

SPM to UTHM: An Animated Guide to Your Tertiary Education Journey (*HALATUJU*)

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Abstract

The transition from secondary to tertiary education in Malaysia has seen a concerning decline, with many SPM graduates preferred to enter the workforce rather than pursue further studies. Addressing this issue, this project presents the development of “*Halatuju*”, a 2D animated promotional video designed to guide and encourage SPM graduates to consider tertiary education especially to Universiti Tun Hussein Onn Malaysia (UTHM). The animation highlights the benefits of tertiary education and provides detailed information about UTHM’s diploma programs. The study adopted quantitative methodology while using a structured animation pipeline, comprising pre-production, production, and post-production phases in developing and access the effectiveness of “*Halatuju*” promotional video. Hence, the project integrates engaging character design, storytelling, and culturally relevant themes to appeal to its young audience. The effectiveness of the animation was assessed through a survey of 30 high school students aged 16 to 19. Results indicate high engagement and positive reception, especially in character design (80%), theme (73.3%), and color usage (73.3%). Furthermore, most respondents reported an increased understanding of tertiary education and its benefits. The study concludes that 2D animated content can significantly enhance the appeal and comprehension of educational information among school leavers. While challenges such as production cost and animator shortages remain, the project demonstrates the potential of animation as an innovative educational outreach tool. The findings support continued use and development of 2D animated promotional video to bridge informational gaps and motivate academic progression among Malaysian youth.

1. Introduction

Education is a crucial pillar of personal and societal growth, offering individuals the tools to think critically, solve problems, and contribute meaningfully to their communities [1]. It is a lifelong process that extends beyond formal schooling, encompassing informal and non-formal learning experiences. As society evolves with cultural shifts, economic demands, and technological advancements, education must also adapt to remain relevant and impactful. Tertiary education plays a vital role in equipping individuals with specialized knowledge and skills necessary for success in a rapidly changing global economy [2].

In Malaysia, a concerning trend has emerged: a decline in the number of SPM graduates pursuing tertiary education. This issue raises questions about the future of the national workforce and the effectiveness of existing education pathways [3]. Several factors contribute to this phenomenon, including financial constraints, uncertainty about job prospects, and lack of awareness about further study options. According to research conducted by Irma Wani Othman in 2023, highlights that high tuition fees and living costs often prevent students from continuing their tertiary education. Many opt to enter the workforce immediately, perceiving further studies as a costly and uncertain investment [4].

Despite these challenges, tertiary education remains essential. It not only deepens students' academic and technical knowledge but also enhances their employability, as supported by Jamil Salmi in 2017 [5], who notes that graduates with higher education qualifications often enjoy better job prospects and earning potential. Moreover, tertiary education fosters personal development, cultivating independence, communication skills, critical thinking, and resilience, all of which are crucial for navigating both professional and personal life successfully [2].

In response to the declining interest among SPM graduates, this project proposes an animated teaser and promotional content for UTHM's diploma and bachelor programs. Initiated by a request from the CeDS Dean, the animation aims to inspire high school graduates by showcasing the benefits of further education and offering clear information about the programs available. By addressing the barriers to continued learning and highlighting the value of tertiary education, the project seeks to guide students toward informed, confident decisions that align with their goals and potential.

1.1 Problem Statement

Transitioning to tertiary education after completing SPM is a critical phase for school leavers in Malaysia as they prepare to enter the workforce. However, many students face significant challenges when planning their future, often perceiving SPM as the endpoint of their educational journey [6]. This mindset leads to uncertainty and hesitation, with some students unsure of their next steps or lacking the motivation to continue their studies. As a result, there has been a noticeable decline in the number of students progressing to higher education [3].

Several underlying factors contribute to this issue. As identified by Irma Wani Othman 2023, financial instability is a primary barrier, making further education seem unaffordable or risky. In addition, external influences such as peer and family opinions can negatively impact decision-making [4]. Many students also express concerns about job security after graduation, questioning the value of higher education. Compounding this is a general lack of awareness about the pathways and advantages offered by tertiary education, which leaves students ill-equipped to make informed choices.

These challenges create a critical gap between secondary and tertiary education, which, if unaddressed, could have long-term implications for the nation's workforce and socio-economic development. Therefore, it is essential to improve access to information and provide clear, engaging guidance to SPM graduates. Helping them understand the benefits, opportunities, and potential outcomes of tertiary education can empower them to make confident and informed decisions about their academic and professional futures.

1.2 Objectives

- i. To create an effective animation video for SPM graduate students that guides them in deciding on their future education plan.
- ii. To attract the interest of targeting SPM graduates in pursuing their tertiary education.
- iii. To give information about the Diploma Studies Programs in UTHM; civil engineering, mechanical engineering, electrical engineering, information technology, animation technology, applied science and chemical engineering technology

1.3 Tertiary Education in Malaysia

Tertiary education in Malaysia has grown to meet the needs of a bigger population and a developing economy. With the creation of many public and private universities and plans like the National Higher Education Strategic Plan (NHESP) 2007-2020, tertiary education equips students with deep knowledge in their chosen field, and those with higher education generally have better career prospects and earn more than those with only secondary education. Malaysia aims to become a global education hub by enhancing access, quality, and internationalization of higher education [7]. Therefore, accessibility to higher education has significantly improved through scholarships, financial aid, and community colleges, enabling more students from diverse backgrounds to attend university. Meanwhile, the Malaysian Qualifications Agency (MQA), established in 2007, ensures the quality of higher education through the implementation of the Malaysian Qualifications Framework (MQF), which standardizes qualifications and accredits programs across institutions [8].

However, there are still some challenges, such as funding and resources. These are a big concern as more institutions and students put a strain on this burden to enroll in tertiary education. Despite the availability of

scholarships and loans, financial constraints remain a significant barrier. The cost of tuition, accommodation, and other related expenses can be problematic for students from low-income backgrounds [4]. Besides, many SPM graduates lack adequate information and guidance regarding their options for enrollment in tertiary education. This gap can lead to under-informed decisions where students might not fully explore available opportunities or choose pathways that align with their strengths and interests [5].

Keeping quality consistent across a variety of institutions, especially with the fast growth of private colleges, is also tough. Plus, there is a gap between what graduates learn and what the job market needs, so there is a need for better collaboration between institutes and employers to help students find jobs after they graduate [7]. Looking forward, tertiary education in Malaysia has new opportunities for using technology and boosting research. E-learning and digital resources can make education more accessible and engaging, while more investment in research and international partnerships can help Malaysia become a global education hub. Good policies and governance, along with continuous planning and stakeholder engagement, will be key to tackling challenges and seizing new opportunities. With ongoing support and investment, Malaysia's higher education sector can keep growing and contributing to the country's development and economy on a global level [9].

1.4 Animation for Advertisements

Animation has become a major tool in Malaysia's advertising world, evolving from traditional hand-drawn techniques to modern digital animation. This development is caused by technology and digital media advancements. In Malaysia, the use of animation in advertisements has grown significantly, driven by advancements in technology and the increasing digital consumption among youths. Early pioneers laid the groundwork, helping to build a skilled workforce that can create amazing content, animated ads with their vibrant colours, dynamic movements, and creative storytelling have proven to be more engaging and memorable, especially for younger audiences. Plus, incorporating local culture and traditions into animations has made ads more relatable and impactful [10].

Research indicates that animated advertisements are more visually appealing to high school students compared to static images or live-action videos. Watching animated ads is positively correlated with purchasing power, and animation also suggests that advertising plays an important role in high-involvement individuals [11]. The vibrant colours, dynamic movements, and creative elements inherent in animation naturally draw the attention of younger audiences. High school students in Malaysia showed higher preferences for animated advertisements over non-animated ones, citing their engaging nature and entertainment value. Moreover, animations often convey messages through storytelling, which can create a stronger emotional connection with the audience. High school students, who are in the formative stage of emotional and social development, tend to resonate more with narratives that include humour, adventure and relatable characters. The ability of animation to evoke emotions and create memorable experiences makes it an effective medium for advertising towards this demographic [10].

Besides, animated advertisements have been found to enhance cognitive retention among high school students. The use of animations helps in breaking down complex information into memorable formats. Students were able to recall details from animated ads more accurately than from traditional advertisements. The combination of visual and auditory stimuli in animations aids in better retention of information [12]. But there are some challenges too. One of the challenges of using animation in advertising is the potential for oversaturation. With the increasing number of animated ads, there is a risk that high school students may become bored with them. High production costs can be a big hurdle, particularly for small and medium-sized businesses, making it tough for them to use animation effectively. The market is also getting crowded with animated ads, which can make it harder for individual campaigns to stand out. Besides, there is a shortage of skilled animators and technical experts, which can affect the quality and creativity of the ads [11].

Advertising animation has a significant impact on high school students in Malaysia. It enhances engagement, retention and cultural relevance and influences purchasing behaviour. While there are challenges such as over-saturation and production costs, the prospects with technological advancements and personalisation are promising. By continuously innovating and adapting to the preferences of high school students, advertisers can effectively use animation to capture the attention and loyalty of the audience.

2. Methodology

The research involves quantitative methodology by delivering questionnaires to high school students aged 16 to 19. There were 30 respondents who answered the questionnaire through Google Forms. The questionnaire aimed to evaluate the effectiveness of *Halatuju* animation video. Since the main objective of this research is to develop an impactful animation that serves as an advertising medium for tertiary education to SPM graduates, specifically focusing on UTHM as their preferred choice and detailing the diploma programs offered. There are two sections. The first section seeks opinions from SPM graduates on various aspects of animation video, including character design, theme, art style, and colour usage. This section aims to optimize the animation's effectiveness in promoting

tertiary education to SPM graduates. The second section assesses the knowledge levels of SPM graduates regarding tertiary education, its benefits, UTHM, and its diploma programs. Each section contains four questions and employs descriptive statistics for data analysis. Descriptive analysis involves systematically examining data to summarize key features in a clear and comprehensible manner.

3. 2D Animation Development Process

The 2D animation is created by following a carefully structured development process. A well-organized roadmap ensures the animation progresses smoothly from beginning to completion. By following this well-defined procedure, the workflow becomes more efficient, seamless, and strategically organized, ensuring a high-quality final product. The 2D animation development process referred to as animation pipeline involves three main stages: (i) pre-production, (ii) production, (iii) post-production [13].

3.1 Pre-Production

The pre-production is the first stages that lays the foundation for the entire project. It involves planning and organizing before actual animation production begins. There are five minor development process involved: (i) ideas generation and storyline, (ii) scriptwriting, (iii) storyboarding, (iv) animatic storyboard and (v) character design.

3.1.1 Ideas Generation and Storyline

Following a request from the Bachelor of Diploma dean, researcher initiated a collaborative brainstorming session with our supervisor to refine our *Halatuju* animation workflow. Together, we explored ideas, shaping the animation’s concept, storyline, and overall visual presentation. In addition to our discussions, we conducted thorough research and gathered valuable references to guide and strengthen *Halatuju* animation development process, ensuring a well-structured and impactful animation.

3.1.2 Scriptwriting

Once the storyline was established, the scriptwriting process began, transforming abstract ideas into structured words. This stage involved crafting detailed elements such as dialogues, character interactions, expressions, timing, and settings, as illustrated in Fig. 1. Additionally, we compiled a list of sound effects and music selections to complement the *Halatuju* animation, ensuring a well-rounded and immersive experience."

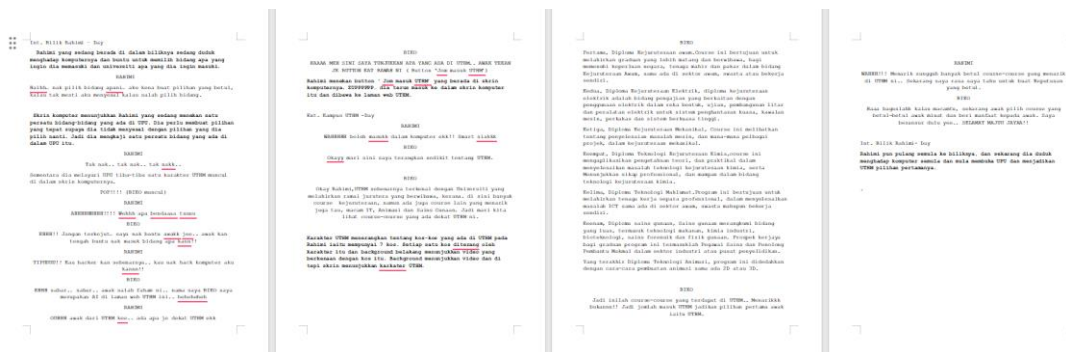


Fig. 1 *Halatuju* animation scriptwriting process

3.1.3 Storyboarding

Subsequently, a storyboard is developed based on the script in Fig. 1 by translated textual elements into visual representations, ensuring a clear and consistent vision of the narrative. During the storyboard creation process, critical decisions are made regarding camera angles, shot composition, character staging and placement, facial expressions, and key storytelling elements. This stage serves as a foundational framework for the *Halatuju* animation, facilitating a structured and visually compelling progression of scenes. Fig. 2 show a brief example of storyboard made for *Halatuju* animation.

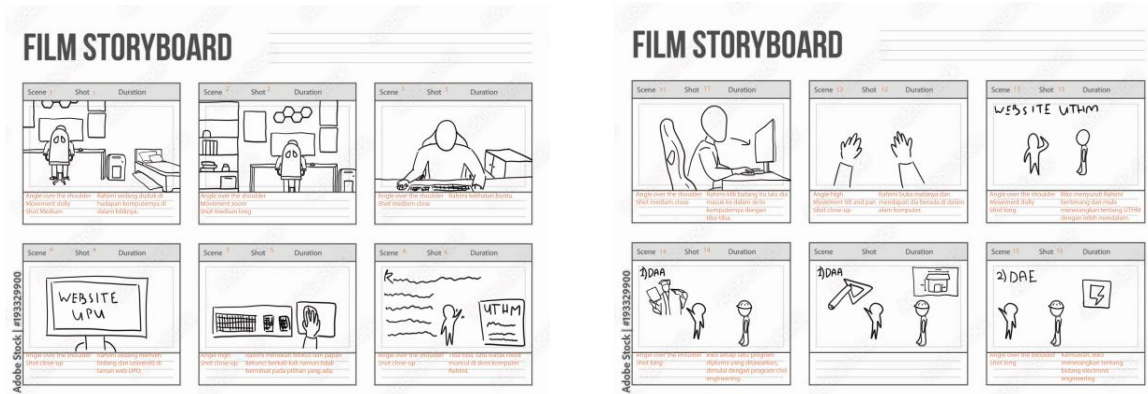


Fig. 2 Halatuju animation storyboard

3.1.4 Animatic Storyboard

Next, an animatic storyboard is developed, serving as a dynamic version of the storyboard to provide a clearer visualization of the *Halatuju* animation. The animatic integrates the storyboard, rough animation, music, and sound effects, offering a solid representation of the *Halatuju* animation's assets and elements. Hence, the selection of colour palettes, backgrounds, assets and elements to be used in *Halatuju* animation is also determined. This process allows for an initial assessment of cinematographic components, including camera shots, movements, angles, layout, and composition, ensuring a cohesive and well-structured visual presentation.

3.1.5 Character Design

The character design process begins with preliminary sketches based on UTHM vision, mission and goal to conceptualize the characters before finalizing the character sheets. During this stage, careful attention is given to various design elements, including character proportions, expressions, poses, colour palettes, artistic style, and overall aesthetic such in Fig. 3 and Fig. 4. Hence, discussion and approval also needed to be obtained from our client and supervisor. These considerations ensure consistency and coherence in the *Halatuju* animation, contributing to a visually compelling character development.

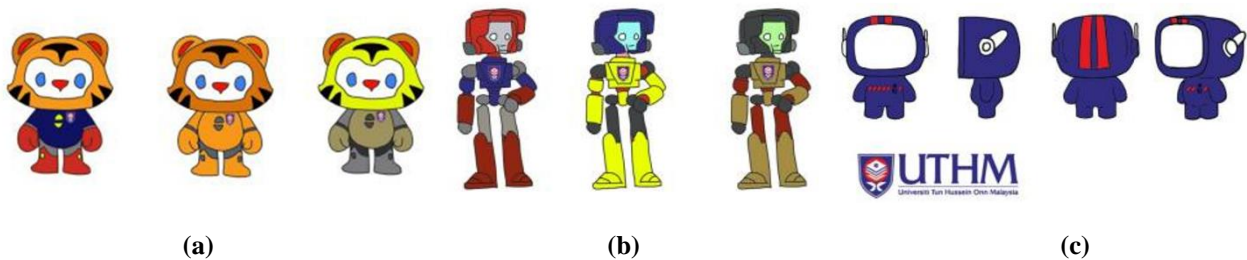


Fig. 3 Halatuju animation icon character "Biko" development (a) Initial character; (b) Enhancement character; (c) Finalize character

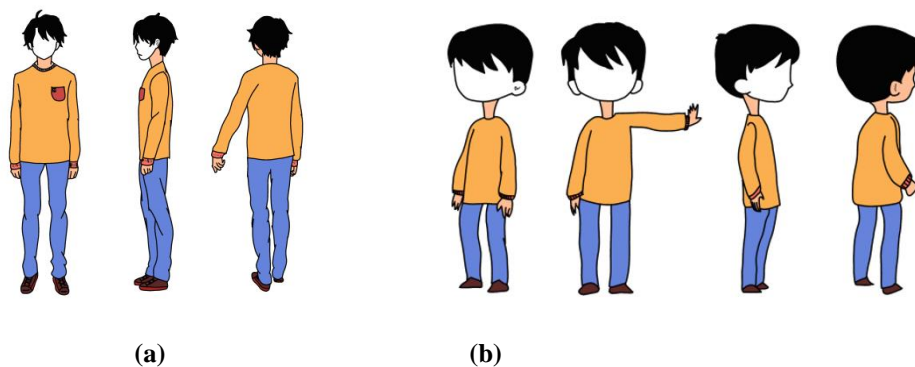


Fig. 4 Halatuju animation main character "Rahimi" development (a) Initial character; (b) Finalize character

3.2 Production

The production is the second phase in the animation development process. There are five minor development process involved: (i) background design, (ii) colouring, (iii) voice record, (iv) rigging, (v) key animation, and (vi) in-between.

3.2.1 Background Design

The background artist design *Halatuju* animation backgrounds in alignment with the storyboard, ensuring visual coherence and narrative consistency. Consideration of cinematographic elements is essential to optimize efficiency in creating props and assets required for the animation. Additionally, the background artist also applies the predetermined color palette established during the art concept in an animated storyboard phase. This ensuring stylistic harmony and enhancing the overall aesthetic quality of the *Halatuju* animation. In addition, *Halatuju* animation also includes 3D modeling environment render as 2D background image as in **Fig. 5**.



(a)

(b)

(c)

Fig. 5 *Halatuju* 3D modelling background design (a) 3D side view; (b) 3D front view; (c) 3D back view

3.2.2 Colouring

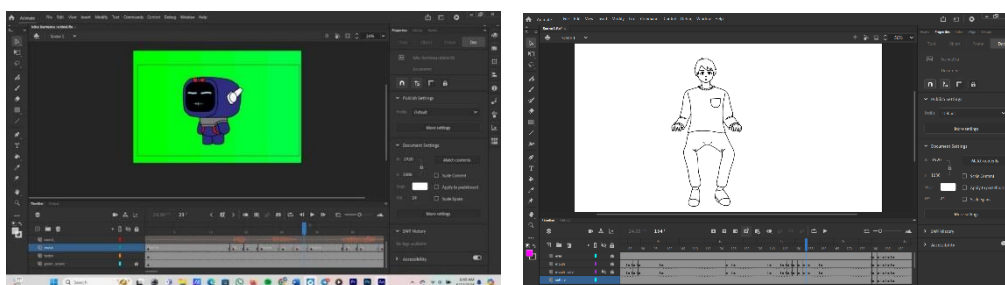
Once the animation drawings are finalized, the colour artist begins the details and complex digital colouring process, applying the predetermined colour palette based on the previous animatic storyboard process to ensure visual consistency through the entire *Halatuju* animation. Additionally, light and shadow effects are carefully incorporated to enhance depth, realism, and overall aesthetic quality, contributing to a polished and visually compelling assets, elements and backgrounds for *Halatuju* animation.

3.2.3 Voice Record

The voice actor for *Halatuju* animation uses each team member's voice to represent icon and character's voice in *Halatuju* animation. The dialogue will be based on the script created earlier and the voice will go through some editing process using Adobe Sound Booth software before being used.

3.2.4 Rigging

The rigging technique is a key animation technique that facilitates the movement of assets through specialized tools within computer software. The main icon "Biko" and main character "Rahimi" for *Halatuju* animation used rigging technique for animation scenes that require dynamic motion, ensuring efficiency in animation production while maintaining visual coherence and structural integrity. Fig. 6 (a) shows how the rigging technique was done in Adobe Animate software.



(a)

(b)

Fig. 6 Rigging and key animation process in Adobe Animate (a) Biko rigging process; (b) Rahimi Keyframing process

3.2.5 Key Animation

Meanwhile, the key animation process is carried out by our team members to illustrate essential key poses for each scene in *Halatuju* animation. A significant portion of the complex movements involving 'Biko' and 'Rahimi' in the scene were executed through key animation as illustrated in Fig. 6(b). Once the key animations in *Halatuju* animation were finalized, then it need to go through in-between technique for further refinement.

3.2.6 In-Between

Once, the finalized sequence of key animation is done. The process of in-between animation started. The key poses then fill with the in-between frames containing more precise drawings of movement to ensure smooth motion of movement in *Halatuju* animation. In-between technique requires our team members to accurately interpret the missing poses to maintain fluidity and consistency in character movement such as Fig. 7, thereby enhancing the overall visual coherence of the final version of *Halatuju* animation.

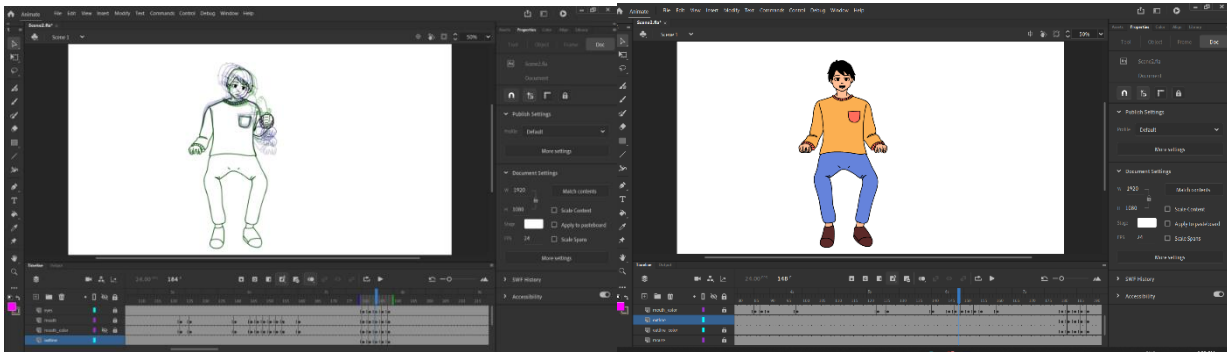


Fig. 7 In-betweening process in Adobe Animate

3.3 Post-Production

The post-production is the last phase in the 2D animation pipeline. There are five minor development process involved: (i) compositing, (ii) editing, (iii) visual effect, and (iv) final output.

3.3.1 Compositing

When all the work in the production phase is done, our team leader (compositor) combines all the work into a single working file using Adobe Premier Pro software in Fig. 8. The compositor will arrange all the animations and audio with their appropriate timeline in *Halatuju* animation.

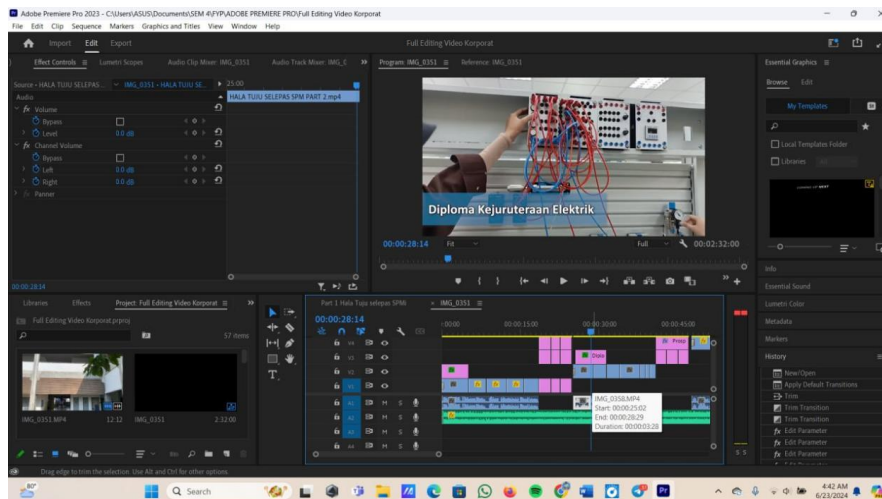


Fig. 8 Compositing Process in Adobe Premier Pro

3.3.2 Editing

The compositor will also do some editing processes like color corrections and cutting scenes and audio editing if needed according to *Halatuju* animation storyboard created earlier. It is needed to portray the whole storyline and purpose of final output of *Halatuju* animation.

3.3.3 Visual Effect

The final step was to add some visual effects to enhance the *Halatuju* animation and to give a “WOW” factors on certain scene in the animation video. We also obtain feedback from our client and supervisor to give the latest input and adjustment to the animation video.

3.3.4 Final Output

When all the post-production process is done, we exported the *Halatuju* animation video by rendering it to .mp4 format for the result of the animation video. We finalized *Halatuju* animation by uploading it in YouTube to be used for Cente of Diploma Studies, UTHM. The final output can be seen from the link below [HALA TUJU SELEPAS SPM : UTHM | FINAL YEAR PROJECT](#). We also prepared a poster that can be seen in Fig. 9 below.

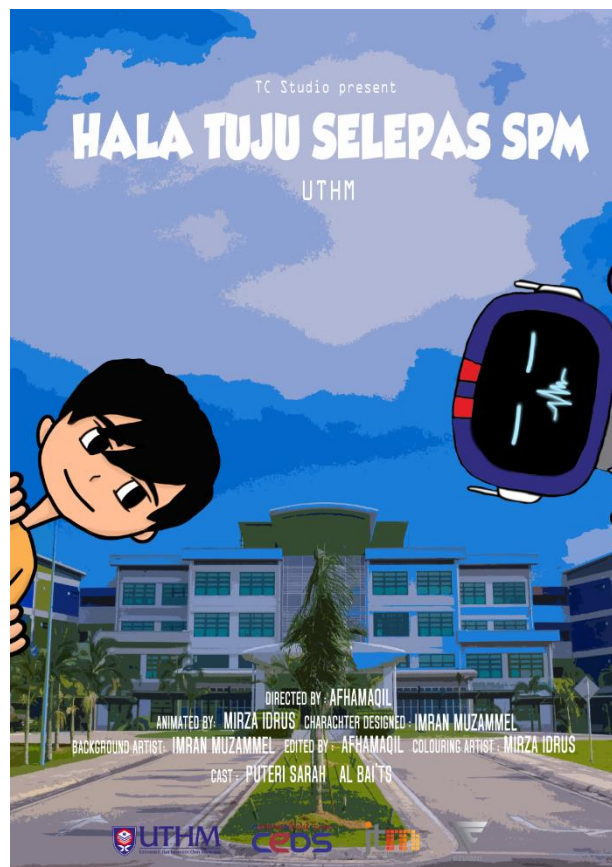


Fig. 9 *Halatuju* Aimation Poster

4. Results and Discussion

The results from Table 1 provide valuable insight into audience perceptions of the animation video across four key design aspects: character design, theme, art style, and color usage. The results are shown in the form of percentage, revealing the respondents who liked the *Halatuju* animation video based on the questions given. This section aims to optimize the *Halatuju* animation's effectiveness in promoting tertiary education to SPM graduates. Overall, the findings indicate a generally positive reception, with most respondents expressing favorable opinions in all evaluated areas.

Table 1 Respondents feedback on the presented *Halatuju* animation video

No.	Question	Yes	No
1.	Do you like the character design in this animation video?	80	20
2.	Do you enjoy the theme presented in this animation video?	73.3	26.7
3.	Are you interested in the art style displayed?	66.7	33.3
4.	Do you like the colors being used in this animation video?	73.3	26.7

Based on the result in Table1, character design received the highest approval, with 80% of respondents indicating they liked it. This suggests that the visual appeal and personality representation of the “Biko” and “Rahimi” characters were effective in engaging the audience. Such a high level of satisfaction may reflect the importance of relatable and aesthetically pleasing character development in animated content, aligning with prior studies that emphasize character design as a critical factor in viewer engagement and narrative immersion. Therefore, prior research for the development of “Biko” and “Rahimi” characters contribute to the effectiveness of *Halatuju* animation video.

The theme of the animation was liked by 75.3% of respondents, highlighting its relevance and appeal with the audience. A well-received theme often contributes to the emotional and cognitive impact of a narrative, enhancing the viewer’s ability to connect with the storyline. This result underscores the role of thematic clarity and coherence in shaping audience perception. In conclusion, the storyline of *Halatuju* animation video had succeeded in capturing audience attention in a positive way to contribute to its effectiveness. Meanwhile, the art style, while still positively received, had a slightly lower approval rating (66.7%) compared to other elements. This suggests some variability in audience preferences, possibly due to stylistic choices that may not appeal universally. It may be beneficial for future productions to explore audience segmentation to better tailor visual styles to specific viewer demographics or cultural contexts.

Color usage was appreciated by 73.3% of respondents, indicating effective use of color to support mood, tone, and visual clarity. Color theory plays a crucial role in visual storytelling, and the favorable response suggests that the chosen palette enhanced the aesthetic experience without overwhelming or distracting the viewer. Taken together, these results suggest that the animation video was well-received overall, with most respondents expressing positive views across all assessed components. The findings support the idea that cohesive visual and thematic elements contribute significantly to the audience’s overall satisfaction. Future research could further investigate the interplay between these design elements and how they influence viewer engagement, retention, and emotional response.

Table 2 presents the results of the questionnaire for the second section which includes four questions asking respondents about their knowledge of tertiary education, its benefits, UTHM and the programs it offers, as conveyed in the animation video. The table displays the percentage of respondents who answered “yes” or “no” to these questions. This section assesses the knowledge levels of SPM graduates regarding tertiary education focusing on UTHM, and its diploma programs.

Table 2 Respondents’ feedback on the issues addressed for tertiary education

No.	Question	Yes	No
1.	Does this animation video inform you about tertiary education?	63.3	36.7
2.	Does this animation video tell you about the benefits of tertiary education?	73.3	26.7
3.	Does this animation video provide you with information about UTHM?	73.3	26.7
4.	Does this animation video inform you about the programs offered in UTHM?	80	20

The results shown in Table 2 reveal that 63.3% of respondents agreed that the *Halatuju* animation video provided information about tertiary education while 36.7% disagreed. Regarding its benefits, 73.3% of respondents agree while 26.7% disagree. The shows that the *Halatuju* animation video mention about UTHM was agreed upon by 73.3% of respondents, with 26.7% disagreed. Lastly, 80% of respondents agreed that the *Halatuju* animation video explained the programs offered at UTHM while 20% disagreed. This proves that majority of respondents agreed that the *Halatuju* animation video effectively conveyed information about tertiary education, its benefits, UTHM and the programs it offers.

After gathering all the relevant data and information, it can be concluded that the presented *Halatuju* animation video received positive feedback from the respondents. The design, color and art style can be improved for a better animation video in the future. As shown in Table 1, most respondents liked the character design, theme, art style and colour usage in the animation video. This indicates that the *Halatuju* animation video will effectively capture the SPM graduate students' attention and deliver the messages. The survey also showed that most respondents understood the issues addressed in this research. Table 2 shows that most respondents understood the messages conveyed in the *Halatuju* animation video. The video successfully provides information about tertiary education, its benefits, focusing on UTHM and the programs offered. The respondents also became aware of UTHM, and the diploma programs it offers. As a result, SPM graduates may be convinced to further their education in tertiary education especially at UTHM.

5. Conclusion

Taken as a whole, the authors was hoping that this *Halatuju* animation video will inspire more SPM graduates to pursue further studies at the university level. Additionally, aspire for UTHM to become their preferred choice. Today's students require creative approaches and engaging content to capture their attention and effectively convey messages and information. Education is crucial and should extend beyond secondary school; it is an endless source of knowledge and experience. Without education, both societal and economic progress would suffer, limiting personal growth and preventing people from reaching their full potential.

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Conflict of Interest

Authors declare that there is no conflict of interest regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: study conception and design: Zuraida Ibrahim; data collection: Ahmad Imranul Muzammel Mohd Noor Nizam; analysis and interpretation of results: Muhamad Afham Aqil Muhamad Zamri; draft manuscript preparation: Mirza Idrus. All authors reviewed the results and approved the final version of the manuscript.

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