

Developing A Visual Novel For Public Sector Accounting Course At UiTM Kedah: A Brief Note

Intan Marzita Saidon
i.marzita@uitm.edu.my
Faculty of Accountancy
Universiti Teknologi MARA (UiTM) ,Kedah, Malaysia

Saluana Che Salleh
salua982@uitm.edu.my
Faculty of Accountancy
Universiti Teknologi MARA (UiTM),Kedah, Malaysia

Nadzri Ab Ghani
nadzri.abghani@uitm.edu.my
Faculty of Accountancy
Universiti Teknologi MARA (UiTM), Kedah, Malaysia

ABSTRACT

This paper describes the development process of a visual novel as a teaching aid for the Public Sector Accounting course at UiTM Kedah. A visual novel is an interactive game genre, which originated in Japan. Application of a visual novel as a teaching aid could be considered as an innovative way of teaching a "dry" subject like public sector accounting. Three stages involved in the development process of the visual novel. The first two stages were concerned with the physical development of the visual novel. Using conveniently selected respondents, an assessment regarding the usage of the visual novel as a teaching aid was carried out in the third stage. Findings indicated that a visual novel has great potential in enhancing students' understanding and sustained their engagement in learning the Public Sector Accounting course.

Keywords: visual novel, game-based learning, public sector accounting, quality education

INTRODUCTION

The United Nations Sustainable Development Goals (SDGs) for 2030 which was signed by 193 countries in September 2015, indicates the seriousness of countries around the globe regarding the sustainable development agenda. Since the endorsement of the SDGs, all countries have started to strengthen their efforts in promoting prosperity as well as keeping their pledge in protecting the planet. This blueprint consists of 17 sustainable development goals (SDGs) that are designed to “stimulate action over the next 15 years in areas of critical importance for humanity and the planet” (United Nations, 2015,p.3).

Education is a fundamental element in achieving a more sustainable society (Foster, 2001). Providing quality education falls under goal number 4 of SDGs; ensure inclusive and equitable quality education and promote lifelong learning for all (United Nations, 2015). Thus, lecturers as one of the main players in the education industry need to align their teaching methods to meet the current call. As such, they have enthusiastically embraced the SDGs in designing their teaching and learning methods. The traditional method of teaching, where lecturers verbally communicating information to students and students feverishly take notes is no longer a favorite method to be applied in today’s classroom. Students-centered or active teaching approach is preferable because this approach could promote deeper levels of thinking and better facilitate the encoding, storage, and retrieval of information (McGlynn, 2005).

Previous studies claim that active teaching techniques such as the application of games and videos are considered as a creative way to encourage students' involvement, motivation, excitement, and attention in class (Stewart-Wingfield & Black, 2005). In a similar vein, digital games were reported to have been used as a tool to facilitate learning in various field such as computer science, health and education (Giannakos, 2013; Barzilai & Blau, 2014; Qian & Clark, 2016; Chang & Lai, 2018).

Acknowledging the potential benefits of applying active teaching techniques, particularly the game-based learning in the classroom, this paper describes the process of developing a visual novel to become a teaching aid for the Public Sector Accounting class (PSA). Public Sector Accounting is one of the elective courses offered for the degree of accountancy students. Past academic records revealed that most students failed to gain excellent results for this course. Based on the first-hand information given by the teaching lecturers, the common failure rate of this course ranging from 6% to 35% for the past five years. Thus, the application of a visual novel in a classroom is expected to transform academic learning, particularly in a case of a “dry” course like PSA to an easier method, more learner-centered, more enjoyable, more interesting and consequently provide a more effective learning experience for students.

LITERATURE REVIEW

Visual novel- an overview

A visual novel (eg. Picture 1) is an interactive game genre, which originated in Japan (Lebowitz

& Klug, 2011). It features a text-based story with the narrative style of literature and interactivity aided by static or sprite-based visuals. The sprites most often use anime-style art or occasionally live-action stills, and sometimes even video footage. As the name might suggest, they resemble mixed-media novels.



Picture 1: A screenshot of a visual novel for Public Sector Accounting course

Visual novels are distinguished from other game types by their generally minimal gameplay. Typically, the majority of player interaction is limited to clicking to keep the text, graphics, and sound moving, while making narrative choices along the way. Another main characteristic of visual novels is its strong emphasis on the prose, as the narration in visual novels is delivered through text. This characteristic makes playing visual novels similar to reading a book (Lebowitz & Klug, 2011).

Most visual novels have multiple storylines and feature more than one ending. The mechanism behind these cases consists of multiple choices in which players must choose to move forward. Each choice would lead to different outcomes and the story leads towards the direction the player selected. However, there are visual novels that do not feature choices and player's action does not have any impact on the story. This kind of visual novel is called kinetic visual novels and it usually consists of only one storyline and ending.

Many visual novels use voice actors to breathe life into characters featured in the story. Often, the protagonist, the player obviously, is left unvoiced. Also, a visual novel usually takes hours to finish up the whole game as some of it features multiple endings and storylines. Some shorter visual novels do exist and many examples can be taken from fan-created works. Fan-created novel games are reasonably popular and there are many free game engines created for fans to construct their very own visual novels. Most notable of these free game engines is Ren'Py (Ren'Py, 2013).

Application of a visual novel - a brief review

Game-based learning such as visual novels has increasingly been used in the educational sector due to its ability to attract and engage students in learning processes (Liu & Chu, 2010). The entertainment value of games integrated into a visual novel allows it to offer instructional sound learning experience and facilitate sustained learning for students. Previously, a visual novel has been applied to facilitate the teaching of mathematics (Emi & Okuda, 2016). In this case, math

teaching materials were embedded into a storyline of a visual novel to deliver the conceptual contents of the course.

With regards to English education, Agusalim (2015) developed a visual novel game to facilitate teaching English (conversation using certain expressions) for the distance learners. The main objective of the visual novel is to allow students (distance learners) to practice using the most appropriate English expressions in a given situation. The interactive elements of the visual novel help to simulate real-life situations. Besides, the visual novel also acts as supplementary material to support the common teaching materials such as textbooks, lecture notes, and e-books.

Similarly, Amalo, Agusalim, & Murdaningtyas (2017) developed a visual novel to teach English expressions to students in one of the higher institutions in Indonesia. Instead of using a common click-based, their visual novel embedded speech recognition as the interaction trigger. Employing an experimental research design, results indicate that the visual novel provides positive outcomes towards the students' ability to master English expressions.

Interestingly, in the field of health care, a visual novel was also been used to enhance patients' empowerment of their health care (Yin, Ring, & Bickmore, 2012). In this study, the visual novel requires the players to interact with non-player characters in a virtual hospital environment to help the patient character recover from a heart attack. The plot of the visual novel is to expose and support the players' autonomy in making a decision and guide the players to take responsibility for their health as well as the virtual patient. Results indicate a significant improvement in empowerment among those players who have experienced playing games or who have shown a high level of engagement in playing the game (visual novel).

METHODOLOGY

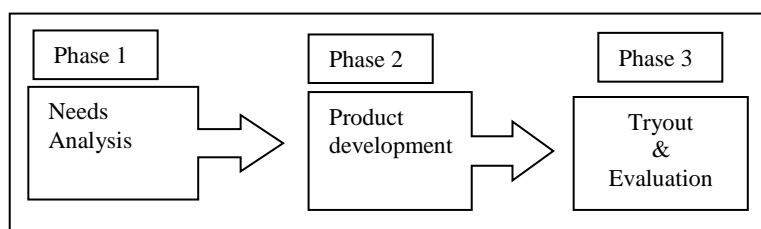


Figure 1: Developmental Research Method

The developmental research method (Richey & Klein, 2005) was adapted in developing this visual novel. It started with the identification of the problem or analysis phase, followed by a development of the product phase and ended up with a tryout and evaluation phase. (Figure 1). In the first phase, researchers conducted semi-structured interviews with the teaching lecturers. The objectives of these interviews were to find out the background of the course, challenges faced by the lecturer in teaching this course as well as the most difficult topics for students. The interviewed data were then used to assess the rationale of applying a visual novel in the Public Sector Accounting class. Information gathered in the first phase was also used in the second

phase; to develop the visual novel. During the period in which this research took place, only 27 students registered for the Public Sector Accounting course. As such, in the third phase, all of them were conveniently selected to tryout and evaluate the usage of the visual novel.

DISCUSSION

Figure 2 illustrates the conceptual framework of developing the visual novel for the Public Sector Accounting course at UiTM Kedah.

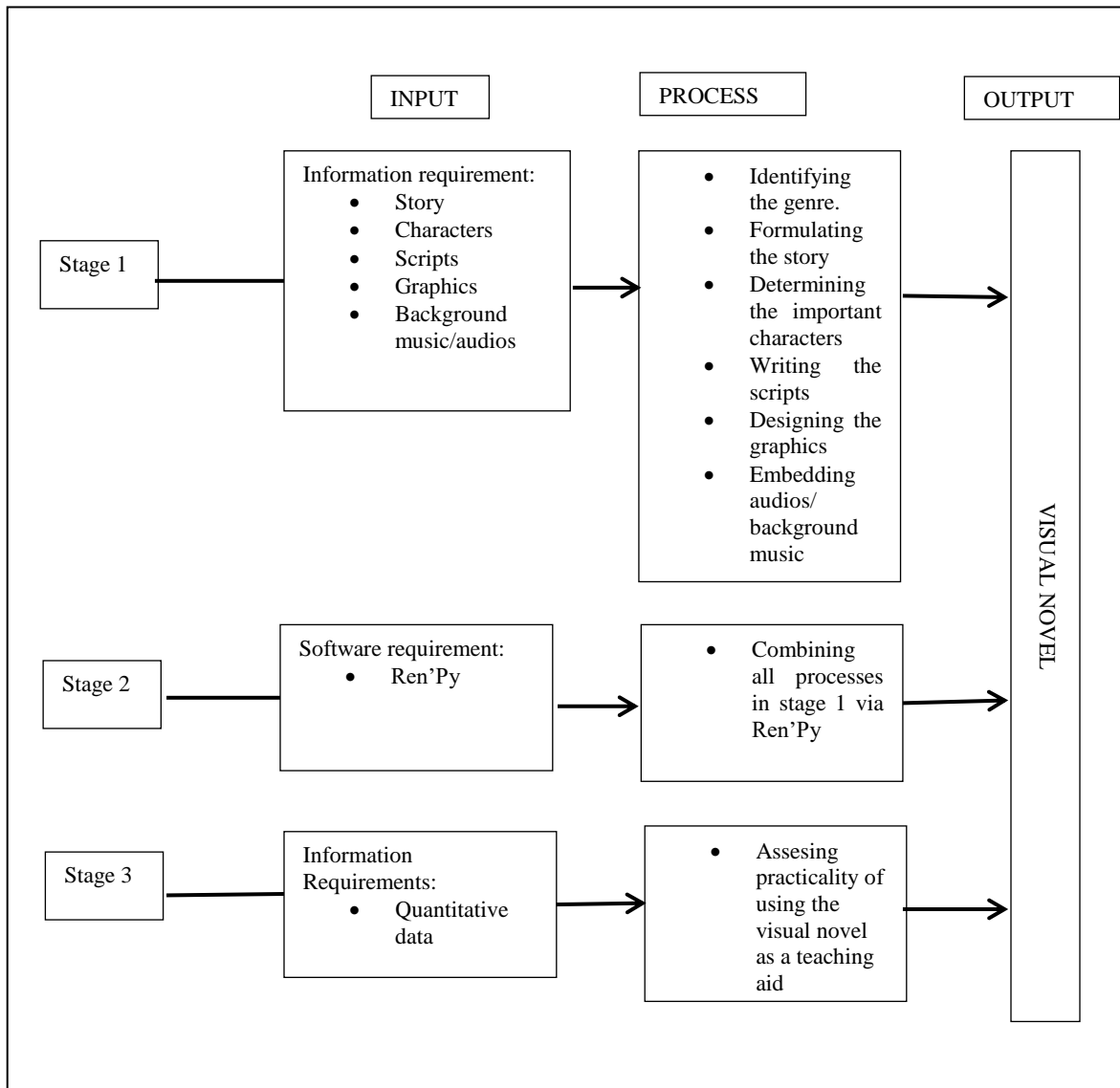


Figure 2: Conceptual Framework

Development of a visual novel – stage 1

The pivotal part in developing a visual novel is finding a suitable genre and story. Based on the chosen story, characters' dialogues will be extracted and consequently, a scenario is constructed. This part was carried out in stage 1 through an intensive review of literature from various sources. For this study, the researchers decided to choose the content of the Public Sector Accounting (PSA) course as the genre of the story (Picture 2). This story was adapted and based on the Public Sector Accounting textbook. One main character, Dalilah (Picture 3), was created with an appropriate role that fit into the genre.



Picture 2: A screenshot of the content of public sector accounting course



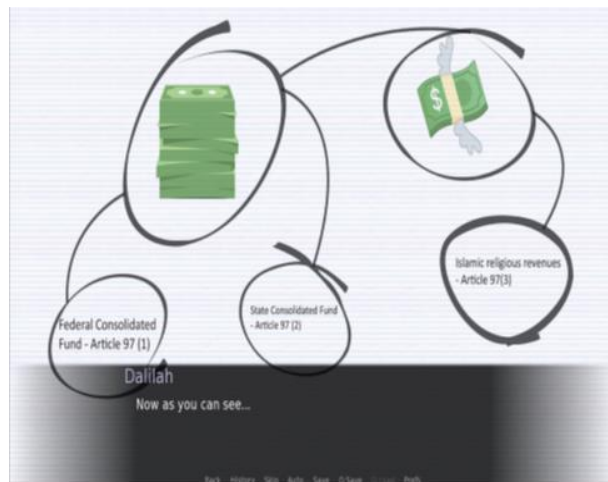
Picture 3: A screenshot of Dalilah (the main virtual character)

Development of a visual novel – stage 2

The most tedious part of developing this visual novel is in stage 2. Here, the scenario is defined and together with the character, the researchers need to illustrate and digitally render the backgrounds and the character sprites using Adobe Photoshop. At this stage, it is important to ensure that the background of the character sprites must be transparent in order not to overlay the background scenery that is going to be used in Ren'Py.

Along the way, the background music and sound effects were added to the Ren'Py system. Then, the background, the character sprites, the music, and sound effects are stored in the game script folder of the visual novel.

As for the PSA visual novel, in brief, the story is about you as the player learning about one of the sub-topic in PSA course. The game starts with a scenario of a semester and you as the player are thinking of the test that will be held soon. Then you would be introduced to the main character, Dalilah. The game continues normally similar to what it would be in real life of a university student's learning PSA. As the player progresses, the main character, Dalilah would explain the content of the chosen sub-topic of PSA. The player's role is to find out and learn about that particular sub-topic of PSA. If necessary, the player could copy the lecture notes (Picture 4) provided in the visual novel.



Picture 4: A screenshot of a lecture note

Development of visual novel – stage 3

The objective of having stage 3 is to assess whether the created visual novel could be used as a teaching aid to create interest and sustained learning of the subject matter of PSA among students who are taking that course. Therefore, a quantitative approach through the use of the survey method was applied. The convenience sampling technique was applied to select the respondents. A total of 27 respondents from the Faculty of Accountancy took part in this survey (Table 1). The respondents were first asked to view the visual novel. After viewing, they were asked to answer a few related questions. Data were then analysed and presented in percentage form (Table 2).

Table 1
 Profile of Respondents

Demographic profile	Number of respondents	Percentage (%)
Gender:		
Male	6	22
Female	21	78
Age:		
19-22	23	85
23-25	4	15

Table 2
 Assessment of the visual novel

Questions	Strongly agree	Agree	Disagree	Strongly disagree
	Percentage (%)			
1. Do you think a visual novel is a good method of enhancing your understanding of the sub-topic in PSA?	14.8%	59.2%	18.5%	7.4%
2. Do you think the content (story, music, character, background) of the visual novel reflects the contents of the sub-topic in PSA course?	7.4%	74%	14.8%	3.7%
3. Do you agree that the visual novel could be an effective teaching aid in PSA class?	14.8%	70.3%	11.1%	3.7%
4. Are you willing to spend time reading the visual novel to enhance your knowledge about PSA?	11.1%	59.3%	18.5%	11.1%
5. Do you agree that the application of a visual novel makes the subject matter more interesting as compared to the traditional way of teaching (e.g. Chalk & talk)?	18.5%	74%	7.4%	0

Based on Table 2, it appears that most of the respondents provide a positive assessment of the usage of the visual novel as a teaching aid for PSA class. The majority of the respondents (74%) agree that the visual novel is a good method to be used in enhancing their understanding of the sub-topic in PSA class. About 81.4% think that the storyline reflects the contents of the sub-topic in PSA class and 85.1% agree that the visual novel could act as an effective teaching aid. Only a small number of respondents (18.5%) felt that the contents of the visual novel such as the story, music, and character failed to reflect the content of the sub-topic in PSA. Furthermore, nearly three-quarters of the respondents (70.4%) indicate their willingness to spend time reading the visual novel to enhance their knowledge about PSA. Finally, almost all respondents (92.5%) agree that the application of the visual novel has successfully made the subject matter more interesting as compared to the existing common method of teaching.

Previous studies posit that the deployment of innovative teaching methods such as

games in classrooms provides a positive impact on learning goals (Vlachopoulos & Makri, 2017; Bakan & Bakan, 2018). It is also worth noting, in the case of a visual novel, as the story progresses, students will be indirectly exposed to other real-life issues such as friendship, decision making skill and ethical values. Taken together, the application of a visual novel in a classroom not only helps in making the course more interesting but also teach students about other aspects of life.

CONCLUSION

Aligned with Sustainable Development Goal's (SDG) goal number 4-education for sustainable development, this project reflects the effort made in finding an alternative way to improve teaching methods. It is hoped that the application of a visual novel as a teaching aid could further enhance the delivering quality of the subject matter to students. Indeed, the findings indicate the positive prospects of using a visual novel as a teaching aid in teaching "dry" courses like Public Sector Accounting. Most probably, its interactive features, breathtaking images, and characters help stimulate and sustain students' interest in the subject matter of the course.

There are two main limitations of this project. First, the respondents of the survey consist of students taking Public Sector Accounting classes at Universiti Teknologi MARA (UiTM) Kedah, thus limit the robustness of the findings. In the future, a larger sample size should be employed to improve the quality of the findings. Secondly, this research was carried out without having the proper financial support or research grant. Should there be better financial support, the methodology and the development process of the visual novel could be further improved. For instance, an experimental research design could be carried out to empirically test the effectiveness of using this visual novel. Nevertheless, the findings of this project highlight a new perspective of deploying a visual novel as an innovative teaching aid in the Public Sector Accounting class.

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About the Authors

Dr Intan Marzita Saidon is a Senior Lecturer at the Faculty of Accountancy, Universiti Teknologi MARA (UiTM) Kedah, Malaysia. She has more than twenty years of experience teaching various accounting courses in UiTM. She obtained her first degree from Northumbria University, United Kingdom and holds a Master and Ph.D. degree from Curtin University, Australia. She is an associate member of the Malaysian Institute of Accountants. Her present research interests include ethics, strategic management, and accounting education.

Ms Saluana Che Salleh is a Senior Lecturer at the Faculty of Accountancy, Universiti Teknologi MARA (UiTM) Kedah, Malaysia. She has a thirty-year experience in teaching Public Sector Accounting and Management Accounting. She was a co-author of the book title "Public Sector Accounting: Malaysian Context". She obtained her Master of Accounting from Curtin University, Australia.

Dr Nadzri Ab Ghani is a Senior Lecturer at the Faculty of Accountancy, Universiti Teknologi MARA (UiTM), Kedah, Malaysia. He has been with UiTM for more than fifteen years and before joining UiTM he was a lecturer at Institut Teknologi Tun Abdul Razak, Malaysia. He holds a Ph.D. in Corporate Governance (specifically in the area of whistle-blowing) from Curtin University, Australia. He is an active researcher and his research interests include whistle-blowing, supply chain management, and accounting education.