

# Exploring Real Estate Students' Learning Approaches, Reflective Thinking and Academic Performance

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Within educational research, the student learning approaches and reflective thinking are increasingly being recognised as cognitive factors in the prediction of student academic performance in higher education. From this theoretical perspective this study reports the results of a study involving real estate students using the Revised Study Process Questionnaire (R-SPQ-2F), developed recently by Biggs et al. (2001) and the Reflective Thinking Questionnaire (RTQ) developed by Kember et al. (2000) to investigate their learning approaches – deep and surface -, the four stages of reflective thinking and academic performance in one of the core real estate modules (property valuation).

**Key Words:** Reflective thinking, learning approaches, descriptive analysis, real estate

## Introduction

One of the topical issues that have attracted widespread attention in educational research is the teaching and learning processes. Of particular interest is a range of student's academic learning issues, including concerns about the efficacy of learning approaches and the levels of reflective thinking demonstrate by students in their academic learning. Within the body of academic literature that have addressed these issues, there seem to be a general agreement that educators need to be proactive in helping students to adopt deep approach to learning and also develop critical thinking skills in the learning process to learn. This is against the background of previous empirical research evidence (see for example Drew and Watkins, 1998; Leung and Kember, 2003; Mezirow, 1991; 1998; Phan, 2006; Watkins, 2001; Wong and Watkins, 1998) suggesting significant relationships between learning approaches, stages of reflective thinking and academic performance.

Notwithstanding the above, It has been argued by (Biggs et al., 2001) that students turn to adjust their styles of learning based on the demand of the course that they are enrolled in. Also there is ample evidence in literature to suggest, for example, that subject disciplines influence student learning approaches and reflective thinking (Skogsberg and Clump, 2003; Smith and Miller, 2005). This study therefore expands the line of previous research by investigating real estate students' learning approaches and stages of reflective thinking and the way both cognitive factors are related to each other and students' academic performance in property valuation. The choice of property valuation module is borne out of the fact that the author teaches on the real estate programme and is particularly responsible for co-ordinating the delivery and assessment of the module. The module introduces more sophisticated approaches and applications of valuation theory to a range of commercial situations. It is taught to Level 5 Real Estate students to enable them develop the underpinning knowledge and skills required to select the most appropriate means of valuation for different purposes and to question the validity of the traditional methods of valuation. The module is assessed by means of coursework (based on a practical valuation assignment which requires students to inspect a property, carry out measurement and market research, undertake valuation and produce a valuation report in response to a client's instruction) and examination (based on scenario style questions instructing students to carry out valuation/investment analysis of fictitious property).

Broadly, valuation education is viewed as real estate problem solving concerned with value formation, an issue confronting the property discipline globally. The difficulty in property valuation is compounded by the

heterogeneous nature of property and lack of transaction information in most market. Because of the nature of the problem, human judgment is particularly important to the property valuation assignment. Furthermore, valuation education has an implicit connection to issues of human decision-making behavior and decision making. However, it is not uncommon to find, for instance, valuation educators emphasising only the mathematical aspects of the subject in their teaching and assessments (Amidu, 2011). It would, therefore, be interesting to test the theoretical conclusions that students who adopt deeper and reflective approach to learning are more likely to achieve high academic performance within real estate subject domain. The specific research questions addressed in this study are:

- What learning strategy and level of reflective thinking do real estate students adopt in their academic learning
- What are the direct effects of real estate students' learning approaches and reflective thinking practice on academic performance in property valuation
- How does real estate students' learning approaches influence their reflective thinking practice in their academic learning

The structure of the paper is as follows: The next section will provide an overview of learning approach and reflective thinking practice. The third section will describe the research methods adopted in this study. Section four will provide a descriptive analysis of the findings of this survey. The paper will conclude with some tentative practical implication for real estate education.

### **Student's Learning Approach and Reflective Thinking Practice**

An approach to learning, according to Ramsden (1987), can be defined as the manner in which a student organises a learning activity. In other words, it is the way of describing the response of student to a learning task and that may, of course, vary from time to time (Biggs, 1993; Rowe & Harris, 2000). The notion of student learning approaches is credited to the experimental work of Marton and Saljo (1976). In this pioneering research, students' approaches to reading academic articles were studied. Using confirmatory factor analysis, the research identified two major categories of approaches to learning: deep and surface. In the case of surface approach, the student engages in leaning the text itself with the intention of reproducing it without any further analysis. In contrast, students who adopt deep approach to learning direct their attention towards understanding the authors' meaning and linking it to their previous knowledge and personal experience (Murphy and Tyler, 2005). In summary, the discourse in deep approach is towards comprehension as opposed to reproduction conception of learning demonstrated in surface approach

Following this theoretical perspective, additional learning approach – strategic approach – have also been suggested by Entwistle and Richardson (1983) in their research work carried out at the University of Lancaster. The strategic approach is based on achieving motivation and involves strategies (such as systematic use of previous paper in revision, good organisation, effective note taking, awareness of marking scheme and criteria) that lead to high marks. It is important to emphasise that out of these three types of learning approaches, the deep approach is viewed as most desirable in higher education.

Reflective thinking, on the other hand, is defined as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the conclusion to which it tends” (Dewey, 1993, p9). According to Dewey, reflective thinking practice emphasises the consequences of ideas and suggests future physical action to confront and solve a variety of personal and professional obstacles (Norton, 1997 as cited in

Phan, 2006). Within the teaching and learning processes, the practice cultivates meaningful learning and helps students to develop specific skills and expertise in their subject domain.

Reflective thinking may be categorised into four constructs in their order of importance (Kember et al., 2000). These comprise: habitual action, understanding, reflection and critical reflection. Habitual action is performing a given activity automatically with little consciousness or thought. Understanding is the application of prior knowledge without reflecting on the link to other personal and practical situations. Reflection involves the critique of any premises underlying the context of our problem solving. Finally, critical reflection is a higher level of reflection which involves validating beliefs in our prior learning. Within higher education, there is an increasing demand for students to reflect on their subject-based studies and personal development of skills required to enter professional and managerial life.

Drawing on these theoretical perspectives, a number of educational researches have explored the causal effects of students' learning approaches and reflective thinking practice on academic performance. With respect to the learning approach, evidence from research focusing on students in higher education (see for example Caro, 2005; Drew and Watkins, 1998; Watkins et al., 1991; Wong and Watkins, 1998; Phan, 2006) suggests that deep and strategic approaches to learning relate positively to academic performance while the surface approach relates negatively. On reflective thinking practice, the empirical evidence appears to be limited to the works of Phan (2007; 2008; 2009). The conclusion emerging from these studies is that habitual action and understanding are negatively correlated with academic performance whereas reflection and critical reflection appear to be positively related to academic performance.

## **Research Methodology**

### *Participants*

Participants in this survey were second and third year Real Estate Undergraduates at a UK based University. The students were given the choice whether they wish to participate or not. Those who choose to participate were further instructed to write down their student's number in order to collect performance marks in property valuation. As the author of this paper is also the valuation module tutors, participating students were assured of anonymity.

### *Measurement Instruments*

Each participant was given a questionnaire that contains statements of study behaviour and reflective thinking practice. Study behaviour – student approaches to learning – was measured with the Revised Study Process Questionnaire (R-SPQ-2F) recently developed by Biggs et al. (2001) and used in several empirical studies (see for example Biggs et al. 2001; Fox et al., 2001; Leung and Kember, 2003; Phan, 2006). The R-SPQ-2F consists of 20 items description (Appendix A) of two learning approaches – deep and surface. Each approach has two subscales, motive and strategy, comprising 5 items on a 5 – point Likert scale rating ranging from 1 (always true of me) to 5 (only rarely true of me). Reflective thinking practice was measured by RTQ developed by Kember et al (2001). The RTQ consists of 16 items description (Appendix B) of the four types of reflection thinking described in Kember et al (2001). Participating students were instructed to rate each item on a five-point scale ranging from (1) definitely agree to (5) definitely disagree. Academic performance in property valuation was measured by students' overall mark at the end of semester 1 year 2. The mark consists of 50% coursework (valuation project) and 50% final examination.

### *Data Analysis*

Previous studies investigating both cognitive factors (students learning approaches and reflective thinking) have generally employed descriptive and structural equation modelling methods of analysis. The SEM, according to

Bollen (1989); Byrne (1998) and Kline (2005) is a more powerful statistical tool capable of exploring both direct and indirect causal relationships between latent variables and also takes into account both structural and measurement errors. However, due to small sample size (40), only descriptive analysis was employed in testing the research questions postulated for this study.

### Summary of Findings and Conclusions

The evaluation of the questionnaire involves two levels of analysis, the internal reliability of for the R-SPQ-2F and RTQ and the relationships between the variables under investigation. The internal reliability was assessed using Cronbach's alpha. Trait et al (1988) proposed that an alpha of 0.50 is acceptable for a measure producing scores that demonstrate satisfactory internal consistency reliability. Details of Cronbach's alpha alongside the means and standard deviations are presented in Table 1. The alpha values ranged from 0.52 to 0.76 for the subscales of RTQ and 0.55 to 0.81 for the subscales of R-SPQ-2F. These values seem to be acceptable when compared with the benchmark proposed by Trait et al. (1998) and the previous findings of Biggs et al. (2001) and Kember et al (2000).

Table 1

*Mean, standard deviation and Cronbach alpha for scales and subscales of the RTQ and R-SPQ-2F*

	Mean	SD	Alpha	Kember et al (2000)	Biggs et al (20001)
<b>RTQ</b>					
Habitual action	11.58	3.27	0.52	0.62	
Understanding	16.20	3.42	0.76	0.76	
Reflection	15.00	2.80	0.63	0.63	
Critical reflection	13.33	3.55	0.66	0.68	
<b>SPQ</b>					
Deep approach	30.55	5.81	0.75		0.73
Deep motive	15.18	3.30	0.55		0.62
Deep strategy	16.13	3.19	0.63		0.63
Surface approach	24.75	6.81	0.81		0.64
Surface motive	10.88	3.84	0.73		0.72
Surface strategy	13.88	3.80	0.70		0.57

A cross correlation analysis was undertaken between the scales of learning approach and reflective thinking practice, their subscales and students overall grade in property valuation to search for any relationship. The correlational matrix data are as reported in Table 2.

As evidenced in Table 2, surface approach subscale correlation is significant and moderately negatively related with the overall property valuation module mark. This is expected and, indeed, corroborates the findings of previous research such as those of Caro (2005), Drew and Watkins (1998), Watkins et al. (1991), Wong and Watkins (1998)

and Phan (2006). Consistent with the studies of Phan (2007; 2008; 2009), a significant negative association was also observed between habitual action subscale and academic performance in property valuation. Surprisingly and contrary to what was found in the work of Phan (2007; 2008; 2009) a negative association was observed between reflection, critical reflection and academic performance, although this is statistically insignificant. The results in Table 2 also indicate that deep approach to learning correlation coefficient was significant and averagely positively related with reflection and critical reflection while surface approach appears to be significantly negatively correlated with understanding, reflection and critical reflection subscales. Again, these findings appear consistent with prior research and the general notion that students who are reflective turn to adopt a deeper approach to learning.

Table 2

*Correlational matrix between variables*

	HA	U	R	CR	DA	SA	Per
HA	1.000						
U	-0.148	1.000					
R	0.148	0.626**	1.000				
CR	0.166	0.260***	0.502**	1.000			
DA	-0.071	0.171	0.545**	0.406**	1.000		
SA	0.062	-0.515**	-0.624**	-0.256***	-0.419**	1.000	
Per	-0.387*	0.037	-0.024	-0.090	0.013	-0.271***	1.000

Note: HA = habitual action, U = understanding, R = reflection, CR = critical reflection, DA = deep approach, SA = surface approach, Per. = academic performance. Note: \*  $p < 0.05$  level, \*\*  $p < 0.01$  level, \*\*\*  $p < 0.1$  level

The negative correlation between surface approach and overall valuation module mark is expected and appears to have confirmed research findings that students who are surface learners tend to have lower academic performance. The same conclusion can be adduced for habitual action on reflective thinking practice subscale; although students who adopt reflective approach are not necessarily rewarded in terms of marks according to the findings of this study. It is possible that this arises from the disciplinary context of real estate in which this study was conducted. In conducting property valuation, there are many technical procedures and, as students become more confident, they may well carry out these as a matter of routine habit. This, perhaps, might have influenced the students' responses to the reflection scale. It may also be concluded that even though the RTQ operates as expected in terms of internal consistency, its use in real estate discipline is questionable. Finally, it is possible that some "noise" factors are at play and have not been taken into consideration in this study. This may include, for example, the assessment criteria, which may not be focused on the development of reflective capacity of students.

To conclude, the findings of this research turn to suggest that, to a great extent, both R-SPQ-2F and RTQ operate as expected in terms of internal consistency and reliability. This is encouraging. However, the fact that this study is based on a relatively small sample (40) as compared to previous studies conducted in this line of research means that the conclusions above should be read with caution. In future, the researcher intends to expand the number of participants in the survey to other students in the built environment to meet the requirement of a more sophisticated statistical analysis such as linear structural equation.

## References

- Amidu, A. (2011); Research in Valuation Decision Making Processes: Educational Insights and Perspectives”, *Journal of Real Estate Practice and Education*, 14 (1), 19-33
- Biggs, J. (1993); What do Inventories of Students’ Learning Processes Really Measure? A Theoretical Review and Clarification, *British Journal of Educational Psychology*, 63, 3-19
- Biggs, J., Kember, D. & Leung, D.Y.P. (2001); The Revised Two-Factor Study Process Questionnaire: R-SPQ-2F, *British Journal of Educational Psychology*, 63 (3), 133-149
- Cano, F. (2005); Epistemological Beliefs and Approaches to Learning: Their Change Through Secondary School and their Influence on Academic Performance, *British Journal of Educational Psychology*
- Dewey, J. (1993); How Do We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process, Boston: D.C. Heath
- Drew, P. & Watkins, D. (1998); Affective Variables, Learning Approaches and Academic Achievement; A Causal Modelling Investigation with Honk Kong Tertiary Students, *British Journal of Educational Psychology*, 68, 173-188
- Kember, D., Leung, D., Jones, A., Loke, A.Y., McKay, J., Sinclair, K., Tse, H., Webb, C., Wong, F.K.Y., Wong, M. & Yeung, E. (2000); Development of a Questionnaire to Measure the Level of Reflective Thinking, *Assessment and Evaluation in Higher Education*, 25, 381-389
- Leung, D.Y.P. & Kember, D. (2003); The Relationship between Approaches to Learning and Reflection upon Practice, *Educational Psychology*, 23 (1), 61-71
- Marton, F. & Saljo, R. (1976); On Qualitative Differences in the Learning II, Outcome as a Function of the Learner’s Conception of the Task, *British Journal of Educational Psychology*, 46, 115-127
- Mezirow, J. (1991); Transformative Dimensions of Adult Learning, San Francisco, CA: Jossey-Bass
- Mezirow, J. (1998); On Critical Reflection, *Adult Education Quarterly*, 48, 185-198.
- Murphy, S.M. & Taylor, S. (2005); The Relationship between Learning Approaches to Part-Time Study of Management Courses and Transfer of Learning to the Workplace, *Educational Psychology*, 25 (6), 455-469
- Phan, H.P. (2006); Examination of Student Learning Approaches, Reflective Thinking, and Epistemological Beliefs: A Latent Variables Approach, *Journal of Research in Educational Psychology*, 10 (4 (3)), 577-610
- Phan, H.P. (2007); Examination of Student Learning Approaches, Reflective Thinking, and Self-Efficacy Belief at the University of the South Pacific: A Path Analysis, *Educational Psychology*, 27 (6), 789-806
- Phan, H.P. (2009); Exploring Students’ Reflective Thinking Practice, Deep Processing Strategies, Effort and Achievement Goal Orientation, *Educational Psychology*, 29 (3), 297-313
- Ramsden, P. (1987); Improving Teaching and Learning in Higher Education: The Case for a Relational Perspective, *Studies in Higher Education*, 14 (2), 157-158
- Rowe, J.W.K. & Harris, B. (2000); A Theory Based Modification of the Engineering Tutorial, *European Journal of Engineering Education*, 25 (3), 235-242
- Skogsberg, K. & Clump, M. (2003); Do Psychology and Biology Majors Differ in their Study Processes and Learning Styles? *College Student Journal*, 37 (1), 27-33
- Smith, S.N. & Miller, R.J. (2005); Learning Approaches: Examination Type, Discipline of Study and Gender, *Educational Psychology*, 25 (1), 43-53

Watkin, D. (2001); Correlates of Approaches to Learning: A Cross-Cultural Meta-Analysis. In R. Sternberg & L.F. Zhang (Eds), *Perspectives on Thinking, Learning and Cognitive Styles*, (pp.165-195), Mahwah, NJ: Lawrence Erlbaum

Watkin, D., Regmi, M. & Astiila, E. (1991); The Asian Learner as a Rote Learner Stereotype: Myth or Reality, *Educational Psychologist*, 11, 21-34

Wong, N. & Watkins, D. (1998); A Longitudinal Study of Psychosocial Environment and Learning Approaches in the Hong Kong Classroom, *Journal of Educational Research*, 91, 247-254

## **Appendix**

### **Appendix A**

#### Revised Study Process Questionnaire

Please fill in the appropriate circle alongside the statements about your attitude towards your studies. The letters alongside each statement stand for the following response.

A – this item is never or only rarely true of me

B – this item is sometimes true of me

C – this item is true of me about half the time

D – this item is frequently true of me

E – this item is always or almost always true of me

Please choose the one most appropriate response to each statement. Do not spend a long time on each item; your first reaction is probably the best one. Please answer each item

1	I find that at times studying gives me a feeling of deep personal satisfaction	A	B	C	D	E
2	I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied	A	B	C	D	E
3	My aim is to pass the course while doing as little work as possible	A	B	C	D	E
4	I only study seriously what's given out in class or in the course outlines	A	B	C	D	E
5	I feel that virtually any topic can be highly interesting once I get into it	A	B	C	D	E
6	I find most new topics interesting and often spend extra time trying to obtain more information about them	A	B	C	D	E
7	I do not find my course very interesting so I keep my work to the minimum	A	B	C	D	E
8	I learn some things by rote, going over and over them until I know them by heart even if I do not understand them	A	B	C	D	E
9	I find that studying academic topics can at times be as exciting as a good novel or movie	A	B	C	D	E
10	I test myself on important topics until I understand them completely	A	B	C	D	E
11	I find I can get by in most assessment by memorising key sections rather than trying to understand them	A	B	C	D	E
12	I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra	A	B	C	D	E
13	I work hard at my studies because I find the material interesting	A	B	C	D	E
14	I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes	A	B	C	D	E
15	I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintances with topics	A	B	C	D	E
16	I believe that lecturers shouldn't expect students to spend significant amounts of time studying materials everyone knows won't be examined	A	B	C	D	E
17	I come to most classes with questions in mind that I want answering	A	B	C	D	E
18	I make a point of looking at most of the suggested readings that go with the lectures	A	B	C	D	E
19	I see no point in learning materials which is not likely to be in the examination	A	B	C	D	E
20	I find the best way to pass examinations is to try to remember answers to likely questions	A	B	C	D	E

## Appendix B

### Reflective Thinking Questionnaire

Please circle the appropriate letter to indicate the level of your agreement with statements about your actions and thinking in this course so far. The letters alongside each statement stand for the following response.

A – definitely agree

B – agree only with reservation

C – only to be used if a definite answer is not possible

D – disagree with reservation

E – definitely disagree

1	When I am working on some activities, I can do them without thinking about what I am doing	A	B	C	D	E
2	This course requires us to understand concepts taught by the lecturer	A	B	C	D	E
3	I sometimes question the way others do something and try to think of a better way	A	B	C	D	E
4	As a result of this course I have changed the way I look at myself	A	B	C	D	E
5	In this course we do things so many times that I started to do them without thinking about them	A	B	C	D	E
6	To pass this course you need to understand the content	A	B	C	D	E
7	I like to think over what I have been doing and consider alternative ways of doing it	A	B	C	D	E
8	The course has challenged some of my firmly held ideas	A	B	C	D	E
9	As long as I can remember handout materials for examinations, I do not have to think too much	A	B	C	D	E
10	I need to understand the material taught by the lecturer in order to perform practical tasks	A	B	C	D	E
11	I often reflect on my actions to see whether I could have improved on what I did	A	B	C	D	E
12	As a result of this course I have changed my normal way of doing things	A	B	C	D	E
13	If I follow what the lecturer says, I do not have to think too much on this course	A	B	C	D	E
14	In this course you have to continually think about the material you are being taught	A	B	C	D	E
15	I often re-appraise my experience so I can learn from it and improve my next performance	A	B	C	D	E
16	During this course I discovered faults in what I had previously believed to be right	A	B	C	D	E

