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Case Report

Investigating the Effectiveness of Blended Learning in Project Management Certifications: A Case Study from Bahrain

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Abstract

This study investigates the effectiveness of the Blended Learning (BL) Method for training professionals from engineering and various other fields in the Kingdom of Bahrain to achieve the Certified Project Officer (CPO) certification as a long-term collaboration by Bahrain Society of Engineers and the Centre of Project Innovation, USA. The primary goal of the research was to evaluate the effectiveness and acceptance of the Blended Learning tool in Bahrain. Specifically, the study aimed to address the research gap by analyzing attitudes towards acceptance and managing the challenges to meet the training challenges &objectives for gaining international certification as planned within a 30-hour, 6-day training period.Surveys were conducted with 24 professional participants from various business organizations who attended training organized by the Centre of Training for the Bahrain Society of Engineers. The training program integrates classroom lessons, group exercises, and computer-based lessons and quizzes to prepare participants for the CPO certification. Results from surveys conducted across three training batches indicated high levels of trainee satisfaction and positive outcomes to achieve the international certification within the given time frame. The findings suggest that the Blended Learning Method is well-received and was effective for project management training, especially within the context of the CPO certification program in Bahrain per given deadlines and challenges to receive the certification during the training period.

Introduction

Project management training has undergone significant transformation over the years, with various methodologies being adopted to improve learning outcomes and professional competency. Traditional classroom-based training, characterized by face-to-face instruction and group interactions, has long been a staple in project management education. This method has been shown to enhance communication skills and provide direct engagement with instructors, which is crucial for effective learningdespite the challenges (Meredith & Mantel, 2017; Turner, 2014). Furthermore, BL is an inseparable part of our modern world and provides opportunities to use both synchronous, such as Skype, group chats and web conferences, and asynchronous tools, such as blogs and social networking sites, email and discussion boards [1]. According to Garrison & Vaughan [2], BL is essential in improving learners experience of the learning process. However, the rise of technology has introduced new training models, such as computer-based online training, which offers flexibility and accessibility to learners worldwide. Research has demonstrated that online training can improve access to learning materials and accommodate diverse learning styles (Clark & Mayer, 2016; Sitzmann, 2011). The hybrid or blended learning model, which integrates traditional classroom methods with online components, has emerged as a particularly effective approach. Blended learning combines the benefits of in-person interaction with the flexibility of online learning, allowing for a more interactive and adaptable educational experience. Studies have shown that blended learning can enhance knowledge retention and engagement by catering to different learning preferences (Garrison &Kanuka, 2004) [3]. In this context, the Center of Project Innovation (CPI) in USA, has established a notable partnership with the Training Centre in Bahrain for the CPO training program. CPI's approach to project management training includes a flexible delivery model that offers online, face-to-face, and blended options. This method is designed to fit various project contexts, preferred methods, and cultural settings. CPI's commitment to high-quality, adaptable training is supported by its international accreditation and high student satisfaction rates, as evidenced by their significant student endorsement (NCVER, 2021; Project Management Institute, 2021). Despite the growing body of literature on blended learning, there remains a gap in research specifically addressing the Certified Project Officer (CPO) certification, particularly within the context of the Kingdom of Bahrain. Most existing studies have focused on broader project management certifications or have been conducted in different geographical and cultural contexts, limiting their applicability to Bahrain. For example, while research by Al-Ahmad and Al-Rashid (2016) has explored project management training in the Middle East, and Garrison and Kanuka (2004) have examined blended learning, there is limited research specifically targeting the CPO certification in the Bahraini context. This study aims to address this gap by investigating the acceptance, challenges, and effectiveness of the Blended Learning Method in preparing participants for the Certified Project Officer (CPO) certification in Bahrain. By focusing on this specific certification and region, this research provides unique insights into the implementation and outcomes of blended learning tailored to the Bahraini context. Figure 1 illustrates the setup used at the Training Centre in Bahrain for the Blended Learning Method, highlighting its innovative approach to project management training and addressing the existing literature gap. By focusing on the CPO certification, this study not only contributes to the limited body of knowledge on blended learning in Bahrain but also offers practical insights that can inform future training programs and policies. The findings are expected to have significant implications for training centers and organizations looking to adopt or refine blended learning methods in project management education.

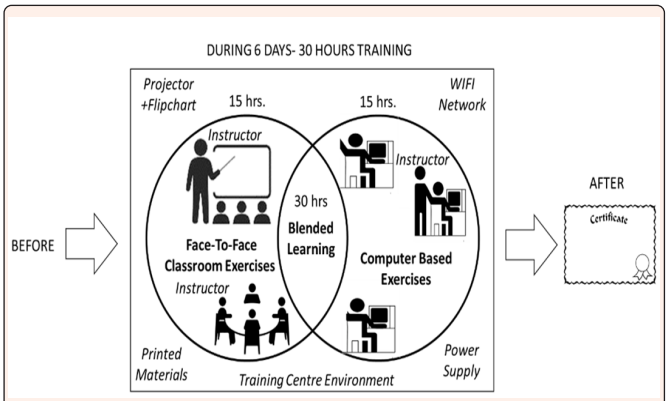


Figure 1: Illustrates the setup used at the Training Centre in Bahrain for the Blended Learning Method.

Problem Description

The effectiveness of different training methods in project management has been widely debated. However, there is limited research on the use of Blended Learning in the context of CPO certification in Bahrain. This study aims to fill this gap by examining participants' perceptions of the training program's effectiveness and its impact on their ability to apply the knowledge gained in real-world scenarios.

Research Objective

1. To evaluate the acceptance of the Blended Learning Method in the CPO certification training program in Bahrain.
2. To assess the effectiveness of the training in achieving the intended learning outcomes.
3. To analyze the applicability of the training content to participants' professional roles.
4. To compare the findings with previous pilot surveys to identify trends and patterns.
5. To provide recommendations for optimizing the training program based on the survey results.

Materials and Methods

The research methodology employed a survey-based approach to gather data from participants of the Certified Project Officer (CPO) training program at the Bahrain Society of Engineers. This program utilized the Blended Learning Method, a training model that integrates multiple modes of instruction, including traditional classroom lessons, collaborative group exercises, and computer-based lessons supplemented with online quizzes. The Blended Learning approach was chosen for its ability to combine the strengths of various instructional methods, creating a more comprehensive learning experience [2,4]. The survey was administered across three distinct batches of trainees who participated in the CPO program. Each batch underwent the same training process, ensuring consistency in the delivery of content and instructional methods. The survey was designed to assess participants' perceptions of the training effectiveness, their understanding and retention of the material, and their ability to apply the learned concepts in practical settings. To ensure robust data collection and analysis, the survey included both qualitative and quantitative questions. Quantitative questions were used to capture measurable outcomes, such as the perceived improvement in project management skills, while qualitative questions provided deeper insights into the trainees' experiences and suggestions for improvement [5]. The results from the final batch of trainees were compared with those from two previous pilot surveys to identify trends and evaluate the consistency of outcomes over time. This longitudinal comparison allowed for the assessment of the training program's impact on different groups of participants, highlighting any improvements or persistent challenges (Teddlie & Tashakkori, 2009). The survey data were analyzed using statistical methods to identify significant patterns and correlations. Descriptive statistics were used to summarize the responses, while inferential statistics were employed to test the hypotheses regarding the effectiveness of the Blended Learning Method in the CPO training program [6]. The methodological approach ensured that the findings were not only reflective of the participants' immediate reactions but also indicative of the training program's long-term effectiveness. By including multiple batches and pilot surveys, the study aimed to provide a comprehensive evaluation of the Blended Learning Method, making the results more generalizable and reliable (Yin, 2017).

Theoretical Background

The study is grounded in the literature on various learning methods, including Classroom, Computer-based online Learning, Virtual Learning, e-Learning, Online Learning, Blended, Hybrid, and LIVE training. Each method has distinct advantages and disadvantages (Pros and Cons), with the Blended Learning Method offering a balance between the personal interaction of classroom training and the flexibility of online learning (Graham, 2006; Garrison &Kanuka, 2004) [7]. Previous studies have shown that Blended Learning can enhance learner engagement, improve retention, and allow for more personalized learning experiences (Means et al., 2009) [8]. The effectiveness of various learning and training methods in professional education has been widely debated, with each method offering distinct advantages and challenges. This section reviews the following methods: Classroom, Computer-Based Online, Blended, Hybrid, and LIVE (virtual instructor-led) training, with a particular focus on their application in project management certification.

Classroom Training

Classroom training is the traditional form of instruction, where learners and instructors engage in face-to-face interaction. This method has been lauded for its direct engagement, immediate feedback, and structured learning environment (Hattie, 2009). The advantages of classroom training include:

Pros:

a. Facilitates in-person interaction and networking among participants.

b. Allows immediate clarification of doubts and real-time feedback [2].

Cons:

c. Lack of flexibility as participants must adhere to a fixed schedule.

d. ravel and logistical costs can be high for both organizations and participants.

e. Limited by the capacity of physical space, restricting the number of participants (Garrison &Kanuka, 2004).

Computer-Based Online Training

Computer-Based Online Training leverages digital platforms to deliver instructional content, allowing learners to access materials remotely. This method has gained popularity due to its flexibility and scalability (Ally, 2008). The key features include:

Pros:

a. Flexible access to training materials from any location and at any time [7].

b. Scalable, allowing for a large number of participants with minimal additional cost (Means et al., 2009).

c. Often self-paced, catering to individual learning speeds [8].

Cons:

a. Lack of real-time interaction with instructors can lead to delayed feedback (Garrison & Vaughan, 2008).

b. Requires high levels of self-discipline and motivation from learners (Ally, 2008).

c. May lead to a sense of isolation due to limited peer interaction [8].

LIVE (Virtual Instructor-Led) Training

LIVE (Virtual Instructor-Led) training involves real-time, online sessions where learners interact with an instructor and other participants through video conferencing platforms. This method provides a structured learning experience similar to traditional classroom settings but with the convenience of online access [9].

Pros:

a. Enables real-time interaction and immediate feedback, enhancing understanding and engagement (Clark & Mayer, 2011).

b. Provides flexibility for participants to join from any location, reducing travel and accommodation costs [4].

c. Offers opportunities for networking and collaboration among participants in different geographical locations (Martin & Parker, 2014).

Cons:

a. Requires a stable internet connection and functional technology, which can be a barrier if technical issues arise (Sitzmann et al., 2006).

b. May pose scheduling challenges across different time zones, limiting accessibility for global participants (Hrastinski, 2007).

c. Lacks the physical presence and in-person interaction that some learners find essential for motivation [10].

Distance Learning

Refers to an educational process where instruction occurs between geographically separated individuals using technology to facilitate learning. This method has become increasingly prevalent, especially with advancements in communication technologies [11]. The key features include:

Pros:

a. Provides learners with the flexibility to access courses from anywhere, reducing the need for physical presence [4].

b. Often more affordable due to the elimination of costs associated with travel and physical resources (Means et al., 2014).

c. Can offer a diverse range of courses and programs that may not be available locally (Simonson et al., 2014).

Cons:

a. Limited face-to-face interaction can affect the sense of community and engagement among students [11].

b. Dependence on technology can be a barrier for those with limited access to reliable internet or digital devices [4].

c. Requires significant self-discipline and time management skills, which can be challenging for some learners (Means et al., 2014).

Online Learning

Online Learning is a mode of education where students access course materials and instruction through the internet. This method has gained popularity due to its flexibility and accessibility (Garrison &Kanuka, 2004).

Pros:

a. Offers flexibility for learners to study at their own pace and schedule [12].

a. Enables access to a wide variety of courses and resources from anywhere in the world [4].

b. Often includes interactive elements like discussion forums and quizzes to enhance engagement (Anderson, 2008).

Cons:

a. Limited opportunities for direct interaction with instructors and peers, which can impact the learning experience [2].

b. Requires strong self-motivation and time management skills [8].

c. Potential technical issues, such as unreliable internet connections, can disrupt learning [4].

Virtual Learning

Virtual Learning involves the use of a virtual environment to deliver education, often through platforms that support video conferencing, simulations, and interactive activities in real-time [9].

Pros:

a. Facilitates real-time interaction between instructors and students, mimicking a classroom experience (Barbour & Reeves, 2009).

b. Allows for immediate feedback and clarification of doubts during live sessions [9].

c. Supports collaborative learning through group work and peer interaction in virtual environments (Barbour & Reeves, 2009).

Cons:

a. Requires reliable high-speed internet and suitable technology, which may not be accessible to all learners (Anderson, 2008).

b. Can be challenging to manage large groups in a virtual setting, potentially leading to less individual attention [9].

c. Learners may experience "Zoom fatigue" from prolonged screen time and lack of physical movement (Wiederhold, 2020).

E-Learning

E-Learning encompasses all forms of electronically supported learning and teaching, including both synchronous and asynchronous methods delivered via computers and other digital devices (Clark & Mayer, 2016).

Pros:

a. Allows learners to engage with interactive and multimedia content, enhancing understanding and retention (Mayer, 2009).

b. Can be accessed anytime and anywhere, offering flexibility for diverse learning needs (Ally, 2008).

c. Supports a wide range of learning activities, from simple text-based courses to complex simulations and gamified experiences (Clark & Mayer, 2016).

Cons:

a. May lack the personal touch and social interaction found in traditional learning environments, which can affect learner engagement [2].

b. Relies heavily on the learner's self-discipline and time management skills (Ally, 2008).

c. Potential for technical difficulties that can interrupt the learning process, such as software compatibility issues or hardware failures (Clark & Mayer, 2016).

Hybrid Learning

Hybrid Learning typically involves a more flexible approach where a course or training program can have sessions that are entirely online or entirely in-person, with students often choosing between the two modes. This approach is more adaptable to

different learners' needs and may involve alternating between online and in-person sessions [8].

Pros:

a. Provides greater flexibility for students who may prefer or require one mode over the other, accommodating diverse learning needs and schedules [7].

b. Reduces the need for physical space and resources as some sessions can be conducted online [12].

c. Encourages the development of self-discipline as students manage their learning across different environments (Garrison &Kanuka, 2004).

Cons:

a. May lead to inconsistencies in student experiences if not well-coordinated, as different students might receive different amounts of face-to-face and online interaction [7].

b. Can be challenging to ensure the same level of engagement and interaction across both modes [8].

c. Requires robust technological infrastructure and support to ensure smooth transitions between online and in-person sessions [12].

Blended Learning

Blended Learning combines elements of both classroom and online training, offering a balanced approach that seeks to optimize learning outcomes [7,2]. This method involves integrating in-person instruction with online activities, such as quizzes and interactive content. The Blended Learning Method is suitable for both industry and higher education. There are studies on blended learning specifically within industrial and professional contexts, such as by Fong CK & Li Z [13]. Their study examines the effectiveness of blended learning in industrial settings and provides insights into how it can be effectively implemented and managed in professional environments. Before this study, Hsu SH, Ching YH [14] have made a research work which compares blended learning with traditional learning methods in a professional training context, focusing on learning outcomes and participant attitudes. We also noted This research explores the application of blended learning in technical training and safety awareness programs within the oil and gas industry. While Zhang X & Chen G [15] provided a broader view of how blended learning is applied in various industrial and professional settings, offering valuable insights that complement the academic-focused research by Garrison, Vaughan, and others. Regarding higher education, Graham [7], Garrison & Vaughan [2] focused on educational practices, specifically in higher education, many western faculty members have begun to utilize Internet-based tools within traditional face-to-face classroom settings.

Garrison and Kanuka (2004) also discussed how Internet-based tools and traditional measures can be combined in a format known as blended learning. The authors define blended learning as "blended learning is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences" (Garrison &Kanuka, 2004, p. 96). Their paper looked closely at how blended learning can be used in higher education settings to encourage collaborative learning among students and teachers. They showed that blended learning is a learning format that is low risk and more effective way to incorporate technology into higher education learning environments. Through their paper the authors have highlighted the importance of and the widespread use of blended learning practices in higher education. However, the authors clearly articulate the need for a supportive structure for educators and students who utilize blended learning to fully realize the benefits. A summary of Authors' Key Points shows that there are needs for changing policy, strategy and administration support for BOTH students and teachers/ faculty. While the design principles emphasize on the true integration of both classroom and computer, as well as the effective integration of all three elements - cognitive, social, and teacher presence so that teacher presence can provide the ability to support learners' responsibility and independence.

Pros:

a. Combines the strengths of both classroom and online learning, providing flexibility and engagement [2].

b. Encourages continuous learning through online resources while retaining the benefits of face-to-face interaction [7].

c. Facilitates personalized learning experiences and accommodates different learning styles (Ally, 2008).

d. Combines the benefits of in-person interaction and digital flexibility, offering a more rounded educational experience [7].

e. Allows instructors to utilize diverse teaching methods, such as interactive content online and hands-on activities in the classroom, to cater to different learning styles (Garrison &Kanuka, 2004).

f. Can improve learning outcomes by reinforcing in-person lessons with online materials and exercises [12].

Cons:

a. Combines the strengths of both classroom and online learning, providing flexibility and engagement [2].

b. Encourages continuous learning through online resources while retaining the benefits of face-to-face interaction [7].

c. Facilitates personalized learning experiences and accommodates different learning styles (Ally, 2008).

d. May pose challenges in terms of ensuring consistent learner engagement across different modes of delivery.

e. Requires careful planning and integration to ensure online and in-person components are complementary and not redundant [2].

f. May require significant resources to develop and deliver both components effectively (Graham, 2006).

g. Students need to be self-motivated to engage with the online aspects outside of the classroom [8].

In summary, while both Hybrid and Blended Learning integrate online and in-person training and education, Blended Learning typically uses a fixed combination where both components are essential, whereas Hybrid Learning offers more flexibility, often allowing learners to choose or alternate between the two. However, the benefits of Blended Learning in this context can include:

a. Enhanced Engagement: The integration of group exercises and interactive online components keeps participants engaged and encourages collaboration, which is crucial in project management (Garrison &Kanuka, 2004).

b. Flexibility and Accessibility: The online modules offer the flexibility for participants to learn at their own pace, making it easier for professionals to balance their studies with work commitments (Ally, 2008).

c. Comprehensive Learning Experience:The combination of theoretical lessons in the classroom with practical exercises online ensures that participants not only understand the concepts but can also apply them effectively in real-world scenarios [7].

d. Adaptability: This method can be easily adapted to suit the evolving needs of industries, making it a sustainable and future-proof training approach [7].

Results & Discussion

The survey was conducted on total 24 participants in 3 Batchesfor the CPO (Certified Project Officer) training program at the Bahrain Society of Engineers' Centre of Training which provided valuable insights, despite the relatively small sample size of trainees. Here's a detailed analysis of the results:

Participant Feedback on Training Effectiveness:

a. Positive Responses: The majority of participants expressed satisfaction with the blended learning approach. They appreciated the mix of classroom lessons, group exercises, and computer-based lessons and quizzes. This positive feedback indicates that the blended approach effectively catered to diverse learning preferences and needs.

b. Learning Outcomes: Participants reported that the combination of in-person and online components enhanced their understanding of project management concepts. The face-to-face sessions allowed for real-time interaction and clarification, while the online modules offered flexibility and the opportunity for repeated practice.

Engagement and Participation

a. Engagement Levels: The blended learning method was successful in maintaining high levels of engagement among trainees. The variety of learning formats (interactive sessions, group work, online quizzes) kept participants actively involved throughout the training.

b. Peer Interaction: Group exercises promoted collaboration among participants, fostering a learning environment where trainees could share knowledge and experiences, further enhancing the learning process.

Practical Application of Knowledge

a. Real-World Application: Participants found the training method particularly effective in applying theoretical knowledge to practical scenarios. The combination of classroom discussions and online exercises enabled trainees to test their understanding in a controlled environment before applying it in real-world situations.

b. Skill Development: The survey results indicated that the blended method supported the development of both technical and soft skills, essential for project management.

Flexibility and Accessibility

a. Accessibility: The online components of the training provided flexibility, allowing participants to engage with the material at their own pace. This aspect was particularly beneficial for professionals balancing work and study.

b. Convenience: Participants appreciated the convenience of being able to revisit online materials and quizzes as needed, reinforcing learning and ensuring mastery of the content.

Relevance to Certification Goals

Alignment with CPO Certification: The survey results showed that participants felt well-prepared for the CPO certification, attributing their readiness to the blended learning format. This alignment between training methods and certification requirements is critical for the program's success [16-19].

Research, Reliability and Reproducibility

To provide a comprehensive understanding of the research and strengthen the credibility of the findings, two previous pilot surveys conducted as part of the CPO training program have been included. These earlier surveys aimed to gauge participants' perspectives on the effectiveness of the training, the achievement of training objectives, and the applicability of learned topics to future projects. The results from these two pilot surveys, along with the final Batch 3 survey, show strong and encouraging outcomes. The consistency observed across all three surveys demonstrates the reliability of the participants' feedback. In particular, the earlier surveys revealed positive participant perceptions, which align closely with the findings of the final survey batch. This alignment suggests a consistent pattern in the effectiveness of the Blended Learning Method for the CPO training program. By including these pilot surveys, we can illustrate the progression and evolution of participants' understanding and satisfaction with the training over time. This trend underscores the training's impact and reinforces the final results, highlighting the benefits of the Blended Learning Method in preparing participants for the CPO certification. In summary, we can deduce the following:

a) Consistency of Results: While the survey involved a small number of participants, the consistently positive feedback across multiple dimensions suggests that the results are reliable. The responses indicate that if the survey were repeated with other batches of trainees in the same CPO program, similar outcomes would likely be observed.

b) Potential for Broader Implementation: The positive outcomes from this small group suggest that the blended learning approach could be effectively scaled up for larger groups or other similar training programs (Figure 2). 7.

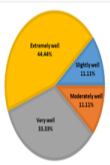
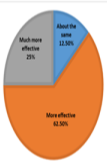
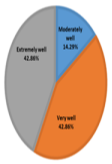
Results	BATCH#3	BATCH#2	BATCH#1
Blended Learning Positive Satisfactions By Different Training Batches			
Number of Trainees	9	7	8
CPO Certifications	100%	100%	100%

Figure 2: Showing the Different Training Batches Satisfactions with the Blended Learning Method.

Conclusion

Blended Learning emerges as the optimal method for Bahrain's CPO Project Management training due to its ability to address the unique challenges of professional certification in the region. By combining the strengths of both in-person experience by the trainer and online learning, this method provides a balanced and flexible approach that can accommodate the varying needs of participants. Overall, Blended Learning is well-suited to meet the demands of Bahrain's professional landscape, offering a robust and adaptable framework for project management certification. The survey results, though derived from a small sample (Qty. 24), provide strong evidence supporting the effectiveness of the Blended Learning Method for CPO training in Bahrain. The positive feedback on engagement, knowledge application, flexibility, and alignment with certification goals within the training time frame indicates that this approach meets the needs of participants and supports their professional development. Repeating this survey with additional batches of trainees would likely reinforce these findings, further validating the Blended Learning Model as a superior training method for project management certification in Bahrain. Thus, the Blended Learning Method has demonstrated effectiveness in training professionals in Bahrain for the CPO certification. When compared to other internationally recognized certification methods, such as the

PMP, which require extensive revision and testing, the Blended Learning Method offers a more efficient approach to achieving certification. The positive outcomes observed across multiple survey batches underscore the method's ability to balance theoretical knowledge with practical application, ensuring that participants are well-prepared for their professional roles. The inclusion of pilot survey results further bolsters the study's credibility, demonstrating a consistent trend of positive feedback and reinforcing the effectiveness of the Blended Learning Method for both industry and higher education. Furthermore, the training center's outstanding facilities and administrative support from the Bahrain Society of Engineers, combined with the exceptional online learning platform (OPEN) provided by the Centre of Project Innovation (as detailed on their website, project.info), have together created an ideal Blended Learning Model that significantly contributes to the success of the CPO certification program.

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