ORIGINAL ARTICLE

Satisfaction toward Blended Learning: A Pilot Study among Undergraduate Pharmacy Students in UniKL RCMP.

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Abstract

The COVID-19 pandemic has prompted a shift towards blended learning, combining online and face-to-face elements in education. This study explores the impact of incorporating video creation as an assignment in the cosmeceuticals course among 38 undergraduate pharmacy students at UniKL RCMP. The objective is to assess students' satisfaction and the effectiveness of video creation in enhancing their understanding of cosmeceutical concepts. This pilot study employs both qualitative and quantitative approaches and was conducted through the use of a questionnaire that contained both closed-ended and open-ended questions. The purposive sampling technique was used to collect the sample for this study. The survey instrument was a self-administer online questionnaire. The majority of the respondents expressed satisfaction with the video creation assignment, citing flexibility, enjoyment and engagement as key themes. Challenges included time constraints and technical issues for some students. Quantitative analysis indicates a significant positive impact on learning, with 68% feeling significantly enhanced understanding. The incorporation of video creation was deemed highly effective by 82% of students, while 18% found it somewhat effective. Overall satisfaction was high, with an average score of 8.61 out of 10. Despite challenges, the study concludes that incorporating video creation into assignments is a successful and well-received learning experience, supporting its continued integration into the educational curriculum. The findings contribute to the broader literature on blended learning and innovative pedagogical approaches, offering insights for educators, policymakers, and researchers aiming to enhance student learning outcomes.

Keywords: *Blended learning; COVID-19; video creation; qualitative; quantitative.*

Introduction

The coronavirus disease (COVID-19) pandemic has led to a significant shift in the education sector, with blended learning becoming a predominant form of learning. A study by Divjak et al. (2022) explored the impact of the flipped classroom model on students' academic performance during the COVID-19 pandemic. The study found that the flipped classroom model was effective in improving students' academic performance and engagement in the learning process [1].

The COVID-19 pandemic has had a significant impact on the education sector, leading to the introduction of distance and blended learning approaches. Blended learning combines the best of online and face-to-face learning, offering a flexible and personalised approach to education [2]. The development of blended learning is driven by the increasing use of technology in education and the need for more flexible learning environments. The pandemic has accelerated this trend, with many institutions turning to distance and blended learning to continue their studies despite isolation and social distancing measures [3].

Several studies have examined the effectiveness of blended learning in various educational contexts, including during the COVID-19 pandemic [4]. These studies have shown that blended learning can have a positive impact on students' academic performance, independent learning skills, and attitudes towards learning [5]. In the context of teacher training, high-quality blended and online teaching and learning practices have been identified that can be applied in schools, universities, and higher education institutions [6].

Despite its potential benefits, blended learning also presents challenges, such as the digital divide, which has been exacerbated by the pandemic. This divide refers to the disparities in access to technology and the internet, which can make it difficult for students to participate in remote learning. To address these challenges, institutions must strive to ensure equity for all students by providing access to the necessary technology and support [3].

Blended learning has emerged as a key educational approach during the COVID-19 pandemic. Its effectiveness in promoting academic achievement and supporting personalised learning highlights the potential of blended learning to shape the future of education. However, bridging the digital divide and ensuring equal access for all students remain major challenges that must be addressed to fully realise the potential of blended learning in a post-pandemic world.

A meta-analysis study by Means et al. (2016) highlighted the positive impact of blended learning on student achievement and engagement [7]. Similarly, a study by Picciano (2017) emphasised the role of blended learning in enhancing student motivation and satisfaction in higher education settings [8]. Moreover, findings from a study by Zeqiri et al. (2020) indicated that blended learning has a positive impact on both students' performance and satisfaction [9]. These studies collectively suggest that blended learning holds promise for optimising the educational experience of university students hence, this study aims to enrich the existing literature on blended learning's impact on undergraduate education and provide valuable insights for educators, policymakers and researchers seeking to enhance student learning outcomes through innovative pedagogical approaches.

Methodology

A cross-sectional study was conducted among 38 undergraduate UniKL RCMP pharmacy students who were taking the elective course Cosmeceuticals during the January 2022 semester to investigate their satisfaction level towards one of the assignments under the course. This pilot study employed both qualitative and quantitative approaches and was conducted through the use of a questionnaire that contained both closed-ended and open-ended questions. The assignment

involved the incorporation of video creation as a component. The purposive sampling technique was used to collect the sample for this study. The data collection took place after the completion of the course when the students were in their final year.

The survey instrument was a self-administer online questionnaire. Each participant received the questionnaire via Microsoft Form and answered it anonymously. Before beginning to answer the questions, informed consent was obtained. Participants were provided with an explanation of the study and clicked "I agree" after confirming that they had read and fully understood the information provided for the study and had chosen to participate. If they had any questions, they had the opportunity to ask the investigators.

The 9-item questionnaire consists of two (2) different sections. Section A inquired about the demographic profile while section B comprised seven (7) main evaluations of students' satisfaction level towards the assignment. Section B requires the students to answer the following questions:

1. How would you rate your overall experience with the video creation assignment?
2. Please provide a specific reason for your rating above.
3. To what extent do you believe video creation enhanced your understanding of cosmeceutical concepts?
4. How effective do you find the incorporation of video creation in learning cosmeceutical concepts?
5. Did you face any challenges during the video creation process?
6. If "yes" to Question 5, explain the challenges you encountered during the video creation process?
7. On a scale of 1 to 10, how satisfied are you with the overall incorporation of video creation in the assignment?

All statistical analyses for the quantitative study were performed using the Statistical Package for Social Sciences (SPSS), version 25.0 (SPSS, Inc.,

Chicago, IL). The categorical variables were summarised in frequency (n) and percentage (%). Descriptive analysis was used to assess the level of satisfaction.

The qualitative data were collected through open-ended questions in a survey. Participants were asked about their overall experience with the video creation assignment (Question 2) and the challenges they encountered during the process (Question 6). The data was systematically coded, and labels were assigned to segments of the text that represent a particular concept, idea, or meaning. For example, segments of text related to flexibility and creativity were coded under the label "Flexibility and Creativity". Similar codes were then grouped together to identify broader themes that capture patterns or commonalities across the data. Identified themes were reviewed and refined, ensuring they accurately reflected the content of the data and captured the essence of participants' experiences. Consistency and coherence were also checked within and across themes. Each theme was defined and named to convey the main idea or concept it represents, and the names of the themes are descriptive and meaningful. The results were expressed in the form of thematic analysis, which incorporates quotations or excerpts from the data to illustrate each theme.

Results

Quantitative study
Data were collected through the distribution of questionnaires via online survey form with a response rate of 100%. Consequently, 38 undergraduate pharmacy students who took the elective Cosmeceuticals course during the January 2022 semester participated. The demographic characteristics of respondents are summarised in Table 1. Out of 38 respondents, 8 (21.1%) were male and 30 (78.9%) were female. Thirty-six (94.7%) of them are Malay, and the remaining two (5.3%) are Indian.

The analysis of feedback from students who participated in the video creation assignment revealed that the majority expressed high satisfaction, with 26% (n = 10) indicating they were "Very Satisfied" and 68% (n = 26) "Satisfied." Only a small percentage (n = 2, 5%) reported being "Neither satisfied nor dissatisfied" (Figure 1). Overall, this suggests that the video creation assignment was well-received among the students.

Concerning the impact on learning, 68% (n = 26) of students felt that the assignment significantly enhanced their understanding of cosmeceutical concepts. An additional 32% (n = 12) reported a moderate enhancement, emphasising the effectiveness of the assignment in reinforcing theoretical knowledge (Figure 2).

The incorporation of video creation in learning cosmeceutical concepts was considered highly effective, with 24% (n = 9) of students rating it as "Extremely Effective" and 58% (n = 22) as "Very Effective." This indicates that the use of video positively influenced the learning process, accommodating various learning preferences and styles. The assignment's success is further supported by the fact that only a small percentage (n = 7, 18%) found it somewhat effective, suggesting a generally positive impact on learning outcomes (Figure 3).

In terms of overall satisfaction with the incorporation of video creation in the assignment, 95% (n = 36) of students rated "Very satisfied" and "Satisfied" with a score of 9 or 10 on a scale of 1 to 10. The average score among 38 respondents was 8.61. This suggests a high level of contentment with the use of video in the learning process. The positive sentiments were reflected in students' appreciation for the flexibility of the task, the unique learning experience it offered, and the positive responses received from peers.

In conclusion, the analysis of student feedback indicates that the video creation assignment was a generally successful and well-received learning experience. The positive impact on learning, high levels of satisfaction, and the development of practical skills suggest that incorporating video creation into assignments can be an effective and engaging approach for teaching cosmeceutical concepts. Despite some challenges encountered, the overall positive outcomes support the continued integration of such innovative methods in the educational curriculum.

Qualitative Study
Themes for the Reasons with Overall Experience with the Video Creation Assignment (Question 2)

i. Flexibility and Creativity:
    a. "The flexibility of the video assignment allowed me to express my ideas in a more creative way, which made the task more enjoyable." - Participant A
    b. "I appreciated the freedom to choose how to present the information in the video. It made the assignment feel less rigid and more engaging." - Participant B

ii. Enjoyment and Interest:
    a. "Creating the video was actually fun! It was a refreshing change from traditional assignments and kept me motivated throughout." - Participant C
    b. "I found myself genuinely interested in the assignment. It didn't feel like work, it felt like a creative project." - Participant D

iii. Engagement and Novelty:
    a. "Using videos as a learning tool was a new experience for me, and I found it much more engaging than lectures or written reports." - Participant E
    b. "The novelty of creating a video for the assignment kept me interested and invested in the content. It was a different approach that I appreciated." - Participant F

iv. Practical Application of Knowledge:
    a. "Applying theoretical knowledge to create a practical video helped solidify my understanding of the

subject matter. It made the concepts more tangible." - Participant G

b. "Seeing how the concepts we learned in class could be applied in a real-world context through the video assignment was really enlightening." - Participant H

v. Collaboration and Skills Development:
    a. "Working with my peers on the video project allowed us to bounce ideas off each other and learn from different perspectives." - Participant I
    b. "Collaborating on the video not only improved my teamwork skills but also enhanced the quality of the final product." - Participant J

vi. Fatigue and Balancing Creativity:
    a. "While I enjoyed the creative aspect of the assignment, it was challenging to balance that with the practical requirements and deadlines." - Participant K

vii. Instructional Clarity:
    a. "Having clearer guidelines for the assignment would have helped ensure that our video met all the requirements. Sometimes it felt a bit ambiguous." - Participant L

Themes for Challenges Encountered during the Video Creation Process (Question 6)

i. Time Restraint:
    a. "Time management was a major challenge for me during the video creation process. It was difficult to balance the assignment with other coursework and commitments." - Participant M
    b. "I underestimated the time it would take to complete the video, and I found myself rushing to finish before the deadline." - Participant N

ii. Brainstorming Ideas:
    a. "Coming up with creative ideas for the video was harder than I expected. It took me a while to brainstorm something original and relevant." - Participant O
    b. "I struggled with writer's block when trying to develop content for the video. Generating ideas was a challenging aspect of the assignment." - Participant P

iii. Technical Issues:
    a. "Technical difficulties, like software crashes and file format issues, slowed down the video creation process and added unnecessary stress." - Participant Q
    b. "I encountered several technical glitches while editing the video, which disrupted my workflow and delayed completion." - Participant R

iv. Logistical Challenges:
    a. "Limited access to equipment and resources made it difficult to produce a high-quality video. I had to make do with what I had available." - Participant S
    b. "Spending long hours editing the video was draining, especially when faced with formatting problems and other logistical hurdles." - Participant T

Discussion

Our study found that 95% of respondents were satisfied with the incorporation of video creation into the Cosmeceuticals course, which is higher than the earlier study by Rieger et al. (2021). In a recent study, Rieger et al. (2021) requested undergraduate nursing students to create an arts-based multimedia knowledge translation presentation to share systematic review findings with patients. According to the study, the majority of students (68%) were satisfied with the assignment and reported learning (77%) and seeing benefits for their future practice (75%), while our study showed 100% respondents believed the video creation had an impact, and 82% believed it was effective. Rieger et al. (2021) also

reported factors such as age, enjoyment of and experience with the arts, type of motivation, and valuing evidence-informed practice significantly influenced students' evaluation of the assignment. The study highlights the potential of creative approaches to deepen students' understanding of evidence-informed practice and 173 mphasizes the importance of considering these factors during the implementation of arts-based assignments [10].

Compared to the study conducted by Lewis et al. (2020), our research identified seven subthemes. Nonetheless, our results were similar to those of Lewis et al. (2020) concerning flexibility and creativity, the practical application of knowledge, and collaboration and skills development. The study by Lewis et al. (2020), explored the satisfaction of undergraduate nursing students with a video assessment of clinical skills (VACS) that integrated formative feedback. The study used a cross-sectional survey design and collected open-ended responses from third-year nursing students. The findings revealed three major themes: flexibility and reflexivity, editing and repeated attempts, and working together. These themes indicate that the VACS approach demonstrated good utility, acceptability, and satisfaction among undergraduate nursing students. The incorporation of formative feedback through video assessment allowed students to reflect on their performance, make improvements, and work collaboratively [11].

In the field of dental education, a study conducted by Kenny et al in 2018 focused on the use of video clips to improve the confidence of undergraduate dental students in managing local anaesthetic administration for children. The study involved fourth-year dental students who were randomly assigned to either an intervention group receiving video clips demonstrating behaviour management techniques or a control group. The results showed that the intervention group had significantly higher confidence levels immediately after the teaching intervention and at 4 months compared to the control group. The study confirms the benefits of using video clips as a teaching aid to enhance students' confidence in delivering local anaesthesia to pediatric patients [12].

There are a variety of challenges experienced that warrant attention when conducting assignments related to blended learning. The challenges identified in our study were similar to those encountered by a study by Brame in 2016. Brame (2016) highlighted technical hurdles, such as equipment malfunctions and software compatibility issues, have been noted to impede the smooth progression of video creation tasks [13]. Moreover, time constraints often pose a significant challenge for students juggling video assignments alongside their regular coursework, necessitating effective time management strategies [14]. Creative blocks can also hinder the development of engaging informative video content, emphasising the importance of fostering creativity through feedback and examples of successful videos [13, 15]. Ensuring quality control across student-produced videos and addressing accessibility and inclusivity concerns further compound the challenges encountered during the video creation process [13, 14].

In summary, the incorporation of video creation as an assignment has shown positive outcomes and high satisfaction levels among undergraduate nursing and dental students. These studies support the effectiveness of video-based approaches in enhancing students' learning, understanding, and confidence in relevant clinical skills.

Conclusion

In conclusion, the findings from the study reveal overwhelmingly positive sentiments among respondents. The assignment was commended for its ability to foster a deep understanding of cosmetic concepts through an engaging and creative process. The flexible nature of the task, the freedom to make creative decisions, and the opportunity for collaboration were key contributors to this positive feedback. Students appreciated the departure from traditional learning methods, emphasising the value of experiential learning and the practical application

of theoretical knowledge. While a small percentage noted challenges, such as fatigue, these did not diminish the overall positive impact of the assignment. These insights suggest that incorporating video creation into academic assignments can be an effective and enjoyable method for enhancing student learning experiences and promoting creativity in the educational setting.

Limitation of Study:
This study faced some challenges that limited its scope and validity. One of the main challenges was the timing of the study, which coincided with the COVID-19 pandemic. This made it difficult to conduct face-to-face interviews, and instead, an online survey questionnaire was used. However, this method might have introduced some errors and biases, as some respondents might not have answered the questions carefully or honestly. Another challenge was the age distribution of the respondents, as most of them were young social media users below 35 years old. This resulted in an uneven representation of different age groups in the sample.

Conflict of Interest
The authors declare no conflict of interest.

Table 1. Descriptive analysis of the demographic characteristics of respondents (n=38)

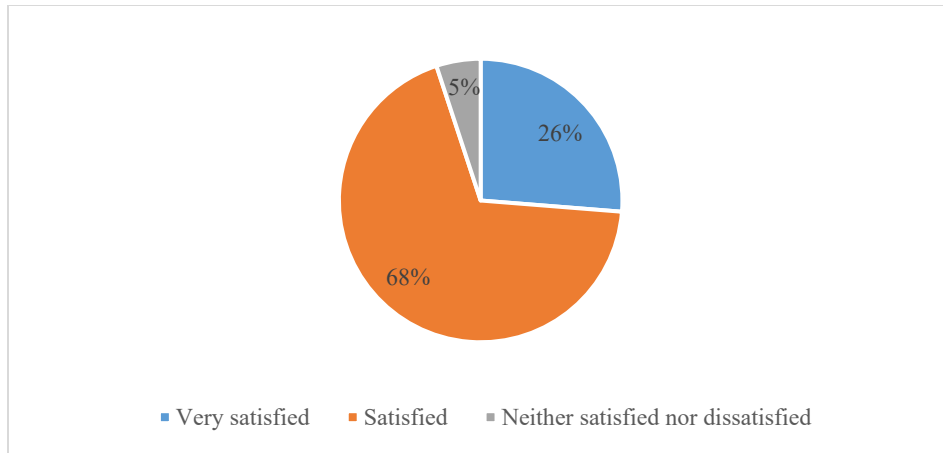| Data	Number	%
Gender		
Male	8	21.1
Female	30	78.9
Race		
Malay	36	94.7
Indian	2	5.3

Figure 1. Overall Experience with the Video Creation Assignment (n=38)
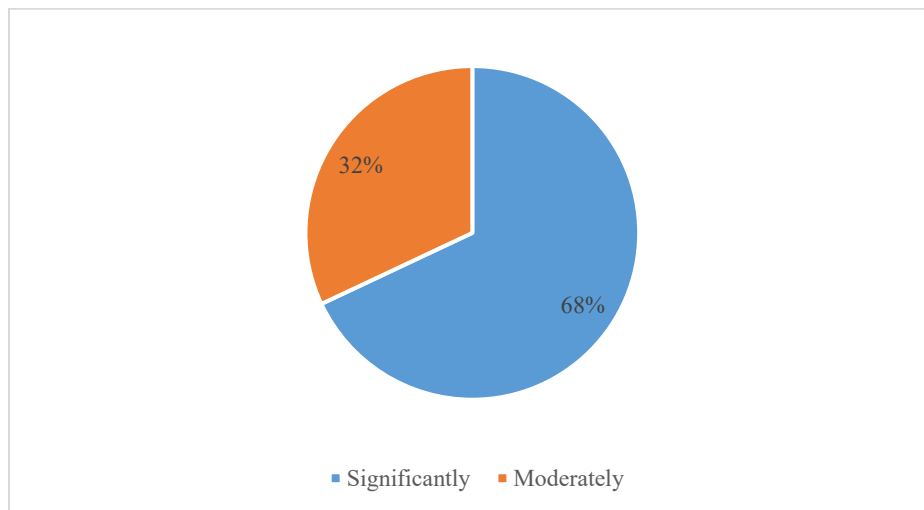

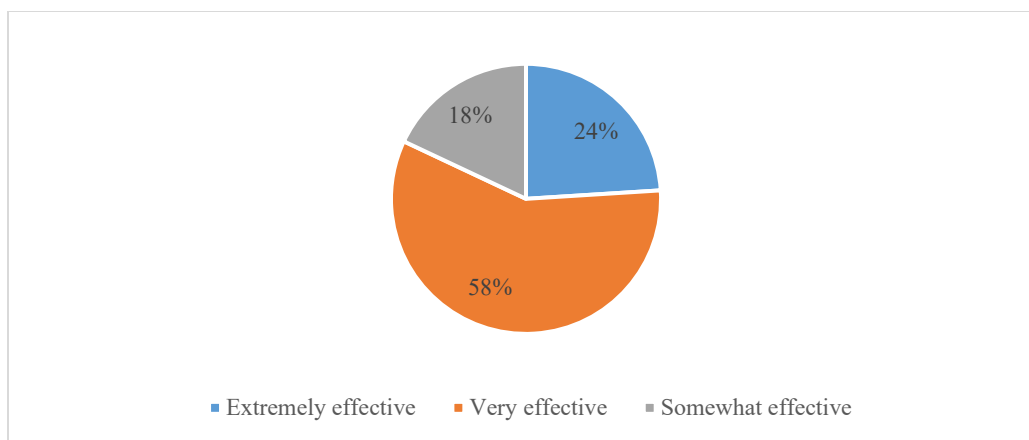Figure 2: Impact of Video Creation on Understanding Cosmeceuticals Concepts (n=38)

Figure 3. Effectiveness of the Incorporation of Video Creation in Learning Cosmeceuticals Concepts (n=38)

References

[1]. Divjak B, Rienties B, Iniesto F, et al. Flipped classrooms in higher education during the COVID-19 pandemic: findings and future research recommendations. Int J Educ Technol High Educ. 2022;19(9). https://doi.org/10.1186/s41239-021-00316-4

[2]. Singh J, Steele K, Singh L. Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. Journal of Educational Technology Systems. 2021;50(2):140-171. https://doi.org/10.1177/00472395211047865

[3]. Coleman V. Digital divide in UK education during COVID-19 pandemic: Literature review. Cambridge Assessment Research Report. Cambridge, UK: Cambridge Assessment, June 11, 2021

[4]. Topping KJ, Douglas W, Robertson D, Ferguson N. Effectiveness of online and blended learning from schools: A systematic review. Review of Education. 2022. https://doi.org/10.1002/rev3.3353

[5]. Tong DH, Uyen BP, Ngan LK. The effectiveness of blended learning on students' academic achievement, self-study skills and learning attitudes: A quasi-experiment study in teaching the conventions for coordinates in the plane. Heliyon. 2022. https://doi.org/10.1016/j.heliyon.2022.e12657

[6]. Hamer J, Smith J. Online and blended delivery in Further Education: A literature review into pedagogy. Department of Education, [Online]. Available: https://assets.publishing.service.gov.uk/media/60d44b09d3bf7f4bd11a249f/online_and_blended_delivery_in_further_education.pdf. [Accessed Dec. 26, 2023]

[7]. Means B, Toyama Y, Murphy R, Baki M. The effectiveness of online and blended learning: A meta-analysis of the empirical literature. Teachers College Record. 2013;115(3):1–47.

[8]. Picciano AG, Dziuban CD, Graham CR. Blended Learning: Research Perspectives. Routledge. 2013; 2(1). https://doi.org/10.4324/9781315880310

[9]. Zeqiri J, Kareva V, Alija S. The Impact of Blended Learning on Students' Performance and Satisfaction in South East European University, In: Proceedings of the ENTRENOVA - ENTerprise REsearch InNOVAtion Conference, Virtual Conference, 10-12 September 2020, IRENET - Society for Advancing Innovation and Research in Economy, Zagreb. 2020:233-244. https://proceedings.entrenova.org/entrenova/article/view/326

[10]. Rieger KL, Mitchell KM, Bolianatz J, et al. Evaluating the impact of an arts-based multimedia knowledge translation assignment on undergraduate nursing students. Nurse Educ Today. 2021:105. https://doi.org/10.1016/j.nedt.2021.105030

[11]. Lewis P, Hunt L, Ramjan LM, Daly M, O'Reilly R, Salamonson Y. Factors contributing to undergraduate nursing students' satisfaction with a video assessment of clinical skills. Nurse Educ Today. 2020: 84. https://doi.org/10.1016/j.nedt.2019.104244

[12]. Kenny KP, Alkazme AM, Day PF. The effect of viewing video clips of paediatric local anaesthetic administration on the confidence of undergraduate dental students. Eur J Dent Educ. 2018:57-62. https://doi.org.10.1111/eje.12257

[13]. Brame CJ. Effective educational videos: Principles and guidelines for maximizing student learning from video content. CBE—Life Sciences Education. 2016;15(4).

[14]. López-Pérez MV, Pérez-López MC, Rodríguez-Ariza L. Blended learning in higher education: Students' perceptions and their relation to outcomes. Computers & Education. 2011;56(3):818-826.

[15]. Kay RH, Kletskin I. Evaluating the use of problem-based video podcasts to teach mathematics in higher education. Computers & Education. 2012;59(2):619-627.