to a minimum.

Quillien (1993) reinforces this latter point and argues that if students learn abstract rules of thumb (in our case business concepts) without a context to place it in, it is difficult to evaluate the rules or do well at remembering them. The chances of increasing the learner's chances of acquiring the desired business knowledge could partially be resolved by providing a rich, interesting context for introducing the principles of business (for example good stories) and bringing in guest lecturers who can provide a wealth of knowledge for classroom exploration.

Business Context lecturers currently use a mix of lectures, individual exercises, group exercises/discussions and case studies within the 2 x 1.5 hours, but the lecture

ENROL			W'DRAW			PASS			% PASS EXCL W'DRAW		
1997	1998	1999	1997	1998	1999	1997	1998	1999	1997	1998	1999
217	203	280	26	25	20	136	115	126	71	65	48

does tend to take over the practical hours allocated (see 2.2). It would be a very useful exercise to stay within the 1 hour theory allocation, as well as introduce guest speakers, and see if there is any change in student perceptions towards this course.

3.6 Pass Rates

A possible link to student dissatisfaction in taking a non-computing course is the increasing number failing the course. Reasons given by lecturers for failure include: non-attendance especially in the second half of the semester, non-completion of assignments, missing the final exam, faring poorly in the final exam, reluctance to buy and/or read the text, and the difficulty of terminology and concepts for english as second language students.

Below is a summary of Business Context pass rates from 1997 to 1999:

This highlights a decline in the pass rate since the degree started. The fail rate also has a flow-on effect to students repeating the course for a second time, and to larger classes as a result of the repeats. However, the BCS 1999 Annual Programme Report also shows a higher failure fate in the eight compulsory courses compared to previous years (Organisational Communication, Packages, Business Context, Business Systems, Data, Hardware Basics, Operating Systems, and Programming 1). There could be a multitude of reasons for this, not least of which is student workload. In a research project carried out by Larkins (1994), for example, students identified the predominant issue of workload interfering with learning.

4. FURTHER ANALYSIS

As a result of the documentary evidence provided, the next part of the process will be to analyse the following:

4.1 Questionnaires

A questionnaire has been filled out by Business Context students in years one, two and three of the degree and will be analysed by SPSS software to identify any direct relationships between the variables.

4.2 In-focus Groups

After the student questionnaires were carried out, verbal comments were documented from small student focus groups. Wilson (1997) points out that a focus group is useful in gaining participants' perceptions, attitudes and opinions, particularly as a method to solicit self-disclosure to produce qualitative data for reflective analysis.

4.3 Interviews of Academic Staff and Advisory Committee Members

Interviews of approximately 45 minutes each have been completed with two academic staff teaching on the course, and two advisory committee industry members. Overall they provided an opportunity to discuss Business Context from different stakeholder perspectives.

5. CONCLUSION

The collection of data provides some useful views on the elements and forces that influence student perceptions towards the Business Context paper. The subject continues to be important from an industry and academic point of view, but a number of students do not appear to see its relevance and comment accordingly via a range of reporting systems. Ongoing changes by academics have not resulted in any major changes to student perceptions of the subject. Pass rates continue to be of concern.

The preliminary evidence at this stage tends to suggest four possible changes to the course:

1. Ensure the course delivery stays within a defined 1 hour theory block and 2 hour practical block, thus reducing formal lecturers to a minimum and increasing practical class discussions and case studies.
2. Further emphasise the IT and business connection in theory and practical sessions (as set out in four of the five learning outcomes in the prescription) to help overcome the barrier to a "non-computing" course.
3. Bring in guest lecturers to the practical sessions, to increase the opportunities for students to acquire real world business knowledge.

4. Evaluate whether there are any course workload issues that interfere with learning.

Industry continues to look for IT people who not only have the technical competence, but also have an appreciation for the business itself and how it all interrelates. Therefore, the most valuable asset an IT graduate can bring to a company is a combination of both technical and business knowledge. Now we just need to convince students of that.

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