

A Blended Institutional Learning Approach for the Higher Education Sustainability

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Abstract

Blended learning approach create more multimodal learner centered learning environment that innovatively shape the instructors' delivery and students' learning. The study on the effects of deliberate practice on blended learning sustainability shows the feasible and practical approach for the students connected outside the classroom with cognitive engagement through the successful completion of courses and sharing of knowledge in their future career. This paper highlights the strategic dimensions for blended learning in Higher Education Institutions and the key competencies in Higher Education sustainability that are driven to the blended learning model. Skills, attributes, and competencies are important to determine the successful placement of university graduates. How the advanced technological based learning activity would help the students to acquire those competencies during their course duration has been discussed.

Keywords: *Blended learning, Curriculum, Key Competencies, Strategic dimensions, Sustainability, Synchronous online learning.*

Introduction

Rapid expansion and essential need for contactless interaction, the blended learning model that combines online and face to face learning is now preferred model for the course structure. Blended learning is the use of two or more distinct methods of training. Academic and social integration has been considered as important determinants of student persistence and success.

Rationales for pursuing blended learning are improved pedagogy, increased access and flexibility, increased cost effectiveness. Blended learning has the potential to promote lifelong education. Appropriate design and management of learning materials meet the needs of present users and also the future users. The instructors need to develop effective methods in the integration of technology and pedagogy approaches. Therefore, it is a continuing challenge for educators to assure affordable learning quality and long-term educational impact of blended learning.

Blended learning initiates learners into constructive learning with collaborative inquiry. Individual reflection and sharing understanding among the learners are the major elements of knowledge construction. The framework proposed by Garrison et al. describes three key

elements, social, teaching and cognitive presence. The characteristics of learner presence such as learning style, self-regulation, self-efficacy are discussed by (Shea & Bidjerano, 2010).

Quality education is not only an objective in itself but also the driving force of this social change. By project development and incorporation of sustainability principles across the disciplines teaching and research centers can improve sustainability. The integration of sustainability in HEIs contribute to achieve agenda for Sustainable Development that focus many colleges and universities. Transferring knowledge to society and shaping the future behavior of their students are the key requirements of the HEIs. Integrating sustainable practices in learning, research, community outreach, staff programs, and assessment helps achieve the goals in sustainable development.

Literature Review

The design of curriculum must contribute a balanced curriculum design that develops the model of the revised Bloom's hierarchical taxonomy of learning domains. It says the students move to higher learning level of productive skills from lower order of remember and understand the concepts. The learners apply the relevant knowledge in the context of their career and recently developing competencies. They will apply, analyze, evaluate and create the skills which is require for the sustainable development (Anderson et al., 2001). HEIs have the role in fostering social transformations that facilitate the transition to a sustainable future. The impact of blended learning on sustainability development is high and it reinforces the learning and teaching practices. The HEIs guide the students in finding new knowledge and competencies. (Gamage et al., 2022)

Formative assessment with constructive feedback helps students to overcome misconceptions. It gives chances to pressure upon the constructive feedback throughout the learning process. It also provides necessary information for the faculty to revamp their instructions towards the learning methodology. (Lim & Wang, 2016). The formative assessments ensure the prompt responses from every individual learner and instructor. (Gikandi et al., 2011). To incorporate this potential, the faculty must be well experienced in a variety of on-line tools that are used to monitor student learning progress and providing constructive feedback through multiple channels like discussion forums, feedback summary in the concern

Learning Management System. Both face-to-face class and on-line component of the learning experience requires teaching faculty to identify and implement appropriate assessment strategies and methods for an effective blended learning experience (Laurillard, 2014).

Professional development of teaching staff plays an important role in the successful implementation of blended learning. Faculty should revise their roles in applying the technology enhanced learning environments. HEIs must provide continuing professional development through workshops and seminars to support teaching staff to transform their teaching and learning practices.

Studies says that the students use technology for communication and entertainment rather than building knowledge they are lacking in experience of using technology for learning purposes (Wang et al., 2014). Students need educational guidance and technical support for using learning tools deliberately in their learning. They must be guided for independent learning in their own pace. Appropriate plan for technical infrastructure and resources to facilitate blended teaching and learning practices must be established. HEIs should carefully consider the requirements of faculty and students always to facilitate adequate capacity and reliability.

Encouraging students to bring your own device approach accelerates digital and technology rich learning as the higher education institutions equipped with campus wide wireless networks (diFilipo, 2013). Self-paced individual and collaborative learning would be made easier while the students are available in the campus. Necessary reviews and reorganizations would require for the quality enhancement of teaching and learning in HEIs. Policies pertained to incentives like innovative teaching awards would serve as motivational function for the wider options of blended learning (De Freitas & Oliver, 2005).

Internal and external partnerships may be built in terms of blended learning. Sharing resources and best practices across the disciplines promotes the teaching and learning practices. Revisions and refinements are always required for the quality enrichment of learning and teaching in HEIs as the blended learning practices are driven by research and evaluation (Fry et al., 2009). Three basic categories that describes the blended models have been incorporated. The derived models such as Rotation model, Flex model, Self-blend model, Enriched virtual models are to be followed to attain the effective results in blended learning. The skill-driven learning is to develop specific knowledge and skills by self-paced learning with instructor. Regular feedback and support will get from the instructor. It is done through synchronous online learning labs or traditional classroom. Attitude-driven learning mixes different delivery media to develop specific behaviors. It deals with developing new professional attitudes and provide risk free peer to peer interaction

environment. This shall be done by holding synchronous web-based meetings such as webinars and conducting simulations. Blending knowledge management resources with performance support tools and mentoring to develop workplace competencies is the competency-driven learning. It receives and transfer tacit knowledge when the learners interact and observe experts doing job. It can be done by assigning mentors and develop a knowledge repository like learning management system (Valiathan, 2002).

Putting altogether the dimensions and models towards the sustainability, it is necessary to consider the framework of the key competencies in sustainability. Analyzing the complex systems across locally and globally in different domains like environment, society, economy, etc. constitutes the Systems thinking competency. Anticipatory or futures-thinking competency collectively analyze and evaluate the future related to sustainability issues and problem-solving frameworks. Values-thinking competency assess the trends that determines what the problem is about? Intended for whom, why it is for and how to resolve. Strategic-thinking competency design and implement interventions, transitions, and transformative governance strategies toward sustainability. It provides guidance to achieve the identified goals in short- and long-term processes. Interpersonal competencies motivate and facilitate collaborative and participatory sustainability research and problem solving (Brundiars et al., 2021). Integrated problem-solving competency integrates the other five key competencies to solve sustainability problems and fostering sustainable development in the institution (Wiek et al., 2016, p. 243). The swing towards the online learning has transformed the way of impartation of educational knowledge it is the responsible of the HEIs to facilitate how it is perceived. The transformation of teaching and learning in higher education can only be sustainable in the future, if shifts and transformations within the system refer to each other and continue to merge (Humpl, 2022).

Blended teaching or flipped classroom gains popularity in both teaching and learning methods in the engineering courses as well. Many universities across the world effectively started using their E-learning systems to keep engaging the students and consider remote learning as the most needed option to sustain in the education sector. (Honnurvali, et.al, 2022).

Proposed Sustainability Model

This holistic framework identifies and explains eight strategic dimensions. The vision gives the expository picture about potential future of an institution. The successful implementation of blended learning needs a precise vision and philosophies for teaching and learning in blended learning environments. Teachers must have the ability to move forward their institution vision and philosophies by offering learning experiences to the students.

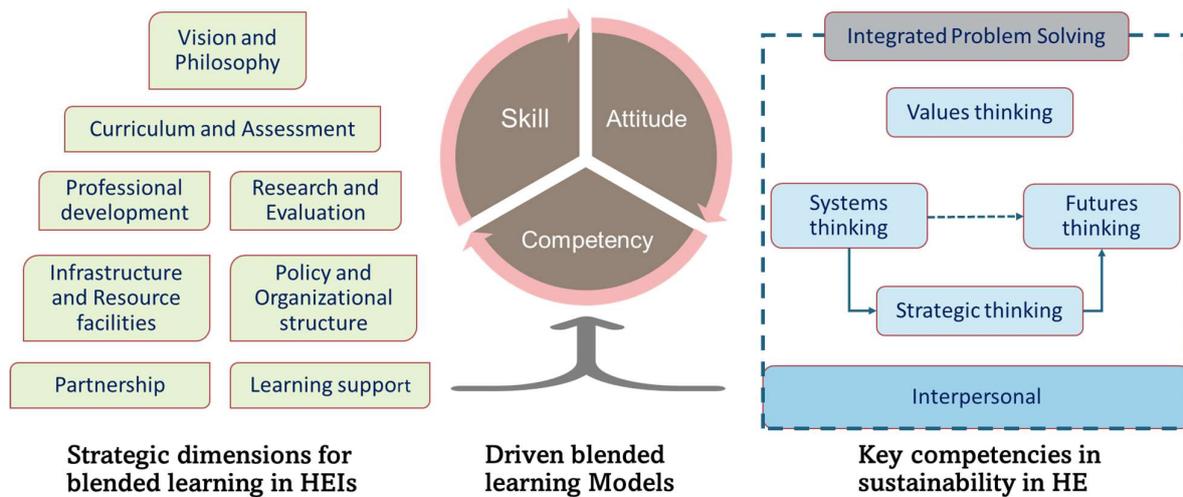


Figure 1. Higher education sustainability model in blended learning approach.

Online learning experiences in asynchronous mode offer great opportunities for students in terms of constructive reflection. But the physical classroom environment with large cohort does not provide favorable circumstances for the students for an effective reflection. Full potential of the learning experience is achieved during the provision of learning in two modes. The idea of flipped classroom reallocates the time between lectures and classroom discussion. The video links provided prior to the scheduled classes are accessed by students as a homework before coming to on-campus class. The discussion in the classroom enables the student to reflect and inquire about the concepts much more confidently. Also supports the adaptive instruction by teachers in a learner-centered paradigm.

The holistic phenomenon that adopts several dimensions of sustainable goals of higher education and personal development proves the student success. Identifying the external factors such as political, economic, and cultural activities help the leaders to cultivate the need of the future wellbeing. Prioritizing student engagement through online and on-site academic to improve students' personality and in turn the acquire the institutional outcomes.

Ensure equitable access for all students throughout the institution resources. The value of equity should be evident in all strategic dimensions for blended learning in the HEIs. Strategy activities identify and eliminate the systematic barriers to success in the perspective of equity mind. Integration of modalities across the institution takes the blended courses to the next level by applying the comprehensive blending of online and on-site strategies. Evolving pedagogies act as the building blocks that are needed for the students' future careers and citizenry.

Methodology

The blended learning method of higher education institution proposed a sustainability model goes beyond the traditional program models and create an institutional level model. It combines technological and process components to blend and meticulously integrate teaching, learning, support and services for students that ensures student success. The model guides leaders in building sustainable institutions by carrying out systems-thinking and implement a proactive responsible institutional strategy which create stability conditions even in times of uncertainty. This model is student centered that values students and emphasizes their needs to be met on or off campus and experiences should be equitable (Joosten et al., 2021). With this vision, BIHE promotes institutional sustainability and growth, strengthens students' academic and social involvement, Prepares the students for their job, career and profession. "It offers a thoughtful compilation of opportunities for learning and support through digital, blended or hybrid, and fully online experiences within and outside the classroom". The key reflective questions taken from this study are as follows:

How does the institution define student success and what are the external factors that influencing their success?

Does the institution employ an equity mind lens and what areas are doing this well?

How does the institution prepare students to be digitally literate people in a blended work environment?

The future of sustainability relies on the entities that involves in the teaching and learning process. The student, educators and administrators have challenges in changing the practices, innovative experiences, and economic adaptation. The responsibilities of these entities would be an important factor that contribute to achieve quality

education. Students must have active participation and engagement in various online discussion and forums while equal opportunity has given to utilize the IT resources. The educators must keep up to date resources to enhance online education quality. Undergone training on technological skills, teaching styles, and assessment methods to align with latest industry standards. The administrators must have the provisions of regular training services through student support centers, funding research, and rewarding incentives to performers.

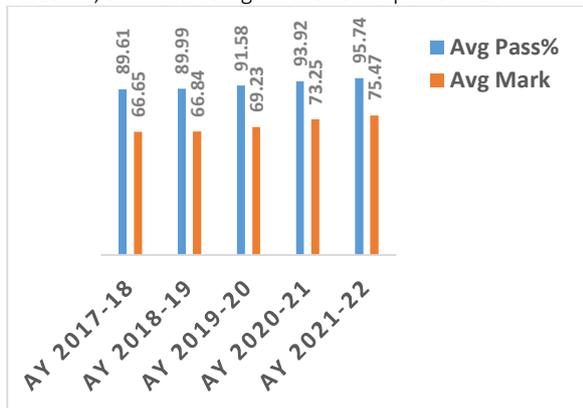


Figure 2: Average Pass % and Average Mark in each academic year.

The sample data has been taken for five academic years. 22 modules from five different specialization were analyzed. Empirical data shows the gradual increase in average pass percentage and the average obtained marks. In continuation with the flipped learning since 2017, blended learning with different technology has been introduced by 2019. Modules without lab components gives the effective outcome rather than the lab modules. This is due to the absent of students for hands on experiences in the lab activities. They preferred for hybrid learning and that does not give the better result for those modules. Hence blended learning with appropriate techniques to be practiced in order to build quality success and ensure sustainability.

According to (Pfeiffer, 2012) students who prepared for assignment tasks using video materials were less motivated and the findings indicate the learning is less effective with MOOCs due to lack of face-to-face interaction. So, it wise to investigate student perception when increasing the use of online activities in course structure. The research study by (Dzuiban, C., et.al, 2018) shown better results in overall grades, retention rates and students' desire to take courses in the blended mode. continuous innovation in teaching and learning methods and professional development for both faculty and students pertained to new technologies would give better results in sustainability in terms of effective teaching and learning process. Regular innovation and course modification in teaching and learning methods can build a firm educational system that improves institutional standards and quality of educational experience. Smart design using a combination of different teaching and

learning activities is required to create a course structure that balance the online and face to face teaching and learning (Van, 2018). Collective participation of the individuals involved in the education system, especially students, teachers, and administrators attain sustainability in higher education.

Challenges in blended learning focusing academics perspectives are attributed in few categories. It includes learning style, cultural, and time management challenges. Discussions have been done based on the research questions like the challenges encountered by academics and learners related to their readiness to adapt the rapid remote learning transition. The major challenges of insufficient in class time has been overcome through an online platform where the learners are able to maintain contact from outside the classroom using instructional design strategies after the traditional on-campus class hours. This shall be the promising method to cultivate the self-efficacy and maintain the learning motivation of students (Chen, R. H, 2022).

Recommendations

Faculty members get dependent on the support of HEI administrators to inculcate effective teaching styles, assessment models, content creation and mapping learning outcomes in the curriculum. Continuous professional development program should be effectively incorporated in the operation plan. Building necessary infrastructure such virtual labs, media creation tools with proper training of technical skills bring success in effective online teaching and learning. Establishing Key Performance Indicators to measure and regulate the occurrence of curricular, co-curricular, extracurricular and industry engagement activities. Effective workload allocation and time management have crucial role in improving effective online teaching and learning. With respect to all of these suggestions effective policies need to be generated, deployed and monitor regularly to balance the concerns reported by the participants of blended learning system.

Conclusions

Educators and learners are intended to choose suitable technology-based tools and course materials to be utilized in the study environment. Strategic dimensions in the learning process would be monitored and revised according to the technological updates and in-line with the vision and mission of the Higher Education institution. As the students take control of their own learning the risk of projecting inappropriate learner model and contents should be carefully reviewed before uploading in the learning management systems. In-person classes and interaction with online materials in blended learning methods employs the synchronous instruction during the course. Systems thinking in the key competencies of sustainable higher education provides an opportunity to

catalyze the changes by rethinking the institutional strategies.

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