Blended Learning Tools and Technologies

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Introduction

Blended learning is a combination of offline (face-to - face, traditional learning) and online learning in a way that the one compliments the other. It is an educational approach that blends online learning materials with conventional classroom approaches. It requires the physical presence of both teacher and student. It offers people a chance to enjoy the best of both worlds. Blended learning was defined to distinguish between this mode of teaching and learning, and traditional or online learning.

Blended learning emerged as a new and significant educational trend in the last few decades. Blended learning methodology is pretty recent and is related to other educational areas, such as educational technology, computer-assisted language learning (CALL), and distance education. It is a tough challenge to find the right environment for all students, but the blended learning approach encourages a "open, versatile, engaging, responsive, motivating and inspiring" teaching and learning climate. Blended learning is also sometimes referred to as "hybrid" learning, and can take a variety of forms in online educational environments.

To illustrate blended learning, Bonk and Graham (2012) defined it as the combination of traditional face-to-face instruction with computer-assisted instruction. In another definition, Garrison and Vaughan (2008) indicated that blended learning was developed from the strengths of face-to-face and distance learning. When describing blended learning, Neumeier (2005) stated that “the most important aim of a Blended Learning design is to find the most effective and efficient combination of the two modes of learning for the individual learning subjects, contexts and objectives.” According to Riel, Lawless, and Brown (2016) “Blended learning environments provide students with online and face-to-face places to meet, collaborate, and work on meaningful projects. Each of these spaces has particular benefits to successful learning”. Rhem (2012) mentioned that one of the unique characteristics of blended learning is that it allows teachers to provide classroom activities in two different settings: in person and online.

In addition, Zhang and Zhu (2018) noted that finding a suitable environment for all students is a difficult task, but the blended learning approach facilitates an "accessible, flexible, active, interactive, encouraging, and inspiring" teaching and learning environment. In the language teaching and learning context, Neumeier (2005) provided a framework for designing a blended learning environment which involved parameters like mode, model of integration, distribution of learning content and objectives, language teaching methods, involvement of learning subjects and location.

These concepts are based on two of the main blended learning processes, namely the teaching process, and the student evaluation process. These processes are crucial in teaching because the teaching processes support the achievement of specific learning goals, while the evaluation processes support assessments to identify whether the targets set have actually been achieved.

Effectiveness of Blended Learning Approach

Two of the factors for adopting a blended approach are enhanced learning efficiency and cost efficiency. According to Dewar and Whittington (2004) there is a good deal less literature on the effectiveness of blended learning than there is defining it and suggesting how to implement it. They say that 'There is some anecdotal evidence about how well individuals liked blended learning and many reports explaining the cost benefit associated with integrating technology. There is also an increasing literature based on the learning outcomes achieved through the use of different types of technology. The biggest challenge is finding studies that specifically address blended learning, as opposed to the use of technology alone.' In the context of higher education, Dziuban found that their blended learning courses had 'the potential to increase student learning outcomes while lowering attrition rates in comparison with equivalent fully online courses' and that blended learning results 'in success and attrition rates were comparable to the face-to-face modality for all ethnicities.

To explain this, Banditvilai (2016) conducted a study that explored the use of blended learning in an Asian university to improve the language skills of English learners and to gain autonomy. The research was conducted for a limited purpose class in English, which included 60 undergraduate students with a major in English. The goal of the study was to understand the attitudes of the students towards mixed learning in English. The researcher used e-lessons, a questionnaire and performance tests as tools to gather data. The study results showed that the use of an online approach associated with the teaching in the classroom enhances language skills of language learners. It was also found that blended learning can be effectively used to enhance autonomous learning and the motivation of learners. Banditvilai mentioned that students are able to learn and practice their language whenever they want and that is what makes the mixed learning approach preferable for language learners.

Similarly, Mildred Osborne Charter School (Osborne) provides grade K-8 students in New Orleans, Louisiana, and is one of two ARISE charter management schools. Osborne had become an ANet school partner in 2010 and adopted Zearn as their main math curriculum in the 2018-19 school year (Zearn is a K-5 blended-learning math curriculum based on Eureka Math / EngageNY). Zearn was an easy transition in certain ways. Before adopting Zearn, Osborne had already used the Eureka Math curriculum (Zearn is based on Eureka Math), so the lessons are aligned with ANet 's assessed standards schedule (SAS). The SAS describes the standards students are expected to learn each quarter to illustrate grade-level skills by year-end. One of Osborne's most challenging transitions was switching from conventional whole-class teaching, where teachers had some flexibility, to a mixed learning model with a predetermined instructional framework. The blended-learning model of Zearn is meant to give the students possession over their learning: students work at their own pace through digital lessons. This ownership is a skill that students develop over time and that begins with setting goals. Osborne started engaging students in this process, asking them to think about what it means to independently complete the four lessons per week, or to concentrate on how they'll perform from week to week.

Likewise, the Boeing Company aims to boost its capture team leader (CTL) training to more closely reflect the work that the business development role performs within the organization. The organization aimed to minimize classroom time in addition to better training learners for the role of CTL. Boeing developed a blended learning program that involves eight short, web-based lessons. Until completing a four-day live event, participants complete lessons and related tasks using the event management program. This updated curriculum allows participants to gain a foundational knowledge of the CTL role, its responsibilities and the tools they need to be effective. It also helps them to practice a CTL's skills before they attend a live session. With this preparation, participants arrive at the classroom session with the basic knowledge and assignments they use throughout the classroom session. While Boeing still compiles performance data, the initial feedback from participant surveys was positive. Participants ranked the training an average of 4.5 out of 5.0 in four areas: knowledge gain, value, performance improvement and job impact. Additionally, 82.5 percent of respondents thought they could use the course material on the job immediately, and 100 percent responded they would suggest the course to a colleague.

Blended learning (BL) is currently commonly used in most higher learning institutions since it appears to have a positive impact on student learning outcomes and brings a number of benefits to the entire educational process. Students can learn about various subjects and cultures from all the technical tools that they have around them, browse the internet and use technological devices that they have access to, such as iPods, ipads, tablets, Mp3s and Mp4s, among others. Students are therefore overwhelmed by a lot of information from different sources. So they get confused and don't know

what to see first, which hinders the proper use of the interactive material that could contribute to their learning process.

Teachers therefore face the challenge of designing virtual learning environments which appeal to their students. This will help them "organize" their learning cycle and supplement Face-to - Face classes or the other way around, as they will autonomously use the virtual platform to get ready for Face-to - Face lessons. In this way, the teachers are in charge of Blended Courses' instructional preparation which could be used to inspire the language learners.

When planning Blended Courses, it is important to take all of the aspects involved in them into account. The institutional dimension is the first item that teachers consider since it depends on the curriculum, the layout of the content, and the administration and financial area of the institutional policies. When teachers schedule offline and online events, they use a vast array of technical tools to attract the attention of their students. If the Face-to - Face and the Virtual classes are not interesting, students can feel bored or irritated. The topics and exercises which appeal to them need to be displayed. It is also important to have that institution’s entire LMS (Learning Management System) ready to work and to train students to handle this system. For example, some basic tasks that the student needs to know are how to log in, how to work on the various assignments and how to implement learning strategies that are suitable for virtual environments.

Through using blended learning, teachers will ensure that the teaching process is compatible with the students ' cultural, social, and linguistic needs. To add to this, it will be established that the students will collaborate using technology. Recently, however, there has been a shift from online courses to the use of mobile applications, which were used to replace traditional instruction in BL approach. The findings show that such a BL approach in combination of mobile learning with conventional instruction through mobile applications is successful.

With blended learning, students can discuss different topics in depth, search for knowledge on the Internet, and improve their learning process with a broad variety of exercises through websites. In addition, they can explore numerous websites and forums to contact people around the world, talk with other students and learning groups, create interactive learning environments and, among other benefits, organize their own virtual learning environment.

Blended learning approach is advantageous for teachers to imbibe knowledge and to develop skills in the student groups.

- **Flexibility**

A blended learning strategy offers ultimate flexibility in conveying content. Complex subjects can be presented in the classroom, while other topics can be accessed online. Blended learning classes offer flexibility for teachers in how they present content and for students in the pace and variety of the learning approaches they experience.

- **Effectiveness**

Studies have shown that because blended learning integrates multiple methods of instruction from an array of perspectives, it confirms that most students involved have an effective learning outcome. Research by Garrison and Kanuka concludes that blended learning has the consistent potential to improve both efficiency and effectiveness of meaningful learning experiences.

- **Teacher empowerment**

Teachers are freed up to communicate with individual or small groups of students by integrating technology into classroom teaching and monitoring progress. Also, the data generated by educational technology programs empowers teachers with insights into the learning of each student so that they can address gaps more easily.

- **Engagement**

Since most of the students today are surrounded by technology in their everyday lives, when technology is introduced into instructional settings they often interact more readily with the content. Additionally, students become empowered as they broaden their technological knowledge and professionalism with technology.

- **Differentiation**

Since blended learning combines a combination of instructional methods and high-quality digital educational resources; it enables teachers to assess the individual skill level of each student and include activities and guidance that match the child where suitable lesson material is being provided to them.

- **Cost-effectiveness**

Including more online options in the teacher's training program saves on travel and missed work. When a teacher is hosting live events online, he/she eliminates employee and instructor travel costs.

- **Efficiency**

Through a well-planned integrated learning approach a teacher can provide training to a broad audience effectively and rapidly. And the potential for reuse is enormous with digital assets such as video and recordings, and e-books. After the initial rounds of training have passed teachers can quickly help more people get up to speed.

Blended Learning Models

Educators have developed various models for blended learning, and teachers and/or schools select based on their unique student populations from among them. The consequences of the various models for mixed learning practitioners depend on the expected objectives of implementing it, and on how well the implementation challenges are addressed. Few of the models of Blended Learning are summarized as follows:

❖ **The Face-To-Face Driver Model**

This model works best for a variety of classrooms in which students function at different skill and mastery levels. In general, only certain students can engage in online learning elements, such as students who are below their grade level of mastery are given adequate remediation of skills in an attempt to improve their learning. Here they are able to get all of the practice they need to master skills and to devise their own techniques that help to improve their memories when content retention is required.

❖ **The Rotational Model**

This is actually just a modification of the style of learning stations used by teachers for years. There is a fixed timetable for students to have face-to-face time with their teachers and then go on to work online. This model seems to be most popular in:

➢ *Elementary classrooms in which students can be graded according to reading and math ability levels.*

➢ *Thus, students who perform well in math but not in reading may have face-to - face reading time with their teachers before they rotate to the math online learning stations. Teachers are able to provide more individual assistance to struggling students, based on their needs.*

❖ **The Flex Model**

This model is heavily based on online instructional delivery, with teachers acting as facilitators rather than as primary instructional deliverers. This model appears to be most used and most successful in:

➢ *Alternative school settings in which students are involved in work-study programs, have attendance problems, or have been placed in a part-time schooling program.*

❖ **Online Lab School Model**

This model entails students commuting to and from a school with full online education delivery for entire courses. There are no qualified teachers on hand but supervisors are more skilled paraprofessionals. This is a good option in the following circumstances:

➢ *Secondary students who need flexibility of scheduling due to other responsibilities (job, child-rearing).*

➢ *Secondary students who choose this option in order to progress at a faster rate than they would in a traditional school setting.*

❖ **Self-Blend Model**

This model makes coursework beyond that offered in a given school or district in a tradition setting. Students take part in standard classes but instead participate in courses to complement their daily study programmes. This model works well for:

➢ *Students who wish advanced placement courses for early college credit can enroll in courses designed and approved for such.*

➢ *Students who are highly motivated and fully independent learners.*

❖ **The Online Driver Model**

This model is the absolute opposite of a conventional face-to-face instructional system. Students operate from remote locations (e.g., their homes) and receive all the instruction through online platforms. There are typically opportunities to "check-in" with an instructor at the course and participate in online messaging if an explanation is needed. Schools and districts implementing this model notice the number of students opting for it increases annually. The model works well for the following students:

➢ *Students with chronic illnesses/handicaps who find it difficult to attend school.*

➢ *Students whose jobs or other obligations demand flexibility to "be in school" at hours during which traditional schools are not in operation.*

❖ **Flipped Classroom**

A flipped classroom is an instructional technique and a form of blended learning that focuses on student interaction and active learning, allowing the teacher a better chance to cope with mixed rates, student challenges, and differentiated learning interests during in-class time.In a flipped classroom, students watch lectures online, participate in online debates, or perform research at home while engaging in classroom concepts with a mentor 's guidance.Intentionally, the flipped classroom transfers teaching to a learner-centered model in which time in the classroom is used to discuss subjects in greater detail and establish substantive learning experiences when students are initially exposed to new topics outside the classroom.

❖ **Virtual Learning Environment**

A virtual learning environment (VLE) is a web-based platform, typically within educational institutions, for the digital aspects of the study courses. It is a series of teaching and learning resources designed to improve learning experience for a student by integrating computers and the internet into

the learning process.The main components of the VLE package include curriculum mapping, student tracking, teacher and student online support, electronic communication, and internet links to resources outside of the curriculum.They can be reached on- and off-campus, which means they can facilitate the learning of students outside the lecture hall 24 hours a day , 7 days a week. This helps institutions to educate not only conventional full-time students but also those who are unable to visit the campus frequently due to geographical or time constraints.

❖ **Gamification**

Gamification applies game mechanics to nongame environments to increase participation, such as a website, online community, learning management system or intranet business. The goal of gamification is to engage in inspiration, collaboration, sharing and interaction with consumers, employees and partners.Gamification works by providing proactive directives and feedback to audiences through game mechanics and game dynamics added to online platforms that lead to the achievement of business goals and goals.A compelling gamification experience draws on the emotions of a participant and easily demonstrates the best activities that can be completed by an audience that have an impact on shared goals.

Tools and technologies:

We can identify a range of tools and technologies that can be used in constructing effective learning environments for blended learning. Some of them are:

❖ **Google Classroom**

Google Classroom is a free web service that Google develops for schools with the goal of simplifying the creation, delivery and grading of assignments. Google Classroom's primary purpose is to streamline the process of file sharing between teachers and students.

➢ Google Classroom links Google Drive, Google Docs, Sheets and Slides, and Gmail together to help educational institutions move into a paperless system.

➢ Students can be invited to classrooms via the institution's database, through a private code that can then be added to us by the student.

❖ **Jam Board**

Jamboard is an interactive whiteboard which Google develops as part of the G Suite family. The device can be mounted on a wall or set up on a vertical wheel stand by default. The Jamboard also has an operating system that matches the ecosystem of the G Suite.

➢ The Jamboard’s main controller can open a "jam," a session in which users can join in and work on projects within the available space.

❖ **Popplet**

Popplet is a free online tool for making mind mapping and brainstorming diagrams. It's a simple and easy-to-use brainstorming application that helps users develop stronger skills in organization, memory and writing.

➢ Popplet operates with a set of squares connected together by an arrow aptly named the "linker." Users have a few choices to decide how each square should be filled with material.

❖ **Edpuzzle**

Edpuzzle is an interactive video and formative evaluation platform built on the Web that allows users to crop existing online videos and add material to meet different learning goals. Although viewing online videos passively can only require lower-level thought skills, the ability to isolate and promote engagement with the most important aspects of a video increases the importance of content and learning depth, especially if teachers take advantage of the options to add additional resources and connections.

➢ Teachers can upload videos with embedded review questions and supplementary resources.

➢ Edpuzzle enables teachers and students to customize online videos in ways that facilitate more active learning.

❖ **Mentimeter**

Mentimeter is a Swedish company that develops and maintains an eponymous app that uses real-time feedback to create presentations. It is an easy-to-use alternative to powerpoint presentation that makes it easy to hear and hear.

➢ The app also focuses on online collaboration for the education sector allowing students or members of the public to answer questions anonymously.

➢ The app allows users to share knowledge and real-time mobile feedback with presentations, polls, or brainstorming sessions in classes, meetings, gatherings, conferences, and other group activities.

❖ **Edmodo**

Edmodo is an educational technology company that provides the K-12 schools and teachers a forum for connectivity, collaboration, and coaching. In architecture and theory, Edmodo is very instructor - centric: students and parents can only join Edmodo if an instructor invites them to do so.

➢ Teachers can share content, distribute quizzes, assignments, and manage communication with students, colleagues, and parents through the Edmodo network.

➢ Teachers and students spend a great deal of time on the board, both in the classroom and out there.

❖ **Kahoot!**

Kahoot! is a game-based learning medium, used in schools and other educational institutions as interactive technology. Its learning games, "Kahoots", are multi-choice quizzes created by the user that can be accessed through a web browser or the Kahoot app. Kahoot! can be used to review students' knowledge, for formative assessment, or as a break from traditional classroom activities. Kahoot! also includes trivia quizzes.

➢ *Kahoot! was designed for social learning, with learners gathered around a common screen such as an interactive whiteboard, projector, or a computer monitor.*

➢ *The site can also be used through screen-sharing tools such as Skype or Google Hangouts.*

❖ **Orai**

It offers interactive, fun lessons and detailed analysis of recorded speech to help everyone learn new public speaking techniques. It is a simple, self-directed approach to improving the oratory skills. Orai promises to make anyone become a better public speaker via artificial intelligence. Once a person recites his/her speech into the app, and it sends the recorded data to the cloud, where the AI analyzes it.

➢ It also mentions how clearly the learner is enunciating words and counts the number of words that he says in a minute, monitoring the pace of your speech.

➢ And Orai measures the “energy” of your speech, like whether you speak in a monotone that will put people to sleep or whether you emphasize certain words.

❖ **Simulation**

Simulations reinforce what was learned and help with changing employee habits. In order to begin, one first wants to teach employees key skills in whatever format they want. Then, set up a simulation highlighting these key skills along with any pre-existing knowledge employees may have. This will help tie new skills with what they are already using.

Simulations should be around 10 minutes to fit with busy schedules and keep employee attention. Also, make sure these can be performed in-person, but also via mobile for contractors or sales staff that are traveling frequently. And each simulation should only focus on one key topic or task to avoid sensory overload. Simulations are a great way for employees to learn from one another and reinforce new skills.

❖ **iSpring Suite 8.1**

iSpring Collection, a fully loaded authoring toolkit, functions as a PowerPoint add-on, and strengthens it with a range of features that are not included in other eLearning packages. The software turns the PowerPoint presentations into ready-to-use multimedia eCourses that can be used in any LMS compatible with SCORM, or LRS enabled with the Tin Can API, or on a regular HTML website.

➢ *Sufficient support for PowerPoint. Published courses retain all animations of original objects, slide transition effects, triggers, embedded audio / video, and more.*

➢ *Built-in screen recorder and editor allow users to create screencasts and insert them as stand-alone explanatory videos to courses or export.*

❖ **Articulate Storyline 2**

Storyline offers a customizable workspace with built-in models to create completely interactive, immersive and engaging courses, but with a bit of a learning curve to master the program. Storyline is available in 5 languages and allows the import of current material in the form of PowerPoint slides, as well as content created in previous Storyline versions and other items in Articulate.

➢ *The understanding and progress of the learners can be checked and tracked with quizzes created from 20 different types of questions, or existing texts can be imported to form a question bank.*

➢ *To incorporate multimedia objects into their courses, users can create, import, and edit audio, video, and images.*

❖ **Adobe Captivate 9**

Adobe Captivate 9 is an eLearning toolkit for authoring responsive eLearning content and interactive material. It allows instructors to update eLearning elements' knowledge storyboards and publish them for viewing in the cloud, no app or additional software needed. Adobe Captivate 9, as with the other software, allows the instructors to import their PowerPoint presentations into eLearning projects.

➢ *Users can capture and import a variety of video formats, and use slides and synchronized objects to synchronize audio and/or visuals.*

➢ *A wide variety of quizzes and question types are based on test results, with comprehensive scoring and branching.*

❖ **Lectora Inspire by Trivantis**

Lectora bills itself as "the game changer for mobile learning," and aims to transform the learning. Lectora's Inspire Package combines prototype library, cutout people library, and interaction builder for the eLearning Brothers to help teachers develop e-Learning courses. Snagit and Camtasia are also integrated by Lectora to allow trainers to capture, edit and import images and video into their eLearning content.

➢ *Publish the eCourses in HTML5 format, which today is supported by a broad variety of widely used browsers.*

➢ *In a single eLearning module, users can combine textual content, Flash animations, images, audio and video, test questions, and interactivity that can be published into a learning management system.*

❖ **TechSmith's Camtasia**

Camtasia is a tool for screen recording and video editing applications which can be used to offer educational and business e-courses. The presenters can configure and edit the content on both Windows and Mac computers with this app, and share the results with viewers on any device playing video or YouTube.

➢ *It is a professional video editor with ready-to-use themes, animated backgrounds, graphics, and callouts that can all be used to improve the video.*

➢ *Integration of quizzes and comprehension questions to track student learning in real time, with results shown in spreadsheets.*

❖ **Webinars:**

One can use webinars in the instructor-led portion of the course to get started with blended learning. An instructor will need a Webinar platform to run a webinar. Many choices are available; so a teacher will just have to find the one that fits the student's needs. Things to consider when choosing one include the audience size, their expectations and the learner experience. Some options to the webinar tool include:

- *Zoom*
- *GoToWebinar*
- *Cisco WebEx*
- *Adobe Connect*

- *Google Hangouts*
- *AnyMeeting*

These webinar tools improvise critical listening skills, comprehending skills and note taking skills of the learners. These tools automate the setup, registration, and attendance reporting to synchronize with LMS. The teacher should make sure that he/she records each session so that the students will be able to use those recordings later. It is a perfect way of creating reusable material in learning. Then these videos can be added to the eLearning courses and supplied to the learners.

Conclusion

All students learn differently regardless of their age. So teachers should reflect this by designing teaching programs that reach visual, auditory and kinetic learners in the same way. With heavy technology integration, teachers will be able to improve their teaching strategies and help the students to retain knowledge, effective engagement along with edutainment. Evidently blended learning holds great promise for teachers. Quality and effective training should no longer be limited to the walls of a classroom while blending can be a highly efficient and effective type of training to improve skills. It is important to note that a good learning experience demands high quality in all aspects of classroom engagement with the instructional program. Blended learning approach fits in the existing educational system and reforms teachers to implement blended teaching practices for developing skills and efficiency in the learners.

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