ORIGINAL ARTICLE

Feasibility study of blended learning implementation based on the views of professors of Qom University of Medical Sciences

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Background: Blended education represents a new method in the field of medical education and relies on the unique advantages of both face-to-face and virtual education methods to increase the quality of learning. The aim of this study was to evaluate the feasibility study of blended education implementation based on the views of professors of Qom University of Medical Sciences.

Method: The present study was a descriptive-survey study. The statistical population of the study included all faculty members of Qom University of Medical Sciences, 219 people in the academic year 2021-2022. The statistical sample consisted of 40 people who were selected by stratified random sampling method considering the appropriateness of university faculties. To collect research data, a researcher-made scale of blended education feasibility questionnaire was used, the reliability of which was 0.92 through Cronbach's alpha and its validity was 0.55 through convergent validity. Data analysis was performed using one-sample t-test and Friedman ranking test in SPSS version 26.

Results: According to professors at Qom University of Medical Sciences, the establishment of a blended learning approach is statistically supported (p=0.0001). This feasibility is attributed to perceived strengths in implementation motivation (60.17), professor technical skills (46.35), and organizational culture (25.91) (p=0.0001). Conversely, the study revealed significant challenges in technical facilities (23.37), executive-administrative support (16.79), and financial-credit conditions (13.68), which were deemed insufficient for successful implementation (p=0.0001).

Conclusion: While blended learning is potentially viable, addressing these critical logistical and financial barriers is essential for successful implementation at the university.

Key words: Feasibility Studies, Blended Learning, Medical Education

دراسة جدوى تطبيق التعليم المدمج بناء على آراء أساتذة جامعة قم للعلوم الطبية

الخلفية: يمثل التعليم المدمج أسلوبًا جديدًا في مجال التعليم الطبي ويعتمد على المزايا الفريدة لكل من أساليب التعليم وجهاً لوجه والتعليم الافتراضي لزيادة جودة التعلم. وكان الهدف من هذه الدراسة تقييم دراسة جدوى تنفيذ التعليم المدمج بناءً على آراء أساتذة جامعة قم للعلوم الطبية.

الطريقة: كانت الدراسة الحالية دراسة وصفية مسحية. شمل المجتمع الإحصائي للدراسة جميع أعضاء هيئة التدريس بجامعة قم للعلوم الطبية، ٢١٩ شخصًا في العام الدراسي ٢٠٢١-٢٠٢٢. تكونت العينة الإحصائية من ٤٠ شخصًا تم اختيارهم بطريقة العينة العشوائية الطبقية مع مراعاة ملاءمة كليات الجامعة. لجمع بيانات البحث، تم استخدام مقياس استبيان جدوى التعليم المختلط الذي وضعه الباحث، والذي بلغت موثوقيته ٠,٩٢ من خلال ألفا كرونباخ وصلاحيته ٠,٥٥ من خلال الصلاحية المتقاربة. تم إجراء تحليل البيانات باستخدام اختبار t لعينة واحدة واختبار تصنيف فريدمان في برنامج SPSS الإصدار ٢٦.

النتائج: وفقًا لأساتذة جامعة قم للعلوم الطبية، فإن إنشاء نهج التعلم المدمج مدعوم إحصائيًا (ص = ٠,٠٠٠١). تُعزى هذه الجدوى إلى نقاط القوة المتصورة في دافع التنفيذ (٦٠,١٧)، والمهارات الفنية للأساتذة (٤٦,٣٥)، والثقافة التنظيمية (٢٥,٩١) (ص = ٠,٠٠٠١). وعلى العكس من ذلك، كشفت الدراسة عن تحديات كبيرة في المرافق الفنية (٢٣,٣٧)، والدعم التنفيذي والإداري (١٦,٧٩)، والظروف المالية والائتمانية (١٣,٦٨)، والتي اعتبرت غير كافية للتنفيذ الناجح (ص = ٠,٠٠٠١).

الخلاصة: في حين أن التعلم المدمج قابل للتطبيق بشكل محتمل، فإن معالجة هذه الحواجز اللوجستية والمالية الحرجة أمر ضروري للتنفيذ الناجح في الجامعة.

الكلمات المفتاحية: دراسات الجدوى، التعلم المدمج، التعليم الطبي

قم یونیورسٹی آف میڈیکل سائنسز کے پروفیسرز کے خیالات کی بنیاد پر مخلوط سیکھنے کے نفاذ کا فزیبلٹی اسٹڈی

پس منظر: ملاوٹ شدہ تعلیم طبی تعلیم کے میدان میں ایک نئے طریقہ کی نمائندگی کرتی ہے اور سیکھنے کے معیار کو بڑھانے کے لیے آمنے سامنے اور ورچوئل تعلیم کے طریقوں کے منفرد فوائد پر انحصار کرتی ہے۔ اس تحقیق کا مقصد قم یونیورسٹی آف میڈیکل سائنسز کے پروفیسرز کے خیالات کی بنیاد پر مخلوط تعلیم کے نفاذ کے فزیبلٹی اسٹڈی کا جائزہ لینا تھا۔

طریقہ: موجودہ مطالعہ ایک وضاحتی سروے کا مطالعہ تھا۔ مطالعہ کی شماریاتی آبادی میں قم یونیورسٹی آف میڈیکل سائنسز کے تمام فیکلٹی ممبران، تعلیمی سال ۲۰۲۱-۲۰۲۲ میں ۲۱۹ افراد شامل تھے۔ شماریاتی نمونے میں ۴۰ افراد شامل تھے جنہیں یونیورسٹی کی فیکلٹیوں کی مناسبت کو مدنظر رکھتے ہوئے ترتیب شدہ بے ترتیب نمونے لینے کے طریقہ کار سے منتخب کیا گیا تھا۔ تحقیقی ڈیٹا اکٹھا کرنے کے لیے، ملاوٹ شدہ ایجوکیشن فزیبلٹی سوالنامے کا ایک محقق کا بنایا ہوا پیمانہ استعمال کیا گیا، جس کی معتبریت Cronbach کے الفا کے ذریعے ۰٫۹۲ تھی اور کنورجنٹ validity کے ذریعے اس کی validity 0.55 تھی۔ ڈیٹا کا تجزیہ SPSS ورژن ۲۶ میں ایک نمونہ ٹی ٹیسٹ اور فریڈمین رینکنگ ٹیسٹ کا استعمال کرتے ہوئے کیا گیا۔

نتائج: قم یونیورسٹی آف میڈیکل سائنسز کے پروفیسرز کے مطابق، مخلوط سیکھنے کے طریقہ کار کا قیام شماریاتی طور پر معاون ہے (p=0.0001)۔ یہ فزیبلٹی عمل درآمد کی حوصلہ افزائی (۶۰٫۱۷)، پروفیسر تکنیکی مہارت (۴۶٫۳۵)، اور تنظیمی ثقافت (۲۵٫۹۱) (p = 0.0001) میں سمجھی جانے والی طاقتوں سے منسوب ہے۔ اس کے برعکس، مطالعہ نے تکنیکی سہولیات (۲۳٫۳۷)، ایگزیکٹو-انتظامی معاونت (۱۶٫۷۹)، اور مالیاتی کریڈٹ کی شرائط (۱۳٫۶۸) میں اہم چیلنجوں کا انکشاف کیا، جنہیں کامیاب نفاذ کے لیے ناکافی سمجھا گیا (p=0.0001)۔

نتیجہ: اگرچہ ملاوٹ شدہ تعلیم ممکنہ طور پر قابل عمل ہے، لیکن یونیورسٹی میں کامیاب نفاذ کے لیے ان اہم لاجسٹک اور مالیاتی رکاوٹوں کو دور کرنا ضروری ہے۔

کلیدی الفاظ: فزیبلٹی اسٹڈیز، بلینڈڈ لرننگ، میڈیکل ایجوکیشن

امکان‌سنجی اجرای رویکرد مبتنی بر یادگیری ترکیبی براساس دیدگاه اساتید دانشگاه علوم پزشکی قم

زمینه و هدف: آموزش ترکیبی نشان‌دهنده روشی نوین در آموزش پزشکی بوده و بر مزایای بی‌بدیل هر دو روش آموزش حضوری و مجازی برای افزایش کیفیت یادگیری تکیه دارد. این پژوهش با هدف امکان‌سنجی اجرای رویکرد مبتنی بر یادگیری ترکیبی براساس دیدگاه استادان دانشگاه علوم پزشکی قم انجام شد.

روش: جامعه آماری کلیه اعضای هیأت علمی دانشگاه علوم پزشکی قم (۲۱۹ نفر) در سال تحصیلی ۱۴۰۱-۱۴۰۰ بود. نمونه آماری ۴۰ نفر بود که به روش نمونه‌گیری تصادفی طبقه‌ای نسبی با در نظر گرفتن تناسب دانشکده‌های دانشگاه انتخاب شد. برای جمع آوری اطلاعات از پرسشنامه محقق ساخته امکان‌سنجی آموزش ترکیبی استفاده شد که پایایی آن از طریق آلفای کرونباخ ۰/۹۲ و روایی آن از طریق روایی همگرا ۰/۵۵ بدست آمد. تجزیه و تحلیل داده‌ها با استفاده از آزمون t تک نمونه‌ای و آزمون رتبه‌بندی فریدمن در برنامه SPSS نسخه ۲۶ انجام شد.

یافته‌ها: از دیدگاه اساتید دانشگاه علوم پزشکی قم امکان استقرار رویکرد مبتنی بر یادگیری ترکیبی در دانشگاه علوم پزشکی قم وجود دارد (p=۰/۰۰۰۱). همچنین می‌توان رویکرد یادگیری ترکیبی را با توجه به سه مؤلفه انگیزه اجرا (۶۰/۱۷)، مهارت فنی اساتید (۴۶/۳۵) و فرهنگ سازمانی (۲۵/۹۱)، اجرا و مستقر نمود (p=۰/۰۰۰۱)، اما از نظر امکانات فنی (۲۳/۳۷)، اجرایی- اداری (۱۶/۷۹) و شرایط مالی- اعتباری (۱۳/۶۸) امکان استقرار یادگیری ترکیبی وجود نداشت (p=۰/۰۰۰۱).

نتیجه‌گیری: از آنجا که یادگیری ترکیبی به طور بالقوه قابل اجراست، پرداختن به این موانع لجستیکی و مالی برای اجرای موفق در دانشگاه ضروری است.

واژه های کلیدی: مطالعات امکان سنجی، آموزش ترکیبی، آموزش پزشکی

INTRODUCTION

The COVID-19 pandemic disrupted the normal functioning of all academic institutions worldwide (1). This is mainly due to the inherent nature of teaching and learning in such institutions, which is largely dependent on face-to-face interactions between faculty and students at educational sites (2). Quarantine measures were implemented in all countries, forcing educational institutions to seek alternatives to continue their educational programs without compromising the safety of their students and faculty (3). It soon became apparent that the judicious use of technology could solve many problems, and thus, almost all educational institutions began a paradigm shift in their policies to rapidly introduce blended (face-to-face and online) methods for both teaching and assessment (4). Since traditional teaching strategies may be insufficient to meet the evolving needs of medical universities in crisis situations, blended learning approaches, as alternatives based on information and communication technologies, have gained popularity (5). Blended learning is considered the third generation of distance education systems (6). One of the advantages of using this approach in medical education is that learning can occur at any time and can be tailored to individual learner needs (7). Over the past two decades, higher education institutions have increasingly adopted the concept of blended learning for various reasons, reconfiguring their curricula based on this new norm in higher education (8). Higher education systems continue to evolve in response to societal and technological changes (9). Blended education overcomes the limitations of geographical proximity and leverages technology to deliver content (10). Blended learning represents a novel approach in medical education, building upon the unique advantages of both traditional and online learning to enhance the quality of education (11).

The current inclination towards blended learning might be seen as a continuation of the 30-year trend in education and training of leveraging technology (12, 13). Blended learning can be described as the intentional integration of online and face-to-face learning to create active, supported learning experiences (14-16). Blended learning opens up new and multifaceted communication channels for both instructors and learners, extending beyond the constraints of time, place, and specific courses (13). Blended learning allows instructors to maintain a balanced presence in both physical and virtual classrooms, where online components naturally enhance traditional classroom learning, leading to meaningful learning experiences, as stated by Martin (17). The implementation of blended learning impacts students, institutional systems and structures, as well as the attitudes and beliefs of faculty members (18). Garrison and Vaughan (19) reported that the integration of virtual and face-to-face interactions facilitates greater flexibility in learning and fosters reciprocal relationships between instructors and learners in both virtual and physical environments.

Educational institutions have adopted blended learning for various reasons, including increased flexibility to meet the diverse needs and learning styles of students, and as an effort to reduce dropout rates (20). In seeking answers to the purposeful application of blended learning in higher education, many researchers have turned to the design of blended learning. For instance, Boelen, Dover, and Voet (21) identified four key challenges in designing blended learning: incorporating flexibility, stimulating interaction, facilitating student learning processes, and fostering an emotional learning environment. According to Graham, Woodfield, and Harrison (22), organizations face numerous contextual challenges when adopting blended learning, including complexities related to strategy (definition and purpose of blended learning, policies, and implementation levels), structure (technical and administrative systems, governance, etc.), or support (technical and pedagogical support, faculty incentives) (13).

The role and position of university faculty in the implementation of blended learning have also been the focus of research. For example, Brown (18) reviewed the empirical literature on university blended learning practices and identified six influences on the adoption of blended learning, including four external influences such as the learning environment, workload, student interaction, and technology interaction, and two internal influences such as instructors' beliefs about teaching and the quality of professional development. On the other hand, Lai, Hsiao, and Hsieh (23) examined the perspectives of university faculty on the implementation of blended learning. Their study focused on 169 university faculty members with experience in blended teaching, and the main finding was that intrinsic challenge motivation and extrinsic rewards significantly influenced the adoption of blended learning (23). Similarly, Cheung and Hew (24) examined the characteristics of faculty in facilitating asynchronous online discussions in two university programs. The results showed that online discussion facilitators exhibited habits such as metacognition and open-mindedness. Finally, Kommas-Quinn (25) evaluated the impact of introducing blended learning on university faculty in a distance language education course and argued that the shift towards a blended curriculum goes beyond acquiring mere ICT skills but requires addressing faculty identity to fully understand the potential of new media.

The lack of necessary readiness can lead to the failure of the blended learning implementation project (26). To develop and implement a blended learning approach, readiness is required in all social, cultural, economic, and educational dimensions. Additionally, it is necessary to examine faculty attitudes and perspectives towards blended learning. This initial stage is crucial and can be the first step towards transforming the education system towards blended learning. Theorists believe that studying attitudes is essential for a better understanding of social behaviors. In summary, addressing faculty priorities and attitudes as an initial step can facilitate better and higher quality implementation of blended learning (27). Additionally, by providing various opportunities for learning, it caters to individual learner differences, as not all individuals learn in the same way (28). Therefore, the use of diverse teaching methods seems essential. Experts have stated that traditional or face-to-face teaching methods encourage passive learning, do not consider individual differences and learner needs, do not

address problem-solving, creative thinking, and other higher-order cognitive skills, and are not entirely effective. Therefore, many experts have emphasized the need to change or supplement traditional teaching methods (29). Blended learning is an emerging approach that overcomes some of the obstacles of traditional teaching and provides easy and flexible access to learning (30, 31).

This study aims to assess the feasibility of implementing a blended learning approach in medical education curricula, specifically from the perspective of faculty members at Qom University of Medical Sciences. Before implementing any blended learning system, comprehensive studies should be conducted to evaluate the university's existing facilities and resources. These studies will help identify the institution's strengths and weaknesses, enabling the development of a suitable and effective plan for blended learning implementation. Feasibility studies are crucial for preventing the waste of financial and time resources and ensuring the success of the project. Given the increasing importance of blended learning in the post-COVID-19 era, the findings of this study can be beneficial for medical universities nationwide.

METHODS

In this study, a descriptive-survey research design was employed to achieve the study's applied objectives. The population of this study consisted of all faculty members at Qom University of Medical Sciences during the academic year 2022-2023. The sample size was determined based on similar studies and using stratified random sampling, considering the proportion of each faculty within the university.

Inclusion Criteria:

- Faculty Members
  - Employed at Qom University of Medical Sciences during the 2021-2022 academic year.
  - Willing to participate in the study and providing informed consent.

Exclusion Criteria:

- Faculty Members
  - On leave of absence during the study period.
  - Unable or unwilling to participate in the survey.

In this study, a researcher-developed blended learning feasibility questionnaire was employed as the data collection tool. Adapted from the research of Shahbig and colleagues (32) with modifications to the question content for higher education, this questionnaire aimed to assess the level of blended learning implementation in medical universities. The questionnaire consisted of 60 items divided into six dimensions: technical-technological, financial-budgetary, attitudinal, skill-based, executive-administrative, and organizational culture. Each dimension contained a specific number of items: 9 items for the technical-technological dimension, 6 for the financial-budgetary dimension, 16 for the motivational dimension, 14 for the skill-based dimension, 7 for the executive-administrative dimension, and 8 for the organizational culture dimension. A 5-point Likert scale (very low, low, moderate, high, and very high) was used for scoring. The theoretical mean for each item varied due to differences in the questions of each dimension.

In Shahbig and colleagues' study (32), content validity was used to evaluate the instrument. Questionnaire items were developed based on reliable library sources, and the questionnaire was reviewed by educational experts to identify weaknesses and modify some questions. These steps ensured the content validity of the instrument. To assess the internal consistency of the questionnaire, it was initially distributed to 30 members of the population, and Cronbach's alpha coefficient was calculated. The resulting coefficient of 0.962 indicated a satisfactory level of reliability.

In this research, structural equation modeling (SEM) using partial least squares (PLS) approach in Smart PLS version 3 was employed to assess the construct validity of the blended learning feasibility questionnaire. The primary reason for choosing this method is its superiority for small sample sizes. Another reason for selecting this method is the presence of non-normal data, which has been encountered in some studies.

Structural equation model evaluation and validation process

(a) Factor Loadings of Items in First-Order Factor Analysis: An examination of the factor loadings of the questions related to each of the six constructs of the blended learning feasibility questionnaire revealed that all item loadings fall within the range of 0.40 to 0.80, indicating a suitable correlation between the items and the research constructs. Furthermore, an analysis of the significance of the t-test results in Figure 3-2 for all items showed that the t-test values for all items were greater than 2.58 (at a significance level of 0.01), indicating the necessary precision for measuring the constructs in the research. Therefore, questions 1 to 9 fall under the technical domain factor, questions 10 to 15 under the financial-budgetary factor, questions 16 to 31 under the motivational factor, questions 32 to 45 under the technical skill factor, questions 46 to 52 under the executive-administrative factor, and questions 53 to 60 fall under the organizational culture factor.

(b) Test of Model Reliability: Given the suitable reliability values for both criteria (Cronbach's alpha and composite reliability), it can be concluded that the constructs of the measurement model have acceptable and appropriate reliability.

(c) Convergent Validity: The average variance extracted (AVE) criterion indicates that the AVE index is greater than 0.5 for all variables, which suggests a good convergent validity of the measurement model.

Evaluation of the Structural Model (Second-order Factor Analysis): To evaluate the structural model (latent constructs), three indices were used: t-values, R-squared (R^2) values, and Q^2 values. Table 3-4 presents the factor loadings, t-test significance, and results of R^2 and Q^2 criteria.

Structural model fit, based on t-values, indicates that the t-values and their significance levels for each factor are significant at the 0.01 level. Another important index is the coefficient of determination (R^2) which shows that the R^2 value for all constructs is at a moderate level. Another way to evaluate the structural model is to examine the model's ability to predict, which is examined using Q^2. This criterion

also shows that the obtained Q^2 value for all constructs is at a moderate level.

RESULTS

We got permission to conduct our research at Qom University of Medical Sciences. We visited the university and talked to professors about our study. Then, we gave them a questionnaire about blended learning. Before they filled out the questionnaire, we explained the purpose of the study and got their permission. To analyze the data, we used statistical methods like the one-sample t-test and the Friedman rank test. We used SPSS software to do this analysis.

The mean and standard deviation of the total blended learning score were 45.185 and 4.26, respectively. Among the blended learning factors, the highest mean belonged to the performance motivation factor at 17.60, while the lowest mean was for the financial-budgetary factor at 13.68. Moreover, considering the skewness and kurtosis values of all subscales, it can be inferred that all variables have a normal distribution36. To investigate and answer the main research question, a one-sample t-test was used (Table 1). To obtain the hypothetical mean score for each item, the criterion score for each item (3) was multiplied by the total number of questions: 60. Similarly, the criterion mean was calculated for all components.

The results of the one-sample t-test indicated a significant difference between the obtained mean (185.45) and the hypothesized mean (180) in the total blended learning score ($p < 0.05$) (Table 1). This finding suggests that, overall, faculty members at Qom University of Medical Sciences perceive a higher feasibility for implementing blended learning. To examine and answer the question related to the components of the blended learning variable in the research, a one-sample t-test was used, and the results are presented (Table 1).

The results of the one-sample t-test revealed significant differences between the obtained means and the hypothesized means for various components of blended learning feasibility as perceived by faculty members at Qom University of Medical Sciences (Table 1).

- **Technical facilities:** Faculty members perceived a lower feasibility for implementing blended learning due to inadequate technical facilities (obtained mean: 23.37; hypothesized mean: 27; $p < 0.01$).

- **Financial resources:** The feasibility of implementing blended learning was perceived as lower due to limited financial resources (obtained mean: 13.68; hypothesized mean: 18; $p < 0.01$).

- **Administrative and operational conditions:** Faculty members perceived a lower feasibility due to unfavorable administrative and operational conditions (obtained mean: 16.79; hypothesized mean: 21; $p < 0.01$).

- **Organizational culture:** Faculty members perceived a higher feasibility due to a supportive organizational culture (obtained mean: 25.91; hypothesized mean: 24; $p < 0.05$).

- **Implementation motivation:** Faculty members perceived a higher feasibility due to strong implementation motivation (obtained mean: 60.17; hypothesized mean: 48; $p < 0.01$).

- **Faculty technical skills:** Faculty members perceived a higher feasibility due to adequate faculty technical skills (obtained mean: 46.35; hypothesized mean: 42; $p < 0.01$)

To answer the seventh sub-question, Friedman's rank test was employed to rank the dimensions of the blended learning approach based on the perspectives of faculty members at Qom University of Medical Sciences (Table 2).

the most influential factors for implementing blended learning, as perceived by faculty members at Qom University of Medical Sciences, were as follows: implementation motivation (rank 92.5), technical skills (rank 86.5), organizational culture (rank 74.3), technical facilities (rank 58.3), administrative and operational conditions (rank 50.2), and financial resources (rank 40.1) (Table 2).

DISCUSSION

Faculty at Qom University of Medical Sciences generally perceive blended learning as feasible, driven by the increasing role of technology in education. However, significant challenges remain, including inadequate technical infrastructure, insufficient financial resources, and a lack of institutional readiness. These challenges encompass issues

Table 1. One-Sample t-Test results for the field of technical facilities

Variable	Mean (SD)	Mean Difference	P value
The field of technical facilities	23.37(7.64)	-3.63	0.0001
Financial-credit field	13.68(4.08)	-4.32	0.0001
Executive-administrative conditions	185.45(6.29)	04.21	0.0001
Organizational Culture	185.45(7.90)	1.91	0.0005
Motivation to perform	185.45(6.16)	12.16	0.0001
Technical skills of professors	185.45(8.58)	4.35	0.0001

Table 2. Rank of the dimensions of the blended learning approach based on the perspectives of faculty members

Row	Factor	Average rank
1	Motivation to perform	5.92
2	Technical skills of professors	5.06
3	Organizational Culture	3.34
4	The field of technical facilities	3.18
5	Executive-administrative conditions	2.10
6	Financial-credit field	1.40

P value	Df	Chi-squared test
0.0001	5	595.02

such as limited access to technology, insufficient funding, the absence of a clear policy framework, and a lack of standardized quality assurance measures for online learning. Faculty members perceived that the institutional culture supports the implementation of blended learning. The widespread adoption of technology has fostered a strong inclination among educators and experts to embrace innovative teaching methods such as blended learning. This new generation of e-learning, often referred to as blended learning, leverages internet technology to combine face-to-face instruction with online learning, emphasizing a diverse and extensive use of teaching methods and technologies. Faculty members also expressed a strong motivation to implement blended learning. Several reasons have been cited for this high level of motivation, including the potential to save time and resources, enhance the quality of education, and increase faculty engagement and satisfaction.

These findings align with the results of previous studies by Shahbig et al. (32), Najafzadeh (5), Joyce et al. (33), Zarei Zavaraki (34), Shahviran et al. (35), Rahimi and Selimi (36), Shikhian et al. (37), and Faghih-Aram et al. (38). These studies highlighted the importance of factors such as faculty motivation, technical skills, and institutional support for successful blended learning implementation, while also identifying challenges related to infrastructure, resources, and administrative readiness

Faculty members perceived that they possess the necessary technical skills to implement blended learning. Over the years, faculty have gained significant experience with both traditional face-to-face instruction and online learning, which has equipped them with a solid understanding of the systems and software required for blended learning. The research findings revealed that faculty at Qom University of Medical Sciences ranked the following factors as most influential in the successful implementation of blended learning: motivation, technical skills, institutional culture, technical infrastructure, administrative support, and financial resources. Faculty emphasized that motivation is a critical factor for the success of blended learning. Without the enthusiasm and commitment of both students and faculty, the implementation of such an approach is likely to fail. Certainly, here are some potential limitations of the research: Sample Size: The sample size of 40 participants may not be sufficiently large to represent the diverse views of all faculty members at Qom University of Medical Sciences. A larger sample size would have increased the generalizability of the findings. Sampling Method: While stratified random sampling was used, potential biases may still exist in the sample selection process. Cross-sectional Design: The study employed a cross-sectional design, which limits the ability to establish causal relationships between variables. Longitudinal studies would be necessary to investigate the impact of specific factors on the implementation and outcomes of blended learning. Self-reported Data: The study relies on self-reported data from faculty members through a questionnaire. Social desirability bias and other self-reporting biases may have influenced the responses. Focus on Faculty Perspectives: The study primarily focuses on the perspectives of faculty members. It would be beneficial to include the perspectives of students, administrators, and other stakeholders to obtain a more comprehensive understanding of the feasibility of blended learning implementation.

CONCLUSION

Overall, the findings from the primary research question indicated that faculty members at Qom University of Medical Sciences perceive the feasibility of implementing a blended learning approach. Moreover, analysis of the sub-questions revealed that, according to faculty, blended learning can be implemented based on three key components: motivation, faculty technical skills, and institutional culture. In other words, Qom University of Medical Sciences is well-prepared to implement blended learning based on these three components. Provided that technical infrastructure, administrative support, and financial resources are adequately addressed, the readiness level can be further enhanced. Therefore, it can be concluded that the implementation of blended learning at Qom University of Medical Sciences is feasible, but addressing the challenges related to technical, administrative.

Ethical Considerations: Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

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