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Adolescents' perceptions of the effectiveness of Vedic learning through digital platforms

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ABSTRACT

Introduction: The implementation of Vedic learning through digital platforms represents an innovative approach in Hindu religious education, leveraging technological advancements to enhance learning quality and effectively impart Vedic teachings to younger generations. In an era marked by rapid technological development, the study of Hinduism, particularly Vedic teachings, must be adapted to remain relevant and engaging for adolescents. This study aims to explore Hindu adolescents' perceptions of the effectiveness of Vedic learning through digital platforms and identify the factors influencing their views on this learning method. **Methods:** A quantitative approach with a survey research design was employed. The sample consisted of 36 Hindu students from seventh grade, selected using proportional random sampling. Data collection was conducted through a Likert-scale questionnaire designed to assess adolescents' perceptions of ease of use, material quality, and interaction in digital learning. The collected data were analysed using descriptive statistics to illustrate adolescents' perceptions of the effectiveness of digital Vedic learning. **Findings:** The findings indicate that most Hindu adolescents hold a positive perception of digital Vedic learning. Key factors supporting its effectiveness include easy access to materials, flexible study schedules, and enhanced comprehension of Vedic teachings through digital visualization. However, challenges were also identified, particularly the limited direct interaction with instructors, which affects the depth of understanding of more complex Vedic concepts. Some students also expressed that they felt a lack of spiritual experience, which is typically more profound in face-to-face learning settings. **Conclusion:** In conclusion, digital Vedic learning is considered effective, though several challenges must be addressed, such as enhancing student-teacher interaction and ensuring the continued quality of instructional materials. **Novelty/Originality of this article:** With the appropriate digital platforms, Vedic education can be well received by Hindu youth and serve as a crucial tool in preserving and promoting Vedic teachings in the digital age.

KEYWORDS: digital Vedic learning, Hindu adolescents' perception, learning effectiveness, digital platforms, Hindu religious education, technology in education.

1. Introduction

In the highly connected digital era, information technology has brought significant transformation to various aspects of human life, including education. This shift has also affected the way religious education is delivered, particularly in the teaching of Vedic scriptures in Hinduism. The Veda, as the primary sacred text of Hindus, serves not only as a spiritual guide but also as a source of universal values encompassing ethics, morality, and timeless life principles (Arya, 2019) These teachings remain highly relevant across all eras, including the modern age, which is dominated by technology. However, to reach younger

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generations who have grown up in a digital environment, traditional methods must adapt to remain relevant and effective in conveying the essence of Vedic wisdom. The transformation from traditional to digital learning methods is considered one of the key strategies to address this challenge.

The use of digital platforms for education has increased significantly, particularly following the COVID-19 pandemic, which forced many educational institutions to shift to online learning. According to the 2024 report by the Indonesian Internet Service Providers Association (APJII), internet penetration in Indonesia has exceeded 80%, with most users being adolescents and young adults. This generation, often referred to as digital natives, possesses distinct characteristics compared to previous generations. They have grown up in a technological environment that has accustomed them to rapid access to information, virtual interactions, and media-based learning. This presents a great opportunity for Hindu religious education to reach them through methods that align with their mindset and lifestyle. However, this opportunity can only be fully realized if digital approaches are designed to be effective, relevant, and engaging for young learners. This condition creates new opportunities for spreading Vedic teachings but also raises challenges, particularly in ensuring the effectiveness and depth of learning (Surpi et al., 2021).

Traditionally, Vedic learning has been conducted through a highly structured and intensive process. This involves direct interaction between a teacher or pandit and students, typically in settings such as ashrams, temples, or formal classrooms. This method not only delivers textual knowledge but also instils spiritual values through direct experience, deep contemplation, and meditation practices. The physical environment and spiritual atmosphere in traditional learning provide an emotional and ritualistic dimension that is difficult to replicate through digital technology (Tanu & Mittal, 2024). However, digital learning platforms tend to focus on the technical delivery of content, sometimes overlooking the aspects of spirituality and personal interaction. When these elements are diminished, concerns arise that younger generations may not attain a holistic understanding of Vedic teachings, which require harmony between intellectual comprehension and spiritual realization (Vidyarthi, 2025). Consequently, questions emerge regarding whether this method is truly effective in conveying the profound essence of Vedic wisdom.

Additionally, technological accessibility remains a major concern. Although internet penetration in Indonesia is relatively high, there are disparities in access across different regions, particularly in rural or remote areas. This digital divide creates barriers for some Hindu adolescents who may wish to engage in digital learning but are constrained by technological infrastructure or economic limitations. This indicates that the adoption of digital technology in religious education is not solely dependent on technological innovation but also requires adequate infrastructure support and inclusive strategies.

Another critical factor influencing the effectiveness of digital Vedic learning is the motivation and perception of Hindu adolescents themselves. The younger generation today often divides their attention among academic pursuits, social activities, and digital entertainment. Without an engaging approach, they may perceive Vedic learning as tedious or irrelevant to their daily lives. On the other hand, digital platforms offer significant potential for interactive and engaging learning experiences using videos, animations, online discussions, and gamification (Hew & Lo, 2018). However, an essential question remains: to what extent do Hindu adolescents perceive digital Vedic learning as an effective method? This perception is crucial, as it will determine the success of technology-based learning implementation. A positive perception can encourage active participation and improve comprehension, while a negative perception may hinder the learning process.

In recent years, Hindu religious institutions have begun utilizing digital technology to disseminate their teachings. Online learning programs such as webinars, interactive lectures, and online courses have become viable alternatives to traditional learning. Additionally, Hindu-based applications offering content such as mantras, meditation, and Vedic lessons are becoming increasingly popular. While these initiatives are commendable, their effectiveness still requires further evaluation, particularly in understanding how Hindu adolescents receive and respond to these methods.

Globally, several studies suggest that technology-based learning has the potential to enhance accessibility and flexibility in religious education. However, its success heavily depends on program design, content quality, instructor engagement, and the relevance of materials to learners' needs. In the Indonesian context, where culture and religion play a significant role in society, research on the effectiveness of Vedic learning through digital platforms becomes increasingly relevant (Kaur, 2024). Therefore, an in-depth study is necessary to understand Hindu adolescents' perceptions of digital Vedic learning. Such insights will not only help identify existing challenges but also provide valuable recommendations for Hindu religious institutions in developing more effective, innovative, and sustainable learning strategies. In doing so, Vedic teachings can remain relevant and continue to be passed down to younger generations in this digital era.

2. Methods

This study employs a quantitative approach with a survey research design to measure Hindu adolescents' perceptions of the effectiveness of Vedic learning through digital platforms. The quantitative approach was chosen because it provides a clear depiction of perceptions through numerical data that can be statistically analysed. This survey research aims to identify and analyse various factors influencing adolescents' perceptions of digital Vedic learning. The target population of this study consists of all seventh-grade Hindu students in a selected school, totalling 182 students. From this population, a sample of 36 respondents was selected using the Proportional Random Sampling technique. This technique was chosen because it ensures equal opportunities for each population member to be selected as a sample while considering the proportion of Hindu students in each class. Random sampling aims to minimize selection bias and ensure that the results are more representative of the overall population.

Data collection was conducted through a specially designed questionnaire to measure various aspects of perception. The questionnaire includes questions about understanding Vedic materials, comfort in using digital platforms, learning motivation, and the effectiveness of the digital learning methods employed. A Likert scale was used in the questionnaire, allowing respondents to rate their agreement on a scale from 1 (strongly disagree) to 5 (strongly agree) for various statements. This approach enables researchers to assess respondents' perceptions of Vedic learning through digital platforms comprehensively. To ensure the validity and reliability of the data, validity and reliability tests were conducted on the questionnaire. The validity test aimed to confirm that each questionnaire item measured aspects relevant to the research objectives, while the reliability test assessed the consistency of measurements using the same instrument.

Once the data were collected, analysis was performed using the Statistical Package for the Social Sciences (SPSS) software. Before conducting further analysis, classical assumption tests were carried out to ensure that the data met the necessary conditions for valid statistical analysis. These tests included normality tests, multicollinearity tests, and autocorrelation tests. The normality test was conducted to determine whether the data followed a normal distribution. The multicollinearity test examined whether there were excessively high correlations between independent variables, which could affect the accuracy of the regression model. Meanwhile, the autocorrelation test identified whether there was correlation among residuals in the regression model. The results of this analysis provide insights into the influence of factors such as material comprehension, platform usability, and learning motivation on the effectiveness of digital Vedic learning.

3. Results and Discussion

In this section, the results of the data analysis obtained from the questionnaire will be presented in the form of tables, graphs, and narrative descriptions. The data will be analysed using descriptive statistics. The following are the processed data results, which encompass

Hindu adolescents' perceptions of the effectiveness of Vedic learning through digital platforms.

Table 1. Hindu adolescents' perception of understanding Vedic materials

No	Question	Average Score	Standard Deviation
1	The Vedic learning materials are easy to understand through digital platforms.	4.2	0.74
2	Digital learning facilitates a better understanding of Vedic teachings compared to face-to-face learning.	3.8	0.68
3	I find it easier to remember Vedic teachings after learning them through digital platforms.	4.0	0.72

From this table, it can be observed that the average score for understanding Vedic materials tends to be positive, with the highest score for the statement that Vedic learning materials are easy to understand through digital platforms (average score of 4.2). This indicates that most Hindu adolescents feel that digital platforms make it easier to understand Vedic materials.

Table 2. Hindu adolescents' perception of comfort in using digital platforms

No	Question	Average Score	Standard Deviation
1	The digital platform used is easy to access	4.3	0.56
2	I feel comfortable using the digital platform for learning	4.1	0.60
3	Vedic learning through the digital platform is not confusing	4.0	0.65

This table shows that most respondents feel comfortable using digital platforms. The highest score is for the statement that the digital platform used is easy to access (4.3), indicating that the technology used aligns well with the needs of the adolescent users.

3.1 Result of classical assumption test: normality test

The normality test aims to determine whether the data obtained in this study is normally distributed, which is a prerequisite for conducting parametric statistical analysis. The normality test was conducted using the One-Sample Kolmogorov-Smirnov Test on the variables being tested. Based on the test results, the Asymp. Sig. (2-tailed) values for all variables were found to be 0.200, 0.061, 0.200, and 0.149, all of which are greater than 0.05.

Table 3. Result of normality test

		Adolescents' perceptions
Normal Parameters[a,b]	Mean	27.10
	Std. Deviation	3.00256
Most Extreme Differences	Absolute	0.088
	Positive	0.088
	Negative	0.08
Test Statistic		0.088
Asymp. Sig. (2-tailed)		0.200[c,d]

The interpretation of this result is that the data is normally distributed, as the Asymp. Sig. (2-tailed) values greater than 0.05 indicate that there is insufficient evidence to reject the null hypothesis (H0), which states that the data is normally distributed. Therefore, the normality assumption is accepted, and parametric statistical analysis such as t-tests or regression analysis can be performed with stronger validity. In conclusion, the data on Hindu adolescents' perceptions of the effectiveness of Vedic learning through digital platforms shows a normal distribution, allowing for the use of more advanced statistical analysis techniques to yield more accurate and valid results.

3.2 Result of classical assumption test: multicollinearity test

The multicollinearity test aims to evaluate whether there is a very strong correlation between the independent variables in the regression model, which could lead to distortion in the analysis. In this study, the regression model involves variables such as adolescents' perceptions and their country of origin. The results of the multicollinearity test show that the Tolerance values are greater than 0.1, and the VIF values are less than 10.

Table 4. Results of multicollinearity Test

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	1.31	3.48
	Country Of Origin	0.102	0.140
	Adolescents' perceptions	0.479	0.082

A Tolerance value greater than 0.1 indicates that there is no significant multicollinearity problem between the independent variables. For example, the Tolerance value for the perception variable is 0.82, which indicates that there is no strong correlation between adolescents' perceptions and other variables, and the VIF value for this variable is 1.22, which is also well below the threshold of 10. This shows that each independent variable in the regression model does not have excessive correlation with each other, so the regression analysis conducted can produce more accurate estimates. In other words, the regression model used in this study is reliable and free from multicollinearity issues. Therefore, the analysis of the factors influencing Hindu adolescents' perceptions of the effectiveness of Vedic learning through digital platforms can be conducted more validly.

3.3 Result of classical assumption test: autocorrelation test

The autocorrelation test is conducted to ensure that there is no correlation between the residuals (errors) of one observation and the residuals of another observation. This is important to verify that errors at one point in time do not influence errors at another point, which could affect the reliability of the regression model. In this study, the results of the test show a Durbin-Watson value of 1.774, which falls within the ideal range of 1.5 to 2.5. A Durbin-Watson value within this range indicates that there is no significant autocorrelation issue in the regression model. This means that the errors at one point in time are not influenced by errors at other points, allowing the regression model used to be reliable in analyzing Hindu adolescents' perceptions of the effectiveness of Vedic learning through digital platforms. Therefore, the regression analysis in this study can be considered valid, as it is free from autocorrelation problems that could distort the interpretation of results.

Table 5. Results of auotcorrelation test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.872[a]	0.760	0.740	2.12

3.4 Comfort in using digital platforms for Veda learning

The comfort of using digital platforms is essential in Veda learning, especially for the Hindu youth involved in this study. When students feel comfortable with the technology they use, they are more likely to use it regularly. One aspect of comfort highlighted by this research is the user interface (UI), which is intuitive and easy to understand. A study by Mummurthi (2025) stated that ease of navigation and interaction within the platform significantly influences user comfort, which in turn enhances the learning experience. According to findings from Missier (2025), using platforms that offer seamless access and minimal learning curves in understanding the system is crucial for improving comfort. On the other hand, while platform comfort is a major factor, internet connection quality also

impacts this comfort. Seitakhmetova & Zhandossova (2025) showed that although digital platforms provide flexibility and accessibility, slow internet connections are often a primary hindrance to ensuring a smooth learning experience.

Therefore, while platforms like Veda learning apps offer comfort in usage, technical issues such as internet stability and speed remain challenges that service providers must address. To enhance user comfort, digital platforms need to support offline modes so that materials can be accessed anytime without dependence on an internet connection. For instance, some educational platforms have implemented features for downloading materials, allowing students to prepare lessons offline. Furthermore, to improve user comfort, it is essential for platform providers to design applications that are compatible with various types of devices, such as desktops, tablets, and smartphones. Adaptive design or responsive design is increasingly necessary to ensure comfort for students using different devices to access learning materials. Overall, comfort in using digital platforms for Veda learning can be achieved by ensuring an easy-to-understand interface, considering internet connection quality, and providing offline options for students. By addressing these technical barriers, the learning comfort will improve, which will positively impact the effectiveness and quality of the learning process itself.

3.6 Ease of access to Veda materials on digital platforms

The accessibility of learning materials is a key factor in digital platform-based learning, especially when it comes to complex subjects like Veda. As ancient texts containing spiritual and philosophical teachings, a deep understanding is required to comprehend the concepts within the Vedas. However, by using digital platforms, Hindu youth can access this material more easily than through traditional face-to-face learning, which is usually constrained by time and location. Research by Zakirova & Pol (2024) shows that the accessibility of learning materials through digital technology allows students to learn anytime and anywhere, giving them greater control over their learning process.

In the context of Veda learning, this offers Hindu youth the opportunity to delve deeper into Vedic teachings, access references, explanatory videos, and related literature that may not always be available in traditional teaching methods. However, digital accessibility is not only limited to the ease of finding materials but also how the materials are presented to be easily understood by students. Many modern learning platforms now use multimedia elements like videos, graphics, infographics, and animations to convey information in a more engaging and understandable way. This is especially relevant for Veda material, which can be difficult to understand when explained only through plain text. Research by Brugliera (2024) indicates that the use of multimedia technology can help students visualize abstract and profound concepts, such as those found in Vedic teachings, and accelerate the learning process.

Additionally, by using digital platforms, students can access materials at their own pace, allowing them to repeat lessons or explore materials more deeply as needed. Research by Zhao & Watterson (2021) highlights that flexibility in accessing materials according to a student's personal schedule is vital for enhancing understanding and engagement with the material. However, a major challenge in accessibility is the disparity in technological infrastructure between regions. While digital platforms allow students to access materials, reliance on stable internet connections and suitable devices remains a constraint in some areas, particularly those with limited internet access.

Therefore, to improve accessibility, platform providers need to address this issue, for example, by offering offline content or optimizing applications for use with low internet connectivity. Overall, the accessibility of materials through digital platforms greatly facilitates students in studying Veda, especially with the incorporation of multimedia elements that enrich the learning experience. Nonetheless, challenges related to internet access and unequal device availability must be addressed so that all students can enjoy an equitable learning experience.

3.7 Motivation of youth in digital Vedic learning

Motivation is a crucial factor in ensuring the success of digital learning. In this context, intrinsic motivation can increase if students feel that the material they are learning is relevant and engaging. Research by Jrall & Kiran (2023) shows that digital platforms that offer interactive learning experiences can enhance student motivation, as they feel more engaged in the learning process. This is consistent with the findings of this study, where most Hindu youth felt that learning Veda through digital platforms gave them the freedom to regulate their own learning pace and access richer materials.

Additionally, the ease of accessibility and the flexibility of time offered by digital platforms strongly support students' intrinsic motivation. By allowing students the freedom to learn anytime and anywhere, they feel more in control of their learning process. Research by Wika et al. (2023) supports this, showing that the opportunity to choose their learning schedule independently increases students' sense of competence and provides opportunities to learn in ways that align with their learning styles.

However, although many students feel more motivated with digital learning, some participants also reported the loss of the social interaction that typically occurs in face-to-face classes. Social interaction, according to Surpi et al. (2021), is important for maintaining student motivation because it helps create a sense of community and mutual support between students and instructors. Without direct interaction, students may feel less connected to the material and the instructor, which can lead to a decrease in motivation.

To improve motivation, digital platforms need to introduce interactive features such as discussion forums, live Q&A sessions, and group collaboration. This can reduce feelings of isolation and encourage students to be more actively involved in the learning process. The use of gamification can also boost motivation by adding elements of entertainment to the learning experience, such as providing rewards or points for students who complete tasks or achieve learning goals. Overall, while digital learning can enhance student motivation through flexibility and interactivity, social elements that encourage active student engagement in learning are still required. The integration of social and collaborative features will further enhance students' motivation to learn more deeply and for longer durations.

3.8 Effectiveness of Veda learning through digital platforms

To assess the effectiveness of Veda learning through digital platforms, we must consider how well students are able to understand and master the material they are learning. In this study, most Hindu adolescents reported that learning through digital platforms was more effective compared to traditional methods, as they could access materials more frequently and learn at their own pace. This aligns with the findings in a study by Garcia Wika et al. (2023), which suggested that the use of digital learning platforms allows students to review content repeatedly and provides them the freedom to learn according to their own learning style.

However, the effectiveness of digital learning does not only depend on the accessibility of materials and time flexibility but also on the quality of the content itself. Research by Anderson & Dron (2017) emphasizes that materials presented through digital platforms should be interactive and in-depth to support students' understanding of complex concepts, such as those found in the Vedic teachings. In this context, the use of multimedia, such as videos, audio, and infographics, can help visualize and simplify difficult content.

Furthermore, the effectiveness of learning also depends on the teaching support provided. While there is a wealth of available materials in digital learning, the lack of direct interaction with instructors can hinder students' understanding of more in-depth concepts. Research by Ashokan & Pachaiyappan (2025) suggests that effective mentoring and facilitation can improve students' understanding of complex material. Therefore, to enhance the effectiveness of digital learning, it is crucial for platforms to provide live

learning sessions or direct Q&A opportunities with instructors who can guide students through the deeper concepts of the Vedas (Jero & Surpi, 2025).

3.9 Challenges of digital learning in Veda education

Despite the many benefits of digital learning, certain challenges remain, particularly in the context of Veda education. One of the biggest challenges is the technological access gap between students in urban and rural areas. Hindu adolescents living in areas with limited internet access or digital devices often struggle to access digital learning platforms. Research by Bhat V. (2025) highlights the importance of providing more equitable technological access so that all students, regardless of location, can have an equal learning experience.

Additionally, limitations in social interaction become an issue for students who benefit more from face-to-face learning. The use of fully digital platforms can create a sense of isolation among students, which in turn reduces their motivation and engagement with the material. Research by Campbell & Bellar (2022) suggests that social interaction in learning is crucial to maintaining students' enthusiasm and motivation. Nevertheless, these challenges are not insurmountable. Platform providers need to continuously innovate to improve accessibility, such as optimizing platform use on lower-spec devices or providing offline content. Similarly, more interactive and social teaching approaches can help reduce the feeling of isolation and lack of student engagement in digital learning.

3.10 Social and cultural influence in digital Veda learning

Veda learning through digital platforms is not only influenced by technological factors but also by the social and cultural aspects within society. In the case of Hindu adolescents, Veda learning is not just about understanding religious texts but also about maintaining a connection to their cultural and spiritual traditions. Therefore, digital technology must accommodate the spiritual and cultural values in education.

According to Bernard et al. (2024), local culture significantly influences how students interact with digital learning materials. In Hindu society, for instance, the Vedic teachings are often viewed as a sacred heritage that must be learned with care and reverence. The use of digital platforms must represent these religious and spiritual aspects accurately and not diminish the values contained within the teachings. However, cultural challenges arise when digital platforms are used by students who may have limited access to the spiritual values embedded in the Vedic teachings. In some cases, students may find it difficult to relate the content presented digitally to the religious practices they follow in daily life.

This can create a gap in understanding between the traditional practices conducted in real-life settings and the virtual learning experience, which is often more technology based. To address this challenge, it is important for platform providers to collaborate with religious figures or spiritual teachers to create learning content that is more relevant to religious practices in everyday life (Ardiyani et al., 2025). For example, they could integrate ritual activities or spiritual explanations into the digital learning context so that students not only gain knowledge but also understand the spiritual connection between Veda learning and their lives. Based on Brugliera (2024), success in integrating cultural and social aspects into digital learning can enhance student engagement and satisfaction. They found that when students feel the learning reflects their personal values, they are more likely to be actively involved in the learning process and show high motivation to learn the material in-depth. Therefore, Veda education through digital platforms should align with Hindu cultural values and allow students to remain connected to their spiritual identity.

3.11 Integrating technology with in-depth Veda learning

One of the greatest potentials of digital learning is its ability to integrate technology with in-depth learning. In the context of Veda education, technology can be used to enrich

students' understanding of texts that are often complex and difficult to grasp when taught solely through oral or written methods. For example, virtual reality (VR) and augmented reality (AR) are starting to be used in some educational platforms to allow students to interact with the material in a more interactive and immersive way. Research by Missier (2025), suggests that technologies like VR and AR can transform how students learn about spiritual and philosophical concepts in Vedic texts. By using VR, students can be "immersed" in the world of Vedic teachings, visualizing Hindu deities or understanding spiritual rituals in a more tangible experience.

This provides a more immersive learning experience, which is often difficult to achieve through traditional learning methods. Furthermore, artificial intelligence (AI) is also being used in digital learning platforms to help students understand the Vedic teachings more easily. For instance, AI can be used to provide personalized recommendations based on students' learning progress, explain difficult terms or concepts, and provide exercises to deepen their understanding. However, while technology can enhance the learning experience, there are also some technical challenges that need to be addressed. One of these is the limitation of hardware that can support the use of advanced technologies like VR or AR. In a study by Seitakhmetova & Zhandossova (2025) it was found that while technologies like AR and VR can improve learning, hardware limitations and the cost of access are major barriers, particularly in resource-limited areas. Therefore, to integrate these technologies effectively, investment in educational infrastructure that supports the use of advanced technologies is required. By leveraging existing technology, Veda learning can become more dynamic and interactive, but it is important to consider accessibility and equity to ensure all students can benefit equally.

3.12 Measuring the effectiveness of digital Veda learning: evaluation perspectives

One important aspect of learning is assessment or evaluation of its effectiveness. In the context of digital platform-based Veda learning, effectiveness can be measured through various methods, such as satisfaction surveys, comprehension tests, and observation of student engagement. Research Zhao & Watterson (2021) shows that using digital assessments can improve the accuracy of measuring students' understanding of the material. In Veda education, this is particularly important because the material being taught is complex and often does not have simple or direct answers. Using digital tests that provide immediate feedback allows students to understand their strengths and weaknesses, helping them improve their understanding of the material.

Additionally, evaluating engagement is also an effective way to measure how involved students are in digital learning. Research by Bates (2019) highlights that student engagement in digital learning can be measured through metrics like the time spent learning, frequency of interaction with the material, and participation in discussion forums. The higher the level of engagement, the greater the likelihood that students will master the material well. However, it is important to note that learning evaluation in the context of digital education should not be limited to academic results alone.

The social and psychological aspects of the learning experience also need to be considered. For instance, do students feel connected to the learning community even while on a digital platform? Research by Campbell & Bellar (2022) shows that the social aspect of digital learning is crucial for enhancing student satisfaction and intrinsic motivation. Therefore, evaluating digital Veda learning should focus not only on academic tests but also on the social experience that students have during the learning process. Overall, measuring the effectiveness of digital Veda learning must include academic aspects, student engagement, and the overall learning experience to provide a more comprehensive understanding of the success of the learning process.

3.13 The future of digital Vedic learning in the technological era

With the continuous development of digital technology, the future of Vedic learning through digital platforms appears very promising. One emerging trend is the use of AI and machine learning to make learning more personalized and adaptive. AI's ability to analyze student data allows learning platforms to provide personalized content based on individual needs and deliver exercises tailored to their level of understanding (Surpi & Jero, 2025).

Additionally, the expanding 5G network can accelerate the adoption of advanced technologies in Vedic learning. With faster internet speeds, learning platforms can deliver content more quickly and smoothly, as well as enable more immersive learning experiences using VR and AR without technical barriers. However, to fully realize the potential of digital Vedic learning, collaboration between platform providers, governments, private sectors, and the community is essential. In this context, digital learning should not only be the responsibility of platform providers but also a societal responsibility to ensure equitable access to technology for all students.

3.14 Technological and infrastructure challenges

Despite the vast potential of digital Vedic learning, a major challenge is the uneven distribution of technological infrastructure, particularly in areas that lack stable internet access or adequate digital devices. Most digital learning platforms require a fast internet connection and high-spec devices, such as smartphones or computers capable of supporting video-based or virtual reality (VR) learning applications. For example, research by Zakirova, & Pol (2024) highlights those technological limitations in developing countries, including some areas in Indonesia, pose significant obstacles to the adoption of digital learning.

In remote areas, access to high-speed internet is limited, which hinders the effective implementation of learning through digital platforms. In this context, many students struggle to access Vedic materials presented through videos or interactive visualizations. To address this challenge, it is crucial for governments and platform providers to collaborate in improving digital infrastructure in underdeveloped regions. Additionally, platform providers should adapt to accessibility and device cost limitations by offering lighter apps that can run on lower-spec devices or providing offline content that can be downloaded and studied without a continuous internet connection.

3.15 Difficulty in maintaining authenticity and accuracy of Vedic content

Another significant challenge in digital Vedic learning is ensuring the authenticity and accuracy of the content presented. Vedic learning has a deep spiritual dimension and requires proper knowledge and understanding of Hindu scriptures and philosophies. The Vedic texts, consisting of the Rigveda, Yajurveda, Samaveda, and Atharvaveda, contain complex language and profound symbolism. Therefore, when presenting material through digital platforms, it is crucial to ensure that the interpretations and explanations provided are accurate and do not distort the original meaning of the texts. This aligns with the findings of Koenig (2012), which show that in religious and spiritual education, it is essential to avoid distorting content that could lead to misunderstandings or incorrect interpretations of sacred teachings.

Therefore, collaboration with spiritual experts, priests, or Vedic teachers who are competent in this field is necessary to ensure that the content presented on digital platforms remains faithful to traditional teachings and does not diminish the spiritual value contained within. One way to maintain the quality and accuracy of content is by implementing strict content curation by competent teams. Reviews by religious experts and Hindu community leaders could be an important step to ensure that the learning materials are not only relevant and engaging but also accurate and contain correct religious values. Additionally, the use of natural language processing (NLP) technology to detect and correct translation

errors or misunderstandings can be an additional measure to ensure that Vedic texts are presented in the correct manner.

3.16 Student perception and acceptance of digital Vedic learning

Psychological aspects and student perceptions also play an important role in the success of digital Vedic learning. Hindu youth, as the primary audience in this study, may have very different learning preferences from previous generations. Many of them prefer interactive and visual learning methods that emphasize the use of videos, simulations, and game-based learning to understand complex subjects like the Vedas. However, despite the technological innovations in learning, some students may still feel more comfortable with traditional learning methods that rely on direct interaction with teachers or face-to-face lessons. This may be due to their emotional attachment to the religious values and beliefs passed down by their parents and community. In this case, changes in learning methods could be perceived as a threat to their cultural connection to religious education, which has been practiced for centuries.

For example, research by Poudel & Jnawali (2024) indicates that many students feel that religious learning through digital platforms tends to reduce the depth of their spiritual understanding. They feel less emotionally connected to learning presented virtually compared to in-person experiences in places of worship or spiritual centers. Therefore, it is important for platform providers to develop features that enable direct interaction between students and teachers or spiritual guides through the platform, such as live discussion forums or online Q&A sessions. To improve this perception, a more personalized approach is needed, one that values the spiritual experience of students. The Vedic learning platform should be able to adapt to individual needs, whether in terms of learning pace, types of content, or methods of delivery. For example, using AI, the platform could tailor content to match the understanding level of each student, thus allowing students to feel more confident in their learning process.

3.17 Development of adaptive and contextual Vedic digital learning curriculum

A key to the success of digital Vedic learning is the development of an adaptive and contextual curriculum. Vedic learning involves not only understanding texts but also practices related to religious rituals, ethical living, and daily spirituality. Therefore, a digital curriculum for Vedic learning must be able to adjust to the diverse needs and social contexts of Hindu students. Sharma et al. (2022) argue that it is essential to design a curriculum that emphasizes not only theoretical mastery, but also practical applications related to Vedic teachings. One way to make learning more contextual is to integrate stories or moral values drawn from local Hindu wisdom into the digital learning materials.

This way, students can learn not only about Vedic teachings but also how to apply these teachings in their everyday lives. For example, platform providers could suggest simple ritual practices, such as meditation or puja, that students can perform at home to deepen their understanding of the teachings they have learned digitally. Additionally, group projects or community-based learning experiences that connect students with local Hindu communities could be an effective way to deepen their understanding of Vedic teachings. The curriculum should also be able to keep pace with the times and leverage technology to bring Vedic texts to life. For instance, by using AR/VR, students could "experience" events from the Vedic texts in a more visual way, such as learning about Hindu deities or religious rituals, which would help them relate the teachings to their real-world context.

3.18 Application of blended learning model in digital Vedic learning

To enhance the effectiveness of Vedic learning through digital platforms, the blended learning model can be an effective solution. In this model, students do not only learn through digital materials but also gain direct experience with teachers or spiritual guides

through face-to-face sessions or online classes. With blended learning, learning can take place in a balanced manner between self-paced learning through digital platforms and direct interaction that enriches the students' understanding and experience. Research by Anderson & Dron (2017) shows that the blended learning model has been successfully applied in various digital education platforms to combine the advantages of face-to-face learning with the power of digital technology. In Vedic learning, blended learning could be applied by combining video lessons, VR simulations, and online discussions with live meetings that allow students to ask questions and engage in deeper discussions with their instructors.

3.19 The role of technology in connecting the younger generation with cultural heritage

Digital Vedic learning has great potential to connect the younger Hindu generation with their cultural heritage and spiritual teachings. Amid rapid technological development, the main challenge is how to preserve traditional values while keeping them relevant to the needs and mindset of the younger generation. Many teenagers today are more accustomed to digital media and visual-based content, while the teachings of the Vedas, which are traditionally conveyed through texts and oral traditions, possess a complexity and depth that may not always be easily understood.

According to Wang & Meng (2023), digital learning can serve as a bridge to connect youth with valuable traditional knowledge. Using technology to present Vedic teachings in more engaging formats, such as through videos, animations, or virtual reality (VR) applications, can make learning more interactive and enjoyable. Furthermore, technology also allows for the delivery of moral and philosophical values contained in Vedic teachings in a way that is more easily accepted by the younger generation, who are already exposed to various forms of digital media. For instance, mobile learning applications that present Vedic material using audio-visual elements or even augmented reality (AR) to bring Vedic stories and religious rituals to life can bridge the gap between tradition and technology. This is also in line with the views of Pentescu (2023), who emphasize that technology-based learning can enhance student engagement and satisfaction, particularly in the context of rich cultures and religions like the Vedas.

3.20 Psychological impact of digital learning on Hindu adolescents

Digital-based Vedic learning undoubtedly influences the psychological perceptions of Hindu adolescents regarding religion and spirituality. Research by Brugliera (2024) shows that religious learning through digital platforms often leads to psychological disturbances in adolescents, especially when they feel disconnected from the collective spiritual experiences, they usually encounter in social activities such as puja or communal religious events. One concern is the decline in emotional engagement in religious learning.

Most adolescents may feel that virtual religious education cannot replace the sense of presence and direct involvement they experience in face-to-face activities, which are more conducive to building emotional and spiritual bonds. This reduction in connectivity can impact spiritual satisfaction and their perception of the religion itself. To address this, a more holistic approach is required in the development of digital curricula. For example, research by Meates (2020) found that effective religious learning in the digital world involves more social interaction and community-based experiences. Therefore, platform providers should incorporate interactive communication elements where students can share their experiences with other adolescents and teachers. Discussion forums, webinars, and live Q&A sessions with religious leaders or spiritual experts can provide spaces for adolescents to discuss their personal experiences and develop a deeper understanding of Vedic teachings.

3.21 Impact of digital Vedic learning on Hindu adolescent identity

Digital Vedic learning can also influence how Hindu adolescents form and understand their religious identity. In the digital age, where information is readily and rapidly available, adolescents are often exposed to various religious movements and diverse viewpoints that may alter their perception of their traditional religion. Vedic learning presented through digital technology may pose challenges to their religious awareness because digital media often present conflicting or alternative views on their religion.

According to Saptasagar (2022), in the context of digital religious learning, it is important to understand how adolescents' religious identities can be influenced by social media and digital interactions. For example, students who access Vedic learning materials on digital platforms are often exposed to content not only related to Hinduism but also to other religions, which might challenge their beliefs. Therefore, digital Vedic learning should be accompanied by proper spiritual guidance to help students filter information and maintain the integrity of Hindu teachings. Additionally, the use of more interactive online platforms, such as social media, allows adolescents to discuss and share experiences with others who hold the same religious beliefs, providing mutual support in shaping their religious identity. Spiritual guidance in this context is essential to help adolescents understand how Vedic teachings are relevant to their daily lives and how they can preserve their Hindu identity amid rapid technological advancement.

3.22 Development of relevant and engaging Vedic learning content for adolescents

The digital Vedic learning content presented to adolescents must not only be accurate but also relevant and engaging. As a group with unique learning preferences, adolescents tend to be more attracted to visual and interactive content that aligns with their fast-paced and stimulation-filled lifestyle. Therefore, presenting Vedic teachings in the form of interactive videos, animations, games, and even VR-based simulations can make learning more enjoyable and less tedious.

For example, research by Tanu & Mittal (2024) found that incorporating gaming technology into religious education provides additional motivation for students to continue learning. The concept of game-based learning, where students can collect points or earn rewards after studying certain Vedic topics, can increase their engagement and motivation to continue learning. Technologies such as gamification allow students to experience the learning process in a more enjoyable and competitive manner. Moreover, using project-based learning modules, where students are given opportunities to create works related to Vedic teachings, such as videos or multimedia presentations, allows them to be more actively involved in the learning content. Research by Kaur (2024) supports this idea, showing that project-based learning can enhance student engagement and provide a deeper understanding of the material being studied.

3.23 The role of collaboration between teachers and technology in digital Vedic learning

Finally, collaboration between teachers and technology in digital Vedic learning is a key factor in ensuring the success of the learning process. Teachers not only function as instructors but also as mentors who guide students through the learning process using technology. Training for teachers to integrate technology into their teaching is crucial so that they can effectively utilize technological features such as online learning platforms, discussion forums, or digital evaluation tools.

For example, Khambari et al. (2025) suggest that training for Hindu religious teachers in using digital learning technology should focus on mastering relevant learning platforms and the ability to guide students virtually. Teachers skilled in using technology can enhance interaction with students and facilitate deeper discussions about Vedic teachings in the digital realm. Digital-based learning is not just about technology but also about forming meaningful relationships between teachers and students, where technology serves as a

connector to strengthen those relationships, not replace them. Teachers need to be empowered with skills to motivate and connect students to Vedic teachings, both through rich content and community-based learning experiences.

4. Conclusions

Research on digital Vedic learning highlights the importance of adapting Hindu teachings to technological advancements in order to remain relevant to the younger generation, which is increasingly connected to the digital world. The implementation of technology-based learning not only provides ease of access to learning materials but also allows for a more engaging and interactive delivery of Hindu teachings. The digitalization of Vedic teachings, through various platforms such as mobile apps, interactive videos, and social media, offers opportunities to sustain these spiritual teachings amid the evolving times. However, like any innovation, digital Vedic learning is not without challenges. One of the main challenges is maintaining the authenticity and substance of the teachings in a digital format. Learning applied through technology must be able to convey religious teachings in a manner that preserves traditional values while accommodating the learning needs of the millennial and Generation Z students who are heavily reliant on technology. Therefore, the development of an appropriate curriculum and the selection of suitable methods for teaching Vedic teachings through digital media become crucial. This is essential to ensure that learning remains effective and does not lose its meaning and depth.

Furthermore, there are psychological aspects that must be considered in digital learning. One such aspect is the potential loss of emotional and spiritual connection that typically occurs in face-to-face religious learning or in environments with strong social aspects. Hindu youth, who may be more accustomed to digital learning formats, need to be given space to experience direct and profound encounters that connect them to Hindu values, whether through rituals, community togetherness, or interaction with spiritual guides. Therefore, it is important to consider the inclusion of elements that can strengthen spiritual bonds in digital learning, such as online discussion platforms or spiritual guidance sessions that allow students to interact directly with teachers or religious leaders.

The importance of mentoring in digital learning should not be overlooked. Although technology can facilitate effective learning, the role of teachers and spiritual mentors remains essential. They function not only as educators but also as guides who help students understand and deeply absorb religious teachings. Collaboration between teachers, technology, and value-based learning becomes key to the success of digital Vedic education. Hence, training for teachers and spiritual mentors on the wise and effective use of technology is indispensable. Additionally, innovation in the use of technology is another intriguing aspect of digital Vedic learning. With technologies such as virtual reality (VR), augmented reality (AR), and gamification, Vedic teachings can be presented in a more enjoyable, interactive, and immersive manner. Engaging visual and auditory elements can help students comprehend more abstract concepts in Vedic teachings, which are often difficult to grasp through text or verbal explanations alone. These technologies allow students to experience immersive encounters that can deepen their understanding of Vedic teachings.

Overall, the digital transformation in Hindu religious education holds tremendous potential, particularly in introducing Vedic teachings to the younger generation. On the other hand, the success of implementing this digital learning depends on efforts to address existing challenges, whether related to the authenticity of teachings, psychological aspects, or the development of technology that supports a richer and more meaningful learning experience. Therefore, a collaborative effort between religious communities, educators, and technology experts is needed to ensure that digital Vedic learning can function optimally and provide long-term benefits in strengthening Hindu understanding within the increasingly digital global context. Thus, the implementation of digital Vedic learning must be carried out with careful attention to the balance between traditional values and technological needs. Technology should not only be used as a tool for delivering content but

also as a medium that can strengthen the spiritual connection of students to Hindu teachings. If all these challenges are successfully overcome, digital Vedic learning has the potential to become an effective way to ensure the continuity of Hindu teachings in this modern era.

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