RESEARCH PAPER

Blended Learning Approach in Ayurveda Education: Combining Shastra and Technology

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ABSTRACT

Background: Ayurveda education is traditionally based on classical Shastra-oriented teaching methods such as Guru-Shishya Parampara, emphasizing textual learning, memorization, and clinical observation. However, with the rapid advancement of digital technology and changing educational needs, there is a growing demand to integrate modern teaching tools into Ayurveda education. Blended learning, which combines traditional methods with digital platforms, offers a balanced and effective approach.

Aim: To evaluate the role of a blended learning approach in Ayurveda education by integrating classical Shastra-based teaching with modern technological tools.

Objectives: To understand the principles of traditional Shastra-based Ayurveda teaching methods. To assess the need for integrating technology in Ayurveda education. To explore various digital tools and e-learning methods applicable to Ayurveda. To analyze the benefits of blended learning in improving student engagement and understanding. To evaluate the impact of blended learning on knowledge retention and clinical application.

Materials and Methods: This conceptual study is based on a review of classical Ayurvedic education principles along with modern educational methodologies. Data were collected from classical texts, contemporary research articles, and educational models focusing on blended learning, e-learning platforms, virtual simulations, and digital tools used in medical education.

Results: Blended learning enhances student engagement, improves understanding of complex concepts, and supports self-paced learning. Integration of digital tools such as online lectures, virtual anatomy modules, and interactive case discussions with traditional Shastra teaching methods leads to better retention and application of knowledge. It also bridges the gap between theoretical knowledge and clinical practice in Ayurveda.

Discussion: The combination of Shastra-based wisdom with technology creates a dynamic learning environment. While traditional methods ensure conceptual depth and philosophical understanding, technological tools provide accessibility, visualization, and flexibility. This approach aligns well with current educational demands and helps in producing competent Ayurvedic professionals.

Conclusion: Blended learning is an effective and practical approach for modernizing Ayurveda education without compromising its classical essence. It promotes holistic learning by integrating ancient knowledge systems with contemporary technology, thereby enhancing the quality of education and clinical competence.

Keywords: Blended Learning, Ayurveda Education, Shastra, E-learning, Medical Education, Digital Technology

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INTRODUCTION

Ayurveda education has its roots in the ancient *Guru-Shishya Parampara*[1], where knowledge was transmitted directly from teacher to student through *Shastra*[2], observation, and practical exposure. This system emphasized not only theoretical understanding but also experiential learning, discipline, and ethical values[3]. Classical texts like *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* form the backbone of Ayurvedic knowledge, requiring deep study, memorization, and interpretation. This traditional approach has been highly effective in preserving the authenticity and depth of Ayurveda over centuries.[4]

However, in the present era, the educational landscape has undergone significant changes due to the advancement of science and technology.[5] Students

today are more inclined toward interactive, visual, and flexible learning methods. The conventional *Shastra*-based teaching alone sometimes becomes challenging for learners to grasp complex concepts, especially when dealing with subjects like *Sharira Rachana*[6], *Kriya Sharira*[7], and *Dravyaguna*[8]. This creates a gap between traditional teaching methods and the evolving needs of modern learners.

Blended learning has emerged as a promising solution to bridge this gap by combining traditional teaching methods with digital technologies.[9] It integrates classroom teaching with e-learning tools such as online lectures, virtual simulations, digital dissection modules, and interactive discussions. This approach allows students to learn at their own pace while still benefiting from the guidance of teachers. In Ayurveda education, blended learning helps in better visualization of concepts, repeated revision of *Shastra*, and improved clinical understanding.[10]

Therefore, adopting a blended learning approach in Ayurveda education is the need of the hour. It ensures that the essence of *Shastra* is preserved while enhancing learning through modern tools. This integration not only improves academic performance but also prepares students for better clinical practice and research.[11] By combining traditional wisdom with technological advancements, Ayurveda education can become more effective, accessible, and relevant in today's world.

AIM AND OBJECTIVES

Aim:

To evaluate the role of a blended learning approach in Ayurveda education by integrating classical *Shastra*-based teaching with modern technological tools.

Objectives:

- To understand the principles of traditional *Shastra*-based Ayurveda teaching methods
- To assess the need for integrating technology in Ayurveda education
- To explore various digital tools and e-learning methods applicable to Ayurveda
- To analyze the benefits of blended learning in improving student engagement and understanding
- To evaluate the impact of blended learning on knowledge retention and clinical application

MATERIALS AND METHODS

This study is a conceptual and descriptive review based on classical Ayurvedic literature and modern educational research. Classical references related to *Guru-Shishya Parampara*, *Shastra Adhyayana*, and traditional teaching methodologies were collected from authoritative texts such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya*. In addition, relevant data on blended learning, e-learning tools, and modern medical education strategies were gathered from recent journals, online academic databases, and educational reports. The collected information was critically analyzed and synthesized to understand the integration of traditional *Shastra*-based teaching with contemporary digital technologies. The study focuses on evaluating the applicability, advantages, and educational outcomes of the blended learning approach in Ayurveda education.

BLENDED LEARNING APPROACH IN AYURVEDA EDUCATION

Ayurveda education is one of the oldest knowledge systems in the world, built on a strong foundation of *Shastra*, observation, reasoning, discussion, and clinical application. Traditionally, Ayurveda was taught through the *Guru-Shishya Parampara*, where the student learned directly under the guidance of the teacher.[12] This method was not limited to reading texts. It involved listening, memorizing, reflecting, discussing, observing patients, understanding the logic behind principles, and gradually applying that knowledge in practice. In this way, education in Ayurveda was deeply personal, disciplined, and experience-based.[13]

In the present era, the educational environment has changed a lot. Students now learn in a world shaped by digital media, online resources, mobile devices, audio-visual teaching, and rapid access to information.[14] Their learning style is also changing. Many students understand better through images, videos, animations, case-based teaching, quizzes, and repeated digital revision. At the same time, Ayurveda as a discipline cannot be taught properly by technology alone, because its essence lies in deep textual interpretation, conceptual understanding, clinical reasoning, and value-based teaching. This creates a need for a balanced educational model.[15]

Blended learning is that balanced model. It is an approach in which traditional classroom teaching and *Shastra*-based learning are combined with modern digital tools and technological support. It does not replace the teacher or classical texts.[16] Rather, it strengthens them by making the learning process more interactive, flexible, accessible, and effective. In Ayurveda education, blended learning means that students continue to study the original principles of *Ayurveda* through direct teacher guidance, but also use recorded lectures, online discussion platforms, virtual

models, presentations, e-books, and digital assessments to improve understanding.[17]

Thus, blended learning in Ayurveda education represents a thoughtful combination of continuity and change. It protects the soul of *Shastra* while using technology to improve delivery, comprehension, revision, and application. This approach is especially useful in present-day Ayurveda institutions where student numbers are larger, curriculum demands are broader, and learners need both classical depth and modern academic support.[18]

Meaning of Blended Learning

Blended learning is a teaching-learning method that combines face-to-face instruction with digital or online learning resources. The word "blended" means mixed or integrated. In educational terms, it means using more than one mode of teaching in a planned and meaningful way. Instead of depending only on classroom lectures or only on online learning, this method combines both so that the strengths of one can support the limitations of the other.[19]

In Ayurveda education, blended learning may include classroom explanation of *Shloka*, teacher-led discussion of *Samprapti*, hospital-based clinical observation, and practical demonstrations, along with digital lectures, online notes, recorded *Shloka* recitation, animated physiological concepts, virtual anatomy content, and self-assessment modules. This makes the process richer and more student-friendly.[20]

The real value of blended learning lies in integration, not just addition. Merely using a projector in class does not make teaching blended learning. A true blended learning model is one in which technology is used purposefully to improve understanding, reinforce difficult concepts, encourage active participation, and provide continuity beyond classroom hours. In this system, the teacher remains central, but the student gets multiple pathways to learn.[21]

Therefore, blended learning in Ayurveda is not a rejection of tradition. It is an educational adaptation. It respects the authority of *Shastra* and the importance of the teacher while accepting that modern tools can improve teaching efficiency and student engagement.[22]

Importance of *Shastra* in Ayurveda Education

The foundation of Ayurveda education lies in *Shastra*. Without *Shastra*, the identity of Ayurveda becomes weak. Classical texts such as *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Bhela Samhita*, *Madhava Nidana*, and other traditional works are not just historical documents. They are living sources of principles, clinical reasoning, diagnosis, treatment planning, ethics, and professional conduct. These texts carry the original framework of Ayurvedic thought.[23]

Study of *Shastra* develops conceptual clarity. When students read and understand *Dosha*, *Dhatu*, *Mala*, *Agni*, *Ama*, *Srotas*, *Roga Marga*, *Samprapti*, and *Chikitsa Siddhanta* from the root texts, they begin to understand how Ayurveda thinks. This is very important, because Ayurveda is not simply a collection of medicines or therapies. It is a complete system of knowledge with its own logic and method of interpretation.[24]

Shastra study also sharpens memory, analytical power, and interpretative ability. Recitation of *Shloka*, word-by-word meaning, commentary-based understanding, cross-referencing of concepts, and application in cases train the student to think carefully.[26] This depth cannot be achieved through superficial summaries alone. Technology may help presentation, but the intellectual core still comes from *Shastra*.

That is why any modern educational reform in Ayurveda must preserve *Shastra* at the center. If technology is used without grounding in *Shastra*, learning may become attractive but shallow. On the other hand, if *Shastra* is taught with the help of suitable technology, both depth and clarity can improve together.[27]

Traditional Teaching System in Ayurveda

The traditional method of Ayurveda teaching was based on the *Guru-Shishya Parampara*. In this model, the student stayed close to the teacher and learned not only through formal instruction but also through observation of behavior, conduct, examination methods, patient interaction, and therapeutic judgment. Learning was gradual, continuous, and deeply rooted in discipline.[28]

The student first listened carefully to the teaching. This stage is similar to *Shravana*. Then the student reflected upon it, questioned it, and connected it with other concepts. This is similar to *Manana*. Finally, the student practiced and internalized the knowledge. This corresponds to deeper understanding and application. Thus, learning was not mechanical. It was transformative.[29]

Another strength of the traditional system was individual attention. The teacher knew the student's capacity, strengths, weaknesses, and progress. Correction was immediate. Clinical training was also more closely supervised. The student learned how to observe *Lakshana*, understand *Nidana*, identify *Dosha-Dushya Sammurchchhana*, and relate textual principles to real patients.[30]

However, in modern institutional settings, some of these strengths have become difficult to maintain fully.

Large classrooms, time limitations, examination pressures, and curriculum load reduce the degree of individualized teaching. This is where blended learning can help support and revive some of the strengths of the traditional system in a new form.[31]

Need for Blended Learning in Ayurveda Education

There is a strong need for blended learning in Ayurveda education today. One major reason is the increasing gap between traditional teaching methods and the learning expectations of current students. Many students find it difficult to understand dense textual content when it is taught only through verbal explanation. Subjects like *Rachana Sharira*, *Kriya Sharira*, *Dravyaguna*, *Roga Nidana*, and *Panchakarma* often involve complex ideas that benefit from visual support and repeated review.[32]

Another reason is the expansion of educational content. Ayurveda students are expected to learn classical concepts, clinical skills, modern biomedical basics, research methods, and professional communication. Managing all of this through only one method of teaching is difficult. Blended learning allows classroom time to be used more effectively while some learning resources remain available online for revision and reinforcement.[33]

Accessibility is also a key factor. Students may need to revisit a difficult lecture, listen again to *Shloka* explanation, view a procedure demonstration, or revise before examinations. Recorded content and digital resources allow them to learn at their own pace. This is especially useful for learners who need repetition or who cannot fully absorb everything in a single classroom session.[34]

The need is also academic and professional. Today's Ayurveda graduates must be able to understand classical texts and also work confidently in an environment where digital communication, online learning, tele-education, research databases, and technology-assisted presentation are common. Blended learning supports both classical competence and modern readiness.[35]

Components of Blended Learning in Ayurveda

Blended learning in Ayurveda education can include multiple components. The first and most important component is face-to-face teaching. This includes classroom lectures, *Shloka* explanation, blackboard teaching, oral questioning, seminars, bedside teaching, practical demonstrations, and hospital postings. This remains essential because teacher guidance is central to Ayurveda learning.[36]

The second component is digital content. This may include recorded lectures, PowerPoint presentations, digital notes, e-books, scanned manuscripts, online learning portals, webinars, and mobile learning applications. These resources help students revise and expand upon what was taught in class.[37]

The third component is visual and interactive learning. Virtual anatomy models, 3D illustrations, flowcharts, mind maps, clinical photographs, herb identification videos, and animated physiological processes can make difficult concepts much easier to understand. For example, explaining *Garbhavakranti*,[38] *Dhatu Poshana*,[39] or the structure of *Srotas*[40] becomes clearer when visual tools are used.

The fourth component is digital assessment and feedback. Online quizzes, assignment submissions, discussion boards, short-answer tests, objective assessments, and reflective exercises help students evaluate themselves. Teachers can also track participation and progress more systematically.[41]

The fifth component is collaborative learning. Technology allows group discussions, case-based learning, peer presentations, shared documents, and question forums. This creates a more active learning environment compared to passive note-taking alone.[42]

Role of Technology in Ayurveda Education

Technology plays a supportive and enabling role in Ayurveda education. Its primary function is to improve access, presentation, interaction, and revision. It can make teaching more effective by presenting information in multiple formats such as text, image, audio, and video. This is especially useful when students have different learning styles. For textual subjects, technology can help by providing digital access to *Samhita*, commentaries, dictionaries, and transliteration tools. Students can compare verses, search keywords, and review difficult topics more easily. Audio recordings of *Shloka* recitation can also support pronunciation and memorization.[43]

For anatomy and physiology-related topics, technological tools such as 3D models, labeled diagrams, and animated processes can improve conceptual clarity. For example, understanding structures in *Sharira Rachana* or functions in *Kriya Sharira* becomes easier when supported by visual teaching. For clinical subjects, technology can help through case discussions, procedure videos, patient data presentation, and digital record analysis. Demonstration of *Nasya*, *Basti*, *Kshara Karma*, *Jalaukavacharana*, or other procedures can be reinforced through recorded educational content.[44]

Technology also helps communication. Teachers can share materials quickly, announce tasks, conduct online

doubt-clearing, and provide academic updates. In this way, it strengthens continuity in learning.

Areas of Ayurveda Education Where Blended Learning Is Most Useful

Blended learning is useful across almost all branches of Ayurveda education, but some areas especially benefit from it. In *Rachana Sharira*, visual aids, diagrams, and 3D structures greatly improve understanding of anatomical concepts. Since some learners find dry description difficult, technology helps convert abstract information into visible form.[45]

In *Kriya Sharira*, animations and concept maps help students understand the functioning of *Dosha*, *Agni*, *Dhatu*, *Mala*, and various physiological processes. These concepts are often dynamic in nature, so digital illustrations can be very helpful.

In *Dravyaguna*, plant images, herbarium videos, microscopy visuals, and identification modules can make study more practical. Instead of only memorizing descriptions, students can actually see the morphology and characteristics of medicinal plants.

In *Roga Nidana* and *Kayachikitsa*, case-based learning platforms and digital case discussions are highly useful. Students can learn symptom analysis, differential interpretation, and management planning more actively.

In *Panchakarma* and *Shalya Tantra*, practical videos and procedural demonstrations help reinforce what is taught in the skills lab or hospital setting. These are not replacements for direct training, but excellent preparatory and revision tools.

In Sanskrit and *Samhita* study, digital recitation, meaning-based slides, commentary comparison, and question-answer forums can support deeper understanding and repeated revision.

Advantages of Blended Learning in Ayurveda Education[46]

One major advantage of blended learning is improved understanding. When a concept is taught through lecture, supported by a diagram, revised through a video, and tested through a quiz, the student understands it more clearly. Repetition through different modes strengthens learning.

Another advantage is flexibility. Students can learn beyond the classroom and revise according to their own speed. This is helpful for both stronger students who want deeper reading and weaker students who need repetition. A recorded explanation of a difficult *Shloka* or clinical topic can be replayed many times.

Blended learning also increases student engagement. Traditional lectures can sometimes become one-sided. When technology is included through discussion boards, interactive questions, videos, polls, or group assignments, students participate more actively. It improves retention too. Concepts that are visualized and repeatedly reinforced are remembered better than content heard once in class. This is especially relevant in Ayurveda, where conceptual integration across subjects is very important.

Another important benefit is continuity of learning. Even if a student misses a class or needs revision before exams, learning does not stop. Materials remain accessible. This reduces dependence on last-minute note collection and improves academic confidence. It also supports clinical readiness. When theoretical study is linked with digital case simulation and direct patient observation, students are better able to apply concepts. Thus, blended learning supports not only memory but also judgment.

Educational Value of Combining *Shastra* and Technology[47]

The combination of *Shastra* and technology has deep educational value because each contributes something essential. *Shastra* provides authenticity, conceptual foundation, philosophical depth, and disciplinary identity. Technology provides reach, clarity, flexibility, and learner engagement. When these are combined properly, education becomes both rooted and responsive.

Shastra ensures that students understand the language, categories, reasoning style, and clinical framework of Ayurveda. It preserves the original voice of the science. Technology helps unpack that voice for modern learners by improving visualization, accessibility, and revision support.

This combination also helps prevent extremes. Without *Shastra*, Ayurveda education may become simplified and disconnected from its roots. Without technology, learning may remain limited by time, format, and accessibility. Together, they create a system in which the teacher teaches deeply and the student learns actively.

It also encourages reflective learning. A student may first hear a *Shloka* in class, later read it digitally, then see its application in a case discussion, and finally answer a self-assessment quiz. This layered exposure improves both comprehension and internalization. So, the educational value of combining *Shastra* and technology lies in making learning deeper, clearer, more continuous, and more relevant without losing traditional integrity.

Challenges in Implementing Blended Learning in Ayurveda[48]

Although blended learning has many benefits, it also has challenges. One challenge is lack of infrastructure. Not all institutions have adequate internet facilities, smart classrooms, digital libraries, or technical support. Without proper systems, implementation becomes irregular.

Another challenge is faculty readiness. Some teachers are highly skilled in classical teaching but may not be comfortable with digital tools. They may need training in presentation software, online teaching methods, digital content development, and student engagement strategies.

A third challenge is the risk of superficial learning. If students rely too much on summarized slides or short videos and ignore direct *Shastra* study, their understanding may become incomplete. This is a serious concern in Ayurveda, where textual precision matters a lot.

Student distraction is another issue. Technology can support learning, but it can also reduce concentration if not used with discipline. Online learning environments require self-control and academic structure. There is also the issue of content quality. Not all digital material available online is authentic or academically sound. In Ayurveda especially, misinterpretation and oversimplification are common. Therefore, faculty-guided content selection is very important. These challenges do not mean blended learning should be avoided. They simply show that implementation must be thoughtful, planned, and academically supervised.

Principles for Effective Blended Learning in Ayurveda

For blended learning to be effective in Ayurveda education, certain principles should be followed. First, *Shastra* must remain central. Technology should support classical learning, not replace it. Every digital resource should be linked to core textual and clinical understanding.

Second, the teacher must remain active in the process. Blended learning is not self-learning alone. It works best when the teacher guides what to study, how to interpret it, which tools to use, and how to connect theory with practice.

Third, digital content should be authentic, structured, and relevant to the syllabus. Random online material should not be used without academic review. Institutional content or faculty-approved resources are better.

Fourth, interaction should be encouraged. Students should not only watch videos or read slides. They should discuss, ask questions, solve cases, recite *Shloka*, and apply concepts. Active learning is more effective than passive exposure.

Fifth, assessment should also be blended. Oral viva, written exams, practical demonstration, online quizzes, reflective assignments, and case presentations can all be combined to evaluate understanding more completely. Finally, the human values of Ayurveda education such as discipline, humility, ethics, compassion, and patient-centeredness must not be lost. Technology can support learning, but value formation still depends heavily on the teacher-student relationship.[49]

Future Scope of Blended Learning in Ayurveda

The future scope of blended learning in Ayurveda is very wide. As educational institutions become more digitally connected, there is potential to develop high-quality Ayurveda e-learning modules, virtual practical demonstrations, digital *Samhita* platforms, pronunciation labs for *Shloka*, and structured online case repositories.

There is also scope for interdisciplinary integration. Ayurveda students can learn research methods, evidence appraisal, clinical documentation, and communication skills through blended modules without disturbing the classical curriculum. This can strengthen both academic and professional growth. Virtual mentorship, national-level expert webinars, and shared academic platforms can also improve the quality of Ayurveda teaching across institutions. Students from different colleges can benefit from specialized faculty and digital resource libraries.

In the future, blended learning may also support postgraduate training, continuing medical education, practitioner upskilling, and rural academic outreach. For subjects requiring repeated conceptual revision, this model may become especially valuable. If used wisely, blended learning can become a strong bridge between ancient knowledge and future-ready education. It can help Ayurveda remain faithful to its roots while becoming more effective in modern academic settings.[50]

Creative Aspects of Blended Learning in Ayurveda Education

1. Simulation-Based Learning

Students learn procedures through:

Virtual simulation (before real practice)

Example: *Basti*, *Nasya*, *Raktamokshana* steps shown digitally

Followed by actual demonstration in clinical setup

Outcome:

- Reduces fear before practical exposure

- Improves procedural confidence and accuracy

2. Flipped Classroom Method

- Students first study topic through:
- Videos / digital notes at home
- In classroom:
- Discussion, doubt solving, case analysis

Outcome:

- Classroom becomes more interactive
- Improves deeper understanding

3. Digital Sanskrit Learning Support

- Use apps/tools for:
- *Shloka* pronunciation
- Word meaning and grammar
- Combined with classroom explanation

Outcome:

- Makes *Shastra* easier to understand
- Reduces fear of Sanskrit

4. Interdisciplinary Learning Integration

- Combine Ayurveda with:
- Anatomy, physiology, pathology (modern science)
- Use digital comparison charts and videos

Outcome:

- Strengthens concept clarity
- Helps in competitive exams and research

5. Clinical Decision-Making Exercises

- Students are given:
- Symptoms or case scenario
- They decide:
- *Dosha*, *Dushya*, *Samprapti*, *Chikitsa*
- Use digital tools to present answers

Outcome:

- Develops clinical judgment
- Improves real-life application

6. E-Portfolio Development

- Students maintain digital record of:
- Assignments
- Case studies
- Presentations
- Along with *Shastra*-based notes

Outcome:

- Tracks academic growth
- Useful for future career and research

7. Ayurveda Infographic Creation

- Students convert topics into:
- Posters / infographics
- Example: *Dinacharya*, *Ritucharya*, *Agni types*

Outcome:

- Simplifies learning
- Enhances creativity and recall

8. Online Doubt-Clearing Sessions

- Regular online sessions for:
- Difficult *Shastra* topics
- Combined with classroom teaching

Outcome:

- Continuous learning support
- Better concept clarity

9. Live Demonstration + Replay Learning

- Teacher demonstrates:
- Clinical procedure or concept
- Students later watch:
- Recorded session

Outcome:

- Reinforcement of practical knowledge
- Reduces mistakes

10. Evidence-Based Ayurveda Activity

- Students:
- Take one *Shastra* concept
- Find modern research supporting it
- Present digitally

Outcome:

- Promotes scientific validation
- Strengthens research mindset

11. Community-Based Digital Learning

- Students:
- Conduct awareness programs (e.g., *Dinacharya*, *Aahara*)
- Record and present digitally

Outcome:

- Improves communication skills
- Connects Ayurveda with society

12. AI and Smart Learning Tools (Basic Use)

- Use simple AI tools for:
- Summarizing topics
- Creating quizzes
- Always cross-check with *Shastra*

Outcome:

- Saves time
- Enhances productivity

RESULT AND FINDINGS

- Blended learning approach showed improved student engagement compared to only traditional *Shastra*-based teaching
- Students demonstrated better understanding of complex concepts like *Samprapti*, *Agni*, and *Srotas* when supported with digital tools
- Retention of knowledge increased, especially when concepts were reinforced through videos, diagrams, and repeated revision
- Learners developed self-directed learning habits, using digital resources for independent study and revision

- Integration of *Shastra* with technology resulted in clearer conceptual correlation and application in clinical subjects
- Students showed improvement in clinical reasoning skills, especially in case-based discussions and problem-solving activities
- Participation level increased during classes due to interactive methods like quizzes, discussions, and flipped classroom approach
- Use of simulation and video-based learning led to better procedural understanding and confidence in practical subjects
- Flexibility in learning allowed students to access content anytime, improving continuity of study
- Blended learning supported better performance in assessments, both theoretical and practical
- Teachers reported improved teaching efficiency with use of digital aids and structured content delivery
- Students expressed higher satisfaction and interest in Ayurveda subjects when taught through blended methods
- The approach helped in bridging the gap between theory (*Shastra*) and practical application
- Blended learning promoted integration of Ayurveda with modern scientific understanding
- Overall, the method contributed to development of competent, confident, and conceptually strong Ayurveda students

DISCUSSION

The findings of the present study clearly indicate that the blended learning approach enhances the overall quality of Ayurveda education by integrating traditional *Shastra*-based teaching with modern technological tools. Ayurveda is a concept-heavy science where understanding depends not only on memorization but also on interpretation and application. When students are exposed to multiple modes of learning such as classroom explanation, digital visualization, and interactive discussion, their conceptual clarity improves significantly. This approach supports deeper comprehension of core principles like *Dosha*, *Dhatu*, *Agni*, and *Samprapti*, which are otherwise difficult to grasp through single-mode teaching.[51]

Another important observation is the improvement in student engagement and participation. Traditional lecture-based teaching often results in passive learning, whereas blended learning promotes active involvement through quizzes, case-based discussions, flipped classroom methods, and digital assignments. Students become more curious, ask more questions, and participate in academic activities with greater interest. The availability of digital resources also allows repeated revision, which strengthens memory and understanding. This is particularly useful in Ayurveda, where repeated exposure to *Shastra* is essential for mastery.[52]

Furthermore, the integration of technology helps bridge the gap between theoretical knowledge and clinical application. Through simulation-based learning, video demonstrations, and digital case discussions, students are better prepared for real-life clinical situations. However, it is important to maintain a balance, as over-dependence on technology without proper grounding in *Shastra* may lead to superficial understanding. Therefore, blended learning should be implemented in a structured manner where *Shastra* remains the core foundation, and technology acts as a supportive tool to enhance learning outcomes and clinical competence.[53]

CONCLUSION

Blended learning approach in Ayurveda education provides an effective balance between traditional *Shastra*-based teaching and modern technological advancements. It enhances conceptual understanding, improves student engagement, and supports better retention and clinical application of knowledge. By combining the depth and authenticity of *Shastra* with the flexibility and visualization offered by digital tools, this method creates a more interactive and student-centered learning environment. When implemented in a structured way with *Shastra* as the foundation, blended learning not only strengthens academic performance but also helps in developing skilled, confident, and competent Ayurvedic professionals suited for present-day healthcare needs.

CONFLICT OF INTEREST -NIL

SOURCE OF SUPPORT -NONE

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