Teaching Accounting to Learners with Diverse Intelligence

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Abstract: This paper aims to discuss the practicality of several unconventional pedagogies recommended by researchers for the accounting curriculum, in response to the challenge of student diversity and learning ability as advocated by Howard Gardner in his Multiple Intelligence (MI) Theory which has been widely accepted in primary education. This paper is divided into two major parts; the first being quantitative analyses and the second focused on recommendations and discussions of the usefulness of various alternative pedagogies in accounting. The quantitative analysis involved an MI profiling test on 136 students from the first semester of an Australian offshore franchise business degree programme who are compulsory to complete a foundation core subject in accounting, followed by regression tests to measure the correlation between the individual MI test scores and students' mid-term examination scores. Results have proven that the logical-mathematical intelligence is undeniably more relevant to the mid-term examination scores; indicating that the 'number smart' students are more receptive to the knowledge of accounting, thus triggering the need to search for alternative pedagogies for students with the other seven distinctive intelligences as discussed in the second part of this paper.
Keywords: teaching accounting, multiple intelligence, MI theory, accounting pedagogy, student diversity

Introduction

Accounting subjects have traditionally been labelled as 'dry' subjects, stuffed with structured definition of technical terms, complex rules and standards, uninteresting number-crunching, and the "knowing" of concepts (Springer & Borthick, 2004). Accounting students are widely criticized for their inflexibility in problem-solving (Deleo & Letourneau 1994) and insufficient communication skills (Andrews & Sigband 1984; Addams 1981). Recognising the fact of increased diversity among students, the Accounting Education Change Commission (AECC, 1990) has called for educational reform in the accounting courses' curriculum, balancing the conventional content teaching with skills teaching, constructivism learning, turning passive learning environment into a livelier one, and most importantly, preparing accounting graduates for the dynamic working environment.

The purpose of this paper is to discuss the practicality of alternative pedagogies in the teaching of accounting courses, following the eight distinct intelligences described in the multiple intelligence (MI) theory. Developed in the 1980s by Howard Gardner, the MI theory has been widely accepted and implemented in the primary education in the United States, Australia, Taiwan, Hong Kong and other parts of Asia (Barrington, 2004). Besides, this theory is said to have close links with constructivism since it emphasises 'where the student is at'. The eight intelligences proposed by Gardner (1983) are logical-mathematical, visual-spatial (**object related intelligence**); verbal-linguistic, musical, bodily-kinesthetic (**object-free intelligence**); interpersonal, intrapersonal and naturalist (**personal intelligence**). Individuals usually possess all eight intelligences, but each has his/her own particular mix of intelligences, with some dominating over others (Gilman, 2001).

The main hypothesis of this paper is that the 'number smart' students will tend to perform better in accounting subjects due to their in-born capability in working with numbers, abstract

patterns, relationships and reasoning. To support this, quantitative analyses involving an MI profiling test will be conducted on a group of first semester students, followed by a series of regression analyses testing the relevance of the individual MI profile test scores with the students' mid-term examination scores of an introductory accounting subject : Accounting for Business. If this hypothesis is proven, how then, can we assist our students who possess other form of intelligences to learn accounting more effectively? How do we utilise the alternative pedagogies advocated by various researchers to make accounting more approachable and thus increase student enrolments?

Methodology

A total of 136 first semester students pursuing an Australian offshore franchise business degree programme have participated in this survey. These students were selected based on convenience sampling. The said business degree programme requires students to complete a foundation core subject in accounting namely 'Accounting for Business' before they progress into their majors. Students were asked to complete a survey form (McKenzie, 1999) consisting eight sections in order to identify their MI profile. The MI test scores of each section collected from individual students were then totalled and regression tests were conducted, using the test scores of each type of intelligence as independent variables and students' mid-semester examination results as dependent variable.

This quantitative analysis recognised two major limitations. First, the MI profiling test questionnaire requires participants to select those statements that best describe his/her personality. Since individual understanding and interpretation of these statements may vary, this may inevitably affect the outcome of the survey. Furthermore, the use of the mid-semester examination scores as the dependant variable may affect the accuracy of the regression tests, as arguably, students are usually not adequately prepared for their mid-term test.

Findings

Test 1

The result of the regression analysis (test 1) shown in table 1 below reflects that, although the logical-mathematical intelligence has not demonstrated strong correlation with the mid-semester examination scores, it has recorded the highest r^2 value of 0.0428 and p-value of 0.0080 (which is far lower than the benchmark of 0.050) as compared to seven other types of intelligences. The intelligence that showed second highest correlation with the examination scores is intrapersonal, with r^2 value of 0.0228 and p-value of 0.0390.

Table 1: *MI Profile Test Scores Vs Examination Scores*

Intelligence	**r**	**r^2**	**p-value**
Verbal-linguistic	0.0200	0.0004	0.4080
Logical-mathematical	0.2070	0.0428	0.0080
Visual-spatial	0.0110	0.0001	0.4480
Bodily-kinesthetic	-0.0690	0.0048	0.2110
Musical-rhythmic	0.0480	0.0023	0.2890
Interpersonal	-0.1400	0.0196	0.0530
Intrapersonal	0.1510	0.0228	0.0390
Naturalist	-0.0240	0.0006	0.3920

Meanwhile, the interpersonal intelligence has also recorded a relatively high r^2 value as compared to the other five intelligences. However, this intelligence was negatively (r value =

-0.1400) correlated to the examination scores, which means the higher the students score for the interpersonal intelligence in their MI profile test, they will probably score lower in the mid-semester examination. The result from this preliminary regression test has proven the main hypothesis. The highest r^2 value achieved by the logical-mathematical is clear evidence that students with higher logical-mathematical intelligence will tend to do better in the introductory accounting subject as compared to students who have other dominant intelligences.

At this juncture, there may be two possibilities explaining why the logical-mathematical intelligence had appeared to be more relevant to the mid-term examination. One, perhaps the structure of the examination questions was designed in a manner that is in favourable to the logical-mathematical intelligence or; two, individuals with this intelligence are inherently more receptive to the knowledge of accounting.

To answer these questions, further regression analyses (test 2 and test 3) were conducted to assess the possible presence of any structural bias in the examination questions. The examination questions were reviewed and divided into two groups. The first group of questions carried 50% of the total mark and consisted only of computational questions, where students are tested on accounting adjustment entries and preparation of two final financial statements. The second group are questions designed to test students' theoretical knowledge, conceptual framework, accounting principles and general knowledge, without any computation. These questions also carried 50% of the total marks. Regression analyses were then conducted on the students' MI profile test scores versus the examination scores of computational questions (group 1) and theoretical questions (group 2). The results of the analyses are stated in table 2 and table 3 below:

Test 2

Table 2 below shows the result of the regression test 2 (the MI profile test scores versus the examination scores of computational questions). As predicted, the logical-mathematical intelligence has once again achieved a relatively high r^2 value amongst other intelligences. No doubt, the logical-mathematical intelligence has clearly dominated the computational questions in the examination. Although the interpersonal intelligence has demonstrated higher r^2 value than the logical-mathematical intelligence, this intelligence was again negatively correlated to the examination scores. This outcome reflects that the logical-mathematical intelligence involving skill/competence with abstract patterns, relationships and problem solving (Gardner, 1983) will certainly have more advantages in the computational questions, as these questions were specifically designed to test the students' ability to compute, classify and categorise accounting transactions.

Table 2: *MI Profile Test Scores Vs Examination Scores (Group 1)*

Intelligence	**r**	**r^2**	**p-value**
Verbal-linguistic	-0.0650	0.0042	0.2270
Logical-mathematical	0.1400	0.0196	0.0520
Visual-spatial	-0.0030	0.0000	0.4840
Bodily-kinesthetic	-0.0310	0.0010	0.3620
Musical-rhythmic	0.0940	0.0088	0.1390
Interpersonal	-0.1700	0.0289	0.0240
Intrapersonal	0.1090	0.0119	0.1030
Naturalist	0.0170	0.0003	0.4230

Test 3

The next analysis involved testing the correlation between the students' MI profile test scores with the examination scores achieved by students on the theoretical questions (group 2). Since these questions were designed to test the students' ability to write, define and discuss the conceptual frameworks and principles of accounting (which requires no computational skill at all), according to Gardner (1983), the verbal-linguistic intelligence should depict the strongest relevance to the examination scores achieved by students for these questions.

Contradictory to the MI theory, students with the logical-mathematical intelligence have once again recorded the highest r^2 value followed by the intrapersonal intelligence; while the verbal-linguistic came in third (table 3). Results from this regression test reflects that although the second group of the examination questions was aimed to assess the students' ability to define and discuss the conceptual frameworks and principles of accounting, 'word smart' students have failed to gain any significant advantage over their 'number smart' counterparts.

Table 3: *MI Profile Test Scores Vs Examination Scores (Group 2)*

Intelligence	**r**	**r^2**	**p-value**
Verbal-linguistic	0.1340	0.0180	0.0600
Logical-mathematical	0.2310	0.0534	0.0030
Visual-spatial	0.0280	0.0008	0.3710
Bodily-kinesthetic	-0.1010	0.0102	0.1210
Musical-rhythmic	-0.0550	0.0030	0.2620
Interpersonal	-0.0480	0.0023	0.2890
Intrapersonal	0.1810	0.0328	0.0170
Naturalist	-0.0730	0.0053	0.1990

Outcomes from these regression tests proved no structural bias in the design of the mid-semester examination questions to the logical-mathematical intelligence; observably, the 'number smart' students are naturally more effective in learning this accounting subject. This conclusion is reached mainly based on the results derived from test 3, in which, as compared to the logical-mathematical, the verbal-linguistic has demonstrated a much weaker correlation to the mid-term examination scores for questions which were designed to test their ability in writing. These signalled the need for alternative teaching techniques to disseminate accounting knowledge to students with diverse MI profiles.

Based on the students' MI profile test scores, I have grouped them according to their dominant intelligence (denotes intelligence with the highest score recorded by individual student in the profile test) (table 1). Students with multiple dominant intelligences (two or more intelligences with same highest scores) were grouped into two; one with multiple dominant intelligences including logical-mathematical and the other consist of those without logical-mathematical intelligence.

Table 4: *Dominant Intelligence Grouping*

Intelligence	**No. of Students**	**%**
Verbal-linguistic	3	2.21%

Logical-mathematical	13	9.56%
Visual-spatial	7	5.15%
Bodily-kinesthetic	22	16.18%
Musical-rhythmic	18	13.24%
Interpersonal	23	16.91%
Intrapersonal	10	7.35%
Naturalist	4	2.94%
Multiple dominant intelligence: with logical-mathematical	11	8.09%
Multiple dominant intelligence: without logical-mathematical	25	18.38%
Total	**136**	**100.00%**

Only 13 students out of the 136 students who have participated in this research are logical-mathematical intelligence dominant, representing a population of 9.56%; whereas only 11 students with mixed dominant intelligences including logical-mathematical (8.09%). Thus, the aggregate percentage of 'number smart' students is 17.65%. At this juncture, this finding signifies that 82.35% of the students might have disadvantages in learning the said subject, particularly, the bodily-kinesthetic, musical-rhythmic and interpersonal intelligence dominant students, who are usually very active and participative in their learning process.

Recommendation

Results from the empirical tests above indicated that the contents of the said foundation accounting subject might contain generic linkages to the logical-mathematical intelligence and the conventional way of how accounting subjects were being taught in classes. Traditional higher educational institutions tend to focus essentially on content teaching, assessing, reinforcing and rewarding the word smart and number smart intelligences (Barrington, 2004). Campbell et al. (1996) commented that restricting educational programmes to a focus on these intelligences tend to minimise the other forms of knowing, undermines students self esteem arising from failure to deliver academic achievements and eventually will conceal their true potentials. The traditional chalk and talk method of teaching is certainly insufficient, especially for advanced knowledge which includes complicated concepts, principles and technical standards associated with the modern business studies (Becker & Watts 2001). Nelson (1998) supports that teaching methods need to be designed to match students' multiple intelligences. Likewise, learning style research indicates that students can process information more effectively when the relevant material is presented in a format that matches their learning preference (Denig, 2004). "While educators may not be able to incorporate each of Gardner's eight intelligence styles into every classroom session, the chances of meeting the learning needs of all learners are increased when a concentrated effort is made to meet the needs of a variety of intelligence styles" (Amerson, 2006).

How can we make teaching and learning accounting subjects more effective for students who possess dominant intelligences other than logical-mathematical? How should we handle the issue of learner diversity in accounting courses? There are several pedagogies recommended by various researchers to improve the effectiveness in delivering the accounting curriculum. For the purpose of this study, four categories of pedagogies were identified, namely the Case Approach, the Group Learning Approach, the Visualisation Approach and the Computer-Based Learning Approach.

a) Case Approach

The case approach was in fact the most recommended teaching pedagogy for accounting subjects. As concluded by Simkins (2001), using case approach in teaching finance related subjects enables students to gain important benefits in their learning experiences. In essence, the case approach requires students to apply deep intellectual thinking on the subject matter. It gives students the hands-on opportunity to diagnose real issues faced by a business entity. Students are driven to carry out a tremendous amount of research and forced to integrate knowledge across multiple areas. As a result, the case/problem based approach will help to bridge the "theory-practice gap" and build students' competency in the subject.

b) Group Learning

Accounting students are widely perceived as ineffective communicators (Andrews & Sigband 1984; Addams 1981). Recognising the fact, the Accounting Education Change Commission (AECC, 1990) (as stated in its Position Statement No. 1) has urged the accounting educators to diverge from the traditional lecture-tutorial instructional methods where students are passive recipients of information, to pedagogies which encourage the environment of active learning and improve students' soft skills. Students should take on the role of active participants in the learning process, and this can be effectively developed through group learning. Well organised group learning assignments allow students to develop skills in problem solving, presentation and communication which are difficult to develop in isolation and require feedback as well as interaction with other individuals.

c) Visualisation

Visualisation is no doubt a highly effective technique in classroom teaching. Generally, visualisation involves technique for creating images, diagrams, or charts to communicate a message. Visual imagery can be an effective way to communicate both abstract and concrete ideas such as accounting conceptual frameworks. Research by Fletcher (2000) found that the incorporation of visualisation technique into a training programme for a group of inexperienced teachers has notably improved their teaching efficiency, including their skills in monitoring students' academic progress, fostering students' imagination and creativity.

d) Computer-based Learning

The computer-based learning approach is certainly an essential element in all accounting courses. Under this approach, students are required to prepare full sets of accounts using accounting software and spreadsheet modelling, or conducting audit on the computerised case study given. Students' assignments will be graded based on the level of understanding and application of accounting or auditing software in the given case. By implementing computer-based learning, students will experience hands-on exposure in accounting software and spreadsheets which are essential tools in their profession.

The benefits of these alternative pedagogies in complementing the chalk and talk content-based teaching method were widely discussed and evident by numerous academic studies. Therefore, we should focus on the importance of these active learning approaches in enhancing the learning process of the non-number smart accounting students and to what extent these alternative pedagogies can enrich the accounting subjects.

1) Applying Active Learning to Personal Intelligences (Interpersonal, Intrapersonal and Naturalist)

Foremost attention must be given to the interpersonal intelligence dominant group as they formed the highest population (16.91%) in our focus group. According to Gardner (1983),

students with high interpersonal intelligence are more understanding, relate well to other people and are naturally good in resolving conflicts. They enjoy a group learning environment. As such the cooperative learning approach may best fit them.

The cooperative learning approach denotes a method where members in a group share interdependent goals but each member is individually assessed. The appreciation of individual outcomes distinguishes cooperative learning from the common group project where a single grade is awarded to the group as a whole with no individual accountability (Ravenscroft 1997). Effectively, cooperative learning enhances team-based active learning without neglecting individual contributions to the group. According to a study conducted by Hwang et al. (2005), students taught under the 'content based' method have been significantly outperformed by those who were exposed to the cooperative learning method, as this method has radically improved students' comprehension and ability to handle more complex accounting questions. This is further supported by Ravenscroft et al. (1995) who found that by implementing this approach, students will gain higher academic achievements as compared to using the individualistic approaches.

The intrapersonal intelligence was defined as an intelligence with a high consciousness of its own motives and feelings, is self-motivated and has sense of self-reflection according to the MI theory. Due to these individualistic characters, the most effective method of teaching these 'self smart' students could be assigning them with self-paced projects which allow them more flexibility to work alone; for example, computer-based assignments involving spreadsheet, accounting and auditing software. Students' feedback on the implementation of computer-based case study was rather encouraging. Most students found that computer-based auditing tasks are demanding, and the overall view indicates a general preference to using this pedagogy to learn practical auditing techniques and specialised audit software packages (Davies, 2000). Besides, Hess (2005) mentioned that by integrating spreadsheet modelling into the teaching of finance and accounting, one will actually achieve two goals at once: students find it easier to understand finance concepts and they in turn become more employable as they pick-up valuable real world skills.

The 'nature smart' who enjoy working in the natural environment and exploring living things was the eighth intelligence added into the mainstream MI theory by Gardner (1999). Up to this point, I have not found the well-matched pedagogy for the naturalists; however, there is one increasingly important topic in accounting that might catch their attention: the social and environmental reporting. Community and political bodies are increasingly concerned about the social and environmental accounting of business entities, covering aspects such as resources utilisation, corporate-social responsibilities and environmental protection (Frost, 2003). Stakeholders such as the local community, NGOs and government authorities are not just interested to know the profitability of firms, but they are also concerned with how these firms achieve their goals without inflicting harm to their neighbourhood and environment. Thus, the importance of social and environmental reporting has presented the naturalists a new perspective of the accounting curriculum and may indirectly instil their interest into studying these courses.

2) Applying Active Learning to Object Related Intelligences (Visual-Spatial)

Results from the study showed that about 5.15% of students involved are visual-spatial intelligence dominant (picture smart). According to MI theory, the visual-spatial intelligence has a strong sense of the visual world, remembers best by visualising and works well with images and pictorial diagrams (Barrington, 2004). These unique characteristics had posted a

tough challenge to educators of 'content based' accounting courses until the introduction of an innovative and meaningful classroom pedagogy that has gained much attention; the concept mapping.

Concept mapping is widely applied in other disciplines as an enriching learning tool to help students organise information and develop critical thinking skills (Maas and Leauby, 2005). It involves the process of externalising, through drawings and diagrams, the mental connections and association of patterns that students make based on the topic learned (Angelo & Cross, 1993). It is an innovative classroom pedagogy that promotes development of self-learning and lifelong learning skills (Albrecht & Sack, 2000). Outcome from the research by Maas & Leauby (2005) proves that the usage of concept mapping in classroom has been positive and fruitful as measured by improved examination scores.

Likewise, teaching accounting with analogies could be another useful method for the picture smart students. This method requires instructors to map the similarities of their topics to livelier personal events as to stimulate students' interest in the subject. In their recent research, Hanson and Phillips (2006) have used graduation as an example in explaining how long-term debt can be reclassified as a current liability in its year of maturity; "graduation seems like a long-term event when they are freshmen, it eventually becomes a current event in their senior year". In this example, an abstract topic (debt reclassification) was effectively connected to a concrete source topic (graduation) which is personally relevant to students. The benefits of applying analogies in teaching are not just limited to improving students' understanding in the said topic, but it will also train them to visualise new situations based on similar concepts (Hanson & Phillips, 2006).

3) Alternative Pedagogies for Object-Free Intelligences (Verbal-Linguistic, Bodily-Kinesthetic and Musical-Rhythmic)

The case study assignment often requires students to read, understand, analyse information extracted from a comprehensive case prescription, and subsequently report research findings and discussions by applying knowledge acquired. The mechanism of how this approach is being conducted seems to match perfectly with the characteristics of the verbal-linguistic intelligence that is sensitive to the order and meaning of words, articulation and natural strength in discussing, debating and writing. Case-based learning serves as an effective tool in reinforcing and connecting the theories into various aspects of business; for instance, the application of cost accounting principles into the manufacturing processes. The integration of the case-based learning method will strengthen students' skills in solving unstructured problems, as it requires the exploration of multiple learning resources, application of theories acquired into the given problem, fosters critical thinking; and eventually encourages lifelong learning. (Knechel 1992, Evans & Nunnally 2002; Deleo & Letourneau 1994; Hansen 2006).

The number of students dominated by bodily-kinesthetic intelligence is 22, representing a population of about 16.18%. Processing knowledge through bodily sensation, skill with tools and active demonstration of body language are the unique characteristics of a typical 'body smart'. Again, the group learning approach involving classroom activities such as role-play, quizes, games and business simulation will inevitably accelerate the learning velocity of this group of students. For instance, in the role-play exercises, assigning special characters or roles to the body smart students is not just giving them the opportunity to express their talent in public presentation, but it will also expose students to the human aspects in the accounting profession. Cage (1997) quoted an example of role-play exercise in an 'Accounting

Institutions and Regulation' course, in which "students are required to present arguments on behalf of various constituencies at a mock hearing on a proposed utility-rate increase, and their classmates serve as hearing offices". Craig & Amernic (1994) concluded this pedagogy encourages students to appreciate the social importance of accounting information, the behavioural implications of accounting, and to be aware of the ethical and governance issues that accountants may encounter.

Similarly, Haywood et al. (2004) have recommended a game strategy to teach ethics and professionalism in accountancy. Using games makes learning more fun and helps to "maintain students' interest and involvement in the learning process" (Haywood et al., 2004); certainly, the element of 'fun' is most attractive to the bodily-kinesthetic intelligence. Students' feedback has been positive and encouraging on the use of this format to teach ethics and professional responsibilities: "while a couple of students noted that they did not enjoy playing games in general, most used such descriptors as fun, enjoyable, unique, interesting, creative, entertaining, and informative to record their general reaction to the game." (Haywood et al. 2004). The business simulation game immerses students in the life of an evolving business environment, for which they are trained to develop continuing stream of business strategies backed by accounting principles. "Emphasising communication skills, alternative viewpoints, and the effect of assumptions on decisions, the simulation episodes demonstrate the usefulness and importance of accounting to business decision makers" (Springer & Borthick, 2004). Further evidence was obtained from Drake et al. (2001) where they have used a simulation model to teach students the impact of incentives in the implementation of activity-based costing system (ABC). Results from their study showed that the simulated production process has immensely improved the students' level of understanding of the topic, and also provided inexperienced students with a feel of the real-life working experience. "If 'seeing is believing', then simulations are powerful teaching devices."(Drake et al., 2001).

Unfortunately, up to this point, I have not been able to identify any specific pedagogy that best suits the 'music smart' students (musical-rhythmic intelligence). Inclined to musical patterns and sensitivity to pitch, melody and tone are unique characteristics which do not seems well-fitted into the accounting curriculum. Obviously, it is not practical to compose songs using accounting principles as lyrics. I frankly do not think anyone will enjoy singing or listening to them! Hence, the issue of how to enhance the learning process for the music smart accounting students still remains unanswered and is pending for further research.

Conclusion

Clearly, the findings from the above regression tests have revealed that the 'number smart' students are more receptive to accounting knowledge as compared to students with other intelligences. Despite the second part of the mid-semester examination questions was designed to assess students' understanding in accounting conceptual framework and required no computational skill, the 'word smart' students have not gained any significant advantage. This outcome should draw attention to the usefulness of MI as alternative pedagogy in teaching and learning accounting knowledge, especially in view of the increasing student diversity. Conventional methods of delivering accounting knowledge have been frequently criticised by researchers (Springer & Borthick, 2004; Deleo & Letourneau 1994; Andrews & Sigband 1984; Addams 1981) and hence the accounting curriculum is changing progressively to meet the challenge of new active learning environment. Accounting instructors should understand and appreciate the importance of identifying the fundamental abilities of each student before embarking onto a particular form of pedagogy. Although it is impossible to

fully incorporate all the alternative MI style pedagogies into the accounting curriculum, by grouping students with similar mind polar and learning styles, the likelihood of fulfilling students' diverse learning needs will definitely be increased when suitable teaching techniques can be adopted to enhance their learning process. Besides, by encouraging students to utilise their diverse intelligences, they are more likely to find personal meaning in their studies (Barrington, 2004). Furthermore, it is also time to seed the awareness of the importance of recognising one's abilities before choosing an education path. With this knowledge in hand, accounting would be easy for everyone.

References

Accounting Education Change Commission (AECC) (1990). *Objectives of Education for Accountants. Position Statement No. One*. Sept 1990, Torrance, CA: AECC

Addams, H. L. (1981). *Should the Big 8 teach communication skills?* Management Accounting (pre-1986); May 1981; 62, 11; ABI/INFORM Global: pp 37-40.

Albrecht, W. S., and Sack, R. J. (2000). *Accounting Education: Charting the Course through a Perilous Future.* American Accounting Association Series, Vol. 16.

Amerson, R. (2006). *Energizing the Nursing Lecture: Application of the Theory of Multiple Intelligence Learning*, Nursing Education Perspectives Jul/Aug 2006, Vol. 27 Issue 4, p194

Andrews, J. D. and Sigband, N. B. (1984). *How effectively does the "new" accountant communicate? Perceptions by practitioners and academics.* The Journal of Business Communication (Spring): 15-24.

Angelo, T. A., and Cross, K. P. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers (2nd ed.).* San Francisco, CA.: Jossey-Bass.

Barrington, E. (2004). *Teaching to Students Diversity in Higher Education: How Multiple Intelligence Theory Can Help*, Teaching in Higher Education, Vol. 9, No. 4, October 2004

Becker, William E. and Watts, M. (2001). *Teaching Economics at the Start of the 21st Century: Still Chalk-and-Talk*, American Economic Review, 2001, vol. 91, is. 2, pp 446-451

Cage, M. C. (1997). *Role-Playing Replaces Spreadsheets in College Accounting Courses*, The Chronicle of Higher Education, January 31, 1997. Retrieved on June 28, 2006, from http://www.business.uiuc.edu/accountancy/projdisc/articles/chronicle.html

Campbell, L., Campbell, B. and Dickinson, D. (1996). *Teaching and Learning through Multiple Intelligences* (Boston, MA, Allyn & Bacon)

Craig, R. and Amernic, J. (1994). *Roleplaying in a conflict resolution setting: Description and some implications for accounting*, Issues in Accounting Education. Sarasota: Spring 1994. vol. 9, Issue. 1; pg 28

Davies, M. (2000). *Using a computerised case study to teach computer auditing: the reasons, the approach and the student response*, Managerial Auditing Journal, Jul 2000, Vol. 15 Issue. 5, pp 247 – 252

Deleo, W. I. and Letourneau, C. A. (1994). *Use of a problem-solving model in teaching specific accounting concept,* Journal of Education for Business May/Jun94, 69; 5 p 263

Denig, S. (2004). *Multiple intelligences and learning styles: Two complementary dimensions.* Teachers College Record, 106(1), pp 96-111

Drake, A., Haka, S. F. & Ravenscroft, S. P. (2001). *An ABC simulation focusing on incentives and innovation,* Issues in Accounting Education; Sarasota Aug 2001 16; 3 pp 443-471

Evans, M. D. and Nunnally, B.H. Jr. (1994). *An Interdisciplinary Case Study For Financial Management* ,October 6- 7, 1994.

Evans, M. D. and Nunnally, B. H. Jr. (2001). *Finance Case Teaching and The Business Core Courses* (March 2001). Retrieved on May 29, 2006, from http://ssrn.com/abstract=303199

Fletcher, S. (2000). *A role for imagery in mentoring*, Career Development International, Jul 2000 Vol. 5 Issue. 4/5, pp 235 - 243

Frost, G. (2003). 'Social and Environment Report' in *Accounting Theory*, 5th edn, ed. Godfrey, J., Hodgson, a. and Holmes, S. (Milton, Queensland, John Wiley & Sons)

Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*, 1st edn, New York: Basic Books

Gardner, H. (1999). *Intelligence Reframed. Multiple intelligences for the 21st century*, New York: Basic Books

Gilman, L. (2001). *The Theory of Multiple Intelligences.* Retrieved on May 29, 2006, from http://www.indiana.edu/~intell/mitheory.shtml

Hanson, E. and Phillips, F. (2006). *Teaching financial accounting with analogies: improving initial comprehension and enhancing subsequent learning*, Issues in Accounting Education, American Accounting Association Feb 2006, vol. 21 issue 1, p1(14)

Haywood, M. E., McMullen, D. A. and Wygal, D. E. (2004). *Using Games to Enhance Student Understanding of Professional and Ethical Responsibilities,* Issues in Accounting Education; Sarasota Feb 2004 19; 1 pp 85-99

Hansen, J. D. (2006). *Using Problem-Based Learning in Accounting,*, Journal of Education for Business; Mar/Apr 2006 vol. 81, issue 4, p 221

Hess, K. (2005). *Spreadsheet-based Modeling for Teaching Finance and Accounting Courses*, (May 16, 2005). Retrieved on May 29, 2006, from http://ssrn.com/abstract=378680

Hwang, R. NC., Lui, G. and Tong, M. YJW. (2005). *An Empirical Test of Cooperative Learning in a Passive Learning Environment*, Issues in Accounting Education, May 2005, vol. 20, Issue 2, pg 151

Knechel, W. R. (1992). *Using the Case Method in Accounting Instruction*, Issues to Accounting Education, vol. 7, no.2; Fall 1992

Maas, J. D. and Leauby, B. A. (2005). *Concept Mapping – Exploring Its Value as a Meaningful Learning Tool In Accounting Education*, Global Perspectives on Accounting Education, Vol. 2, 2005, 75-98

McKenzie, W. (1999). *Multiple Intelligences Inventory*, Copyright @ 1999 Walter McKenzie, The One and Only Surfaquarium. Retrieved on March 28, 2006, from http://surfaquarium.com/MI/inventory.htm

Nelson, K. (1998). *Developing students' multiple intelligences*. New York: Scholastic

Ravenscroft, S. P., Buckless F. A., McCombs G. B. and Zuckerman G. J. (1995). *Incentives in student team learning: An experiment in cooperative group learning*. Issues in Accounting Education, Spring 1995, vol. 10, Issue 1, pp 97-109.

Ravenscroft, S. P. (1997). *In support of cooperative learning*, Issues in Accounting Education; Spring 1997; vol. 12, no. 1, Academic Research Library, pg. 187

Simkins, B. J. (2001). *An Innovative Approach to Teaching Finance: Using Live Cases in the Case Course* (May 30, 2001). Oklahoma State University Working Paper

Springer, C. W. and Borthick, A. F. (2004). *Business Simulation to Stage Critical Thinking in Introductory Accounting: Rationale, Design, and Implementation*, Issues in Accounting Education Aug 2004, vol. 19, Issue 3, pg 277