

# **MULTIPLE MEASURES OF IMPROVEMENT OF RESEARCH SKILLS IN BUSINESS ETHICS AND BUSINESS LAW**

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## **ABSTRACT**

Universities offering as a distinguishing learning environment for all students their research-intensive nature are searching for ways in which students and research may actually meet. One way to achieve this is to enable students to develop the skills associated with research in regular curricula. Many studies of initiatives to achieve this utilise student self-reported gains after the effect, a limited data set which gives a possibly biased understanding of outcomes. This paper reports on results from Masters-level Business Law course and Business Ethics course, utilising pre- and post-questionnaires to gain students' perceptions of changes in their research skill over the duration of a course. These results are from a study conducted across two research universities which is utilising diverse measures of student research outcomes. In addition to pre and post questionnaires, these measures include lecturer assessment of student research skills, changes in those measures during a course, and interviews to be conducted 1 year after completion. Benefits determined so far have included statistically and educationally significant increases in student perceptions of improved research skills. The significance of this result is that curriculum adaptations are able to demonstrably improve students' discipline-specific research skills.

## INTRODUCTION

Courses in business and management increasingly require independent research work from their more senior students (Remenyi, et al, 1998). A major goal of the explicit development of these discipline-specific skills is that students may, through research processes, develop knowledge 'to change the way things get done in order to be more efficient or more effective' in business (Remenyi, et al, 1998, p.10). However students will tend to engage in independent research at an introductory level, despite increasingly sophisticated content across the years of study (Luckie 2004), unless active steps are taken to develop skills that are relevant for research. Therefore curricula efforts have begun to focus on ways to enable students to incrementally develop the skills associated with research in Business and Management.

The pilot study reported here focuses on data from Masters students enrolled in courses in Business Law or in Business Ethics. Each course is run at different Research Universities but both utilise the same conceptual model, the Research Skill Development (RSD: Willison & O'Regan, 2006) framework, to inform the explicit development of student research skills. This paper presents the benefits of this explicit development, based on an analysis of student responses to questionnaires given at the beginning and end of each course. These results are part of a larger set of data, which includes academic measures of students' discipline-specific research skills, also conducted at the beginning and end of the course, and student interviews conducted about one year after the course is completed. Both academics coordinating these courses are members of a larger study considering the effects of utilising the Research Skill Development framework in a variety of disciplines and contexts<sup>1</sup>.

The Research Skill Development framework identifies 6 facets in common with many different conceptions of research, and elaborates these into a continuum (Willison & O'Regan, 2007) described by 5 levels of student autonomy (Jones, Simon, Fairbrother, Watson & Black, 1992). As a conceptual framework, the RSD was devised to help lecturers conceive of and plan explicit and incremental research skill development and assessment. The first 3 levels of the RSD all describe 'closed inquiry', where the academic determines the starting point such as aim, purpose or question, the processes to follow, such as methods and procedures, and the end point such as the answer, resolution, intended audience, and style of presentation. A student who is considered to be working at Level 1 requires a high degree of structure and guidance, whereas a student working at Level 3 does so independently within all parameters set. Levels 4 & 5 describe open inquiry, where the starting point, processes and end points are determined by the students; at Level 4 this is scaffolded, so that, for example, students would still be limited in their scope and be given objectives to meet & marking criteria in advance; at level 5 the open inquiry is determined by the student with reference to the discipline. For all of these levels, the degree of academic rigour required to fulfil them will vary according to Year level, disciplinary expectations, and so on.

## STUDY METHOD

The academic coordinating Business Ethics adapted an existing diagnostic assessment and an existing summative assessment, developing marking criteria for the former up to Level 3 (closed inquiry, conducted independently) of the RSD, and the latter up to Level

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<sup>1</sup> This Business discipline-based study is part of a multi-discipline, five-university project funded by the ALTC

4 (open inquiry within structured guidelines). Likewise, the Business Law lecturer adapted existing assessments, but both were framed up to Level 3. Student assessments were therefore used to quantify student research skill in the Business Ethics and Business Law context at the beginning and end of the course. With these two assessments as ‘bookends’, classes were conducted in similar ways to previous years. However, the academics found that this framing tended to change the way that they spoke about readings, and generally were more likely to emphasise research. The marking criteria utilized is in Appendix 1.

The data presented here draws on student responses to pre and post questionnaires containing 15 seven-point Likert-scale questions that ask for self-assessment of specific research skills, and about attitudes to research itself. In addition, the questionnaires contain two open-answer questions about students’ understanding of research, and about factors that developed and impeded the development of their research skills. These questionnaires were given at the beginning of the course, and again at the end of the course. On the scale used, ‘1’ means ‘strongly disagree’, ‘7’ means strongly agree, and ‘4’ an ambiguous ‘neutral’, ‘undecided’ or ‘half-way’ indication. In the results section, the scales marked by students as 5, 6 & 7 are combined to give ‘broad agreement’ and likewise 1, 2 & 3 combined together give ‘broad disagreement’. Difference between the mean score for each question in the pre and post questionnaire is given as ‘ $\Delta$  mean’. The questions from the survey are in Appendix 2.

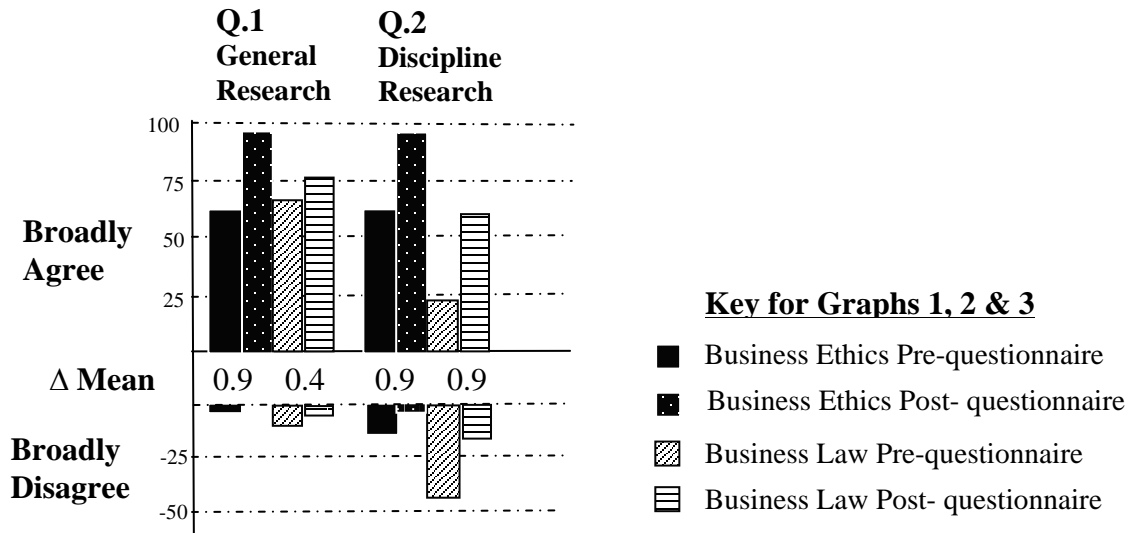
## RESULTS

**Table 1: Business Ethics and Business Law student responses to 15 seven-point Likert scale questions about self-assessment of general research skills (Qs1 & 2),-specific research skills (Qs 3-9) and about their attitudes to research (Qs10-15).**

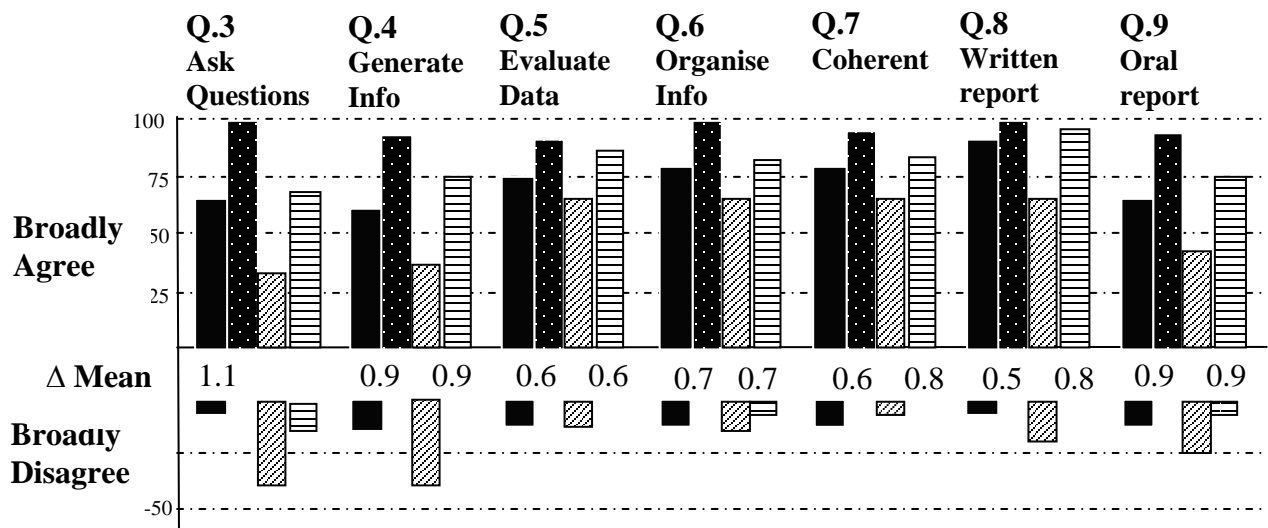
Q	Business Ethics			Business Law		
	Mean score/7 Pre-post (change)	Broadly agree %pre- %post (change)	Broad d’agree %pre-%post (change)	Mean score/7 pre-post (change)	Broadly agree %pre- %post (change)	Broad d’agree %pre-%post (change)
1	4.8-5.7 * (0.9)	61-94 (33)	4-0 (-4)	4.7-5.1 (0.4)	68-77 (9)	19-5 (-14)
2	4.7-5.6* (0.9)	61-94 (33)	17-3 (-14)	3.7-4.6* (0.9)	24-59 (35)	49-18 (-31)
3	4.8-5.9* (1.1)	65-97 (32)	9-0 (-9)	3.9-4.8* (0.9)	29-68 (39)	35-14 (-21)
4	4.6-5.5 * (0.9)	61-91 (30)	13-0 (-13)	4.0-4.9* (0.9)	37-73 (36)	42-0 (-42)
5	5.0-5.6 * (0.6)	74-91 (17)	9-0 (-9)	4.7-5.3 (0.6)	63-86 (23)	8-0 (-8)
6	5.0-5.7 * (0.7)	78-97 (19)	9-0 (-9)	4.8-5.1 (0.3)	68-82 (14)	16-5 (-11)
7	5.0-5.6 * (0.6)	78-94 (16)	8-0 (-8)	4.9-5.1 (0.2)	66-86 (20)	11-5 (-6)
8	5.4-5.9 (0.5)	91-97 (8)	4-0 (-4)	4.7-5.5* (0.8)	66-95 (29)	18-0 (-18)
9	4.9-5.8 * (0.9)	65-94 (29)	9-0 (-9)	4.2-5.1* (0.9)	42-73 (31)	24-4 (-20)
10	4.1-5.2 (1.1)	48-71 (23)	38-12 (-26)	4.9-4.9 (0)	66-73 (7)	21-5 (-21)
11	5.5-5.8 (0.3)	78-91 (13)	9-3 (-6)	6.0-5.6*(-0.4)	87-82 (-5)	6-0 (-6)
12	5.1-5.7 (0.6)	74-82 (8)	17-3 (14)	6.0-5.8 (0.2)	87-86 (-1)	8-0 (-8)
13	5.7-6.2 (0.5)	87-94 (7)	4-0 (-4)	6.2-5.5*(-0.7)	92-86 (-6)	3-9 (6)
14	5.1-5.6 (0.5)	70-76 (6)	4-3 (-1)	5.7-5.4 (-0.3)	84-86 (2)	6-9 (3)
15	5.6-6.0 (0.4)	78-97 (19)	4-0 (-4)	5.9-5.4 (-0.5)	87-86 (-1)	5-9 (4)

Cronbach's Alpha ( $\alpha$ ) was determined to be 0.902 for Business Ethics Questionnaires and 0.866 for Business Law Questionnaires, suggesting that both instruments were producing highly reliable scores. Mean score changes with  $p < 0.05$ , as determined by the Mann-Whitney U test, are marked with an asterisk in Table 1.

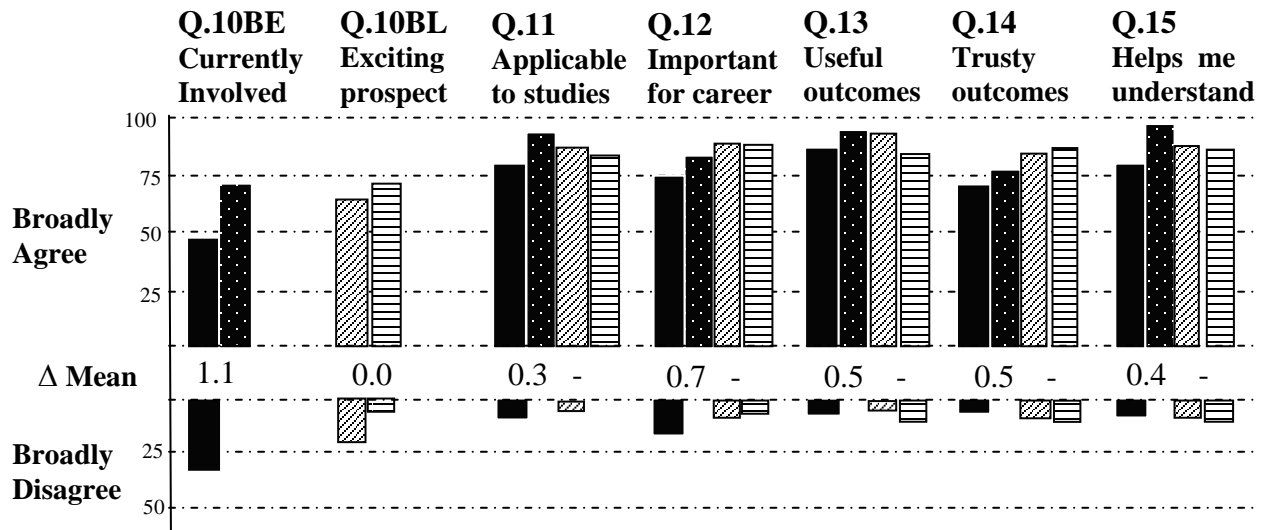
**Graph 1: Business Ethics and Business Law student responses to 2 seven-point Likert scale questions on self- assessment of overall research skills**



**Graph 2: Student responses to 7 point Likert scale questions on self- assessment of specific research skills in the discipline context**



**Graph 3: Student responses to 7-point Likert scale questions on attitudes to research.**



The measures above don't necessarily give us an understanding of changes in research skill, but rather show students' changed perceptions. These changes in perceptions may be due to improvement in a skill, such as evaluating data, or due to increases in; awareness of what that skill may entail in the discipline context; self-confidence (or over-confidence); understanding that the disciplinary requirements were not as demanding as they originally expected; capacity to 'transfer' a particular research skill from another context to the business/management context; motivational factors; and numerous other possibilities.

## DISCUSSION

### Business Ethics

For all the 'self-assessment of research skills' questions, (Q1-9) Business Ethics students displayed a minimum of 60 % broad agreement, and all increases in these questions are statistically significant, except Question 8. Students perceptions of 'My general research skills are good' (Q1) at the beginning of the course (mean 4.8, broad Agreement 61%), and increases over the timeframe of the course (change in mean + 0.9, increase in Broad Agreement of 33) was virtually identical to 'my Research Skills in management context are good' (Q2). Students perceived both of these broad-brush measures to have increased substantially during the course.

Questions 3-9 concerned specific facets of research, and this section of the questionnaire had a Cronbach's Alpha score of 0.937, giving scores of very high internal reliability. As the questions were set in discipline-specific contexts, this information says nothing about the external reliability of the measures. The questions were, however, framed by the 6 facets of the RSD, and these results, when considered with the general Questions 1 & 2, suggest that the questionnaire had a reasonable or higher level of construct validity. Question 3 relates to facet A of the RSD (embarks on inquiry), stating 'I am able to ask clear, researchable questions in management' and manifest the highest degree of

improvement (1.1 increase in mean; 32 percentage points increase in Broad Agreement). How to help students pose researchable questions is a very crucial question in higher education; students need this skill when running a business or progressing to HDR. The degree of improvement in this skill demonstrates that students can develop discipline-specific research skills in the standard curriculum if these skills are developed explicitly. Open inquiry, by the definition given earlier requires that student instigate the activity, and it would seem that students' appreciation of their capacity to ask researchable questions was enhanced by the open inquiry opportunity provided in Business Ethics, or by the explicit development of their skill, or a combination of both.

Question 4 asked 'I can devise procedures to generate high quality information', and had very similar degrees of improvement as Qs 1& 2. Of note is that Q4 was informed by Facet B of the RSD – find/generate needed information/data- a facet which beginning students often characterise as what research involves (Homewood, Willison, Kraushaar, Irwin & Yasin 2008). It will take interview data to determine if Business Ethics students are holding to a notion of research-as-information-gathering. Question 5 'I can effectively evaluate the quality of data that I generate', Question 6 'I organise information from multiple sources effectively' and question 7 'I am able to pull together information from different sources in a coherent manner' mirror Facets C (evaluation), D (organisation), and E (synthesis, analysis and application) of the RSD respectively. These all started with a mean score of 5.0 and improved by 0.6 to 0.7. Whilst not demonstrating the more spectacular increases in 'question asking' these results show a very solid improvement for all the facets of the RSD, except for Facet F (communication).

Facet F was broken into 2 components in the questionnaire. Question 8 stated 'I can clearly communicate in writing what I understand from my research' and showed the only non-statistically significant result. This question, however, started from the highest base (mean = 5.4, BA= 91) and ended up with level highest measures (mean = 5.9, BA= 97). What may be important here is that its 'cousin', Question 9 'I can clearly communicate in oral presentations what I understand from my research', started from a lower base (mean = 4.9, BA= 65) and almost caught up (mean = 5.8, BA= 94). This may not reflect real differences in these two communication skills, but possibly the difference in perceived exposure; a written presentation is frequently completed in private and handed to one person in confidence; an oral presentation is conducted under public scrutiny, students may feel more anxious or exposed to this form of communication and so tend to more lowly estimate themselves. Ultimately, students felt at the end of their course that their oral communication skills were on par with their written communication skills; this may be due to improved oral communication skills, improved confidence, better understanding of what oral communication in Business Ethics involves, or even relatively 'downgrading' their written communication skills. The interviews to be conducted with students involved in this study one year later may help us to understand these results more clearly. Nevertheless, it is likely that the Business Ethics course enhanced students perceptions of their skills in the oral communication of research, to enable the parity with written skills by the end of the course.

None of the increases in attitudes to research (Qs 10-15) were statistically significant, and so they are not discussed individually, however these questions may be found in Appendix 2. It is interesting that, given substantial perceived improvements in research skills, students did not indicate commensurate 'improvements' in attitudes to research.

Improvements in attitude would not necessarily be indicated by more positive scores, a point discussed in the Business Law section.

## **Business Law**

We continue to consider statistically and educationally significant results for the Business Law students' perceptions of their research skills. Business Law students' perceptions of their incoming *general* research skills (Q1) were the same as Business Ethics students. However, whereas 64% of Business Ethics students agreed that their incoming discipline-specific research skills (Q2) were good, only 24% of Business Law students broadly agreed that their research skills were good in the Business Law context, and half broadly disagreed that their skills were good. University, cohort and individual background, and Year Level all play their role in this perception. However, a discipline-specific reason for the big difference may include that this involves learning 'out of discipline' - Law in a Business course - which is compulsory for students to complete due to accreditation requirements. There is also domain specificity, where the students must rely on primary research in Business Law, and only after appropriately engaging with the subject do students know where and how to find primary sources. Business Law students therefore, possibly appropriately, perceived themselves to be poorly equipped for research in that context. As one student stated in the 'barriers to research' open-response field in the pre questionnaire: 'Biggest barrier is no law background knowledge'.

The perception of the Business Law cohort about Question 2 changed markedly over the semester, with a mean increase in score of 0.9 on the 7 point Likert scale, and with 3 in 5 students ending up broadly agreeing their Business Law research skills were good, leaving 1 in 5 disagreeing that their research skills were good. This extent of changes in perception of Business Law-specific research skills was not matched by changes in general research skills. The domain specificity may have led some students to perceive that this domain-specific development did not help with their general research skills. Ultimately, there was a non-significant improvement in their general research skills. This suggests that they did not see a strong connection between the discipline specific and general research skills (whether or not one exists). This all may be a function that many Business students do not see Business law as an area which they would like to focus on, but rather a compulsory area of study.

Business Law students started from a low base in terms of Q3 'I am able to ask clear researchable questions in Business Law' (29% broad agreement, 34% broad disagreement) and 'I can devise procedures to generate high quality information' (37% broad agreement, 42% broad disagreement) but perceived substantial, statistically significant improvements by the end of the course; 68% agreeing, 14% disagreeing for 'asking questions' and 73% agreeing, 0% disagreeing for 'devising procedures'. That no student would disagree that they can devise appropriate procedures to generate quality information in Business Law by the end of the course says that the two in five students who originally disagreed were 'upskilled' or became more familiar with how their skills fit the law context.

Just as for Business Ethics students, Business Law students rated their skills associated with written communication of research (Q8: mean = 4.7, broad agreement = 66) to be higher than oral communication (Q9: mean = 4.2, broad agreement = 42).

However, the Business Law students perceived that both skills increased almost identically (change in mean= 0.8 & 0.9, change in broad agreement = 29 & 31), and both having very few students disagreeing that these skills are good by the end of the course.

Questions 5, 6, 7, 10, 12, 14 and 15 yielded non-significant results. Question 11 'The ability to research is important to my forthcoming studies' had a statistically significant decrease in measures (change in mean of -0.4 and a drop of 5 percentage points for broad agreement). However, these modest drops mask a more revealing one: 55% of students initially marked '7' - strongly agree- on the Likert scale, however only 18% marked the same score on the post questionnaire. Paradoxically, there were also less broadly disagreeing (6% decreased to 0%), with more neutral or weakly agreeing.

55% of Business Law students strongly agreed (7 on the Likert scale) before the course that the ability to research would be important to their further studies, compared with only 18% who strongly agreed afterwards. This finding fits with the only other significant result- Q 13 'Research is an activity that has useful outcomes' (change in mean of -0.7 and a drop of 6 percentage points for BA). Students enrolled in Business perceived that their skills associated with question asking, devising procedures, and research communication increased substantially, yet that these abilities were not important or able to lead to useful outcomes. Again, it is possible that if these skills are relevant to Business Law only, from the students perspective, then they may be considering that these skills would not be relevant to other non-law studies or the Business world at large. This may reflect that many students do not move into the Bus Law area, and so the 'usefulness' questions scores tend to decrease.

Quite possibly Business Law students esteemed Law initially as an unknown that they themselves were unequipped to research. As students came to understand disciplinary expectations and perceive their own improvement in Business law research skills, they seem to have esteemed Business Law research with less regard. The small downward changes in 'trustworthy outcomes' (Q 14) suggest that some students may have become more critical of considering all research to be trustworthy, not a negative outcome for students at university.

## **CONCLUSION**

Efforts to explicitly develop students' research skills in Business Ethics Curriculum and Business Law Curriculum were unambiguously successful from the perspective of students who self-assessed their discipline-specific research skills pre and post. This result is in agreement with those of other disciplines that have attempted to enable this development (e.g. Chaplin, 2003; Hoskins, Stevens & Nehm, 2007; Luckie, Maleszewski, Loznak & Krha, 2004). What was ambiguous was the effects on students attitudes to research, with non-significant results in the main, but with the Business Law students regarding research as less useful and less important after the course. This quantitative analysis raises questions that will form the basis of interview protocols for the next phase of the research.



These results show that the skills developed in one specific context alone may limit students understanding of the breadth of research practices in Business and of the utility of research processes to 'change the way things get done'. It may be that explicit research skill development best be incorporated in the curriculum of courses of study early in a program, and in multiple courses. Even though there are discipline, and sub-discipline particularities that mean transfer is not necessarily immediate from one domain to the next, one course to the next, the general facets may be developed in multiple contexts, enabling student to, over time, learn to guide this transfer themselves. If these skills are rarely explicitly developed, opportunities for guided development will be wasted, and the realisable gains demonstrated in this study left unmade. As a Business Ethics student wrote: 'This is the first subject in the masters that required primary research. Have had no opportunities previously.'

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**APPENDIX 1: RSD- BASED MARKING CRITERIA**

A. Business Ethics RSD- Based Diagnostic Assessment Marking Criteria

B. Business Ethics RSD- Based Summative Assessment Marking Criteria

C. Business Law RSD- Based Diagnostic Marking Criteria

D. Business Law RSD- Based Summative Marking Criteria

## **APPENDIX 2: QUESTIONNAIRE QUESTIONS**

Question 1 'My general research skills are good'

Question 2 'My Research Skills in management context are good'

Question 3 'I am able to ask clear, researchable questions in management'

Question 4 'I can devise procedures to generate high quality information'

Question 5 'I can effectively evaluate the quality of data that I generate'

Question 6 'I organise information from multiple sources effectively'

Question 7 'I am able to pull together information from different sources in a coherent manner'

Question 8 'I can clearly communicate in writing what I understand from my research'

Question 9 'I can clearly communicate in oral presentations what I understand from my research'

Question 10 BE 'Research is an activity that I would be excited to be involved in'

Question 10 BL 'Research is an activity that I am currently involved in'

Question 11 BE 'The ability to research is applicable to my current studies'

Question 11 BL 'The ability to research is important to my forthcoming studies'

Question 12 'The ability to research is important to my future career/career prospects'

Question 13 'Research is an activity that has useful outcomes'

Question 14 'Research is an activity that has trustworthy outcomes'

Question 15 'Research is an activity that helps me to understand the world'