Evaluating the Effectiveness of Interactive Multimedia in Boosting Brand Equity: A Case Study of Visual Communication Design Programs

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Abstract

This study focuses on strengthening brand equity in the Visual Communication Design (VCD) study program at higher education institutions by implementing interactive multimedia. The background of the problem lies in the importance of branding innovation in addressing the increasing competition in the education sector. The purpose of this research is to evaluate the impact of interactive multimedia on four dimensions of brand equity: brand awareness, brand loyalty, perceived quality, and brand associations. The methodology employed involves a mixed quantitative and qualitative approach. Data was collected through a survey of 100 respondents using a Likert-scale-based questionnaire and in-depth interviews with relevant participants. A paired t-test was used to analyze changes in brand equity perceptions before and after implementing interactive multimedia. The results show a statistically significant increase in brand awareness by 20% (p < 0.01), brand loyalty by 25% (p < 0.01), perceived quality by 18% (p < 0.01), and brand associations by 19% (p < 0.01). These findings provide practical contributions to higher education institutions by demonstrating that interactive multimedia is not merely a communication tool but an effective strategy for building emotional engagement with audiences and enhancing institutional reputation. Furthermore, qualitative insights highlight the role of interactive multimedia in fostering deeper emotional connections and improving perceptions of quality. This research supports adopting technologies like Augmented Reality (AR) and Virtual Reality (VR) to enrich future learning experiences. Continuous implementation and innovation in interactive content are also necessary to remain relevant and competitive in the dynamic education market.

Keywords: *Brand Equity, Higher Education, Interactive Multimedia, Visual Communication Design.*

INTRODUCTION

Higher education has become increasingly competitive in recent decades, with institutions striving to attract prospective students through various branding strategies. One critical element in the success of branding is brand equity, which refers to the perceived added value of a brand (Sheikh & Asemani, 2024). In the education sector, brand equity has gained greater relevance, as a strong brand attracts prospective students and enhances the institution's reputation among other stakeholders. In this digital era, interactive technology has become an essential part of efforts to enhance brand equity. In the context of *Visual Communication Design* (VCD) programs, the importance of innovative branding strategies has

grown more prominent, given the rising interest among prospective students in visual and interactive content. In line with this trend, interactive multimedia application offers significant opportunities to strengthen a program's brand equity by providing more engaging and interactive user experiences.

Interactive multimedia is effective in various branding and higher education contexts. (Bozkurt et al., 2021) demonstrate that interactive multimedia can enhance user engagement and strengthen brand perception, particularly among younger generations, who tend to be more responsive to digital content. Another study by (Ghorbanzadeh & Sharbatiyan, 2024) emphasizes that interactive multimedia plays a crucial role in raising brand awareness and fostering brand loyalty within educational environments. According to (Kisiołek et al., 2021) state that higher education institutions that incorporate interactive technology in their branding strategies tend to be more attractive than those that rely solely on conventional promotional methods. (Liu et al., 2021) argue that, in the context of VCD programs, interactive multimedia offers additional advantages by providing prospective students with visually and creatively relevant experiences. However, implementing this technology is not without challenges. (Thite, 2022) have indicated that developing interactive multimedia content requires substantial technology and human resources investment. Nevertheless, the benefits derived from enhanced brand equity, such as increased program visibility and student loyalty, make it a worthwhile investment for higher education institutions.

Although many studies have explored the use of interactive multimedia in educational and branding contexts, several significant research gaps remain. (Ruangkanjanases et al., 2022) although interactive multimedia can increase student engagement, its specific impact on brand equity dimensions, such as brand awareness and loyalty, has not been thoroughly examined. (Prawira et al., 2021) while multimedia may improve perceptions of quality, its long-term impact on programs like VCD remains underexplored. (Farhat et al., 2021) suggest that interactive multimedia can enhance student involvement in visual education programs, yet studies explicitly linking multimedia to improved brand equity are still scarce. (Zhou et al., 2022) underscore the importance of integrating multimedia into branding strategies, but many institutions have yet to leverage this technology, especially within visual design entirely. Additionally, (Todea et al., 2022) the main challenges in adopting interactive multimedia are limited technological resources and instructors' expertise, which hinder the technology's significant impact on brand perception and student loyalty. Thus, a research gap exists regarding how interactive multimedia can be effectively implemented in branding strategies to improve brand equity in VCD programs.

Consequently, this study aims to design and implement interactive multimedia strategies that can enhance the brand equity of VCD programs in higher education. It will evaluate how interactive multimedia can strengthen brand awareness, improve perceptions of quality, and build brand loyalty. Furthermore, the study aims to guide other educational institutions in developing similar strategies to enhance their position in an increasingly competitive educational market. Based on previous research, the central hypothesis of this study is that

the application of interactive multimedia will significantly improve the brand equity dimensions of VCD programs. This research will offer new insights into how higher education institutions can leverage digital technologies to strengthen their image and reputation. Moreover, the findings of this study are intended to serve as a foundation for developing more effective and innovative branding strategies in the future.

LITERATURE REVIEW

A. Interactive Multimedia

Interactive multimedia integrates various media types, such as text, images, sound, video, and animation, to create dynamic and participatory user experiences. According to (Shahbaznezhad et al., 2022), this technology plays a vital role in enhancing user engagement by offering elements that enable direct interaction with content. Users no longer passively receive information but can actively engage through platforms such as video games, simulations, presentations, and educational applications. Kuchai, (Kuchai, Kotiash, et al., 2022) further explain that interactive multimedia facilitates more dynamic communication by integrating multiple media forms. (Iskandar et al., 2023) argue that this approach allows users to participate actively and influence how information is delivered. Meanwhile, (Kuchai, Plakhotnik, et al., 2022) highlight that interactive multimedia offers responsive and flexible interaction between users and different media formats.

Interactive multimedia has been adopted in marketing to create engaging and effective campaigns. Research shows that interactive advertisements and promotional videos allowing consumers to interact with brands directly have the potential to increase engagement and drive sales conversions. Technologies such as touchscreens, motion sensors, and Virtual Reality (VR) further deepen and refine user interaction with the content presented. However, designing interactive multimedia requires integrating elements from various disciplines, such as graphic design, animation, and software development. Although it offers many benefits, including increased motivation and richer user experiences, implementing interactive multimedia often faces challenges, particularly regarding the substantial investments in technical resources and high development costs.

Interactive multimedia is also applied across various sectors, including education, healthcare, hospitality, tourism, arts, and culture. Virtual laboratory simulations provide practical experiences in education without costly physical facilities. In healthcare, interactive multimedia is used for clinical training, where doctors and medical professionals can practice their skills in a safe environment. In the tourism sector, this technology enables visitors to explore attractions virtually before physically visiting. (Arena et al., 2022) note that Artificial Intelligence (AR) and Virtual Reality (VR) increasingly enrich user experiences. Furthermore, interactive multimedia enhances accessibility through technologies such as easy-to-read text and subtitles for users with special needs. Interactive multimedia is an effective and evolving tool supporting communication and interaction innovation.

B. Brand Equity

Brand equity refers to the added value a brand provides to a product or service, which can significantly influence consumer perception and purchasing decisions. This added value includes enhanced brand recognition, customer loyalty, and positive perceptions of product quality. According to (Ramadhani et al., 2022), a brand with solid equity can build long-term

relationships with consumers, reinforcing its position in the market. Additionally, brand equity allows companies to set premium prices, as consumers are likelier to choose brands they trust. This condition creates a sustainable competitive advantage, with widely recognized brands enjoying a better reputation for reliability and quality. Therefore, brand equity is essential in maintaining market share and ensuring long-term profitability.

Theoretically, (Supiyandi et al., 2022) identify four critical elements of brand equity: brand awareness, brand associations, perceived quality, and customer loyalty. These elements work together to create a positive image in consumers' minds. Brand awareness refers to the extent to which consumers can recognize or recall a brand, marking the first step in building robust brand equity. Brand associations pertain to the connections between a brand and specific attributes consumers link to it. (Le, 2023) further emphasizes that brand image is critical in shaping consumer perception, where positive associations with a brand foster customer loyalty. Thus, brand equity reflects the dynamic relationship between consumer experiences and the perceived value they derive from the brand.

Brand equity requires a strategic approach involving quality control, innovation, and a consistent and positive brand image. (Wang et al., 2021) highlight that consumers' perceived quality is crucial in establishing a brand reputation in competitive markets. Brands perceived as high-quality not only strengthen customer loyalty but also provide opportunities for companies to set higher prices. Innovation is also vital in maintaining brand relevance in a rapidly evolving market. Therefore, companies must continuously innovate their products and marketing strategies to retain appeal and sustain a competitive edge. Effective brand equity management also involves continuous monitoring of market trends to enable strategic adjustments that meet consumer needs.

Measuring brand equity requires a comprehensive approach, combining quantitative and qualitative methods such as financial evaluations, consumer surveys, and brand audits. This approach provides a holistic view of consumer perceptions of the brand and its impact on business performance. (Ertz et al., 2024) assert that solid brand equity enhances a company's competitive position and positively influences employee morale. Employees working for a well-reputed brand tend to feel more motivated and take pride in their organization. In the digital age, social media and online reviews play a crucial role in brand equity management, enabling direct interaction between companies and consumers. Furthermore, brands actively engaged in Corporate Social Responsibility (CSR) initiatives tend to receive more robust support from consumers concerned with social and environmental issues.

C. Visual Communication Design Higher Education

In higher education, Visual Communication Design (VCD) equips students with theoretical and practical knowledge to develop creative solutions in visual storytelling, branding, and user experience design. Higher education in VCD integrates design, communication, and technology principles to prepare students for advertising, digital media, and product design careers. According to (Sarrico, 2022), VCD education emphasizes the development of critical

thinking, visual literacy, and problem-solving skills, enabling graduates to address complex communication challenges through innovative design strategies.

The curriculum in VCD higher education typically combines foundational studies in art and design with specialized courses in typography, visual identity, motion graphics, and interactive media. (Žalėnienė & Pereira, 2021) highlight that programs encourage students to explore design's cultural, social, and ethical implications, fostering a deeper understanding of how visual communication shapes perceptions and behaviors in society. Additionally, (Cruz et al., 2021) notes that collaboration with industries and real-world projects is integral to VCD education, ensuring students gain practical experience and understand industry standards.

Higher education in VCD also emphasizes integrating technology to meet the demands of the digital age. (Chankseliani et al., 2021) argues that the rapid evolution of design tools and platforms requires universities to update their curricula continuously, incorporating emerging trends such as augmented reality, user interface design, and data visualization. These technological advancements enhance the creative process and expand the scope of VCD applications in diverse fields. Moreover, VCD programs often encourage interdisciplinary learning, allowing students to combine design principles with insights from psychology, marketing, and computer science. (Rohm et al., 2021) assert that this interdisciplinary approach equips students with the versatility to adapt to various professional contexts. For example, a VCD graduate might work on creating accessible user interfaces for healthcare applications or designing impactful campaigns for social causes.

Despite its contributions, higher education in VCD faces challenges, such as ensuring accessibility and adapting to rapid industry changes. (Blanden et al., 2023) highlights that maintaining a balance between fostering creativity and meeting technical proficiency is a continuous effort for educators. Furthermore, institutions must address the need for sustainable design practices as (Blanden et al., 2023) emphasizes the role of designers in mitigating environmental and social issues. Through a well-rounded curriculum, practical experiences, and technological integration, higher education in VCD prepares students for professional success and instills a sense of responsibility to create aesthetically compelling, socially impactful, and ethically grounded designs.

METHODS

This study employs a mixed-methods approach, incorporating both qualitative and quantitative methods, to evaluate the impact of interactive multimedia on brand equity within the VCD Program. The research involves several stages, beginning with the development of interactive multimedia, followed by surveys to collect quantitative data and in-depth interviews and observations to gather qualitative data. The study uses purposive sampling to select participants relevant to the research objectives, including the VCD Program's students, lecturers, and administrative staff. Purposive sampling was chosen to obtain in-depth

insights from respondents with direct experience using interactive multimedia in an educational setting.

A total sample of 100 respondents was selected for the survey, comprising students and professionals from marketing, branding, and multimedia who were familiar with or had experience using interactive multimedia. The inclusion criteria for respondents included individuals aged 18–35 years with prior exposure to branding concepts and interactive multimedia. The sample was recruited through purposive sampling to ensure alignment with the study's objectives. The survey employed a closed-ended questionnaire designed to measure the dimensions of brand equity, namely brand awareness, brand loyalty, perceived quality, and brand associations. The questionnaire comprised 20 items, with five dedicated to each dimension. The questionnaire was developed by adapting validated instruments from previous studies, including Aaker's brand equity model (Aaker, 1991) and Keller's brand knowledge framework (Keller, 1993). This adaptation ensured the items were relevant to the study context while maintaining theoretical rigor.

Each item was rated on a five-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5), to facilitate the measurement of respondents' perceptions of each brand equity dimension. Sample questions included:

- For brand awareness: "I am familiar with the brand presented in the interactive multimedia."

- For brand loyalty: "I would choose this brand over other competing brands."

- For perceived quality: "The quality of this brand meets my expectations."

- For brand associations: "The brand evokes positive associations in my mind."

In addition to the survey, qualitative data were collected through in-depth interviews with ten participants, selected based on their direct involvement in creating or using interactive multimedia content. These participants included multimedia developers, branding professionals, and educators who integrated interactive multimedia into their teaching practices. The interviews aimed to gain deeper insights into how interactive multimedia influences perceptions of brand equity. Sample interview questions included:

- "How do you perceive the role of interactive multimedia in enhancing brand awareness?"

- "What aspects of interactive multimedia content contribute to perceived quality?"

- "Can you describe your experience using interactive multimedia to convey brand associations?"

Observations were also conducted during classroom presentations of interactive multimedia to examine how users interacted with the media and responded to the content.

Before deploying the questionnaire in the survey, validity and reliability tests were conducted to ensure the instrument's accuracy and consistency in measuring the variables under study. Content validity was assessed by consulting three experts in branding and interactive multimedia, who evaluated the relevance and clarity of the questionnaire items. Based on their feedback, minor revisions were made to improve the alignment of items with the dimensions of brand equity.

Reliability testing used Cronbach's Alpha to assess internal consistency among the questionnaire items. The reliability test yielded a Cronbach's Alpha value of 0.85, indicating good consistency. Construct validity testing was conducted using exploratory factor analysis (EFA), which confirmed that the items loaded significantly onto their respective dimensions, with factor loadings exceeding 0.70 for all items.

The data obtained from the survey were analyzed using descriptive statistics to summarize respondents' perceptions and hypothesis testing to evaluate the impact of interactive multimedia on brand equity. Meanwhile, data from the interviews were examined through thematic analysis to identify patterns and themes related to respondents' perceptions and experiences with interactive multimedia.

RESULTS

A. *Development of Interactive Multimedia*

Developing interactive multimedia involves creating digital content that integrates text, images, videos, animations, and audio to provide users with a participatory experience. This technology enables direct interaction through clicks and swipes, enhancing engagement compared to passive information consumption. To strengthen user understanding and involvement, interactive multimedia is applied in various contexts, including websites, mobile applications, training simulations, and instructional materials. Critical aspects of development include interface design, content creation, and programming, all of which must be carefully prepared to ensure an engaging and practical experience. Beyond education, interactive multimedia also plays a significant role in marketing and entertainment, expanding audience reach and reinforcing messaging. With its ability to build positive brand images and increase appeal, interactive multimedia functions as a communication tool and a branding strategy that strengthens competitive positioning and supports institutional or corporate growth in dynamic markets.

In practice, interactive multimedia is often used within a Corporate Identity System (CIS) framework. CIS encompasses various visual and communication elements reinforcing the company's identity and image. In addition to the logo, CIS involves consistently using components such as colors, typography, symbols, and visual communication styles across different channels. This consistency ensures that the company's identity is easily recognized and understood by the public. Core elements of CIS, such as the logo and its variations, serve as visual representations of the company across different sizes and backgrounds. At the same

time, a consistent color palette across media strengthens brand recognition. Typography, including the choice of fonts and writing styles, also contributes to the brand's visual coherence and alignment with the company's characteristics. A visual communication style guide provides standards for content presentation, such as using images, icons, and design layouts to ensure that all elements remain aligned with the brand identity. By establishing a coherent and professional identity, CIS helps strengthen the company's market presence, enhance brand recognition, and build public trust. An example of the critical elements of CIS is illustrated in Figure 1.

The VCD program at a university has successfully utilized interactive multimedia to strengthen the brand value and attract more prospective students. By integrating elements such as text, images, videos, animations, and interactive features, the program creates a dynamic and immersive experience for its audience. This strategy enhances visual appeal, bolsters reputation, and fosters a positive image within the educational community. Moreover, it effectively differentiates the program from competitors, increases visibility, and strengthens public perception of the institution's quality and excellence. Interactive multimedia also improves prospective students' engagement with the program by offering more personal and engaging participatory experiences. As a result, this approach enables the institution to stand out in a competitive educational market while maintaining its reputation as a high-quality and creative education provider.

R: 240 G: 35 B: 17
C: 0 M: 98 Y: 100 K: 0
#F02311

R: 225 G: 102 B: 0
C: 0 M: 74 Y: 100 K: 0
#FF6600

R: 3 G: 22 B: 52
C: 97 M: 86 Y: 47 K: 61
#031634

Figure 1. Corporate Identity System

Figure 2 presents an example of a splash screen for the VCD program at a higher education institution. As the introductory interface of an application or website, the splash screen captures users' attention before they access the main content. In this splash screen, visual elements such as vibrant colors, the program's logo, and modern typography are carefully selected to reflect the identity of the VCD program, creating a consistent and professional impression. This cohesive design aims to strengthen the institution's image and appeal, particularly to prospective students or site visitors, while enhancing the overall aesthetic value of the application or website.
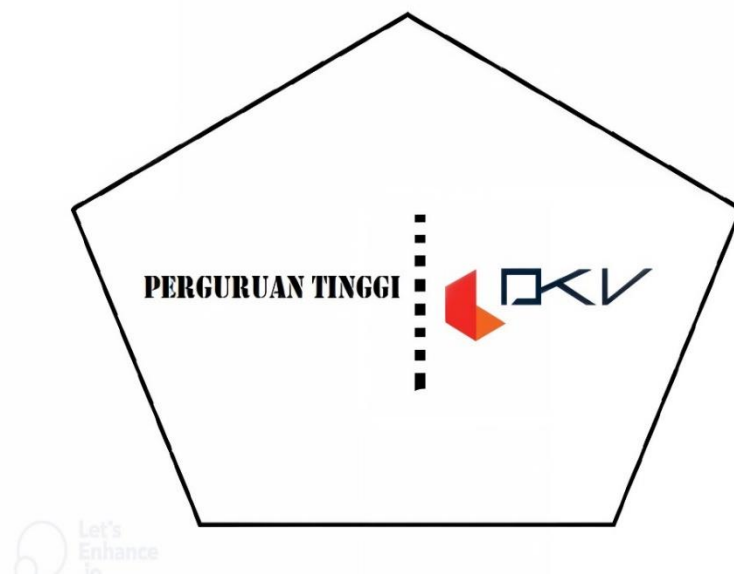

Figure 2. VCD Program Splash Screen in Higher Education

B. Impact on Brand Equity

Research on the impact of interactive multimedia on the brand equity of the VCD program demonstrates that incorporating dynamic digital elements such as text, images, videos, and animations can significantly enhance the brand value of educational institutions. These elements facilitate the delivery of more engaging and immersive information, encouraging users to consume content passively and participate actively. This deep and participatory experience leaves a lasting positive impression, shaping the institution's image as a modern and innovative entity. Aligning with the latest technological developments, this approach mainly attracts young audiences accustomed to digital technologies. Through this strategy, the program offers a richer experience that is informative and inspirational for prospective students. Ultimately, interactive multimedia serves as an effective communication tool to increase appeal and strengthen the program's brand equity in the eyes of its audience.

Beyond enhancing appeal, interactive multimedia has proven effective in fostering a deeper connection between prospective students and the program by tailoring experiences to users'

needs. Elements such as promotional videos, informative animations, and interactive applications provide lively and engaging ways to showcase the program's strengths. Immersive experiences such as virtual campus tours or interactive simulations of academic facilities offer prospective students concrete insights into what they can expect. This strategy helps overcome the limitations of physical distance, enabling institutions to reach broader audiences, including those unable to attend in person. By highlighting the unique and innovative characteristics of the curriculum and facilities through interactive content, the program can stand out more prominently among competitors. Furthermore, this approach fosters deeper engagement, creating a strong emotional attachment between prospective students and the institution.

The implementation of interactive multimedia not only strengthens the program's brand image and enhances the institution's competitiveness in an increasingly dynamic educational market. Integrating various types of multimedia content into marketing and branding strategies allows institutions to communicate their messages more creatively, efficiently, and with a broader impact. Investment in such technology reflects the institution's commitment to innovation and quality enhancement, essential indicators for ongoing technological changes and demands. This approach also signals that the institution is dedicated to providing modern and relevant learning experiences for prospective students. Consequently, interactive multimedia improves brand recognition and reinforces the institution's reputation as a responsive and high-quality education provider. This strategy is critical in building and maintaining substantial brand equity amidst the market's competitive dynamics.

C. Quantitative Data Analysis

This study measures changes in brand equity following the implementation of interactive multimedia in the VCD study program. Quantitative data were collected through a survey of 100 respondents, consisting of students, lecturers, and administrative staff. The survey encompassed four dimensions of brand equity: brand awareness, loyalty, perceived quality, and brand associations. Statistical analysis was conducted using descriptive statistics and paired t-tests to evaluate differences in perceptions before and after implementing interactive multimedia. Table 1 presents the average results of respondents' perceptions before and after implementing interactive multimedia for each dimension of brand equity.

Table 1. Changes in Average Brand Equity Perceptions Before and After the Implementation of Interactive Multimedia

Brand Equity Dimension	Before Implementation	After Implementation	Change (%)
Brand Awareness	3.,5	4.,2	+20%
Brand Loyalty	3.,2	4.,0	+25%
Perceived Quality	3.,8	4.,5	+18%
Brand Associations	3.,6	4.,3	+19%

D. Evaluation Results

In the study on the development of interactive multimedia to enhance brand equity in higher education, particularly within the VCD study program, statistical data, and survey results play a crucial role in evaluating changes in brand perception. These data offer deep insights into the impact of interactive multimedia implementation on the image and value of educational institutions' brands. Surveys typically include questions aimed at measuring the responses of prospective students and other audiences to changes in marketing and branding materials following the adoption of interactive multimedia. For example, a survey might reveal a significant increase in brand recognition after an institution launched promotional videos or multimedia-based applications. These findings indicate that interactive elements like virtual simulations and online campus tours make the study program more engaging and memorable than traditional marketing methods.

Survey statistics often reveal improvements in critical aspects of brand equity, such as brand awareness, brand image, and perceived quality of the study program. For instance, data may show a 30% increase in brand awareness among prospective students after implementing interactive multimedia. Additionally, surveys might demonstrate that respondents feel more emotionally connected to the study program and more confident in selecting it as an educational option. Statistical analysis also indicates increased audience engagement with the study program's content. The data suggest that visitors to websites or users of applications featuring interactive multimedia tend to spend more time and engage more actively compared to non-interactive content. These findings confirm that interactive multimedia captures attention and significantly enhances user engagement.

Furthermore, surveys may highlight how advanced technology and creative approaches in interactive multimedia influence audience perceptions of the quality and innovation of the study program. Technologies such as VR, AR, and interactive applications create the impression that the institution is staying current with technological advancements and is open to innovations. The audience may perceive the institution as more modern, adaptive, and relevant to the needs of contemporary industries, thereby reinforcing the institution's positive image. Implementing interactive multimedia also strengthens brand equity by building audience loyalty through personalized and interactive experiences with the study program. In addition to attracting prospective students, these experiences foster emotional bonds between the audience and the institution. As such, interactive multimedia is a promotional tool and a vital strategy for maintaining reputation and enhancing competitiveness in the highly competitive higher education sector.

The study employed a paired t-test to evaluate interactive multimedia's effectiveness in enhancing brand equity dimensions, including brand awareness, loyalty, perceived quality, and brand associations. The paired t-test compared respondents' perceptions before and after implementing interactive multimedia, revealing statistically significant improvements across all dimensions. As shown in Table 1, the average scores for brand awareness, loyalty, perceived quality, and brand associations increased by 20%, 25%, 18%, and 19%,

respectively. These results indicate a substantial enhancement in brand equity following the adoption of interactive multimedia.

Table 2. Changes in Brand Equity Perceptions Before and After the Implementation of Interactive Multimedia

Brand Equity Dimension	Before Implementation	After Implementation	Change (%)	p-value
Brand Awareness	3.5	4.2	+20%	<0.01
Brand Loyalty	3.2	4.0	+25%	<0.01
Perceived Quality	3.8	4.5	+18%	<0.01
Brand Associations	3.6	4.3	+19%	<0.01

The p-values indicate that the observed changes are statistically significant ($p < 0.01$), confirming the positive impact of interactive multimedia on brand equity. In addition to quantitative analysis, qualitative findings from in-depth interviews further support these results. Interview participants, including multimedia developers and branding professionals, highlighted the unique advantages of interactive multimedia in creating engaging and memorable brand experiences. Key themes from the interviews include:

1. **Enhanced Engagement**: Participants noted that the interactive features, such as animations and virtual simulations, captured users' attention more effectively than static content.

2. **Improved Perceptions of Quality**: Respondents associated using advanced technology with higher program quality, perceiving the institution as modern and innovative.

3. **Stronger Emotional Connection**: Interactive multimedia fostered a sense of personal involvement and emotional connection with the brand, enhancing user loyalty.

4. **Expanded Accessibility**: Virtual campus tours and multimedia-based presentations were identified as practical tools for reaching a broader audience, including those unable to attend physical events.

These qualitative insights align with the statistical findings, illustrating how interactive multimedia strengthens the program's brand equity. By combining quantitative and qualitative methods, this study provides a comprehensive understanding of the effectiveness of interactive multimedia as a branding tool for higher education institutions.

DISCUSSION

This study demonstrates that implementing interactive multimedia significantly enhances brand equity in the VCD study program at higher education institutions. These results align with the findings of (Bozkurt et al., 2021), which highlights the critical role of interactive media in increasing user engagement and brand perception, particularly among younger

generations. Furthermore, the findings support the study by (Kisiołek et al., 2021), which asserts that integrating technology into branding strategies makes institutions more competitive than conventional approaches. Implementing interactive multimedia in the VCD program improves brand awareness and strengthens academic reputation and emotional connections with stakeholders. In addition to complementing previous findings, this study challenges the conclusions of (Thite, 2022), which claimed that significant investment in interactive multimedia poses a major barrier. This research proves that the benefits, particularly in enhancing loyalty and perceived quality, make this investment strategic. The findings also address the research gaps identified by (Ruangkanjanases et al., 2022) and (Prawira et al., 2021), providing empirical evidence that interactive multimedia effectively strengthens the four dimensions of brand equity: awareness, loyalty, perceived quality, and brand associations. In practice, interactive multimedia offers innovative solutions for institutions to build brand equity and attract prospective students through technologies such as virtual campus tours and interactive presentations. AR and VR technologies are expected to enrich user experiences, though institutions must remain committed to addressing cost challenges and continuously updating content to stay relevant.

Limitation

This study has several limitations that should be carefully considered. Although the selected participants had direct experience with interactive multimedia, the results may not fully represent the views of all students, lecturers, and administrative staff in the VCD program. This indicates that the research findings may only be relevant to a specific group within the program. Additionally, this study relies on data collected through surveys and interviews, which may be influenced by respondent bias. Respondents may provide expected or inaccurate answers, which could affect the validity and reliability of the data. Therefore, caution is required when interpreting the results to avoid drawing incorrect conclusions.

Further limitations arise from time and resource constraints, which may have affected the depth of the analysis. Although this study incorporates quantitative and qualitative methods, these limitations could reduce the scope of exploration into the impact of interactive multimedia. Future research with adequate time and resources is needed to investigate more complex and in-depth aspects. This study is also limited to the context of higher education within the VCD program, and thus, its findings may not be universally applicable to other fields or educational contexts. Research in various fields and educational environments is required to gain a more comprehensive understanding of the effectiveness of interactive multimedia. This will enable broader generalization of the findings and provide additional insights into applying such technologies in different contexts.

CONCLUSION

This study demonstrates that interactive multimedia significantly strengthens brand equity in the VCD program within higher education. By integrating elements such as text, images, videos, animations, and interactive features, educational institutions have successfully

created engaging and immersive experiences for prospective students. This approach not only enhances the positive image and appeal of the study program but also facilitates the delivery of information innovatively and effectively. Implementing interactive multimedia has been proven to strengthen both awareness and emotional connections between the audience and the institution, ultimately improving loyalty and the perceived quality of the program. This strategy provides a competitive advantage in the context of intense competition, enabling institutions to differentiate themselves and reinforce their reputation as innovative and high-quality education providers. Thus, interactive multimedia is a promotional tool and a critical element in building and maintaining brand equity.

Further research could explore the use of advanced technologies, such as AR and VR, to enhance brand equity in higher education. These technologies can create more immersive and interactive experiences, allowing prospective students to engage in simulations or virtual tours and strengthening their emotional attachment to the study program. Implementing AR and VR could also add value to promotional efforts by increasing visual appeal and providing practical experiences relevant to the curriculum. Additionally, exploring how interactive multimedia technologies can be effectively applied across various fields beyond VCD, such as science, business, or medicine, is essential to broaden their benefits and enhance academic engagement. Further research should also include an evaluation of the sustainability of these technologies, including an analysis of their long-term impact on students' perceptions and how multimedia experiences influence their decisions during and after their enrollment in the program. Therefore, adopting these new technologies is expected to strengthen institutional marketing strategies and maintain competitiveness in the continuously evolving global education market.

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