Chapter 7: DATA PRESENTATION OF HIGHER EDUCATION'S CONTEXTUAL NEED FOR MBA SERVICE-LEARNING

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning

Sub-problems:		***Propositions 3.1 to 3.5***
3.1	Evaluate the extent of functional course content learning achieved by MBA students as reflected in their assignments	3.1 MBA students' course content learning in Service-Learning courses meets educational standards
3.2	Evaluate the extent of CCFO learning achieved by MBA students as reflected in their assignments	3.2 MBA students learn the CCFOs through participating in Service-Learning courses
3.3	Describe the preferred assessment methodologies used in an MBA Service-Learning course	3.3 Reflection with reflective journals are considered to be the most effective assessment methodology for Service-Learning courses
3.4	Evaluate the general academic quality of students' Service-Learning assignments	3.4 The general academic quality of student assignments reflects the integrated and appropriate use of references and follow a logical report structure 3.5 The depth of reflection by students is positively correlated with the extent of cognitive development as measured by Bloom's taxonomy for each CCFO

7.1 Proposition 3.1: MBA students' course content learning in Service-Learning courses meets educational standards

Students' course content learning was judged primarily by their syndicate performances, since it was in syndicates that they carried out their Service-Learning assignments. However, data relating to their course content learning were also gathered from their individual assignments.

7.1.1 Profile of the students participating in the study

The profile of the 72 students whose assignments were made available for analysis is as presented in Table 7.1. Racial data were not available from the assignments.

Table 7.1 Profile of the students (n = 72) participating in the study

Class Type breakdown	**n**	**%**
Part-time	42	58.3
Full-time	30	41.7
Gender breakdown	**n**	**%**
Male	50	69.4
Female	22	30.6

7.1.2 Students' course content learning

The individual assignments revealed that 50% of the females in the class made explicit linkages of their course content learning to their CCFO learning, whereas only 23.6% of the males did.

The quality of the ODD process followed, as judged by the researcher from the syndicate assignment reports, can be seen graphically in Figure 7.1. There was no difference between the Full-time and the Part-time syndicates.

Figure 7.1 The quality of the ODD process followed by the syndicate groups

Community organisations' feedback regarding the value of students' interventions may be seen in Chapter 6, Tables 6.10, 6.11 and 6.13.

From the data available it is suggested that the students generally did learn sufficient course content through the Service-Learning course, and **Proposition 3.1 is tentatively accepted**, although more direct measurements would have added value. Multi-rater evaluations would have provided greater validity.

7.2 Proposition 3.2: MBA students learn the CCFOs through participating in Service-Learning courses

The data supporting this proposition are drawn from the same student groups as those for proposition 3.1, however the CCFO data were the focus of the individual assignments and these have been analysed in depth to give the results that follow.

7.2.1 A descriptive statistical overview of CCFO development

Attention is drawn to the re-analysed CCFO importances / development data in Chapter 5, with particular reference to Tables 5.4, 5.5 and 5.6, which indicate that the CCFOs

are developed through MBA and SEP study, and have been experienced to have been developed by experienced Service-Learning practitioners, whatever their discipline.

Furthermore, plotting the importances data versus the development data in Figures 5.3, and 5.4 demonstrates the perceived differences in development of the different CCFOs by management students (n = 142) and by Service-Learning practitioners (n = 32).

The data presented here are based on analysis of student assignments. A total of 82 assignments were submitted; however, not all CCFOs were discussed in all the assignments. Of the 82, 59 followed the specified format and discussed all of the expanded set of 13 CCFO variables. The data presented first describe the 59 usable responses relating to the seven assessable CCFOs. Where appropriate and possible, the data for all 13 are presented. However analysis of the 7 assessable CCFOs only is possible in some cases. Because Bloom levels are ordinal level data the only meaningful descriptive statistics are the median and modal values, shown in Table 7.2

Table 7.2 Descriptive statistics for the Bloom level analysis of the 7 assessable CCFOs (n = 59)

	Work with others	Communicating	Solving problems	Systems thinking	Managing information	Managing self	Use technology
Median	5	4	4	4	3	3	3
Mode	6	3	6	3	3	3	3

The medians for the Bloom level of each of the assessable CCFOs from the student assignments have been plotted in Figure 7.2. However, the modal values also present information of interest, with “solving problems” and “working with others” being shown as the CCFOs that were most strongly developed, with a Bloom level of 6 being the most frequently reached in these two. For analysis purposes a Bloom level of 4 was selected as the threshold of being the bare minimum that should be attained by MBA students when conducting their assignments. Synthesis and evaluation levels should be

possible, but these higher levels of cognitive achievement were seen in relatively few cases, suggesting a pedagogical gap. The Bloom levels attained are indicators of the depth of cognitive achievement by the student for each CCFO.

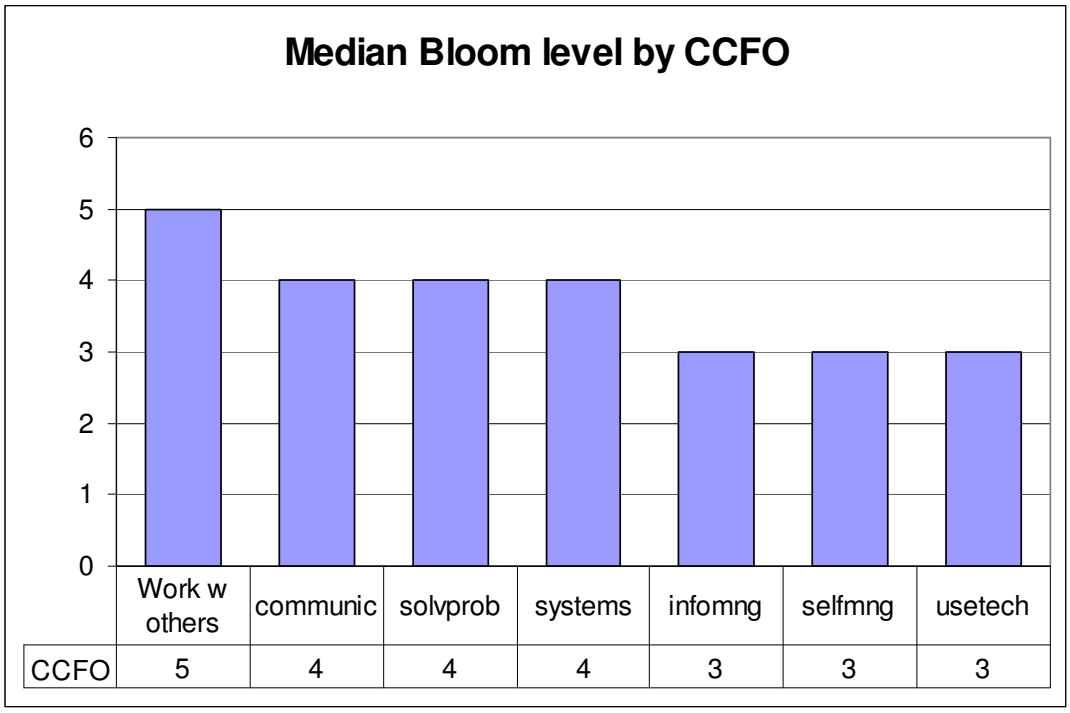


Figure 7.2 Median Bloom level by assessable CCFO (n = 59)

For convenience, the meaning of each Bloom (1956) level is repeated below:

0 = Theoretical level introduced for this study, meaning no learning

1 = knowledge

2 = comprehension

3 = application

4 = analysis

5 = synthesis

6 = evaluation

The extent of development of each individual CCFO can be seen in Tables 7.3 through 7.9. The percentage of students achieving a Bloom level of 4 (analysis) or higher (synthesis and evaluation) is also given in these Tables. The CCFO Tables are presented in the descending sequence of the percentage achievement of Bloom 4 or higher.

Table 7.3 Frequency distribution of "Work with others"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	0	0	0	0		
1	1	1	1.69	1.69	I	
2	3	4	5.08	6.78	II	
3	14	18	23.73	30.51	IIIIIIIII	
4	10	28	16.95	47.46	IIIIII	**52.54**
5	8	36	13.56	61.02	IIIII	
6	23	59	38.98	100	IIIIIIIIIIIII	

Table 7.4 Frequency distribution of "Solve problems"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	0	0	0	0		
1	2	2	3.39	3.39	I	
2	2	4	3.39	6.78	I	
3	14	18	23.73	30.51	IIIIIIIII	
4	12	30	20.34	50.85	IIIIIIII	**49.15**
5	8	38	13.56	64.41	IIIII	
6	21	59	35.59	100	IIIIIIIIIIII	

Table 7.5 Frequency distribution of "Systems thinking"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	1	1	1.69	1.69	I	
1	4	5	6.78	8.47	II	
2	3	8	5.08	13.56	II	
3	14	22	23.73	37.29	IIIIIIIII	
4	14	36	23.73	61.02	IIIIIIIII	**38.98**
5	9	45	15.25	76.27	IIIIII	
6	14	59	23.73	100	IIIIIIIII	

Table 7.6 Frequency distribution of "Communication"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	1	1	1.69	1.69	I	
1	3	4	5.08	6.78	II	
2	5	9	8.47	15.25	III	
3	20	29	33.9	49.15	IIIIIIIIIIII	
4	12	41	20.34	69.49	IIIIIIII	**30.51**
5	7	48	11.86	81.36	IIII	
6	11	59	18.64	100	IIIIIII	

Table 7.7 Frequency distribution of "Self management"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	1	1	1.69	1.69	I	
1	2	3	3.39	5.08	I	
2	4	7	6.78	11.86	II	
3	23	30	38.98	50.85	IIIIIIIIIIIIII	
4	14	44	23.73	74.58	IIIIIIIII	**25.42**
5	5	49	8.47	83.05	III	
6	10	59	16.95	100	IIIIII	

Table 7.8 Frequency distribution of "Information management"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	0	0	0	0		
1	2	2	3.39	3.39	I	
2	11	13	18.64	22.03	IIIIIII	
3	17	30	28.81	50.85	IIIIIIIIII	
4	15	45	25.42	76.27	IIIIIIIII	**23.73**
5	3	48	5.08	81.36	II	
6	11	59	18.64	100	IIIIIII	

Table 7.9 Frequency distribution of "Use technology"

Bloom level	Count	Cumulative Count	Percent	Cumulative Percent	Graph of Percent	% Bloom 4 or higher
0	10	10	16.95	16.95	IIIIII	
1	8	18	13.56	30.51	IIIII	
2	6	24	10.17	40.68	IIII	
3	19	43	32.2	72.88	IIIIIIIIIII	
4	7	50	11.86	84.75	IIII	**15.25**
5	4	54	6.78	91.53	II	
6	5	59	8.47	100	III	

Tables 7.3 to 7.9 focus on each assessable CCFO in turn and show the distribution of Bloom levels achieved for that CCFO by the respondents. Figure 7.3 shows the distribution of CCFOs in which students achieved a Bloom level of 4 or greater (analysis, synthesis or evaluation) in their reflective journal assignments.

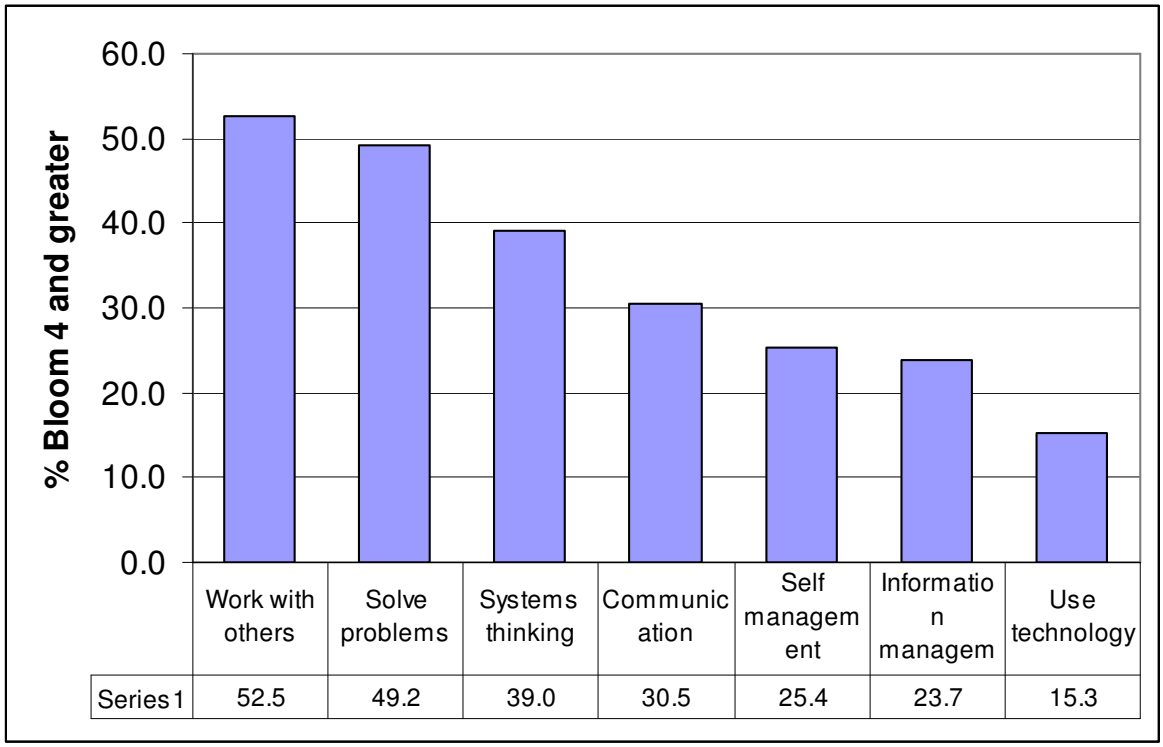


Figure 7.3 Distribution of CCFOs achieving a Bloom level of 4 or greater

Considering the data presented in Tables 7.2 to 7.9 from the alternative perspective, Tables 7.10 to 7.16 take each Bloom level in turn and show the distribution of CCFOs within that Bloom level. This is to give an additional indication of which CCFOs the students perceived to be worthy of reflection (eg "use technology") in Table 7.10 was barely given a passing thought – 76.9% of students did not reflect on it at all.

Thus Table 7.10 demonstrates that the CCFO "use technology" accounted for nearly 77% of all the theoretical Bloom zero (no learning at all) ratings.

Table 7.10 Frequency distribution of CCFOs for Bloom 0

Variables	Percent	Graph of percent
Work with others	0.0	
Solve problems	0.0	
Systems thinking	7.7	II
Communication	7.7	II
Information management	0.0	
Self management	7.7	II
Use technology	76.9	IIIIIIIIIIIIIIIIIIII
Total	**100**	

Table 7.11 Frequency distribution of CCFOs for Bloom 1

Variables	Percent	Graph of percent
Work with others	4.5	I
Solve problems	9.1	III
Systems thinking	18.2	IIIIII
Communication	13.6	IIII
Information management	9.1	III
Self management	9.1	III
Use technology	36.4	IIIIIIIIIII
Total	**100**	

Table 7.12 Frequency distribution of CCFOs for Bloom 2

Variables	Percent	Graph of percent
Work with others	8.8	III
Solve problems	5.9	II
Systems thinking	8.8	III
Communication	14.7	IIIII
Information management	32.4	IIIIIIIIIII
Self management	11.8	IIII
Use technology	17.6	IIIII
Total	**100**	

Table 7.13 Frequency distribution of CCFOs for Bloom 3

Variables	Percent	Graph of percent
Work with others	11.6	III
Solve problems	11.6	III
Systems thinking	11.6	III
Communication	16.5	IIIIIII
Information management	14.0	IIIII
Self management	19.0	IIIIII
Use technology	15.7	IIIII
Total	**100**	

Table 7.14 Frequency distribution of CCFOs for Bloom 4

Variables	Percent	Graph of percent
Work with others	11.9	IIII
Solve problems	14.3	IIII
Systems thinking	16.7	IIIII
Communication	14.3	IIII
Information management	17.9	IIIIII
Self management	16.7	IIIII
Use technology	8.3	II
Total	**100**	

Table 7.15 Frequency distribution of CCFOs for Bloom 5

Variables	Percent	Graph of percent
Work with others	18.2	IIIIII
Solve problems	18.2	IIIIII
Systems thinking	20.5	IIIIIII
Communication	15.9	IIIII
Information management	6.8	II
Self management	11.4	IIII
Use technology	9.1	III
Total	**100**	

Table 7.16 Frequency distribution of CCFOs for Bloom 6

Variables	Percent	Graph of percent
Work with others	24.2	IIIIIIII
Solve problems	22.1	IIIIIII
Systems thinking	14.7	IIIII
Communication	11.6	IIII
Information management	11.6	IIII
Self management	10.5	III
Use technology	5.3	II
Total	**100**	

The data presented demonstrate that the students participating in this study did learn the CCFOs through the Service-Learning assignments they carried out, although to different extents.

Thus Proposition 2.3 may be given a qualified acceptance because CCFO development was present but not universal.

7.3 Proposition 3.3: Reflection with reflective journals are considered to be the most effective assessment methodology for Service-Learning courses

Both Service-Learning practitioners and students provided input into this section. The Service-Learning practitioners gave specific recommendations regarding their applied assessment methodologies. The input from students came from two sources. The first related to whether they perceived the assessment methodology used on the Service-Learning course to be different to previous experiences, and if so how, and whether or not it was of value. The second source was their assignments, which were evaluated by the researcher with regard to the level of reflection achieved for each CCFO.

The Service-Learning practitioners' input is provided first, followed by the students' comments.

7.3.1 Service-Learning practitioners' preferred assessment methodologies

The Service-Learning practitioners' (n = 32) input included suggestions of a number of different assessment methodologies, as well as comments regarding the fact that assessment should be both formative and summative (n = 27, or 84%).

Reflective journals were mentioned by all but two of the respondents (94%), demonstrating that this methodology is by far the most common form of assessment.

Several (n = 7 or 22%) of the respondents suggested that the final mark be made up of several different forms of assessment in varying proportions. None of these suggested proportions or components was consistent with one another and seemed to reflect individual preferences.

The full range and sorted frequency of the different assessment methodologies is presented in Table 7.17.

Table 7.17 Service-Learning practitioners' preferred assessment methodologies

Assessment methodology	n	%
Reflective journal / diary / log / portfolio (individual)	30	94
Lecturer assessment	27	84
Self assessment	19	59
Peer assessment	19	59
Placement (eg community organisation) assessment	17	53
Projects delivered	16	50
Class discussions and participation marks	15	47
Supervisor observation	14	44
Group assignments	12	38
Class presentations	11	34
Presentations to the recipient communities	11	34
Academic report	9	28
Written examination	9	28
Class tests	7	22
Role plays in classroom	5	16
Symposium presentation	1	3

Other comments made by the Service-Learning practitioners were that:

- Assessment should include functional skills development, eg project delivery, technical skills, or patient aids as well as personal growth accounts
- An understanding of social issues should be evident in the student submissions or presentations
- Reports should be structured and judged on their academic quality as well as their content

- Critical incidents and learning points should be part of the structure of the reflective journals, and demonstrate the students' quality and depth of thinking about problems and how to solve them
- Project / assignment impact measures could be included, eg finances raised, meals sponsored, awards made

7.3.2 Students' perceptions of assessment methodologies applied

The input regarding the course assessment came from the 52 students who completed the CHESP questionnaire, one of whom did not comment, giving 51 usable responses for analysis. These results are presented in Table 7.18.

Table 7.18 Students' (n = 51) perceptions of assessment methodologies applied

Was assessment different to other courses?		**n**	**%**
Yes		38	73.1
No		13	25.0
Not completed		1	1.9
	n =	**52**	
Reasons for "No"	Did not comment	12	
	"Besides being an NGO, a lot of other courses use practical applications"	1	
Reasons for "Yes"	Did not comment	5	
How was the assessment different? Key concept / assessment theme for "Yes" (n = 38 yes responses)			
Key concept	**Phrases included**	**n**	**%**
Practical application	More practical	16	42.1
	Action learning		
	Worked in a real-life organisation		
	Focused on outputs for the organisation		
	Practical application of theory		
	We used theory to drive practice		
	More hands-on than other courses		
	Better learning through doing not just reading		

Key concept	Phrases included	n	%
Personal growth and development	Personal development	14	36.8
	The course mainly assessed my personal learning through the practical experiences		
	Very much a self-learning experience		
	We addressed our basic nature and thinking		
	Gives us a different perspective		
	Course was more concerned about our ultimate growth as individuals		
	We had to examine our inherent assumptions		
	Applied creative thinking		
	Open to own interpretations		
	It made me a better person		
	We were able to add SO much value		
Exam equivalent assignment not exam	Exam equivalent assignment	7	18.4
	No exam		
	The reflective journal		
Community input to the assessment	Community participation in giving marks	5	13.2
	Feedback from community		
	Feedback from organisation		

The key concepts regarding assessment methodology from the students' comments were extracted through content analysis – these are in bold in the first column of Table 7.18, and the various phrases and words that they used to express these key concepts are listed in the second column. The number of comments relating to each of the key concepts is in the third column, followed by the percentage that each number represented.

The concepts are sorted by frequency – 42.1% of the respondents felt that they main difference to normal assessment was its practical application, 36.8% indicated that personal growth and development was a key difference, and so on.

7.3.3 Students' depth of reflection as assessed in their reflective journals

The depth of reflection was based on the "what, so what, now what" model (Bender *et al* 2006). However it became evident that some students did not reflect at all on some of the CCFOs, so a fourth category of "none" was introduced into the analysis, and was placed prior to "what", being at the lowest level possible on the ordinal scale.

In a similar manner to the analysis above, firstly the frequency distribution of the depths of reflection attained is presented for the entire group of 59 assignments. This is followed by a breakdown of the depths of reflection attained for each of the 7 assessable CCFOs.

Figure 7.4 illustrates the overall depths of reflection achieved in the students' (n = 59) assignments.

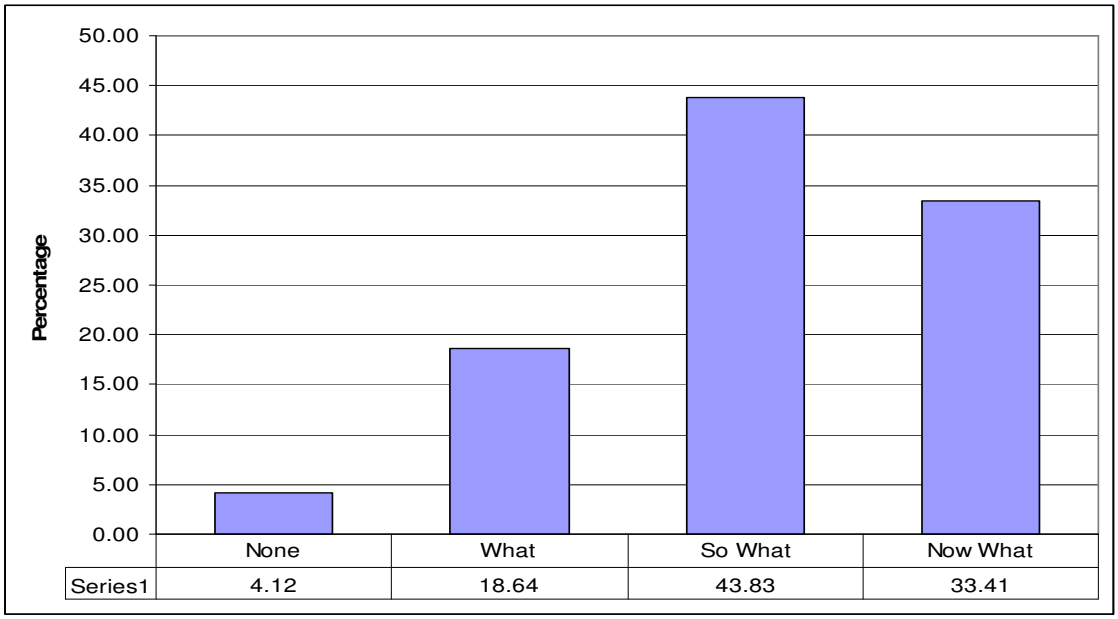


Figure 7.4 Overall frequency distribution of the depths of reflection achieved by students (n = 59)

A figure of 77.2% of all students achieved a reflection level of "So what" or higher, indicating that most of them did reflect on the implications of their experiences as well as possible future actions that could be taken. However, the depth of reflection did vary by CCFO, as demonstrated in Figure 7.5. Nearly 90% of students achieved a reflection level of "so what" or greater, whereas only 55.9% did so for "use technology".

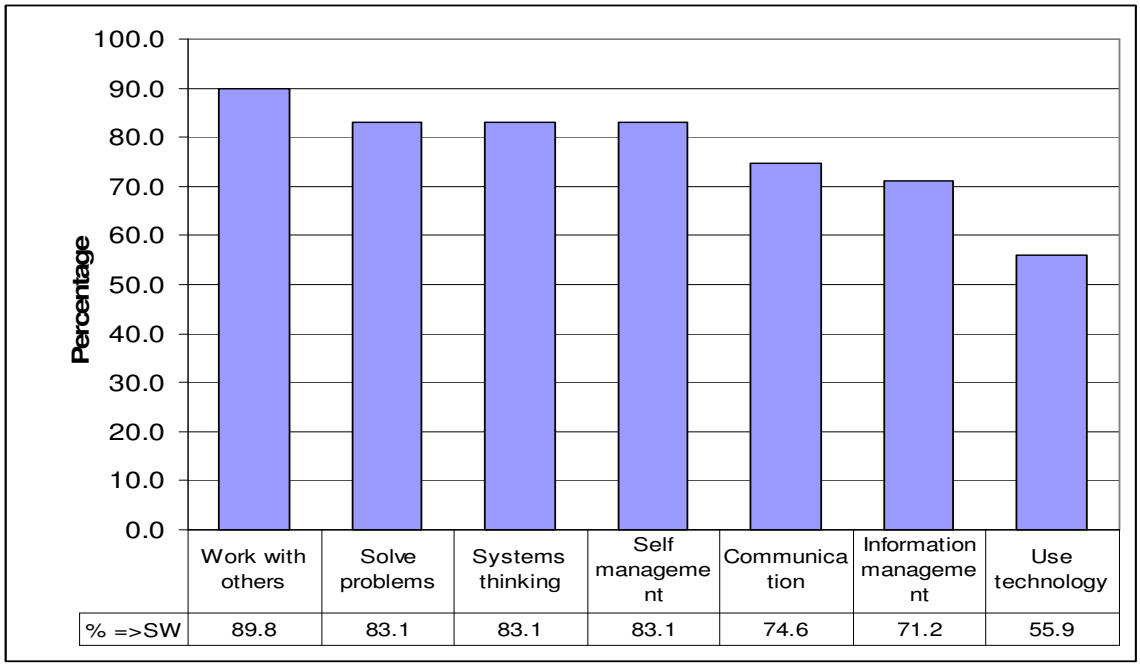


Figure 7.5 Frequency distribution of CCFOs reflected on to a level of "so what" or higher

Tables 7.19 to 7.25 take each CCFO in turn and show the distribution of the level of reflection within that CCFO.

The sequence of presentation is in descending sequence of those CCFOs that were reflected on at a level of "so what" or higher. This sequence is demonstrated in Figure 7.5, followed by the disaggregated detail in Tables 7.19 to 7.25, which follow below.

Table 7.19 Frequency distribution of CCFO "Work with others" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	1	1	1.69	1.69	I	
What?	5	6	8.47	10.16	III	
So What?	22	28	37.29	47.46	IIIIIIIIIIIIII	89.8
Now What?	31	59	52.54	100	IIIIIIIIIIIIIIIIIIII	

Table 7.20 Frequency distribution of CCFO "Solve problems" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	0	0	0	0		
What?	10	10	16.95	16.95	IIIIII	
So What?	17	27	28.81	45.76	IIIIIIIIII	83.1
Now What?	32	59	54.24	100	IIIIIIIIIIIIIIIIIII	

Table 7.21 Frequency distribution of CCFO "Systems thinking" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	3	3	5.08	5.08	II	
What?	7	10	11.86	16.94	IIII	
So What?	32	42	54.24	71.19	IIIIIIIIIIIIIIIIII	83.1
Now What?	17	59	28.81	100	IIIIIIIIII	

Table 7.22 Frequency distribution of CCFO "Self management" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	1	1	1.69	1.69	I	
What?	9	10	15.25	16.94	IIIIII	
So What?	34	44	57.63	74.58	IIIIIIIIIIIIIIIIIIII	83.1
Now What?	15	59	25.42	100	IIIIIIIII	

Table 7.23 Frequency distribution of CCFO "Communication" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	2	2	3.39	3.39	I	
What?	13	15	22.03	25.42	IIIIIIII	
So What?	28	43	47.46	72.88	IIIIIIIIIIIIIIIII	74.6
Now What?	16	59	27.12	100	IIIIIIIII	

Table 7.24 Frequency distribution of CCFO "Information management" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	1	1	1.69	1.69	I	
What?	16	17	27.12	28.81	IIIIIIIII	
So What?	25	42	42.37	71.19	IIIIIIIIIIIIIII	71.2
Now What?	17	59	28.81	100	IIIIIIIII	

Table 7.25 Frequency distribution of CCFO "Use technology" reflection

Reflection depth	n	Cumul n	%	Cumulative %	Graph of Percent	% reaching So What or higher
None	9	9	15.25	15.25	IIIIII	
What?	17	26	28.81	44.06	IIIIIIIII	
So What?	23	49	38.98	83.05	IIIIIIIIIIIII	55.9
Now What?	10	59	16.95	100	IIIIII	

Given the high demand for reflection and reflective journals (94%) as a method of assessment as seen in Table 7.17, coupled with the students achievements in terms of their ability to achieve deep levels of reflection as seen in Figure 7.4, **Proposition 3.3 may be accepted.**

7.4 Proposition 3.4: The general academic quality of students' assignments reflects the integrated and appropriate use of references and follows a logical report structure

The students' individual assignments were evaluated on the following criteria:

- The number of CCFO variables included in the individual assignment. The students were instructed to reflect on all 13 of the expanded CCFO list: 62.5% did so.
- Number of references in the reference list. The students were instructed to use at least seven references in their assignments: exactly 50% did so, and 50% listed six or fewer references.
- The extent to which the references followed the prescribed format
- Number of good quality references (journal articles or textbooks) in the reference list
- The formality of the style of the written report.

These findings are summarised in Tables 7.26 to 7.28

Table 7.26 Frequency distribution of the extent of the academic format of listed references

Academic format of refs	n	Cumulative n	%	Cumulative %	Graph of Percent
High	20	20	27.78	27.78	IIIIIIIIII
Medium	29	49	40.28	68.06	IIIIIIIIIIIIII
Low	13	62	18.06	86.11	IIIIIII
N/A	10	72	13.89	100	IIIII

Table 7.27 Frequency distribution of the number of good quality references (journal articles or text books)

# of High Quality Refs	n	Cumulative n	%	Cumulative %	Graph of Percent
Up To 3	16	16	25.4	25.4	IIIIIIIII
3 To 7	32	48	50.79	76.19	IIIIIIIIIIIIIIIII
7 To 10	10	58	15.87	92.06	II
10 and more	5	63	7.93	100	I

Table 7.28 Frequency distribution of the formality of the report style

Formality of Report Style	n	Cumulative n	%	Cumulative %	Graph of percent
Very Academic	3	3	4.17	4.17	I
Academic	19	22	26.39	30.56	IIIIIIIII
Formal	29	51	40.28	70.84	IIIIIIIIIIIIII
Informal	18	69	25	95.83	IIIIIIIII
Very Informal	3	72	4.17	100	I

Although 50% of students listed seven or more references in their assignments, only 38% actually referred to references within the text of the assignments, but this 38% was not a subset of the 50% - in fact there was no relationship between whether students listed references in a reference list and whether they used references in-text.

Figure 7.6 illustrates the relationship between the use of in-text references and Bloom level achieved in the assignments. For the purpose of this analysis each CCFO for each respondent (with its attendant data regarding depth of reflection and whether or not they had used in-text references) was analysed and n = 413. In Figure 7.6 “Y” indicates the use of in-text references and “N” indicates the lack of referral to references within the text of the assignment, whether or not the student had listed references at the end of the assignment.

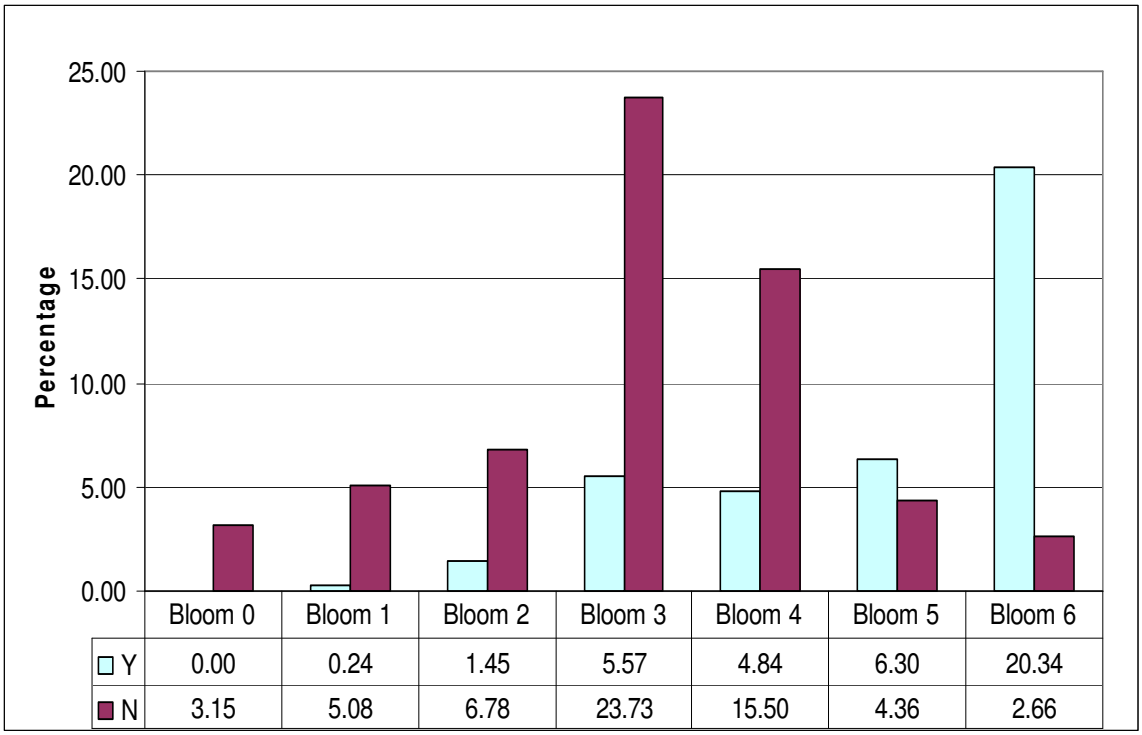


Figure 7.6 The relationship between the use of in-text references and Bloom level achieved in student assignments (n = 413)

Thus the findings for Proposition 3.4 are inconclusive and it is neither accepted nor rejected. Some of the data point to acceptance, such as that relating to the use of references and formality of the reports, but other evidence, such as the low level of compliance with instructions suggest otherwise.

7.5 Proposition 3.5: The depth of reflection by students is positively correlated with the extent of cognitive development as measured by Bloom's taxonomy for each CCFO

The data for all 13 CCFO variables were summarised as seen in Table 7.29, then the same done for the seven assessable CCFOs, which may be seen in Table 7.30.

Table 7.29 Contingency table for the depth of reflection vs the Bloom level achieved for all 13 CCFO variables (n = 857)

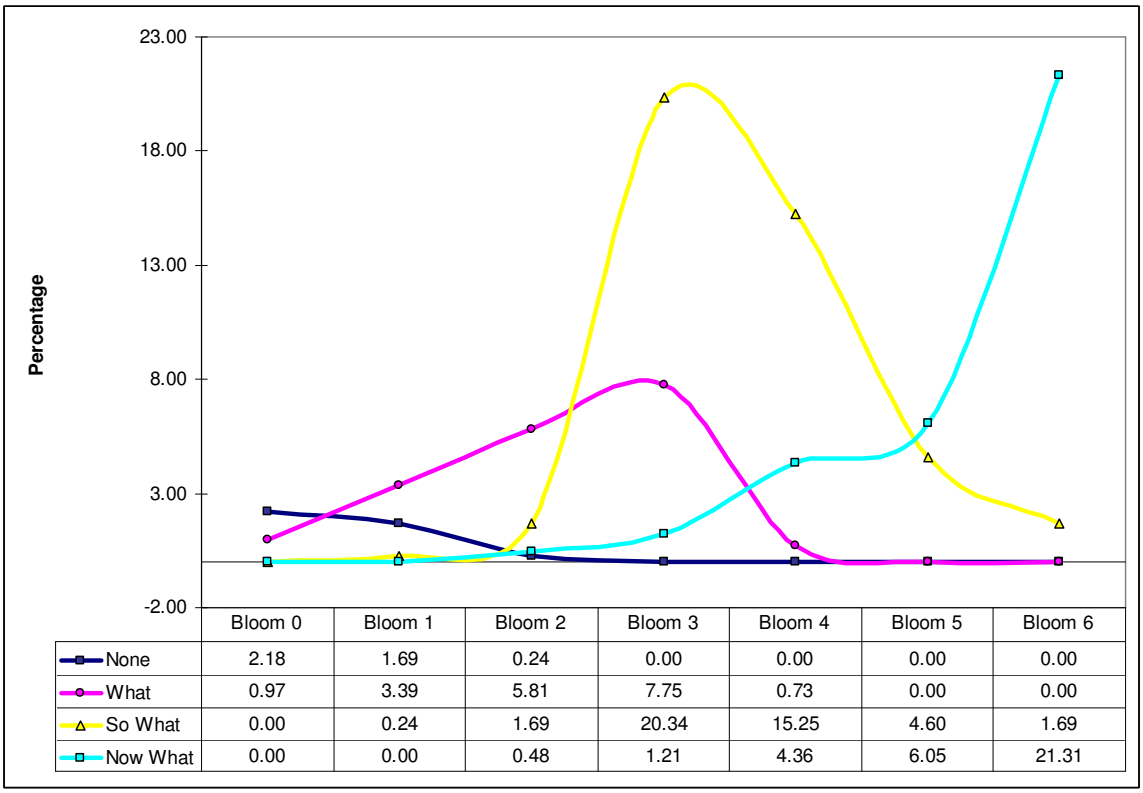
	Bloom 0	Bloom 1	Bloom 2	Bloom 3	Bloom 4	Bloom 5	Bloom 6	TOTAL
None	14	10	1	0	0	0	0	**25**
What	12	31	69	78	5	0	0	**195**
So What	0	1	12	162	127	33	11	**346**
Now What	0	0	4	12	37	62	176	**291**
TOTAL	**187**	**95**	**169**	**252**	**86**	**42**	**26**	**857**

Table 7.30 Contingency table for the depth of reflection vs the Bloom level achieved (%) for the 7 assessable CCFOs

% ages	Bloom 0	Bloom 1	Bloom 2	Bloom 3	Bloom 4	Bloom 5	Bloom 6	TOTAL
None	2.18	1.69	0.24	0.00	0.00	0.00	0.00	**4.12**
What	0.97	3.39	5.81	7.75	0.73	0.00	0.00	**18.64**
So What	0.00	0.24	1.69	20.34	15.25	4.60	1.69	**43.83**
Now What	0.00	0.00	0.48	1.21	4.36	6.05	21.31	**33.41**
TOTAL	**3.15**	**5.33**	**8.23**	**29.30**	**20.34**	**10.65**	**23.00**	**100.00**

The figures from Table 7.30 are illustrated graphically in Figure 7.7. It can be seen that no reflection resulted in a modal value of the theoretical Bloom 0, reflection at the "what" level gave a modal Bloom value of 3, but dropped off rapidly after that and constituted only 7.75% of responses.

The deeper "so what" also had a modal Bloom level of 3, but with a much higher percentage of 20.34%, and the deepest reflection "now what" resulted in a modal value of Bloom 6.



	Bloom 0	Bloom 1	Bloom 2	Bloom 3	Bloom 4	Bloom 5	Bloom 6
None	2.18	1.69	0.24	0.00	0.00	0.00	0.00
What	0.97	3.39	5.81	7.75	0.73	0.00	0.00
So What	0.00	0.24	1.69	20.34	15.25	4.60	1.69
Now What	0.00	0.00	0.48	1.21	4.36	6.05	21.31

Figure 7.7 Overall percentage distributions of Bloom levels achieved with progressively deeper levels of reflection for the 7 assessable CCFOs (n = 413)

A Chi-square test of independence was conducted on the raw data (alpha=0.05) and there was found to be a significant correlation ($p < 0.001$) between the depth of reflection and the Bloom level achieved (see Appendix 11).

Proposition 3.5 is accepted.

Greater detail was obtained by presenting the depth of reflection and Bloom level data for each of the assessable CCFOs in turn in Table 7.31.

Table 7.31 **Percentage distributions of Bloom levels achieved with deepening levels of reflection for each of the 7 assessable CCFOs (n = 413)**

CCFO	%	Bloom 0	Bloom 1	Bloom 2	Bloom 3	Bloom 4	Bloom 5	Bloom 6	TOT
Work with others	N	0.0	0.2	0.0	0.0	0.0	0.0	0.0	**0.2**
	W	0.0	0.0	0.5	0.7	0.0	0.0	0.0	**1.2**
	SW	0.0	0.0	0.0	2.7	1.7	0.2	0.7	**5.4**
	NW	0.0	0.0	0.2	0.0	0.7	1.7	4.9	**7.6**
Communicate	N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	W	0.0	0.5	0.7	1.7	0.2	0.0	0.0	**3.2**
	SW	0.0	0.0	0.2	2.9	2.7	1.0	0.0	**6.9**
	NW	0.0	0.0	0.2	0.2	0.0	0.7	2.7	**3.9**
Solve Problems	N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	W	0.0	0.0	0.2	1.7	0.0	0.0	0.0	**2.0**
	SW	0.0	0.0	0.0	1.7	1.7	0.5	0.0	**3.9**
	NW	0.0	0.0	0.0	0.0	1.2	1.5	5.2	**7.9**
Systems thinking	N	0.0	0.5	0.0	0.0	0.0	0.0	0.0	**0.5**
	W	0.0	0.2	0.5	1.0	0.0	0.0	0.0	**1.7**
	SW	0.0	0.2	0.2	2.2	3.2	1.2	0.7	**7.9**
	NW	0.0	0.0	0.0	0.2	0.2	1.0	2.7	**4.2**
Manage info	N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	W	0.0	0.5	2.5	0.7	0.5	0.0	0.0	**4.2**
	SW	0.0	0.0	0.2	3.2	2.5	0.2	0.0	**6.1**
	NW	0.0	0.0	0.0	0.2	0.7	0.5	2.7	**4.2**
Manage self	N	0.0	0.0	0.2	0.0	0.0	0.0	0.0	**0.2**
	W	0.2	0.5	0.5	1.0	0.0	0.0	0.0	**2.2**
	SW	0.0	0.0	0.2	4.2	2.7	1.0	0.2	**8.4**
	NW	0.0	0.0	0.0	0.5	0.7	0.2	2.2	**3.7**
Use technology	N	1.7	0.5	0.0	0.0	0.0	0.0	0.0	**2.2**
	W	0.7	1.5	1.0	1.0	0.0	0.0	0.0	**4.2**
	SW	0.0	0.0	0.5	3.7	1.0	0.5	0.0	**5.7**
	NW	0.0	0.0	0.0	0.0	0.7	0.5	1.2	**2.5**
									100
	TOT	**2.7**	**4.7**	**8.1**	**29.7**	**20.6**	**10.8**	**23.3**	**100**

Problem 4: Relate MBA students' preferred Learning Styles to the context of Service-Learning and describe their experiences, personal growth and insights from attending a Service-Learning course on their MBA programme.

Sub-problems:		***Propositions 4.1 to 4.2***
4.1	Relate MBA students' preferred Learning Styles to the context of Service-Learning	4.1 MBA students' Honey and Mumford learning styles profiles will not conflict with the reflection requirements of Service-Learning
4.2	Describe MBA students' experiences, personal growth and insights from attending a Service-Learning course	4.2 MBA students experience personal growth and new perspectives from attending a Service-Learning course and are able to articulate insights to contribute to further MBA Service-Learning course development.

7.6 Proposition 4.1: MBA students' Honey and Mumford learning style profiles will not conflict with the reflection requirements of Service-Learning.

The histograms of the four Honey and Mumford learning styles, viz. Activist, Reflector, Theorist and Pragmatist for the entire sample of 291 MBA students from seven business schools around the country are seen in Figures 7.8 to 7.11. It should be noted that these data are ordinal, not interval, which does limit the extent of analysis. However the median and modal values are given for each.

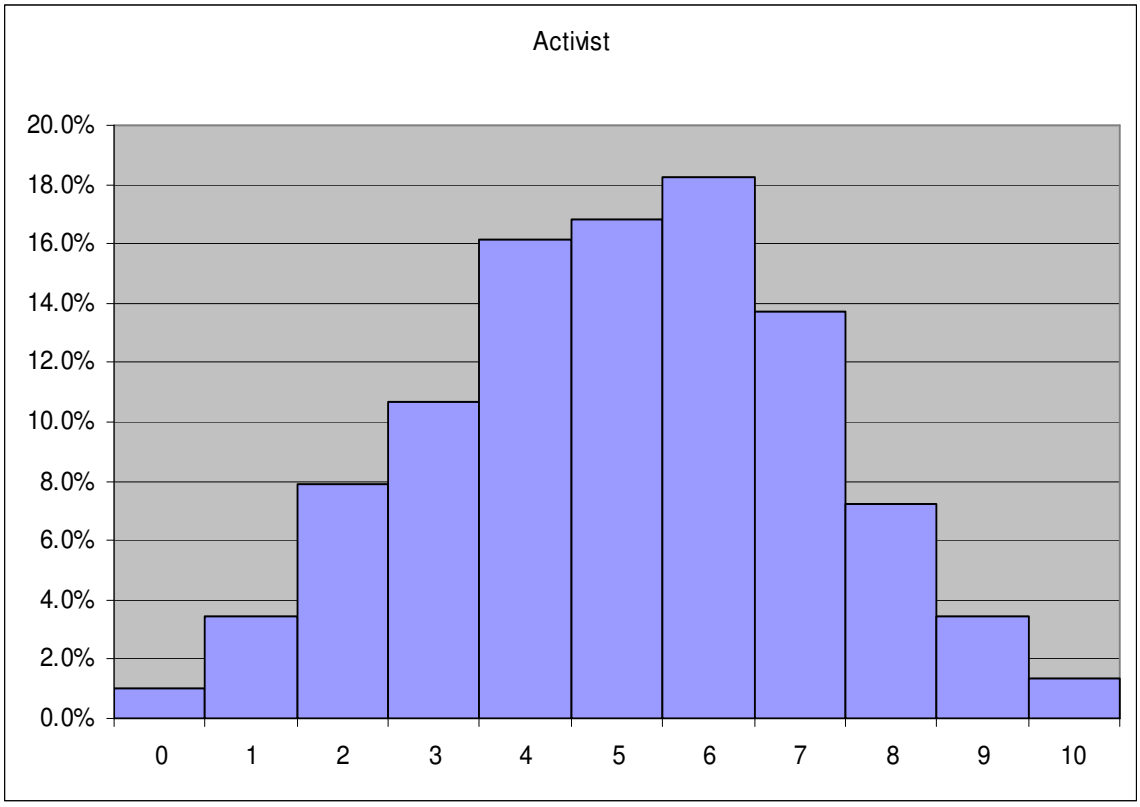


Figure 7.8 The histogram and distribution curve for the Activist learning style (n = 291)

Table 7.32 Descriptive statistics for the Activist learning style (n = 291)

Median	5
Mode	6
Kurtosis	-0.4085
Skewness	-0.0532

The activist learning styles is within the range of skewness to suggest normality of distribution.

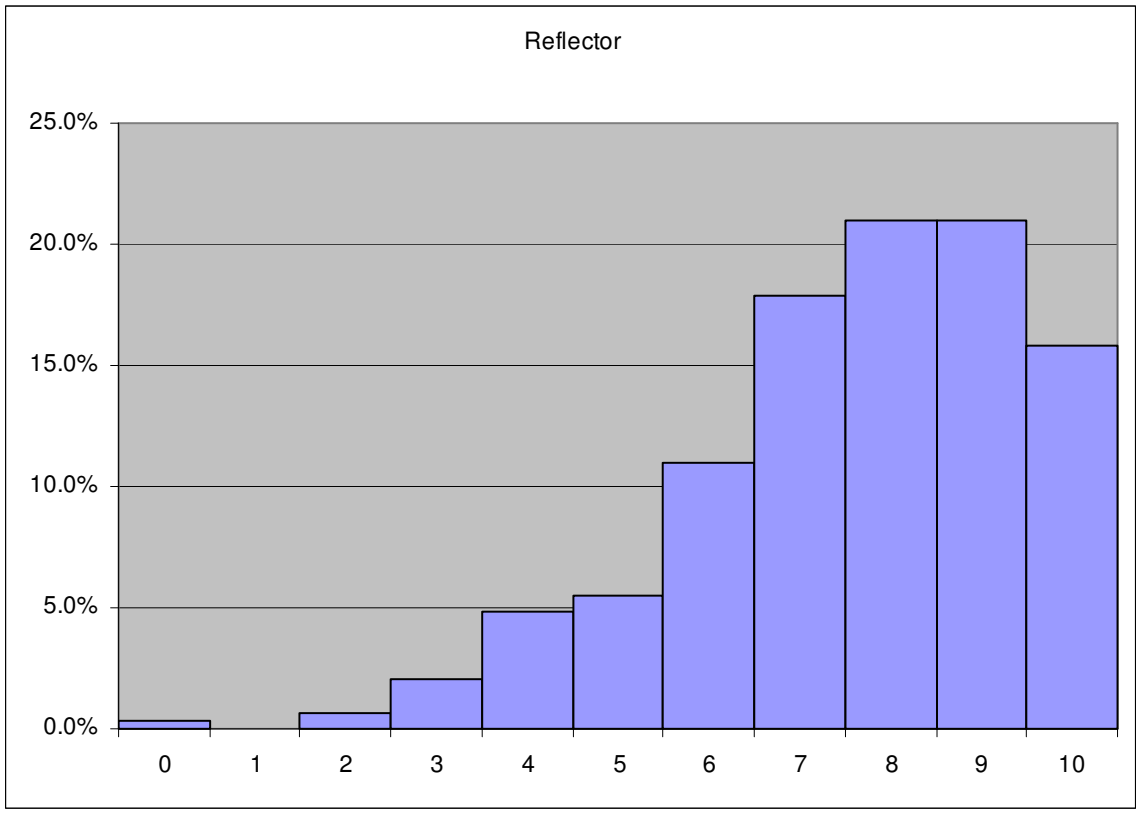


Figure 7.9 The histogram and distribution curve for the Reflector learning style (n = 291)

Table 7.33 Descriptive statistics for the Reflector learning style (n = 291)

Median	8
Mode	8
Kurtosis	0.6486
Skewness	-0.8571

The distribution is strongly skewed to the left, indicating a higher number of high scores than would be expected from a normal distribution.

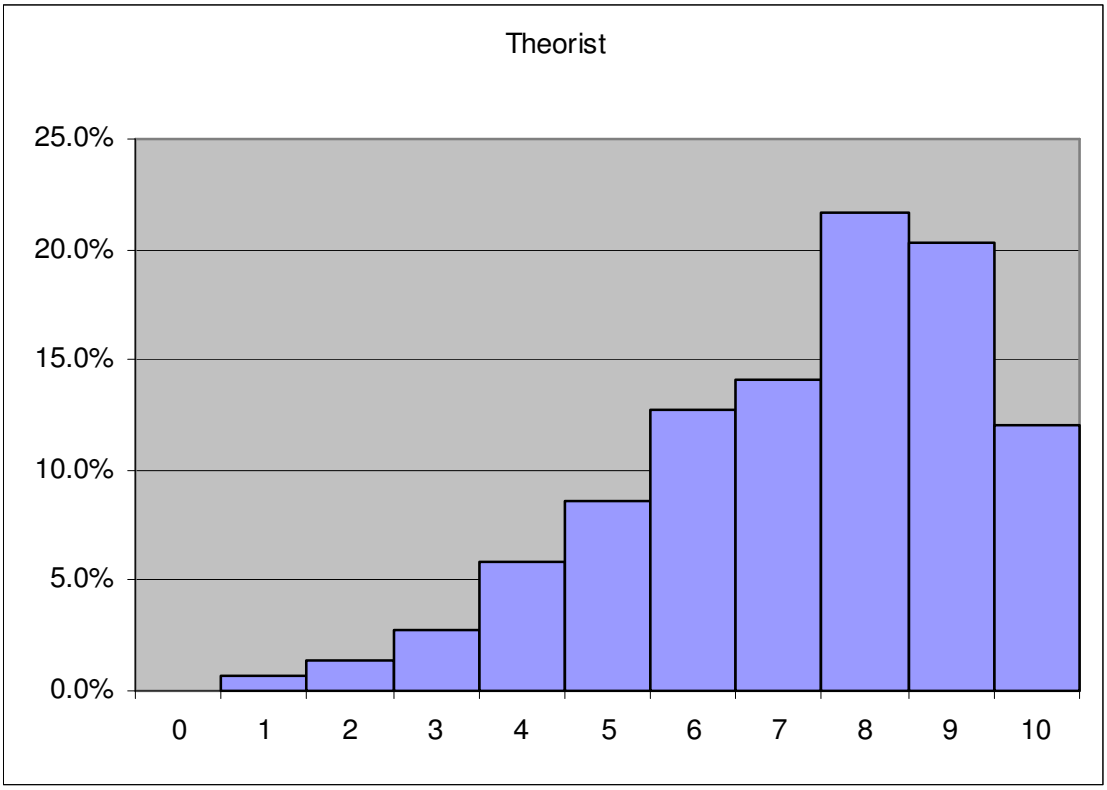


Figure 7.10 The histogram and distribution curve for the Theorist learning style (n = 291)

Table 7.34 Descriptive statistics for the Theorist learning style (n = 291)

Median	8
Mode	8
Kurtosis	0.0163
Skewness	-0.7251

The distribution is strongly skewed to the left, indicating a higher number of high scores than would be expected from a normal distribution

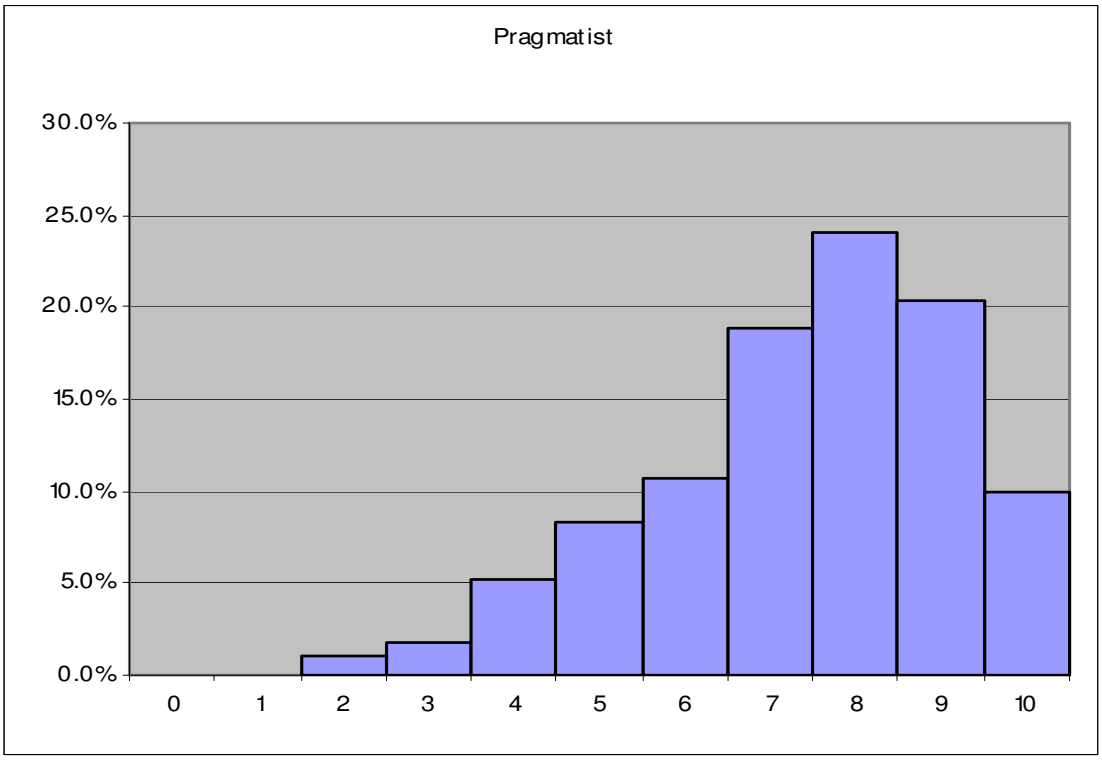


Figure 7.11 The histogram and distribution curve for the Pragmatist learning style (n = 291)

Table 7.35 Descriptive statistics for the Pragmatist learning style (n = 291)

Median	8
Mode	8
Kurtosis	0.0277
Skewness	-0.6869

The distribution is strongly skewed to the left, indicating a higher number of high scores than would be expected from a normal distribution

Proposition 4.1 may be accepted, given that a higher than expected number of high scores was obtained for the reflector learning style.

7.7 Proposition 4.2: MBA students experience personal growth and new perspectives from attending a Service-Learning course and are able to articulate insights to contribute to further MBA Service-Learning course development.

Feedback from the students was primarily gathered from the CHESP questionnaire, although some numerical data were available from analysis of their assignments. The comments from the end of course lecturer evaluations were also summarised. Of the 52 students who completed the CHESP questionnaire, 44 (84.6%) said that the course was well planned, 5 (9.6%) said that it was not well planned and 3 (5.8%) said that it was well planned in parts.

Comments supporting the students' views about the planning of the course from the CHESP questionnaire are presented in Table 7.36. Not all students commented, so Table 7.36 lists all comments made, broken down into positive comments and negative comments.

Table 7.36 Students' views regarding the planning of the course

Positive direct quotes
• I learnt in a very natural way
• I learnt through the authentic process of OD implementation, by theory, practice and classroom discussion
• Beyond the other theoretical courses, this one gave me the opportunity to look at myself and how I can contribute to the community
• Although it did not follow the structure we are used to, the content got across well
• We understood what was expected of us, and it shows in the amount and quality of the work we did
• This is the first time that the learning was a process rather than just content
• Huge benefits felt by XXX (name of community organisation)
• [The course] provided the right amount of time and pressure to participate
• [The course] gave insight into the approach of ODD
• I think this is the best way of learning about a subject that is so abstract
• I liked the real intervention

Positive direct quotes
• The guidelines were very clear
• Clear structure and outcomes available ahead of time
• The assignment boundaries were well laid out
• Very challenging, worthwhile
• Perfect amount of work for the time allowed
• This is the first time that we *really* worked together as a team [in our syndicates], even though we screamed at each other a lot in the beginning
Negative direct quotes
• The course was very time consuming
• Some parts [of the course] were well planned, but some topics and discussion came from the class
• We didn't know what ODD or Service-Learning was at the beginning, so some of us came a bit undone when it came to knowing what to do
• [The course] doesn't take part-time students' time into consideration (x3)
• Initially the course seemed confusing, but it all came together in the end (x3)

By way of triangulation, the post-course evaluations from both of the 2005 courses and both of the 2006 courses were summarised – references to the lecturer have not been included due to lack of relevance, and only comments pertaining to the course and its structure / content included. It is clear that the comments about lack of structure in the 2005 evaluations were resolved in the 2006 courses.

The comments are summarised in Table 7.37.

Table 7.37 Post course comment summaries comparing the two 2005 courses with the two 2006 courses

2005 courses		**2006 courses**	
Positive comments summary	**n**	**Positive comments summary**	**n**
Very practical and fun	16	Learnt about real life / South African issues	15
I think differently now	6	I can make a difference	12
Introspection very valuable	4	Highly practical / interactive	10
Better learning method	3	I grew personally / transformed	9
		Very relevant / valuable course	8
		Teaches a different way of thinking	7
		Good way to learn ODD	7
		Social responsibility	7
TOTAL POSITIVE	**29**	**TOTAL POSITIVE**	**75**
Negative comments summary	**n**	**Negative comments summary**	**n**
Still vague about ODD / don't know what the subject is about / ODD too soft and fuzzy	15	Too idealistic / far fetched / not real business situations that we will face	9
Course needs more structure	14	Course needs more structure	7
Too theoretical	5	Need more content	6
Too time consuming	5	Too time consuming	1
TOTAL NEGATIVE	**39**	**TOTAL NEGATIVE**	**23**

Within the assignments themselves (n = 72), only one student did *not* make a reference to personal growth in some way.

Within the CHESP questionnaire, students were asked what they understood by "Service-Learning". The Jet (2006) definition was used as a basis for analysing the answers, and responses were counted in terms of the four major components of the Service-Learning definition. These may be seen in Table 7.38.

Table 7.38 Students perceptions of the key concepts embedded in Service-Learning (n = 52)

Key concept in JET (2006) Guide	Phrases included	n
Enhanced academic learning	learning	38
	learn	
Community service	community service	22
	community intervention	
	assistance to communities	
	helping a community	
	benefit to community	
	adding value to community	
	provision of service	
	giving to a community	
	serving the less fortunate	
Purposeful social responsibility	social change	8
	social organisations	
	make a difference in society	
	social circumstances	
	contribute to society	
Structured reflection	reflection	2

In addition to the information that fitted the JET (2006) definition of Service-Learning, two other major themes emerged in the answers to the question about defining Service-Learning. These are in Table 7.39

Table 7.39 Other major emergent themes from students' definitions of Service-Learning (n = 52)

Supporting and other emergent themes from the definitions	Phrases included	n
Action / Experiential learning	action learning	35
	learning by doing	
	hands-on learning	
	experiential learning	
	real-world learning	
	application of theory	
	application of classroom learning	
	learning from interventions	
	practical assistance	
	real-life learning	
	practical application	
	actively involved	
	learning through engagement	
	implementing theory	
	learning on the job	
	doing work while learning	
Personal growth	personal development	9
	personal growth	
	learn about myself	
	life-changing experience	
	understand others	
	understand oneself	
	challenge myself	
	self-development	

The students also identified other new knowledge that they had acquired during the course of the Service-Learning module. Three students did not complete the section. The comments were content analysed, summarised and presented in descending order of frequency in Table 7.40. Thus 25 students reported that they had acquired empathy for and awareness of the wider society in South Africa, and those less fortunate than themselves, and, at the bottom of the list, one student claimed to have learnt nothing extra at all.

Table 7.40 Other learnings that resulted from the course

New knowledge, skills and / or attitudes acquired	n
Empathy for and awareness of the wider society in SA & those less fortunate	25
ODD skills	16
The importance of the role played by NGOs and NPOs & that they are businesses too	12
Communication skills including listening and story telling as a tool	10
Development of real team work ability & getting best from others within syndicate	10
Appreciation for one's own fortunate situation	10
Gained new perspectives on how businesses operate (generally) and how to work with and in them	8
Other business skills: strategy, project management, learning to learn, presentation skills	6
I can personally make a difference	5
Businesses have a responsibility to society	4
Diversity and culture awareness	4
Changed attitude / mindset	3
"None"	1

Based on the results, Proposition 4.2 may be accepted.