

# Implementing Technology-Enhanced Support for First-Year Students on Blackboard: Lessons Learned

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**Abstract:** Technology Enhanced Learning has become one of the key components of teaching and learning in the current environment and mainly because of Covid-19, hence the introduction of the Technology Enhanced Learning Programme. The Technology Enhanced Learning Student Assistants (TeL Assistants) programme supports students in the university with Blackboard (University choice of LMS). The programme was established in 2021 since there was a need to assist students in the use of Blackboard. With Covid, the university moved to strictly online and that became a challenge to the students. With most undergraduate students coming from disadvantaged high schools and backgrounds, there was a need for the programme. The TeL student assistants undergo training by the Teaching and Learning Consultants. The aim of this study was to evaluate how the TeL student Assistants supported the students of the University of Fort Hare on how to navigate Blackboard. This study examined the benefits of TeL student Assistant's support in first-year students navigating their modules using Blackboard as an LMS. A purposive sample of undergraduate students that were trained by TeL student assistants submitted data through a qualitative survey in which they narratively conveyed their perspectives on support provided for Blackboard by the TeL Student Assistants. Data was analysed through coding, which were then assigned to themes and categories. The significant aspect of the TeL student assistants which enabled students to use Blackboard was the submission of assignments and tests, the facilitator's knowledgeability and the patience students received from the TeL student assistants. The findings of the study directly benefit the university and higher education because they will provide information upon which we can take action to improve the support, retention, and throughput of students at the University of Fort Hare (UFH).

**Keywords:** Blackboard, TeL students assistants, Support, Learning Management System

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## 1. Introduction and Background

The Technology Enhanced Learning (TeL) Student Assistant Programme was introduced by the Teaching and Learning Centre at the University of Fort Hare (UFH) in 2021 as an important component of student development and support. The programme is aimed at providing support to students through trainings and consultations on issues related to the university LMS (Blackboard) of choice. Blackboard is a Learning Management System (LMS) which facilitates online teaching, learning, assessments, collaboration, and knowledge sharing in a synchronous and asynchronous manner. Bradford et al. (2007) states that Blackboard improves e-learning through a number of essential features and it offers more accessibility, enabling students to view course materials at any time and from any location. Due to the mobility that LMS offers, access is not limited to desktop, but there is an App compatible with smart phones where both students and lecturers can navigate the system.

At UFH, first-year students often face considerable difficulties with Blackboard, which can negatively impact their engagement and academic success. The university is located in rural Eastern Cape province and attracts students from underprivileged schools with limited knowledge of E-Learning technologies. The students' inexperience with technology makes it more difficult to use Blackboard which causes frustration and difficulties to engage with online learning activities. Providing individualised support to students, the TeL Student Assistant Programme seeks to close the gap and improve first-year students' overall educational experience. The increased technological expectations imposed on students can cause them to feel overwhelmed learning new educational technologies. The TeL Student Assistant Programme addresses critical issues by providing individualised support to help students navigate the complexities of Blackboard. The programme is designed to be a lifeline for students, offering them guidance and assistance they need to become proficient in using the LMS.

Providing hands-on training with immediate assistance on Blackboard, the programme assists students adapt to the LMS, improving their confidence and competence in using digital learning tools. Better academic performance is made possible by the support provided by TeL assistants, creating a more interactive and engaging learning environment for students. The availability of TeL student assistants lowers barriers to successful online learning, increases student retention at the university, and guarantees that students have access to ongoing support.

## **2. Literature Review**

### **2.1 Technology-Enhanced Support in Higher Education**

The use of technology to support students has been a growing focus in educational research. Studies show that technology-enhanced support can significantly improve student outcomes by offering tailored resources, interactive learning environments, and timely feedback (Alavi & Leidner, 2001; Herrington & Oliver, 2000). For first-year students, who often face challenges in adapting to university life, these technologies can be crucial in providing academic support and fostering a sense of belonging (Tinto, 1993). The implementation of technology-enhanced support for first-year students using Blackboard has revealed both benefits and challenges.

Studies highlight that Blackboard's communication tools, such as discussion boards and messaging systems, significantly enhance interaction between students and lectures, which is crucial for first-year students transitioning to university life (Garrison, Anderson, & Archer, 2001). These tools help create a supportive learning community and facilitate student engagement (Moore, 1993). Additionally, Blackboard's centralized access to academic resources, including lecture notes and gradebooks, allows students to manage their coursework efficiently and receive timely feedback, which contributes to improved academic performance and retention (Dzuiban, Hartman, & Moskal, 2004; Krause & Coates, 2008). However, the successful use of these tools depends on their effective integration into course design and the lecturers' engagement, as well as addressing issues related to digital literacy and user interface design (Beetham & Sharpe, 2013).

Despite these advantages, several challenges have been highlighted to effectively utilise Blackboard for first-year student support. Technical difficulties and the complexity of the LMS interface can hinder its effectiveness, particularly for students with limited digital skills or unreliable internet access (Seale, 2014; JISC, 2008). Effective implementation also requires strong institutional support and adequate training for both students and lecturers (Khan, 2012). Continuous feedback and iterative improvements are crucial to addressing these challenges and enhancing the platform's usability (Swan, 2003). While Blackboard offers valuable tools for supporting first-year students, overcoming these obstacles is essential for ensuring that all users can fully engage with and benefit from the technology.

### **2.2 Benefits of Technology Enhanced Support for Student Success**

Alamri, Watson, & Watson (2021) claim that there are several advantages to technology-enhanced support in higher education which have a major positive impact on student achievement. Institutions can provide more individualised and flexible learning experiences that are suited to the needs of specific students by utilising digital tools and platforms. According to Liu, Lomovtseva & Korobeynikova (2020), digital platforms offer flexibility by allowing students access learning materials and finish tasks at their own convenience and pace. Students with different schedules and responsibilities especially benefit from this flexibility, which fosters a more welcoming and accessible learning environment. As a result, incorporating technology-enhanced support not only leads to better academic results but also increases student retention and happiness.

The University of Fort Hare is subscribed to the Blackboard Learning Management System as a technological tool for student learning. According to Bradford et al. (2007), Blackboard as LMS has features that include dependable material access, prompt feedback, efficient communication channels, thorough progress tracking, and the development of critical organisational and time management skills that all work together to enhance the e-learning experience. These advantages make Blackboard an effective instrument in the field of educational technology experience, supporting both lecturers and student learning processes. Due to diverse student abilities with interaction with LMS, the university employs TeL Student Assistants to provide the needed support to assist students with navigating the LMS.

According to Johnson-Smith (2014), by establishing more dynamic and engaged learning environments, integrating technology-enhanced support programs with TeL Student Assistants can significantly boost student engagement and retention. Features such as simulations facilitated by TeL Student Assistants, make learning more engaging and enjoyable, capturing students' interest and encouraging active participation. TeL Student Assistants also play a crucial role in promoting online discussion forums and collaborative tools, which facilitate peer-to-peer interaction and foster a sense of community and belonging among students. Furthermore, early alert systems that track student performance and engagement are frequently included into the LMS which enables prompt interventions for students who are at risk of falling behind. Bradford et al. (2007) underscores that Blackboard allows for progress tracking by keeping track of student usage and performance. Additionally, Blackboard helps students effectively manage assignments and deadlines by promoting time management and organisational skills through tools like the Course Calendar.

While there are obvious advantages to technology-enhanced support, Adekola, Dale & Gardiner (2017) point out that institutions must address certain issues and problems in order to assure successful implementation. Issues such as poor network connectivity, limited access to computers by students, liabilities to use computers form part of the issues witnessed by the University of Fort Hare that reduce the effectiveness of digital learning programmes. Connecting to online resources can be a challenge for both lecturers and students, which can impede learning and cause lower interest to online learning.

### 2.3 Theoretical Framework

The study employs the E-learning Systems framework which according to Aparicio et al (2016) is made up of three fundamental elements that make up the theoretical foundation of e-learning systems which is people, technologies, and services. Below on figure 1 is the e-learning systems framework diagram that illustrates the interrelatedness of the three components of the framework.

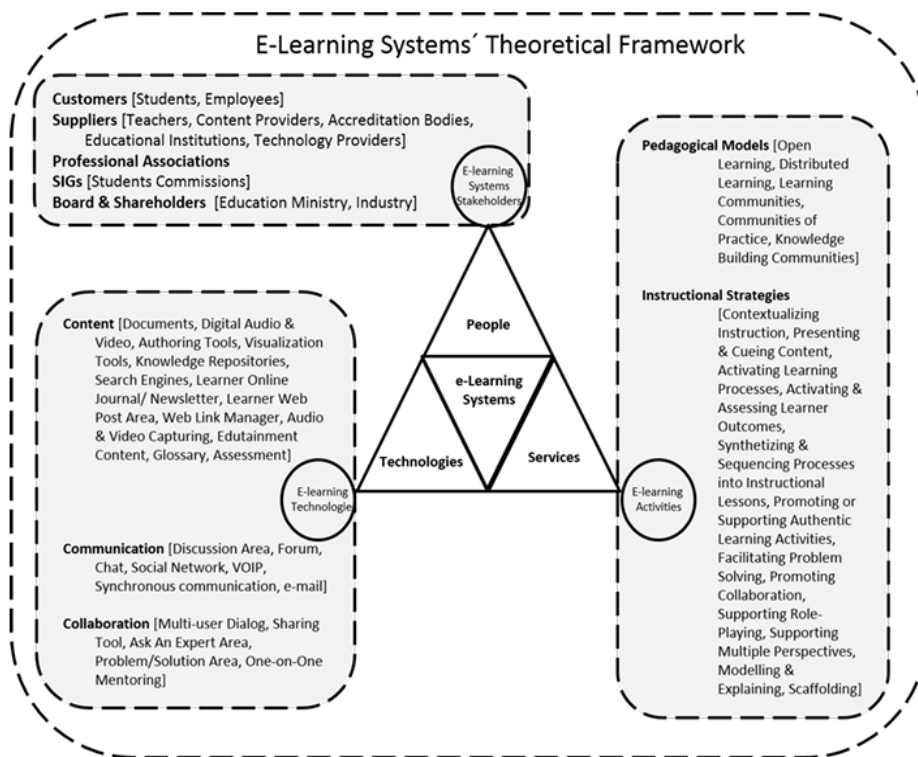


Figure 1: e-Learning systems framework

The framework deduces that technologies support user interactions, content integration, communication, and collaboration, and people interact with e-learning systems. Services include the instructional tactics and pedagogical frameworks that underpin online learning activities. E-learning theory is built on cognitive science principles that demonstrate how the use and design of educational technology can enhance effective learning.

## 3. Methodology

### 3.1 Research Design

The parallel mixed-methods design was employed in this research. This approach involves the simultaneous collection and analysis of both quantitative and qualitative data, which allows for a more holistic understanding of the research problem (Almeida, 2018). By integrating these two methodologies, the parallel mixed-methods design provides a more nuanced perspective and enhances the validity of the findings. Moreover, the parallel mixed-methods design facilitates the triangulation of data, which strengthens the credibility of the results by cross-validating findings from different sources. As Dawadi et al. (2021) highlight, this approach not only enriches the overall analysis but also helps in collaborating one set of findings with the other. Consequently, it enables researchers to draw more robust and reliable conclusions about the issue at hand, ensuring that the research outcomes are well-rounded and reflective of multiple facets of the problem. This method is particularly effective in addressing complex research questions where a single methodological approach might fall short of capturing the full scope of the issue.

### **3.2 Sampling**

In this study, two training sessions were conducted with the goal of evaluating their effectiveness and gathering feedback from the participants. Following these training sessions, a questionnaire was distributed to the attendees through Google forms to collect their responses and insights. Out of the 68 participants who attended the trainings, 51 completed and submitted the questionnaire. This resulted in a response rate of approximately 75%. The collected responses were then used to analyse and assess the impact of the trainings, providing valuable data on participants' experiences, satisfaction, and areas for improvement.

### **3.3 Data Collection**

The data collection process utilised both quantitative and qualitative methods to capture a comprehensive set of responses from participants. Quantitative data were gathered through numerical responses, which involved the use of structured instruments such as surveys with closed-ended questions and rating scales. This type of data provides measurable and statistically analysable results that facilitate the identification of trends, patterns, and correlations within the dataset.

In addition, qualitative data was also collected through narrative responses, which involved open-ended questions with prompts that encouraged participants to provide detailed and descriptive feedback. This approach captures the depth and richness of participants' experiences, opinions, and insights, offering context and elaboration beyond mere numerical scores. Participants shared their personal reflections on the training's impact, suggested improvements and described specific instances of how the training affected their practices. Analysing these narrative responses helps to uncover underlying nuances understanding, and address aspects of the training that may not be evident from quantitative data alone.

By combining these two types of data, the research aims to gain a well-rounded understanding of the participants' experiences and the effectiveness of the training. Quantitative data offer a broad overview and statistical validity, while qualitative data provide detailed, contextual insights, enriching the overall analysis and supporting more informed conclusions (Bandara, Furtmueller, Gorbacheva, Miskon, & Beekhuyzen, 2015).

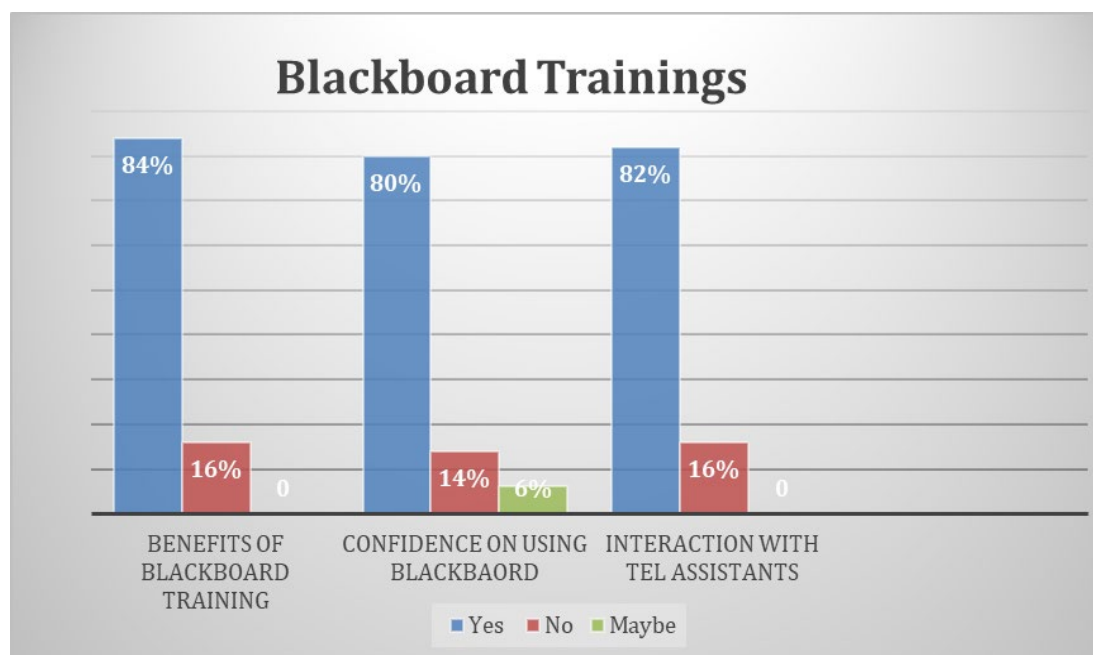
### **3.4 Data Analysis**

In this study, the E-learning theoretical framework was employed to analyse the collected data, providing a structured lens through which the findings were interpreted. This framework encompasses various models, theories, and constructs related to the design, implementation, and effectiveness of e-learning environments. By applying this framework, the research aims to assess how well the e-learning systems used in the training sessions met the theoretical expectations and objectives that are set.

The data was clustered based on the three core areas of the E-Learning framework, which are people, technology and services. The framework helps to analyse the interaction between technological tools, the students and the services offered by the TeL Students Assistants. This examined how well the e-learning systems supported the learning objectives and acquisition of knowledge. The framework also provides criteria for assessing the usability and functionality of the e-learning platforms used, including their accessibility, user-friendliness, and technical performance.

## **4. Results and Discussion**

The study looked at lessons learned on implementation of technology-enhanced support for first-year students on Blackboard. The results and discussion is based on the three core areas of the framework which are Service (offered by the TeL Assistants), People/ E-Learning Stakeholders (Students) and E-Learning Technologies (Blackboard LMS). The table below quantitatively tabulates the results of the study and how the training benefited the students with consideration of the framework.



The results highlight how TeL Assistants improved students' proficiency with the navigation of Blackboard. Significantly, 84% of the participants agreed that having TeL Assistants as support was helpful. The study looked at benefits of the Blackboard training for improved results. The results show that a great percentage of the students found the Blackboard training beneficial in that they are confident in using the LMS for their learning. The high degree of satisfaction emphasizes how the TeL Assistants' interactions were crucial in helping students navigate the technical and procedural aspects of the Blackboard effectively. This is shown by 82% of students acknowledging the importance of having competent and approachable support staff during the training sessions.

Students who attended the training indicated their confidence in using the LMS where 80% of them indicated that their confidence in using Blackboard increased after the training. This therefore can be assumed to be an indication that students can yield positive results with the training received from the TeL assistants as it covered how to access content, study materials and resources as well as how to write and submit assessment tasks in the Blackboard LMS. The support provided by the TeL Student Assistants has undoubtedly benefited students by enhancing their confidence and proficiency in utilizing the LMS. The knowledge acquired will be beneficial for students' lifelong learning as the knowledge covered in the training will be useful for students through their learning process. Providing early support not only helps students to actively participate in their courses but also cultivates essential independent learning abilities that are vital for their academic success. Moreover, the acquisition of digital literacy and problem-solving skills through this assistance can enhance the students' academic performance.

#### 4.1 Service Offered by the TeL Assistants

Students stated that their comprehension and efficient use of Blackboard were much enhanced by the TeL Assistants' abilities to gently walk them through procedures and respond to their enquiries. The students expressed confidence to navigate Blackboard LMS after the training conducted. The TeL Assistants' extensive familiarity with Blackboard was another important component, the students were able to use the platform more easily and received accurate and useful guidance. Students were able to learn how to use Blackboard's services, like submitting assignments and taking tests, rapidly thanks to the assistance of this competent staff.

#### 4.2 E-Learning Technologies - Blackboard LMS.

Students found Blackboard to be more accessible due to its built-in user-friendliness and assistance provided by the TeL Student Assistants. The results provided that the students stated that blackboard was beneficial to them. The platform's ease of use and efficient support made it possible for students to concentrate more on their academic assignments rather than battling with its technical features. The results of the study demonstrated that assisting students with the completion of assignments and tests was one of the major advantages of having TeL Assistants on staff. Due to the constant support of the TeL Assistants, these important academic activities were less complicated and demanding.

#### 4.3 People/ E-Learning Stakeholders (Students)

The results displayed stakeholder satisfaction as positive feedback was received regarding the quality of training that TeL Student Assistants offered as the students responses indicated as such in the administered questionnaire. Students displayed confidence and the abilities to utilise Blackboard efficiently ready to take on their academic needs, as these training sessions covered a variety of platform functionalities.

### 5. Conclusion

The study provides insights into the success of the TeL Student Assistant Programme and emphasizes the active involvement of the intervention. The programme's success is further demonstrated by how simple it is to access and navigate the LMS. The study highlights the integration of user-friendly components which are crucial in creating an atmosphere that facilitates effortless engagement with E-Learning Technologies, by augmenting the overall learning experience. Furthermore, it has become clear that the facilitators' attributes are important to the programme's success. The TeL Assistants' patience and knowledge are key qualities that enhance the success of training sessions. Facilitators who are well-versed in the platform and exhibit patience can address students queries and concerns more efficiently, creating a supportive learning atmosphere. This approach not only aids in the immediate understanding and application of the platform's features but also instills a sense of assurance in students, encouraging them to utilise the platform confidently in their academic activities. The study concludes that Implementing technology-enhanced support for first-year students on Blackboard yields positive results that promote student engagement with the LMS through ongoing support by the TeL Student Assistants.

### 6. Recommendations

The study recommends the uptake of the TeL Student Assistants programme to provide assistance to first-year students as it yields positive results. The study recommends employing the peer-to-peer interaction model of TeL Assistants to improve student engagement and learning during trainings. Peer-to-peer training fosters a more relaxed and relatable environment, where students feel more comfortable asking questions and expressing concerns. TeL Assistants are viewed as more approachable peers who foster open communication and a collaborative learning environment. This enhances learning and fosters a community of support among students, which promotes lifelong learning and aid to one another. Here is the implementation plan we've developed:

Step	Action	Details
Needs Assessment and Goal Setting	Assess Needs	Conduct surveys or focus groups to identify challenges faced by first-year students. Review academic data and feedback
	Define Goals	Outline objectives and establish specific, measurable goals for the programme.
Programme Design	Develop Programme Structure	Define roles of TeL Assistants and interaction formats (one-on-one, group, workshops).
	Create Training Modules	Develop training materials covering communication skills, active listening, and academic support.
	Develop Support Materials	Create guides, FAQs, and tips for first-year students.
Recruitment and Selection	Recruit TeL Assistants	Advertise the programme and specify candidate qualifications.
	Select Candidates	Use applications, interviews, and peer evaluations to choose candidates.
Training and Development	Train TeL Assistants	Conduct training sessions covering programme objectives, student needs, and mentoring techniques.
	Develop Mentorship Skills	Provide resources and workshops to enhance TeL Assistants' mentorship skills.
Implementation and Rollout	Launch the Programme	Organize an introductory event and integrate the programme into orientation.
	Monitor and Evaluate	Establish feedback systems and use surveys and metrics to evaluate effectiveness.

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