

Development of a Two-dimensional Animation for Business Law: Elements of a Valid Contract

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Abstract—Elements of a valid contract is an important topic in corporate law. Since there are so many elements and related case studies, some students have difficulty remembering all the elements. Therefore, an animation will contribute to explaining all the elements in simpler terms, help the students remember the relevant case studies, and help lecturers teach students in an easier and more interactive way. An investigation on a 2D animation design and its effectiveness for corporate law and commerce learning is presented in this article. This paper aims to examine the 2D animation principle in animated explainer videos. In addition, the objective of this research is to develop an animation and evaluate the effectiveness of the 2D animation for Business Law teaching and learning. A comprehensive analysis of the 2D animation used in Business Law learning which focusing on spreading the importance of student understanding and motivation in Business Law course using a 2D animated approach is the expected outcome of this paper. The project collaborates with the Department of Commerce, Politeknik Melaka, Malaysia, for content expertise and testing. The Multimedia Production Process is the methodology used for the development of this research work, and the ADDIE Model is applied for the instructional design. The application is developed using Adobe After Effects, Adobe Premiere Pro, Adobe Media Encoder, and the Audacity platform. The contribution of this study is obvious, as the resulting outcomes can be used as guidelines for best practises of learning styles. The implications of this study will impact teaching and learning and increase understanding. This research is expected to improve teaching delivery while also increasing user understanding and motivation to learn.

Keywords—2D animation; business law; elements of a valid contract; teaching and learning; multimedia

I. INTRODUCTION

Elements of a valid contract is one of the many topics delivered in corporate law that every business and commerce student should be aware of. It has a lot of key factors and a number of case studies that need to be related to each of the elements [1], making it harder for students to understand and memorise each element and their relevant cases. It also gets progressively harder for lecturers to provide a simpler way for their students to understand the topic. This work is to develop a 2D animation that acts as a medium for business students and lecturers to effectively remember relevant cases based on the elements of a valid contract. Elements of a valid contract is a crucial topic in corporate law that every business student must understand and memorise. Due to the many elements and relevant case studies [3, 4], some students are having a hard time memorising all the elements. This animation that will be

delivered will focus more on explaining all the elements in simpler terms, helping them remember the relevant case studies, and helping the lecturers teach the students in a simpler and more interactive way.

This animation provided simplified descriptions of the Elements of a Valid Contract to facilitate the retention of important case studies among business law students and to assist lecturers in delivering interactive and comprehensive lessons. It is envisaged that the proposed work would assist in providing an effective teaching delivery to the students and lecturers in the form of 2D animated video.

The organisation of this paper is as follows: The existing system and related work on Business Law and two-dimensional animation are presented in Section II. Section III defines the overall methodology of this research work in detail. The implementation of the research work is presented in Section IV, while Section V presents the discussion. Finally, Section VI presents the conclusion and future work.

II. LITERATURE REVIEW

Elements of a valid contract consist of six essential elements, which are offer, acceptance, consideration, intention of making legal relation, certainty of the contract, and capacity and legality [1]. All these elements make up one valid contract.

Meanwhile, animation is a technique that manipulates figures to make them appear to move. Most animations today are created using computer-generated imagery, which has allowed multiple storytellers to deliver their stories in a more creative and fun way. Visibly, it provides a whole new method of expression and innovation, but on a more practical level, the evolution of movement attracts more attention than static images [2]. Visual designers can expand their creativity far beyond what the world allows them to do through liveliness. They can create sketches that draw a crowd as well as sketches that help the group understand the world better. Other researchers have presented materials that can assist in law education. For example, Boulton vs. Jones case is presented in [3], while the case between Hyde and Wrench is presented in [4]. The case between David and Noorazman is presented in Malayan Law Journal Reports [5], also Balfour v Balfour case is reported in [6]. Other cases, such as Karuppan Chetty v Suah Thian and Tan Hee Juan v The Boon Keat are reported in [7] and [8], respectively. Meanwhile, there are a lot of research works reporting on the animation usage, mainly for educational purposes. The development and evaluation of a 2D animated for therapy of verbal apraxia have been

presented in [9] and [10]. An interactive content development using a 2D animation for depression awareness among tertiary students is explained in [11]. Meanwhile, the usage of animation in education and report generation are presented in [12] and [13]. A related domain to this proposed work which is the production process of an animated explainer video is discussed in [14].

Also, there have been several literature reporting the development of law education resources. Three existing systems will be discussed here: the David Jaroszewski videos on Youtube, Malaysia Company Law: Principles and Practices, and Introduction to the Law of Contract.

David Jaroszewski is a lawyer who practises law in Texas and has 40 years of community college teaching and leadership experience as a classroom instructor, department chair, and dean. He opened his YouTube channel back in January 2013 to make videos about various legal topics and teach the community about the basic concepts of each topic [15]. Fig. 1 shows a screenshot of the video.

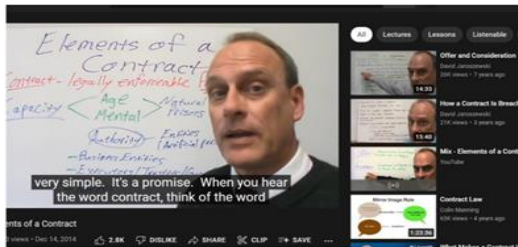


Fig. 1. Elements of a contract.

The Malaysia Company Law: Principles and Practices, 3rd Edition, provides a detailed analysis of the core company law principles, incorporating amendments in 2019 to the Companies Act 2016. The materials cover an extensive number of reported cases with extracts of significant dicta and relevant statutory provisions, combining the discussion of the Companies Act 2016 and the previous Companies Act 1965 [16]. Together with the thoughtful use of tables, diagrams, and flowcharts, this publication enables readers to engage in a critical examination of the law as it is and as it ought to be. Fig. 2 shows the cover page of the Malaysia Company Law book.

Introduction to the Law of Contract by Sarah Field is a user-friendly book that provides a comprehensive, clear, and straightforward account of what is required for the formation of a valid contract [17]. Fig. 3 shows the cover page of the Introduction of the Law of Contract.

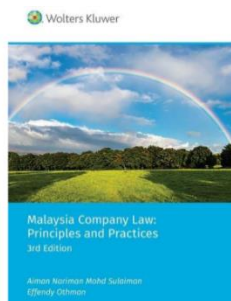


Fig. 2. Malaysia Company Law: Principles and practices.

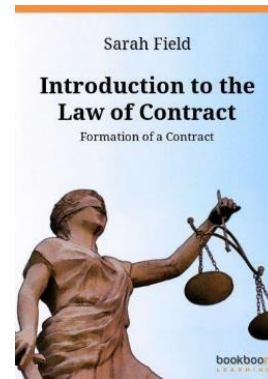


Fig. 3. Introduction to the law of contract.

III. METHODOLOGY

Multimedia Production Process is the methodology used in this research work. This model was chosen for this research work because it addresses the use of different media, such as images, text, animation, audio and video, to enhance the impact of message. The goals and objectives of the research work, as well as the intended audience, are all decided during development. Basic aims, objectives, and matrix of an activity would be constructed after settling on a multimedia project theme. Specific aims or general assertions of desired work outcomes are often global in multimedia works, whereas the objectives of work target adding customer association to a two-dimensional animation using the approach of digital animation.

The first phase is pre-production, which includes concept creation, design boards, storyboards, script writing, and character creation. The concept is the first item that is generated. To create a script, everyone involved in the work will explore different ideas for the animation. Before getting too ambitious, it is critical to understand the limitations of the animation and programme used. The animation's authors will write a narrative that will allow the animation to establish a storyline. A script is the foundation of an animation film, and it will serve as a point of reference throughout the animation production process. Captions that summarise the story's outline will be included in the storyboards. This aids in camera location as well as animation timing. It also aids in making decisions about what works and what does not.

The production phase comes next, which entails creating and implementing the storyboard into a multimedia work. During the production phase, the necessary hardware was installed, assets were transferred to the unit, also code was completed, among other things. Multimedia element utilised will be implemented, and flow charts also storyboards developed on this work will determine the technology to be used, as well as an existing system analysis and the current system limitation, all of which are the requirement part.

Lastly, there is the post-production stage, where the video's final appearance is determined. The full process of developing and modifying sound mixing, background music, and visuals, including lower thirds, is referred to as postproduction. When the video is finished, the multimedia program goes to alpha testing and beta testing. After it has

been tested and updated, the developed application transfers to the stage called packaging. It may be available through a DVD or CD-ROM, or could be made available on the Internet and shared on sites like YouTube.

A. Analysis

A YouTube video called 'Elements of a Contract' made by David Jaroszewski and the Malaysia Company Law book will be the inspiration for this animation work. The reason for this is that their content is very simple to understand but lacks graphic content to assist students who are visual learners in memorising and understanding the context of the video. Table I presents the comparison of existing systems.

It can be concluded from Table I that various applications were proposed in order to produce an efficient and interactive learning tool. However, these applications still have lacunae or spaces for improvement. The contents of the listed research works, for example, are delivered in non-interactive video and manual books. In addition, the usage of multimedia elements is not fully implemented in those applications. Therefore, this proposed research implements a 2D animation approach for delivering the contents. The implementation of animation is necessary to overcome the limitations of the current delivery method. The proposed techniques in this research will most notably benefit the realm of multimedia in a number of areas or ways that include the provision of an interactive method for effectively displaying complex contents in the commerce and law fields.

The project specifications look at the framework that will be built. It will detail the actions, procedures, and other requirements that must be met by the work. The specifications will then be judged according to the gathered requirements also the project's methodology. One of the requirements of the project is a clear task understanding that must be accomplished.

The gathering requirements is among the most vital step for the process of data organisation and transmission. An

interview was performed with a corporate law lecturer from Politeknik Melaka, Malaysia as the subject matter expert. All the work's features, including proposed interactions, source analysis and raw data were addressed during requirement collection. This work's basic methodology will be investigated as well. The study's findings will be used to further the field of animation.

The duration of this proposed application is about five minutes to help the students understand the content of the video even better. The storyline of the work is that there would be a businesswoman who would be telling the relevant cases in a storytelling way to make it easier to understand. All the characters and objects will be designed. As a result, during the analysis process, the researcher should conduct requirements consumer, target user, and stockholder. For this work, the researcher interviewed a lecturer from a local college who teaches that specific subject. The interviewee's information is listed in Table II.

B. Design

During the design phase, the animator will create and structure the animation. The animator and viewer will be able to get a general idea of the project interface by sketching the concept, layout and design. This phase also goes over storyboard design which is necessary for animation because it serves as a reference until the production process is completed. This stage is crucial for determining all the research work's specifications.

In delivering the message to the viewer, characters play an important role. If the character fails to do so, the story will turn into ineffective and dull. Adobe Illustrator was used to create the design for better quality. Amongst the important character profiles designed for this work are businesswoman, defendant, plaintiff, third party, Mrs. Balfour, teenager, land, money, housing estate, handshake for agreement, goods, contract and court.

TABLE I. COMPARISON OF EXISTING SYSTEM

Comparison	David Jaroszewski videos	Malaysia Company Law: Principles and Practices, 3 rd Ed	Introduction to the Law of Contract	2D Animation Business Law: Elements of a Valid Contract
Interactive	Non-Interactive	Non- Interactive	Non-Interactive	Non-Interactive
Types of Product	Video explainer	Book	Book	2D animation
Interface	Simple	Basic	Basic	Attractive and Simple
Sound	Good audio quality	-	-	Background music and storyteller
Price	Free	Paid	Free	Free
Scope	General	Students/Lecturers	Students	Students
Language	English	English	English	English
Ease of Use	Yes	Yes	No	Yes
Strength	Understandable and simple	Detailed explanation	Detailed explanation	Good visual design, appealing animation with background music
Limitation	No visual help	Long and complicated sentences	Long and complicated sentences	-



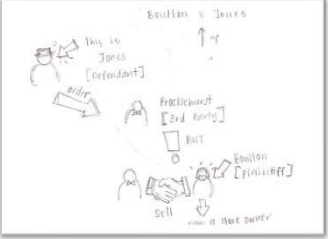
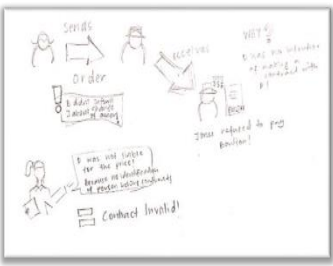
TABLE II. CONTENT VERIFICATION FORM


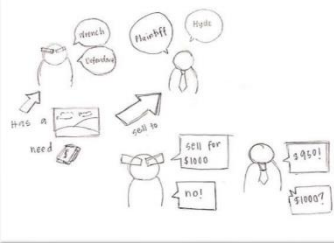
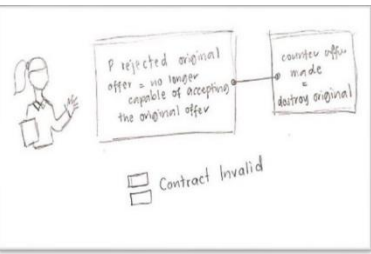
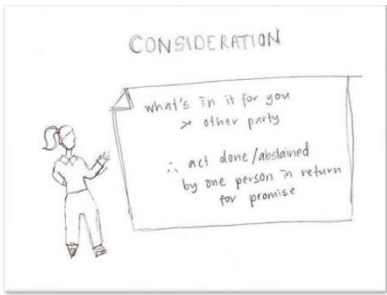
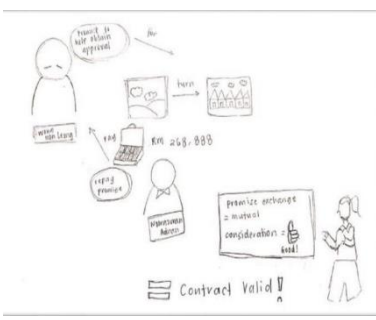
Component	Details
Name:	Madam Hazira binti Saleh
Company Name:	Politeknik Melaka
Position:	Principal Lecturer

C. Implementation

This part details the media creation, where it will cover the processes of media creation and media component editing before incorporating them in the media integration section later. Audio, graphics, text, and animation will be produced as part of this process. The storyboard of all the modules and the characters profiles are presented below in Tables III and IV, respectively.






TABLE III. STORYBOARD OF ALL MODULES









	<p>Scene: Main Title Description: Business Law: Elements of a Valid Contract (Relevant Cases) Sound: Background Music Time: 6 seconds</p>
	<p>Scene: Module 1 Description: Offer definitions Sound: Background Sound</p>
	<p>Scene: relevant case 1 Description: Boulton v Jones Sound: Background Sound</p>
	<p>Scene: relevant case 1 Description: continuation of the case and case issue Sound: Background Sound</p>

	<p>Scene: Module 2 Description: Acceptance definitions Sound: Background Sound</p>
	<p>Scene: relevant case 2 Description: Wrench v Hyde Sound: Background Sound</p>
	<p>Scene: relevant case 2 Description: case issue and why the contract invalid Sound: Background Sound</p>
	<p>Scene: Module 3 Description: Consideration definitions Sound: Background Sound</p>
	<p>Scene: relevant case 3 Description: Wong Hon Leong v Noorazman Adnan and case issue Sound: Background Sound</p>

	<p>Scene: Module 4 Description: Intentions to Create Legal Relations definitions Sound: Background Sound</p>		<p>Scene: relevant case 5 Description: case issue and why the contract invalid Sound: Background Sound</p>
	<p>Scene: relevant case 4 Description: Balfour v Balfour Sound: Background Sound</p>		<p>Scene: Module 6 Description: Capacity & Legality definitions Sound: Background Sound</p>
	<p>Scene: relevant case 4 Description: case issue and why the contract invalid Sound: Background Sound</p>		<p>Scene: relevant case 6 Description: Tan Hee Juan v Teh Boon Keat Sound: Background Sound</p>
	<p>Scene: Module 5 Description: Certainty definitions Sound: Background Sound</p>		<p>Scene: relevant case 6 Description: case issue and why the contract invalid Sound: Background Sound</p>
	<p>Scene: relevant case 5 Description: Karuppan Chetty v Suah Thian Sound: Background Sound</p>		

TABLE IV. CHARACTER PROFILES

Profiles	Character
Host	
Defendant	
Plaintiff	
Third Party (Module 1)	
Mrs Balfour (Module 4)	

Teenager (Module 6)	
Land	
Money	
Housing estate	
Handshake for agreement	
Goods (Module 1)	
Contract	
Court	

1) *Text production*: Text is vital to the creation of this animation, as it provides all the information needed for the viewers to understand the context of the work. In this venture, the words and sentences are simplified in order to make them clearer and more precise. The text was created using Adobe After Effects. For this animation, the font types Times New Roman, Georgia, and Impact are chosen in order to create the typewriting style.

2) *Graphic production*: The process of editing and design is in production of graphic for a two-dimensional animation, in which graphics or images are used. The characters and bitmap images are formed as a two-dimensional image using Adobe Illustrator, while some characters were taken from the Freepik website. The 2D images were used for this animation.

3) *Animation production*: In this section, the storyline and characters were created according to the storyboard that had already been done in the pre-production phase. All the characters were formed, colored, and edited in Adobe Illustrator. Then, the movements of the characters are done using Adobe After Effects. Then, the animation is saved as a clip of movie format. For all the objects and characters designed in this animation work, some have been done to make the animation process easier. All the assets are then saved in Adobe Illustrator. Besides, transitions are used for the movement of the characters as a way to make the characters move smoothly onto the canvas and make up the animation. The combining of movie clips and files is implemented in Adobe Premiere Pro, and the rendering file is an mp4 file. The targeted audience can then play this project on any sort of device, whether it be a laptop or their smartphones.

4) *Audio production*: This application has a voiceover that is recorded using the Audacity software, which is then imported into the animation using Adobe Premiere Pro. The background audio is taken from a non-copyrighted sound from the Internet.

5) *Product configuration management*: This work made use of Adobe Illustrator for illustration and the objects and characters were drawn in layers called vector layers. The characters and objects will then be animated frame by frame in the same software after they have been finished drawing. This is where all the coloring and shading takes place. After finishing the animation process, the animation is later exported to a software named Adobe After Effects to be animated. Finally, the animation will then be exported as an mp4 video format.

The status of implementation aims to keep track the process of development for the developed work. It will discuss the progress of development using the Gantt chart. Table V will show the status of development.

TABLE V. IMPLEMENTATION STATUS

Module	Duration	Description
Character design and modelling	1 week	The character and object that will be used will be designed
Animation scenes creation	3 weeks	The frame by frame animation using Adobe After Effects will be created
Background input and sound effect	1 week	Sound effect and sound for background will be chosen and input into the animation
Scene compiling in Adobe Premiere Pro	1 week	The animated scenes will be compiled to Premiere Pro

IV. DEVELOPMENT

Fig. 4 to 12 show some of the interfaces developed in the application.



Fig. 4. Interface of the main page.

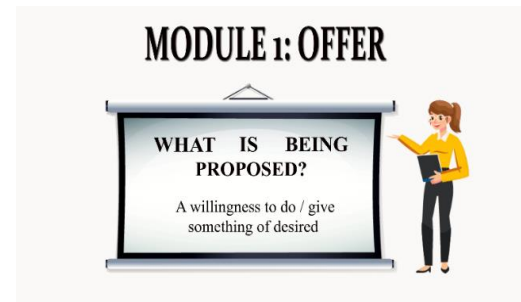


Fig. 5. Interface of offer module.

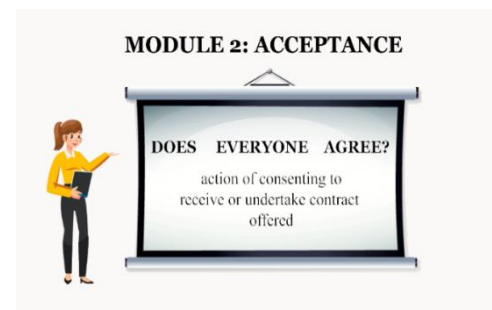


Fig. 6. Interface of acceptance module.

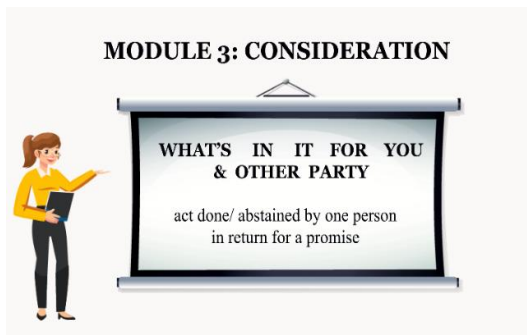


Fig. 7. Interface of consideration module.



Fig. 12. Interface of memorisation module.

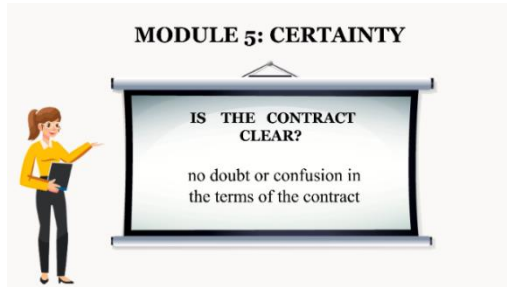


Fig. 8. Interface of certainty module.



Fig. 9. Interface of intention to create legal relations module.



Fig. 10. Interface of capacity and legality module.



Fig. 11. Interface of balfour v balfour case module.

V. DISCUSSION

This paper presented the essential phases of analysis, design and development of the Business Law two-dimensional animation. A comprehensive explanation of the evaluation phase of the application is presented in [18]. The evaluation comprised five major evaluation components, including learnability, usability, accessibility, functionality, and effectiveness. The findings of the usability testing performed revealed that the majority of respondents were pleased with the outcomes of the animation. Also, the findings of the testing in [18] indicate that the outcomes of the 2D animation may facilitate and overcome the limitation from the current work proposed by other researchers in [15-17]. It is envisioned that this proposed animated video will assist teachers and students as an effective teaching and learning platform.

The main aim of this work is to help the students achieve a better understanding of the Elements of a Valid Contract topic and provide a way of memorising the relevant cases in each element. In a nutshell, this method of learning is proven to be able to assist students in understanding the Elements of a Valid Contract topic and memorising its relevant cases more effectively, hence the objective is reached.

VI. CONCLUSION

To conclude this research work, the animation was indeed proven to be successful. Despite a little shortcoming, the demand for the animation work was well addressed. Throughout the analysis phase, the animation and systems were investigated to determine the elements that could be required to build an effective teaching animation system.

The proposed techniques in this research will mostly notably benefit the realm of multimedia in a number of areas or ways that include the provision of an interactive method for effectively displaying complex contents in the social sciences field. The proposed work will be a benchmark and can be enhanced in other major complex study fields and topics in order to assist course delivery among tertiary students and lecturers. The application could be enhanced with other advanced approaches for more convenient accessibility and wider usability.

A few enhancement suggestions made in order to improve the application capabilities and execution in the future, such as making a separate video for each Element of a Valid Contract and different character designs for different character names that are featured in each different case. Besides, it is suggested

to improve the sound quality of this animation by slowing down the narration to produce clearer and more precise explanation.

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