

Accounting Undergraduates' Learning Approaches: Case of a Malaysian Public University

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ABSTRACT

Concerns about graduates' employability are not new. Being burdened with accounting standards to be memorised and regurgitated in examinations does little to encourage learning with understanding, i.e. deep learning. Yet, deep learning is pertinent for development of generic employability skills such as problem solving and critical thinking. This study examines the extent to which accounting undergraduates at a public university in Malaysia adopt deep learning via a questionnaire survey. Results suggest that surface learning, which promotes rote memorisation and is often blamed for graduates' incompetence, is the first step towards deep learning. Having a thirst for meanings has been found to be pertinent to motivate undergraduates to move from rote memorisation to seek meanings and thus deep learning. Female undergraduates have been found to be more inclined to adopt deep learning compared with their male counterparts. Nonetheless, much is still to be learned to promote deep learning, which is a complex process that is not constrained to the campus.

Keywords: Rote memorisation, learning with understanding, academic performance, gender, graduates' employability

INTRODUCTION

Business schools are blamed for their increasing disconnection from practice as production and dissemination of research

and theory that bear little relevance to the real business world take centre stage (Bennis & O'Toole, 2005; Eckhardt & Wetherbe, 2014). Concerns about graduates' poor interpersonal communication, critical thinking and problem solving skills, which do little to prepare graduates for the workforce, are not new (e.g., Pianin, 2014). Malaysia is not the only country grappling with the resultant graduate unemployment problem as graduates are ill-equipped with

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the relevant skills and competencies to be readily employable (e.g., Cleary *et al.*, 2007; Kigotho, 2015).

To date, empirical findings on whether business schools equip graduates with the relevant skills and competencies to be employable have been inconclusive. While there is a general consensus that business schools need to contribute more in preparing graduates for the workforce, employers have been found to be satisfied with graduates' employability skills to a certain extent (e.g., Lowden *et al.*, 2011; Ismail *et al.*, 2011). Further, what constitutes employability skills vary across culture and profession. For instance, ICT skills, values, ethics and proficiency in the Malay and English languages are considered important employability skills in a Malaysian study (Ismail *et al.*, 2011) but not in the studies conducted in developed countries (Cleary *et al.*, 2007; Oliver *et al.*, 2007; Lowden *et al.*, 2011). Development of employability skills is also believed to be a life-long process where graduates are expected to acquire employability skills not only through academic training on-campus but also via other off-campus life experiences such as industry placement, part-time employment and voluntary social and community work (Cleary *et al.*, 2007).

While business schools are not solely responsible for the development of graduates' employability skills, ongoing efforts aimed at improving and aligning academic curriculum with employability skills development continue worldwide (Cleary, 2007; Oliver *et al.*, 2007). Though

employability skills vary across culture and profession, generic skills such as being able to understand and apply one's understanding across contexts in a creative and critical manner and problem solving have been found to be most valuable (Cleary, 2007; Oliver *et al.*, 2007).

This study contributes by exploring the learning approaches of accounting undergraduates at a public university in Malaysia. More specifically, this study examines the extent accounting undergraduates seek to understand (i.e., deep learning) versus memorise facts (i.e., surface learning). Reforms in accounting education in the early 1990s have already unravelled the need to move away from rote memorisation to learning with understanding, which is crucial for creative and critical thinking (Beattie *et al.*, 1997). Recent studies suggest that accounting undergraduates' tendency to resort to rote memorisation will continue to be unresolved for as long as the accounting profession is ridden with written standards (Sunder, 2010). Accounting education constitutes a rich context to ascertain to what extent undergraduates learn with understanding when confronted with volumes of written standards to be covered in lectures leaving little room for critical debates and discussions on the pros and cons of alternative accounting treatments for different classes of transaction.

This study conducted a questionnaire survey on accounting undergraduates' learning approaches at a public university. Results demonstrate that deep learning is

not readily attainable. Adoption of surface learning is required to ultimately attain deep learning. Having a preference for deep learning has been found to be important in undergraduates' quest for meaning. Female undergraduates have been found to be more inclined to adopt deep learning.

The remainder of the paper is organised as follows. The second section develops the theory and hypotheses. The third section describes the method. The fourth section presents and discusses the results. The final section concludes the discussions.

THEORY AND DEVELOPMENT OF HYPOTHESES

Extant literature suggests that there are three predominant approaches to learning: deep, surface and strategic learning (see Richardson, 2005). Deep learning is characterised by quest for meanings, which involves vigorous interaction with the subject being studied, relating new ideas and concepts to existing knowledge and everyday experiences, and critical evaluation of evidences to conclusions and logic of arguments. Development of deep learning is desirable and becomes the aim of higher education (Beattie *et al.*, 1997; Hayers *et al.*, 1997). On the other hand, surface learning is characterised by passive, rote memorisation, where focus is on task completion. Surface learning entails little appreciation of the purposes of learning where learning is perceived as an imposition resulting in failure to distinguish principles from examples and inability to integrate new information with existing knowledge

to be applied in everyday life experiences. Strategic learning is characterised by concern to achieve the highest possible marks and/or grades. Strategic learning involves analysing structure and content of past examinations to predict examination questions, ensuring learning materials are appropriate, identifying cues about marking schemes, as well as organising time and effort to attain the highest possible marks and/or grades.

Ongoing calls for a greater degree of deep learning at the higher education level reflect that deep learning is desirable but not readily attainable (e.g., Beattie *et al.*, 1997; Sunder, 2010). This study theorises that the three learning approaches facilitate one another. The psychology literature evidences that contextual information is required and desired to comprehend meanings that are often implicit (Goldstone & Barsalou, 1998). Implicit meanings emerge when the impact of one information item is considered in conjunction with the impact other contextual information (Lau, 2014). This study posits that adoption of surface learning which enables memorisation of accounting rules and procedures facilitates subsequent adoption of deep learning to discern the fundamental accounting principles that emerge when memorised rules and procedures are considered in conjunction with one another. Besides deep learning, this study posits that adoption of surface learning at the beginning also facilitates adoption of strategic learning where learners are better equipped to analyse past examinations,

predict examination questions, as well as organise time and learning materials in a manner to attain the highest possible marks and/or grades. The goal of attaining the highest possible marks and/or grades is short-term and more readily attainable compared with quest for meanings. Furthermore, bad grades undermine learners' mental and emotional well-being. Decreased mental and emotional well-being brings about a range of health concerns, from stress and anxiety to depression (Crocker *et al.*, 2003). Quest for meanings and appreciation of the fundamental accounting principles becomes less of a concern when learners are grappling with stress, anxiety and depression. This study posits that surface learning first facilitates adoption of strategic learning. Subsequently, surface and strategic learning facilitate adoption of deep learning.

The hypothesised relationships between the three learning approaches, which are the dependent variables of this study, are stated in the alternative form, as follows:

H1: Surface learning is positively related to strategic learning.

H2: Surface learning is positively related to deep learning.

H3: Strategic learning is positively related to deep learning.

What affects the choice of learning approaches?

Extant literature suggests that learners' perception of the learning context determines the learning approaches

adopted (Richardson, 2005). For instance, if learners perceive the learning task and subsequent assessment simply require acquisition and accurate reproduction of facts, they are likely to adopt surface learning. Similarly, if the learning task burden learners with heavy workload to the extent that learners become anxious, they tend to resort to surface learning (Cope & Staehr, 2005), consistent with the contention that having to cover expanding volumes of accounting standards merely drills memorisation of the specifics of the standards (Sunder, 2010). However, if learners perceive the learning task and subsequent assessment demands demonstration of a thorough understanding, integration and application of the fundamental concepts and principles, learners are more likely to adopt deep learning.

Learners with the same perception of the learning contexts adopt different learning approaches based on their conception of learning (Richardson, 2005). For instance, learners who see learning as contributing to their existing knowledge, as well as personal and career development in the long run, are more likely to adopt deep learning even when confronted with volumes of accounting standards to be digested compared with their counterparts who perceive learning as something they are compelled to do.

Female undergraduates at an institution of higher learning in Malaysia were found to possess a number of characteristics that contribute towards better academic

performance (Ismail, 2014). More specifically, the study revealed that female undergraduates are more hardworking, more conscious of their goals in life and more determined in achieving their goals, have better self-discipline, give due priorities to their studies and are mentally more mature than their male counterparts (Ismail, 2014). Such characteristics among female students, especially being conscious of life goals and having the self-discipline, determination and mental maturity to attain their goals in life motivate adoption of deep learning for more effective learning and personal development. Further, while gender inequality is still an ongoing concern worldwide (Jacobs, 1996; Morley, 2005; Gunawardena *et al.*, 2006), females have been found to have better access to institutions of higher learning in Malaysia, where females outnumber males in all disciplines except for engineering, manufacturing and construction (see Yusof *et al.*, 2012; MOE, 2014). As of 2014, the overall ratio of male to female enrolled in public institutions of higher learning in Malaysia is 0.64:1, whereas the ratio for the social sciences and business discipline is 0.42:1 (MOE, 2014). Being more effective in learning, this study hypothesizes that females are more likely to adopt deep learning. The fourth hypothesis stated in the alternative form is as follows:

H4: Female undergraduates are more likely to adopt deep learning than male undergraduates.

METHOD

This study administered a questionnaire survey, which is the Approaches and Studies Skills Inventory for Students (ASSIST) questionnaire. The ASSIST questionnaire is an improved version of the Approaches to Studying Inventory (ASI) to measure learning approaches. The ASSIST questionnaire had been validated and found to be useful across countries and cultures (e.g., Richardson, 1994; Entwistle *et al.*, 2000). A total of 153 accounting undergraduates at a public university in Malaysia completed the ASSIST questionnaire. Out of the total, 50 of them were the first year, 50 were the second year, three were the third year and 50 were the fourth year accounting undergraduates; the questionnaire survey were administered at the time where third year accounting undergraduates were off-campus for their industry placement.

Dependent Variables

The dependent variables—deep, strategic and surface learning—were measured using the questions in the ASSIST questionnaire. The extent to which undergraduates adopt each learning approach was assessed in terms of undergraduates' perceptions of how they learn on a 5-point Likert-type scale, where 5 denotes "strongly agree" and 1 denotes "strongly disagree", as follows:

- *Deep learning*: Undergraduates' perceptions of the extent to which they seek meanings, relate ideas, use evidence and are interested in the ideas are measured.

- *Surface learning*: Undergraduates' perceptions of the extent to which they memorise, lack purpose, are syllabus bounded and fear failure are measured.
- *Strategic learning*: Undergraduates' perception of the extent to which they adopt organised studying, time management, are alert to assessment demands, are achievement-oriented and monitor their own studying effectiveness are measured.

Independent Variables

The key independent variable in this study is gender. Undergraduates were required to self-report gender in the questionnaire. Besides gender, the following variables were measured or captured:

- *Conception of learning*: Undergraduates were required to self-rate on a 5-point scale the extent to which they perceive learning as memorising, increase of knowledge, development as a person, acquisition of useful information, abstraction of meaning and for seeing things in a more meaningful way (e.g., Richardson, 2005).
- *Preferences for deep and surface learning*: Undergraduates were required to self-rate on a 5-point scale a list of items that measure their preferences for deep and surface learning, which are part of the ASSIST questionnaire.
- *CGPA*: Undergraduates were required to self-report CGPA in the questionnaire to be included as a control variable.

Data Analyses

In light of the hypothesised relationships between the three learning approaches (dependent variables), a Multivariate Analysis of Covariance (MANCOVA) which allows analysis of multiple dependent variables was conducted. Next, a Roy-Bargmann step-down procedure was conducted to enable test of the hypothesised sequential relationship between the three dependent variables, i.e. undergraduates proceed from surface to strategic and finally deep learning. Using the Roy-Bargmann step-down procedure, the effects of gender and other independent variables were first assessed on surface learning using an Analysis of Covariance (ANCOVA). Second, the effects of surface learning, gender and other independent variables were assessed on strategic learning using an ANCOVA. The second step of the Roy-Bargmann step-down procedure enables test of H1, i.e. the effect of surface learning on strategic learning. Finally, the effects of both surface and strategic learning, together with gender and other independent variables, were assessed on deep learning using an ANCOVA. The final step of the procedure enable test of H2 to H4, i.e. the effects of surface learning, strategic learning and gender, respectively, on deep learning.

RESULTS AND DISCUSSION

A total of 32 male and 121 female accounting undergraduates participated in this study. The low male to female ratio is consistent with the overall enrolment

in public institutions of higher learning in Malaysia (see MOE, 2014). Table 1 provides a summary of the descriptive statistics, primarily means and standard deviations of the variables. Cronbach's α value for each of the three dependent variables is greater than 0.7, which suggests a high level of internal consistency in measuring each learning approach. Female undergraduates appear to have higher mean scores and lower standard deviations for all the three learning approaches—surface, strategic and deep learning—compared with their male counterparts. Independent sample t-tests revealed that the three learning approaches are significantly

different between the two gender groups, $p < 0.05$, which suggests that females are more inclined to adopt the three learning approaches. Male undergraduates appear to understand what learning is better than female undergraduates, as reflected by the slightly higher mean score for conception of learning (23.85 for males and 21.31 for females). Female undergraduates also have higher mean scores and lower standard deviations for their preferences for both deep and surface learning, respectively. Nonetheless, the mean CGPA for both gender groups do not appear to be significantly different.

TABLE 1
Descriptive statistics - means and standard deviations (in parentheses) by gender

| | Total (N=153) | Male (N=32) | Female (N=121) | Independent sample t-test ¹ | |
|---|-------------------|-------------------|-------------------|--|-------|
| | | | | t | p |
| DEPENDENT VARIABLES | | | | | |
| Surface learning <i>Cronbach's $\alpha = 0.798$</i> | 51.86 (13.306) | 46.03 (23.389) | 53.41 (8.453) | 2.853 | 0.005 |
| Strategic learning <i>Cronbach's $\alpha = 0.880$</i> | 66.32 (17.117) | 58.88 (29.921) | 68.29 (11.007) | 2.830 | 0.005 |
| Deep learning <i>Cronbach's $\alpha = 0.875$</i> | 53.19 (13.785) | 48.44 (24.137) | 54.45 (9.087) | 2.221 | 0.028 |
| INDEPENDENT VARIABLES | | | | | |
| Conception of learning | 21.76 (4.748) | 23.85 (3.541) | 21.31 (4.865) | | |
| Preference for deep learning | 13.24 (4.056) | 11.88 (6.430) | 13.60 (3.086) | | |
| Preference for surface learning | 13.99 (4.424) | 12.09 (6.468) | 14.50 (3.573) | | |
| CGPA | 3.56 (0.305) | 3.54 (0.338) | 3.56 (0.299) | | |

¹Note: Results are the same when equal variances are not assumed.

Table 2 shows the correlations between dependent variables. The three dependent variables—surface, strategic and deep learning—are highly correlated with

Pearson correlations greater than 0.8. Such high correlations are as hypothesised; the three learning approaches facilitate one another.

TABLE 2
Pearson correlations between dependent variables

| | Surface learning | Strategic learning | Deep learning |
|--------------------|------------------|--------------------|---------------|
| Surface learning | 1 | | |
| Strategic learning | 0.847** | 1 | |
| Deep learning | 0.852** | 0.929** | 1 |

**Significant at 1 percent level (two-tailed)

A MANCOVA was conducted to assess the effects of gender, conception of learning, preferences for deep and surface learning and CGPA on a combination of surface, strategic and deep learning. Table 3 provides a summary of the MANCOVA

results. Only the effects of preferences for both deep and surface learning are significant on a combination of surface, strategic and deep learning, $p < 0.01$. However, the effect of gender is not significant, $p = 0.148$.

TABLE 3
MANCOVA for surface, strategic and deep learning

| Source | df | Wilk's λ | F | p |
|---------------------------------|-----|------------------|--------|---------|
| Gender | 3 | 0.954 | 1.819 | 0.148 |
| Conception of learning | 3 | 0.974 | 1.009 | 0.392 |
| Preference for deep learning | 3 | 0.722 | 14.471 | 0.000** |
| Preference for surface learning | 3 | 0.886 | 4.837 | 0.003** |
| CGPA | 3 | 0.993 | 0.270 | 0.847 |
| Error | 113 | | | |

**Significant at 1 percent level

Roy-Bargmann Step-down Procedure

A Roy-Bargmann step-down procedure was conducted to further tease out the effects of the independent variables on each learning approach. First, an ANCOVA was conducted to assess the effects of gender

and other independent variables on surface learning. Table 4 presents a summary of the ANCOVA results. The effects of preferences for both deep and surface learning are significant on the adoption of surface learning, $p < 0.05$.

TABLE 4
ANCOVA for surface learning

| Source | df | MS | F | P |
|---------------------------------|-----|---------|--------|---------|
| Gender | 1 | 43.304 | 0.712 | 0.401 |
| Conception of learning | 1 | 61.493 | 1.011 | 0.317 |
| Preference for deep learning | 1 | 249.576 | 4.104 | 0.045* |
| Preference for surface learning | 1 | 850.325 | 13.981 | 0.000** |
| CGPA | 1 | 9.849 | 0.162 | 0.688 |
| Error | 115 | | | |

**Significant at 1 percent level

*Significant at 5 percent level

Second, an ANCOVA was conducted to assess the effects of surface learning, gender and other independent variables on strategic learning. Table 5 provides a summary of the ANCOVA results. The effect of surface learning on strategic learning is highly significant, $p < 0.01$, which suggests that memorisation of accounting

rules of procedures facilitates adoption of strategic learning to attain highest possible marks and/or grades. Hence, H1 is supported. The effect of preference for deep learning on strategic learning is highly significant, $p < 0.01$; having a preference to seek meanings positively affect adoption of strategic learning.

TABLE 5
ANCOVA for strategic learning

| Source | df | MS | F | P |
|---------------------------------|-----|----------|--------|---------|
| Gender | 1 | 35.711 | 0.526 | 0.470 |
| Conception of learning | 1 | 91.935 | 1.354 | 0.247 |
| Preference for deep learning | 1 | 1329.608 | 19.589 | 0.000** |
| Preference for surface learning | 1 | 5.929 | 0.087 | 0.768 |
| CGPA | 1 | 40.440 | 0.596 | 0.442 |
| Surface learning | 1 | 2648.010 | 39.012 | 0.000** |
| Error | 114 | | | |

**Significant at 1 percent level

Finally, an ANCOVA was conducted to assess effects of both surface and strategic learning together with gender and other independent variables on deep learning. Table 6 provides a summary of the ANCOVA

results. The effect of surface learning is significant, $p < 0.05$, while the effect of strategic learning is highly significant, $p < 0.01$; memorisation of accounting rules and procedures, as well as organising

learning materials and time in a manner to attain the highest possible marks and/or grades are useful in undergraduates' quest for meanings. Therefore, both H2 and H3 are supported. The effect of preference for deep learning is highly significant, $p < 0.01$.

The effect of gender is also significant, $p < 0.05$. Parameter estimates reveal that female undergraduates are more inclined to adopt deep learning compared with their male counterparts; $\beta = -2.320$, $SE = 1.134$, $t = -2.046$, $p = 0.043$. H4 is supported.

TABLE 6
ANCOVA for deep learning

| Source | df | MS | F | p |
|---------------------------------|-----|----------|--------|---------|
| Gender | 1 | 93.909 | 4.186 | 0.043* |
| Conception of learning | 1 | 14.819 | 0.665 | 0.417 |
| Preference for deep learning | 1 | 356.252 | 15.879 | 0.000** |
| Preference for surface learning | 1 | 13.504 | 0.602 | 0.439 |
| CGPA | 1 | 1.334 | 0.059 | 0.808 |
| Surface learning | 1 | 132.026 | 5.882 | 0.017* |
| Strategic learning | 1 | 1551.187 | 69.142 | 0.000** |
| Error | 113 | | | |

**Significant at 1% level

*Significant at 5% level

CONCLUSION

This study sheds light on the extent to which accounting undergraduates are in a position to equip themselves with the relevant skills and competencies to be employable, especially generic skills like being able to discern and apply fundamental principles across everyday life experiences. More specifically, this study examines the extent to which accounting undergraduates adopt deep learning, which is the aim of higher education. The results revealed that quests for meanings and being able to cope with new and complex situations in everyday life, which deep learning enables, are not easy to attain though

not impossible. Surface learning, though blamed for accounting undergraduates' incompetence in exercising judgment, ensures rote memorisation which constitutes a stepping stone towards deep learning. Having memorised accounting rules and procedures enables the impact of each accounting rule and procedure to be considered in conjunction with the impact of other rules and procedures for better appreciation of the underlying accounting fundamentals. Accounting rules and procedures in learners' memory also facilitate analyses of past examinations, prediction of examination questions and adoption of other strategic learning

techniques to attain the highest possible grades. Having attained the highest possible grades promotes mental and emotional well-being, which facilitates adoption of deep learning to appreciate the meanings and fundamental accounting principles applicable across situational contexts.

This study helps to clarify concerns about accounting undergraduates' incompetence in exercising judgment as syllabi become increasingly burdened with factual accounting standards, which promote rote memorisation and subsequent regurgitation of information in examinations (Beattie *et al.*, 1997; Sunder, 2010). This study demonstrated that rote memorisation, and thus surface learning, is not completely useless as it constitutes the first step towards deep learning. However, having a preference for deep learning has been found to be important for undergraduates to proceed from surface to strategic learning, and ultimately deep learning.

Results of this study are consistent with the gender equality contention in Malaysian higher education (Yusof *et al.*, 2012). More specifically, this study found that female undergraduates are more inclined to adopt deep learning, which is pertinent for development of generic skills to be employable. However, learning is a complex, life-long process where learning takes place every day regardless of whether undergraduates are on or off-campus (Cleary *et al.*, 2007). Hence, future research can consider exploring the extent to which specific on and off campus experiences promote deep learning

for a better understanding of how best to encourage undergraduates to move from surface learning to strategic learning, and ultimately deep learning.

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