Making Education Fun! The Marketing of Advanced Topics by Multimedia

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Abstract

During the recent decades, there is an increasing concern on accounting fraud. According to the report by Federal Bureau of Investigation, from 2007 to 2011, there has been an increasing 12.8% cases reported on eight categories of accounting fraud, amongst which are money laundering and corporate fraud. The situation has attracted global interest, in virtue of some highly publicized cases, including the Enron and WorldCom. This resulted in the growing demand to comprise ethical behavior and decision-making courses into the syllabus of university degree programs. For universities without accounting major, this however implies that fraud education will need to be delivered within general management courses. This fosters the need to design fraud education syllabus that can meet the requirements of the economy but attract the attention of students who do not specialize in this area. The current research used a multimedia, movie, as a marketing tool to market this advanced accounting topic to freshman majoring in tourism and hospitality. More than three hundred freshman undergraduates are included. The majority of students hold a positive perception on the use of movie to learn accounting. It is found to improve their understanding and is more effective than reading textbooks alone. Based on the technology acceptance model (TAM), three hypotheses are established and a regression equation is developed that explains the relation between perceived usefulness and perceived ease of use of movie on the technology acceptance of using movie as an education tool in accounting.

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1. Introduction

In an elementary or intermediary level of accounting courses provided by most of the universities and institutes in Macau, accounting basic theories, concepts and technical skills are learnt by accounting and non-accounting major students. Only those who study forensic accounting or other accounting major students will have advance courses, which may involve topics like fraud accounting. As the economy and society becomes more prosperous and complex, there is an increasing concern on accounting fraud. There has been an increasing 12.8% cases reported on eight categories of accounting fraud from 2007 to 2011 from the report of Federal Bureau of Investigation.

Students who study different kinds of management should have a basic knowledge and sensitivity on fraud accounting, as it is not just a concern for accounting major students (Gates, Lee, & Sullivan, 2011). In delivering this topic, students are expected to understand the concept of accounting fraud and accounting scandal due to the increasing concern and need on ethical management decisions while TEDQUAL also intends to include the study of code of ethics officially within their requirement. Therefore, students can have a broader sense and picture of what they should concern for management and decision-making. In delivering this topic, students are expected to understand the concept of accounting fraud and accounting scandal due to the increasing concern and need on ethical management decisions while TEDQUAL also intends to include the study of code of ethics officially within their requirement. Therefore, students can have a broader sense and picture of what they should concern for management and decision-making. However, learning the basic accounting theories and technical skills in a management accounting course under the tourism and hospitality curriculum is not an easy task for non-accounting major students. Fraud accounting is even more conceptual to them. In view of this, this study reports the findings on how instructors can attract the attention of students in learning this advanced accounting topic – fraud accounting.

The main intention of the research is to investigate the understanding of students on the concept of fraud accounting by using multimedia based on the concept of technology acceptance model (TAM). Ten factors by using movie that may affect the students in understanding fraud accounting are analyzed. In order to capture students’ attention, an integrative method can be used in which fraud topics can be delivered by both traditional lectures and multimedia (Gates et al., 2011). Besides, real world examples should be used so as to reinforce the students’ awareness of fraud accounting in today’s business environment. Including the topic of fraud accounting in different accounting courses is not just the only interest of the universities or instructors, one of the research papers of Peterson (2003) also told that students found the concept of fraud accounting very useful and it can benefit employers as well.

When applying the multimedia, movie, for the delivery of fraud accounting concept for non-accounting major students, it will be more effective if more steps are taken before and after watching the movie. Students have to read some extra articles about the case of ‘Enron’, which included its background and analysis. Besides the articles for the real case, students also had to read some basic knowledge about the importance of fraud accounting in the business world. When students had prepared their materials before the class, they would understand more about the case and its consequences in education and the accounting industry. After the movie ‘The Smartest Guys in the Room’ was shown, students were asked to work on a review report with questions, which can examine their understanding of the movie and their perception about the case. A total of nine classes would have individual class discussion and general conclusion on the movie and the questions in the report. The pre and post steps for the movie watching can help students learn and understand more about a more advanced topic in accounting. The results of the regression analysis showed a causal relationship between PU and PEOU on TA of using movie in delivering an advanced topic to the students but more variables that may affect the level of acceptance can be included.

2. Literature Review

Accounting courses always have a close relationship with concepts and figures. To arouse the interest of the students on the first day of accounting class (Stice & Stice, 2006), students are told the Enron story in different level of accounting courses. Since different parties that were involved in the case of Enron had been introduced and discussed, students can easily realize the relevance of accounting knowledge, fraud accounting and the real business world. Evidence has proved that spending time in demonstrating the case of Enron was useful to both students and instructors. For non-accounting major students in tourism and hospitality stream, their initiatives in studying accounting will be increased if topics can be more related to the real business world (Stice & Stice, 2006).

Accounting professionals are no longer just focus on the concepts and principles, ethical standards are of the same importance nowadays. With this requirement, the transference of ethical standards in accounting classes has been described as essential (Thomas, 2012). Understanding the importance of ethical standards can give a better direction for students to make ethical decisions. However, students with different perception and rationales on ethics
which includes moral equity, contractualism, relativism, utilitarianism and egoism (Reidenbach & Robin, 1998) will have different decision making due to their individual standpoint. Besides, students with different level of accounting and management education will also lead to a different result. Thomas (2012) also found out the differences among senior accounting students, first-year accounting and first-year business students in which senior students used higher deliberative reasoning than first-year students and there is no difference in the ethical decisions of the first-year accounting students compared with the first-year business students. Under this assumption, it is good to start delivering the moral and ethical issues to the accounting and non-accounting students in the first-year of accounting studies. With the continuous growth of accounting fraud in the economy, accounting firms are also expanding their forensics and fraud services. Universities are expected to have more fraud courses in nurturing more expertise for this issue. However, it is not easy to offer a full course for fraud accounting so instructors would prefer to include this as one of the topics in an accounting course. Therefore, students can learn the basic concept of fraud accounting in terms of ethical decision making which can help them to develop themselves more in deliberative reasoning. With this knowledge, students can also provide a better service and decision making to their future employers (Peterson, 2003).

The real fraud accounting cases like Enron and Worldcom have given a signal to the business world and government to be alert of those accounting tactics, which were described as innovative and aggressive. To be more realistic to students, using videos in delivering the fraud topic can be a more active and effective way to arouse the interest of the students. Besides, videos can help different level of business students to have a thorough learning experience and prepare them for future challenges (Gates et al., 2011). Improvement in the results is always a final measure in applying different techniques in teaching and education so there is no exemption in judging the effectiveness of the use of multimedia. However, there is no definite conclusion about the effectiveness of multimedia in teaching: Wise and Groom (1996) identified the positive results in using multimedia for teachers, students and administrators while Solomon (1994) identified the negative factors such as the unwillingness of instructors in using others’ materials; the high cost of multimedia; and the lack of logistics in using multimedia. Moreover, the results of the students are affected by different factors like different learning style, different interest and different levels of involvement. Since the value of multimedia in learning is difficult to establish and different types of multimedia are difficult to compare, Ellis (2001) suggested measuring the facts acquired by the students and the critical thinking capability instead. In this way, higher level of knowledge that students learn in the topics are not necessarily shown in the results of the courses. Rather, the important factors in learning are the feedback of the students, the different learning attitude, the critical thinking capability and flexibility of the students.

There are numerous multimedia tools that can be chosen for education nowadays. Some multimedia tools like TV, movies, YouTube which are categorized as video clips are easy to apply in classroom learning (Berk, 2009). There are potential effects in using videos clips like grabbing students’ attention, creating a sense of anticipation, improving students’ attitudes towards content and learning, increasing understanding, stimulating the flow of ideas, inspiring and motivating students, making learning fun and creating memorable visual images, etc. Some majors like medical nursing use the videos clips for demonstration extensively and is very effective since learning with pictures and videos are superior to traditional learning with verbal description only. However, choosing an appropriate video clips is very critical in arousing the interest of the students. Guidelines about the video clips are of the same importance to students especially a new topic has to be introduced. Furthermore, time for reflection and discussion can improve students’ critical thinking capabilities. Finally, instructors can collaborate the content of the video clips with the related topics within the course so as to reinforce the relevancy to accounting and decision-making. Therefore, proper steps in using video clips for teaching can be useful and effective.

Multimedia is always used as a kind of complement to different courses. It provides a lot of convenience to the users and has been prevalent in education. However, there are two things that have to be faced before it can be fully utilized. Firstly, instructors have to be competent, confident and enthusiastic in providing an appropriate environment for the students to learn with the specific multimedia (Ferry & Brown, 1995). Secondly, the acceptance of multimedia of the students can affect their performance. Studies (Astleitner & Wiesner, 2004) (Yarbrough, 2001) have suggested that multimedia materials can enhance students’ satisfaction and motivation. The structures and standardization of the materials are important to measure the effectiveness of the multimedia (Junaidu, 2008). To study the acceptance of multimedia, the Technology Acceptance Model (TAM) was used. The TAM indicated that the acceptance of technology (TA) was influenced by the level of perceived usefulness (PU) and perceived ease of use (PEOU), when PU imposed a significant affect on PEOU (Davis, 1989). PU explains the degree that an
individual believes in applying a particular technology can improve his/her performance; while PEOU explains the degree that an individual believes applying a particular technology is free of effort (Davis, 1989). This research studied whether the level of perceived usefulness (PU) of movie for the learning of fraud accounting that would affect the level of perceived ease of use (PEOU). Further elaboration of the model is applied for the students’ attitude of PU and PEOU on using movie in the topic of fraud accounting (Tabachnick & Fidell, 2001). Based on the aforementioned, three hypotheses were developed.

Hypothesis 1: The perceived usefulness (PU) of movie will affect the perceived ease of use (PEOU) of movie for the learning of accounting.

Hypothesis 2: The perceived usefulness (PU) of movie will affect the technology acceptance (TA) of using movie to teach accounting.

Hypothesis 3: The perceived ease of use (PEOU) of movie will affect the technology acceptance (TA) of using movie to teach accounting.

3. Methodology

Three hundred and three junior year undergraduate students from five non-accounting majors of event management, heritage management, hotel management, retail management and tourism management of Institute for Tourism Studies Macao were included in the current research study. These students were all taking the course of Management Accounting at the time of the research. The course covers nine topics and to prevent potential emotional influence at the beginning or by the end of the semester, the topic of accounting fraud was designed as topic six within the syllabus.

The syllabus was provided to the students at the beginning of the semester and the students were informed during the first class of the course that a movie on the Enron scandal will be shown for the topic of accounting fraud, as a substitute of traditional classroom training. A list of four documents related with the Enron scandal was provided to the students around one month before the topic on accounting fraud was delivered. This was accompanied by a set of five guidance questions on the information that students were expected to pay particular attention on. A week before the movie was shown, precise information on the meaning of accounting fraud, accounting scandal and the importance on the code of ethics was explained to the students. These three areas have been set as the major objectives on the topic of accounting fraud within the course. The background on the choice of the movie was also discussed.

Four movie sessions have been arranged and students were restricted to join in at least one session, when they were allowed to join in all. Digital video disc (DVD) of the movie was available for rental by the students after the four movie sessions at the library of the Institute. After each movie session, the respective group of students was required to complete a review report that covered the five guidance questions provided to them before the movie. The report was marked and included in the evaluation on their achievement of the course. The survey was carried out on the class after they have completed the review report. This has been planned to secure the reliability of the data collected, when the students still held clear perception on both the topic and on the understanding of the major areas covered by the topic of accounting fraud.

Survey approach was adopted using questionnaires with 107 questions that constituted six parts. These covered areas on the preparation done by the students before the movie and their perception on the movie (20 questions), the differences in their level of understanding on each of the major areas of accounting fraud before and after the movie (15 questions), the perceived usefulness and perceived ease of use of movie (19 questions), personal learning habits (8 questions), preference on education tools and perception on the accounting course (25 questions), together with demographics. The Likert scale of 1 to 5 with 1 being extremely disagreeable and 5 being extremely agreeable was used. The questionnaire was developed based on past literatures (Lane & Porch, 2002; Potter & Johnston, 2006; Rainsbury & Malcolm, 2003) with local considerations and the structure of both the course of Management Accounting, together with the topic of accounting fraud. The Technology Acceptance Model (TAM) was applied and three hypotheses were developed to study the relation between the two independent variables of perceived usefulness (PU) and perceived ease of use (PEOU) of movie on the technology acceptance (TA) of using move to study accounting.
4. Findings and Discussions

4.1. Demographics and reliability

For the 303 collected questionnaires, 291 were included in the final analysis, when questionnaires with missing information were excluded. Among the respondents, 28% were male and 72% were female, with 74% local Macao students and 26% international students. Over 70% of students aged 19 or below and the distribution within the five majors of event, heritage, hotel, retail and tourism management were 24.1%, 8.2%, 34.4%, 10% and 23.4% respectively.

The internal consistency of the collected data was measured through reliability and assessed by the Cronbach’s coefficient alpha (Cronbach, 1951). An overall alpha score of 0.946 was recorded and this suggested a relatively high internal consistency (DeVellis, 2012).

4.2. Technology Acceptance Model (TAM)

The acceptance on the use of movie to learn accounting courses was studied by means of the Technology Acceptance model (TAM). The TAM stated that the perceived usefulness of a technology will affect the perceived ease of use on that technology. These two factors in turn will determine the acceptance of the technology, termed technology acceptance. The differences between the group means of variables under study was commonly analyzed by means of the Analysis of Variance (ANOVA). However, significant Levene statistics was found on all the hypotheses that violated the assumption of ANOVA. Therefore, the existence of significant differences between the group means of the variables was evaluated through the Welch test that can accommodate heterogeneous variance (Welch, 1947). All the results showed to be significant at p<.01 (Table 1). This implied that the perceived usefulness (PU) of movie will affect the perceived ease of use (PEOU) of movie for the learning of accounting (Hypothesis 1); the perceived usefulness (PU) of movie will affect the technology acceptance (TA) of using movie to teach accounting (Hypothesis 2); and the perceived ease of use (PEOU) of movie will affect the technology acceptance (TA) of using movie to teach accounting (Hypothesis 3). These supported all the three hypotheses H1, H2 and H3.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Factor</th>
<th>Welch Statistics</th>
<th>df</th>
<th>Sig*</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived usefulness (PU)</td>
<td>Perceived ease of use (PEOU)</td>
<td>46.597</td>
<td>4</td>
<td>.000</td>
<td>1 Supported</td>
</tr>
<tr>
<td>Technology acceptance (TA)</td>
<td>Perceived usefulness (PU)</td>
<td>34.805</td>
<td>4</td>
<td>.000</td>
<td>2 Supported</td>
</tr>
<tr>
<td>Technology acceptance (TA)</td>
<td>Perceived ease of use (PEOU)</td>
<td>35.407</td>
<td>4</td>
<td>.000</td>
<td>3 Supported</td>
</tr>
</tbody>
</table>

*Significant at p<.01

To further explore the relationship between the perceived usefulness, perceived ease of use and technology acceptance of movie, the correlation of the variables was studied by Pearson correlation (r). The Pearson correlation coefficient will indicate the direction and magnitude of the association between the variables (Bobko, 2001). Results showed that all the variables demonstrated significant correlation. As shown in Figure 1, the perceived usefulness and perceived ease of use of movie has a significant positive correlation (r=+0.669, p<.01). The correlation between the perceived usefulness (PU) of using movie to technology acceptance (TA) of using movie to study accounting (r=+0.626, p<.01) was slightly higher than that between the perceived ease of use (PEOU) of using movie to technology acceptance (TA) of movie (r=+0.607, p<.01).
4.3. Perception on movie

After the verification on the technology acceptance of using movie to study accounting, in-depth analysis was carried out on the perception of students with regard to this tool of education. The perception of the students on three major domains was tested through ten variables. The three major domains covered the features of the movie, the extent that it could help the students understand the main objectives of the topic on accounting fraud and the effectiveness of movie at delivering the accounting knowledge over textbook alone.

As shown in Figure 2, aside from the factor that the movie is interesting, when only 23% of the students agreed, the remaining nine variables under study received positive responses from majority of the students. The movie was found to be informative (58%), rich in ethical (64%) and accounting (48%) information. It has helped the students at understanding the impact of accounting fraud on the organization and the society (52%), the importance of ethical decisions made by management (57%) and the importance of management decisions at maintaining an ethical culture in the organization (60%). In addition, it was believed to be more effective than using textbook alone at delivering the impact of accounting fraud (54%), the importance of ethical decisions (57%), as well as the importance of management decisions (54%).

4.4. Regression Model of TAM

Based on the conceptualized relationships between the three variables as demonstrated by the TAM, together with the understanding on the perceptions of the students on the different aspects of using movie as an education tool for accounting, it drove the need to investigate how technology acceptance (TA) of movie as an education tool would change with respect to the two independent variables of perceived usefulness (PU) and perceived ease of use (PEOU). This was studied by means of the regression analysis that identified the extent of change on the dependent
variable when the independent variables changes (Freedman, 2009). Equation 1 (1) captured the causal relation between PU and PEOU on TA of using movie as an education tool on accounting.

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\text{Technology acceptance (TA)} = 0.256 \text{ Perceived usefulness (PU)} + 0.220 \text{ Perceived ease of use (PEOU)} + 1.621 \ldots \ldots \ldots (1)
\]

The regression analysis has a Durbin-Watson statistic of 1.747 and variance inflation factor (VIF) of 1.809, which indicated both autocorrelation and multi-collinearity did not exist. The regression also demonstrated a significant F-value = 120.737, p<.01. However, the R squared was 0.456, which implied only 45.6% of the changes in technology acceptance of using movie in accounting education was explained by the two independent variables under TAM, perceived usefulness (PU) and perceived ease of use (PEOU) of movie. This also indicated that other latent variables or moderators on the variables identified from the Technology Acceptance Model (TAM) probably should exist, which may influence the level of technology acceptance.

5. Conclusions

Delivery of fundamental accounting concepts and techniques may be inadequate for the students to face their career in the future. The inclusion of accounting fraud into accounting classes can benefit both students and employers (Peterson, 2003). Owing to the continuous concern of accounting fraud from the public after the incidents like Enron and Worldcom, the importance of ethical issues and analytical skills were further assured. In order to facilitate the non-accounting major students with this knowledge, incorporating movies in teaching fraud accounting in traditional classroom learning is expected to have a positive impact on the students in understanding the topic. However, multimedia can help in developing the critical think capabilities rather than enhance the results of the subject (Ellis, 2001).

In following the schedule, students started from the preparation of the documents and cases given which were related to the Enron scandal and the concept of accounting fraud, followed by detailed explanations in class from the instructors on the three main issues: accounting fraud, accounting scandal and code of ethics, watching the film and finally came up with an individual review report with guided questions given earlier. The learning outcome of using movies can be grabbing students’ attention, improving attitudes toward content and learning, increasing understanding etc. (Berk, 2009).

In the analysis, all the three hypothesis identifying the relationship among PU, PEOU and TA were all supported and they all showed a significant correlation. With this as a base, ten variables in which the movie was found to be interesting, informative, etc. were used to test the feature of the movie, the effectiveness of movie on students’ understanding of the topic and the superiority of movie over textbook alone in delivering the accounting knowledge. Furthermore, a regression model was used to test how the two independent variables, perceived usefulness (PU) and perceived ease of use (PEOU), affect the technology acceptance (TA). However, the result showed that the PU and EOU were not sufficient to tell the changes of TA. As a result, there are rooms for future research on the variables that may affect the TA in using movie as a teaching tool.

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