CORPUS PUBLISHERS

Current Trends in Engineering Science (CTES)

ISSN: 2833-356X

Volume 4 Issue 3, 2024

Article Information

Received date : September 24, 2024

Published date: October 21, 2024

*Corresponding author

Yousif Amin, School of Science and Engineering, Atlantic International University, USA

DOI: 10.54026/CTES/1065

Keywords

Smartphones; Blended learning; Project management; Communication; Bahrain

Case Report

Investigating the Impact of Smartphones on Blended Learning Effectiveness for Project Management Certifications: Case Study in Bahrain

Yousif Amin*

School of Science and Engineering, Atlantic International University, USA

Abstract

This paper examines the impact of smartphones through integration and enhancing the effectiveness of blended learning activities for project management training programs in Bahrain. Building on previous research, this study report on how smartphones can improve real-time communication, boosting engagement, and provide trainees' continuous access to learning materials. Smartphones served as real-time tools for trainers by facilitating group chats, organizing meetings, and sharing educational content, such as YouTube videos and training PowerPoint slides, thus ensuring the fulfillment of training objectives. The case study demonstrates how smartphones contributed to a more dynamic, flexible, and collaborative learning environment, optimizing the blended learning model for professional project management programs in Bahrain. Additionally, since smartphones enabled real-time updates and notifications, they supported trainers to stay organized and engaged with the trainees while tracking their tasks throughout the course. Hence, this tool for sure supported the trainer role as project manager, encompassing the initiation, planning, execution, monitoring, and control phases of activities, all in real-time, to ensure the successful completion of the training program.

Introduction

Blended learning (BL) has emerged as a widely adopted model for professional certification programs, including the Certified Project Officer (CPO) certification in Bahrain. By combining face-to-face instruction with online learning components, blended learning provides flexibility and enhances learner engagement and retention [1]. Amin Y [2] demonstrated the effectiveness of blended learning in the CPO program, showing how this model caters to the needs of professionals balancing work and study. However, with the increasing use of smartphones, there is an opportunity to further enhance the blended learning experience by introducing mobile technology for real-time communication and resource access.

This paper explores the role of smartphones in the CPO certification program, specifically how platforms like WhatsApp were used to enhance communication, facilitate collaboration, and provide continuous access to learning materials. Smartphones, particularly, played a crucial role in facilitating group chats, organizing meetings, and sharing educational video clips from YouTube, as well as training PowerPoint slides. Additionally, smartphones were used to share memory group activity photos and maintain future contacts for updates on further certification levels. By focusing on the case study of Bahrain, the paper highlights the impact of smartphones on blended learning effectiveness in professional project management certification. Figure 1 Illustrate the integration of the Smartphone with the BL's Learning activities.

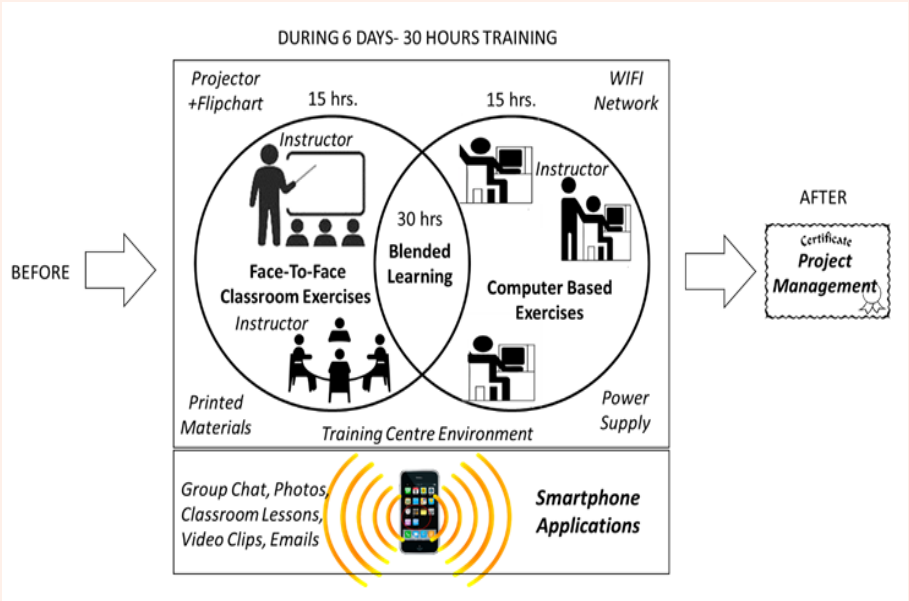

Figure 1: Illustration of Smartphone's integration with BL Learning Activities in Bahrain, Amin Y. (2024)

Theoretical Framework

Blended learning combines the strengths of traditional classroom instruction with the flexibility of online learning, creating an adaptable and interactive learning environment [3]. Amin Y [2] emphasized the effectiveness of this approach for the CPO certification program in Bahrain, where it helped improve learning outcomes and trainee satisfaction. The study found that blended learning, which combines face-to-face instruction with online components, significantly improved trainee satisfaction and learning outcomes.

While smartphones at the beginning were not the focus of the original study by Amin Y [2], the findings later on provided a foundation for further exploring how the smartphone benefits can be integrated with BL during the research work which has proved that smartphones can enhance the learning experience by increasing flexibility and engagement the trainees being an essential modern tool for communication, specially via WhatsApp among Bahraini communities and other multi-national residents.

Hence, the integration of smartphones into blended learning for the CPO certification introduces new possibilities for enhancing BL's effectiveness through the enhanced communication, flexibility, and engagement. This is possible since modern technology has enabled the smartphones to access learning materials on the go, stay connected with instructors, and collaborate with peers through platforms like WhatsApp, as described by Gikas & Grant [4] and Bouhnik & Deshen [5]. They have shown that modern mobile devices can significantly improve engagement by providing real-time communication and interaction, enhancing the overall learning experience in blended environments. This effect was clearly noticeable during the training in Bahrain.

Impact of Smartphones on Blended Learning in CPO Training

In the CPO certification program in Bahrain, WhatsApp was used extensively to facilitate communication between trainers and trainees. Trainers shared real-time updates, reminders, location maps, and training materials, allowing trainees to remain engaged with the content even outside of classroom hours. WhatsApp also enabled group discussions and collaboration, fostering a sense of community among the trainees.

The use of smartphones provided continuous access to resources, allowing trainees to review materials at their convenience. This flexibility was particularly beneficial for professionals balancing their work commitments with their training. The ability to access course materials on demand, coupled with real-time communication through WhatsApp, greatly enhanced the effectiveness of the blended learning model. These findings align with prior research by Bouhnik & Deshen [5], who noted the positive impact of mobile messaging platforms on engagement and communication in educational settings.

Additional Benefits of Smartphones in Blended Learning

Enhanced Communication and Collaboration

Smartphones, particularly through WhatsApp, enabled real-time communication between trainers and trainees. This allowed for instant feedback, quick resolution of queries, and facilitated collaboration among trainees. These benefits are consistent with the findings of Rambe & Bere [6], who highlighted the role of mobile messaging apps in fostering learner engagement.

Furthermore, Studies such as those by Bouhnik & Deshen [5] have explored how messaging apps like WhatsApp, when used on smartphones, improve communication between students and instructors. This real-time communication fosters engagement, allows instant feedback, and supports collaboration in group projects and discussions, which are vital components of blended learning.

Continuous Access to Learning Materials

Smartphones provided trainees with the flexibility to access learning materials at their own pace, reinforcing the content taught in class. This continuous access allowed trainees to revisit materials and solidify their understanding, contributing to better knowledge retention [7]. Gikas & Grant [4] has also highlighted that smartphones provide learners with continuous access to educational content, including videos, reading materials, and interactive elements. This flexibility enables learners to engage with the content at their own pace and revisit materials as needed, which is particularly useful in blended learning environments.

Increased Engagement through Real-Time Interaction

The use of smartphones allowed trainers to send real-time notifications and updates, keeping trainees informed and engaged throughout the course. This real-time interaction helped ensure that trainees remained on track with their learning and maintained high levels of engagement. Ally [7] emphasized the role of mobile learning (m-learning), including smartphones, in creating flexible learning environments. Smartphones allow learners to interact with both the digital and face-to-face components of blended learning, which leads to higher engagement and satisfaction.

Multimedia Learning

Smartphones are ideal for sharing multimedia content such as educational videos from platforms like YouTube and other visual aids. Plana et al. [8] explored how multimedia content delivered via smartphones can improve learner understanding and retention by providing real-time examples and interactive elements in blended learning.

Real-Time Feedback and Notifications

Research by Rambe & Bere [6] indicated that smartphones enable real-time feedback and notifications, which help learners stay on track with their learning tasks. This functionality also enhances the ability to monitor student progress and provide timely interventions, which are crucial for the success of blended learning models. Besides this, Gikas & Grant [4] explored how smartphones allow trainers to monitor student progress, engagement, and participation in real-time through apps and platforms that track attendance, assignment completion, and quiz results. This allows for continuous monitoring and feedback during the training process.

Training Conclusion and Follow-Up

After the training, smartphones can be used to maintain contact with participants, send post-training surveys, and provide certificates. Plana et al. [8] discussed the use of smartphones for continued engagement, such as follow-up resources and communication, even after the official end of the training, for future certification updates or professional development. However, while there may not be a single study that explores smartphones' role in managing every phase of training from start to end, these references highlight how smartphones can be effectively used throughout various stages of a training program, contributing to its overall management and success.

These studies highlight that smartphones are effective tools for supporting blended learning by providing real-time communication, access to learning materials, flexibility, and enhanced engagement. Their integration into blended learning environments has been widely recognized as beneficial in improving the overall learning experience.

Results and Discussion

By mapping smartphone tools with specific training activities, we can summarize how smartphones can enhance blended learning effectiveness, as shown in Table 1. The training activities include pre-training communication via WhatsApp and email for organizing group chats and sharing logistics [5], while calendar apps like Google Calendar help set up schedules and manage appointments [4]. Content delivery occurs through platforms such as YouTube and Google Drive, allowing easy sharing of educational materials [7,8]. Real-time communication is facilitated through WhatsApp and Telegram, enabling instant group chats and updates [5,6]. Continuous access to learning materials is provided through Google Drive and LMS apps, while group collaboration occurs via Zoom and Microsoft Teams [5,6]. Monitoring trainee progress can be achieved through Google Forms and WhatsApp polls [4,7], and feedback is gathered using tools like SurveyMonkey and Google Forms [6,8]. Post-training communication and follow-ups are maintained through WhatsApp, email, and LinkedIn [5,8].

During the training event in Bahrain, actual smartphone activities included creating WhatsApp chat groups for communication between trainees and the trainer, sharing instructions and reminders about training schedules, and providing video clips as demonstrations. Pictures of group activities were shared for auditing, and classroom lecture slides were distributed daily in PDF format. The quiz-taking progress was

monitored in real-time, and updates regarding delays were communicated promptly. Reminders were sent to ensure trainees brought necessary materials for the blended parts of the training. These activities illustrate the effective use of smartphones to enhance the training experience through real-time management and communication.

Table 1: Mapping smartphone tools with training activities.

Training Activity	Smartphone Tool	Description	References
Pre-Training Communication	WhatsApp, Email	Organizing group chats, sending reminders, sharing logistics (e.g., schedules, venues, materials).	Bouhnik & Deshen [5]
Training Schedule & Organization	Calendar Apps (Google Calendar, Outlook)	Setting up and sharing training schedules, sending reminders, and managing appointments and meetings.	Gikas & Grant [4]
Content Delivery	YouTube, Google Drive, LMS Mobile Apps	Sharing educational video clips, PowerPoint slides, and documents through cloud services and video apps.	Ally [7]; Plana et al. [8]
Real-Time Communication	WhatsApp, Telegram	Real-time group chats, one-on-one messaging, updates, and notifications for instant engagement.	Bouhnik & Deshen [5]; Rambe & Bere [6]
Learning Material Access	Google Drive, Dropbox, LMS Apps	Providing continuous access to training materials such as reading content, quizzes, and exercises.	Ally [7]; Gikas & Grant [4]
Group Collaboration & Discussions	WhatsApp, Zoom, Microsoft Teams	Facilitating group collaboration and discussions through messaging platforms and video conferencing.	Rambe & Bere [6]; Gikas & Grant [4]
Tracking & Monitoring Progress	Google Forms, LMS Apps, WhatsApp Polls	Monitoring trainee progress via quizzes, feedback forms, and real-time polls during the training process.	Gikas & Grant [4]; Ally [7]
Feedback and Assessment	SurveyMonkey, Google Forms, WhatsApp	Gathering feedback and conducting assessments through mobile surveys and messaging apps.	Rambe & Bere [6]; Plana et al. [8]
Post-Training Communication & Follow-Up	WhatsApp, Email, LinkedIn	Maintaining future contact, providing updates on new certifications, and sending post-training materials.	Plana et al. [8]; Bouhnik & Deshen [5]
Sharing Multimedia (Photos, Videos)	WhatsApp, YouTube, Google Photos	Sharing memory group activity photos, educational videos, and other multimedia resources.	Plana et al. [8]; Gikas & Grant [4]

Conclusion

Smartphones play a significant role in enhancing the effectiveness of blended learning environments, particularly in professional certification programs like the CPO certification in Bahrain. By providing continuous access to learning materials, facilitating real-time communication, and increasing engagement, smartphones complement the traditional blended learning model. Building on the findings of Amin Y [2], this study demonstrates that smartphones can significantly enhance the effectiveness of blended learning, making it smarter and flexible approach to project management certification.

Recommendations

Those are the recommendations made from this study, they are as follows:

Incorporate Mobile Messaging Platforms

Adult training programs should formally integrate mobile messaging platforms like WhatsApp into their blended learning strategies to enhance communication and collaboration. This would allow for real-time feedback, resource sharing, and continuous engagement between trainees and trainers.

Develop Mobile-Friendly Learning Management Systems (LMS)

To maximize the benefits of smartphones, institutions should ensure that their Learning Management Systems (LMS) are mobile-friendly. This would allow trainees to access course materials, participate in discussions, and complete assignments using their smartphones, increasing the flexibility of the learning experience.

Balance Mobile and Face-to-Face Learning

While smartphones provide flexibility, it is important to strike a balance between mobile learning, screen size, telecoms network availability, quality of mobile and face-to-face instruction. Hence, trainers should use smartphones to complement and support classroom learning rather than replace it, ensuring that both digital and physical components work in harmony [5].

Provide Real-Time Updates and Notifications

Smartphones should be used to send real-time updates, reminders, and notifications to trainees. This would help keep them organized, engaged, and on track with their learning throughout the duration of the course. Such activities are part of managing the training program life cycle, similar to a project which needs initiation, planning, execution, monitor & control and finally closing. Such activities can be supported by the smartphones for further enhancing the training.

References

1. Garrison DR, Vaughan ND (2008) Blended Learning in Higher Education: Framework, Principles, and Guidelines. In: Jossey-Bass.
2. Amin Y (2024) Investigating the Effectiveness of Blended Learning in Project Management Certifications: A Case Study from Bahrain. Current Trends in Engineering Science 4: 1061.
3. Graham CR (2013) Emerging practice and research in blended learning. In: Handbook of Distance Education pp. 333-350.
4. Gikas J, Grant MM (2013) Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones, and social media. The Internet and Higher Education 19: 18-26.
5. Bouhnik D, Deshen M (2014) WhatsApp goes to school: Mobile instant messaging between teachers and students. Journal of Information Technology Education: Research 13: 217-231.
6. Rambe P, Bere A (2013) Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology. British Journal of Educational Technology 44(4): 544-561.
7. Ally M (2008) Mobile learning: Transforming the delivery of education and training. In: Athabasca University Press.
8. Plana MGC, Escofet AG, Figueras IG, Gimeno A, Appel C, et al. (2013) Improving learners' reading skills through instant short messages: A sample study using WhatsApp. Proceedings of World CALL, p. 80-83.