EFFECTIVE BLENDED LEARNING PRACTICE

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ABSTRACT

Effective blended learning is a teaching technique that utilizes face-to-face teaching and online or technology-based practice in which the learner has the ability to exert some level of control over the pace, place, path, or time of learning. Schools that employ this method of teaching often demonstrate larger gains than traditional face-to-face programs due to their increased ability to differentiate, scaffold, and assess students using a variety of methods. This study sought to determine ways blended-learning models, as perceived by administrators and teachers, contribute to student success; to what extent practitioners in blended models attribute their students' success to the models they employ; how blended-learning schools are measuring student effectiveness; and how administrators are supporting teachers in their use of blended techniques. Results yielded five consistent themes: an understanding of the needs of students to drive individualized instruction, varied and individual success criteria, strong relationships with students tied to decision-making that fosters individual achievement, student needs as a driving force behind the development of school structures and programs, and an increased level of student choice to combat low levels of motivation.

*Keywords***:** Blended Learning; Blended-Learning Flex Model; Blended-Learning Rotation Model;

Enriched Virtual Blended-Learning Model; Flipped Teaching

1. INTRODUCTION

Now, as technology use around the world has expanded over the past two decades, so have the uses for technology in the classroom. Today, students use technology such as iPads, Chromebooks, laptops, tablets, and interactive devices for learning that allow them to explore content and receive immediate feedback on their progress. Over the past 10 years especially, with the addition of technology-assisted teaching, both learners and educators have more options than ever in the learning process. Thus, recent research in using technology in the classroom has led educators to design technology-rich pedagogical techniques to meet the evolving needs of students for a 21st century education. According to the national nonprofit organization, partnership for 21st Century Learning, such an education is built upon an exposure to and education in life and career skills, learning and innovation skills like critical thinking and communication, media and technology skills, and core subject skills. To ensure students are exposed to opportunities to develop these skills, increasingly educators are incorporating blended

learning because environments that promote the ability to create classrooms that are "technology-rich where students and teachers have the tools needed to enact better interactions, inquiry, and feedback" (Brengard, 2016).

Thus, initiatives such as flipped teaching and distance learning are at the forefront of educational technology research, and both have been used in the development of what practitioners refer to today as blended learning (Staker & Horn, 2012). All of these teaching techniques, though, are proving to help students achieve success because they offer educators the ability to differentiate and to offer multiple ways of learning for different learners at the same time.

Because blended learning can be a viable alternative for students who have not experienced success in a traditional school setting, it is in practitioners' best interest to study and learn from those achieving success in blended-learning programs to determine what is replicable and may help students at sites that are considering or could benefit from implementing blended learning. It is the researcher's belief that when blended learning techniques are integrated into traditional classrooms, teachers can more easily differentiate for students and assess their progress. These benefits can reach students who may have needs that are not addressed in non-blended learning classrooms, such as difficulty with concentration, delayed processing, behavior challenges, or students who work at an advanced pace and tend to get bored or slowed down by whole-class lessons and routines that are common in face-to-face, traditional classrooms. Blended-learning practice may help tackle some of the other reasons for lack of student success in a traditional school setting as well, ranging from a nontraditional schedule, distractibility, or extreme medical issues.

The purpose of this study is to research practices within classroom-based and whole-school blended-learning programs that school leaders and teachers believe positively impact student effectiveness, how these practitioners implement these practices, and how school leaders support and lead the implementation of these structures. The researcher notes that these measures of student success may vary among blended-learning sites. However, this difference in definition from site to site may shed light on the overarching goals of practitioners in blended-learning programs and help identify the strategies they use to reach them.

This study will research how blended-learning models may be helping students become more effective and successful and how practitioners believe blended learning both as a classroom model and as a whole-school program can serve as a better way than traditional models for schools to meet the needs of students who require differentiation and assistance.

2. LITERATURE REVIEW

2.1 Definitions of Blended Learning

The first commonly accepted definition of blended learning was that it is a pedagogical approach that blends computer or online-learning activities with face-to-face instruction provided by an instructor (Staker & Horn, 2012). This type of approach

may allow students higher levels of autonomy, relevance, and connectivity, which are important to 21st century learners (Lemley, Schumacher, & Vesey, 2014). With the focus on the student and his or her particular needs and skill development, "blended-learning technologies can help...by enabling teachers to create lessons for both inside and outside the classroom that benefit the student, helping them to become a fully functioning global citizen" (Jimison, 2011, p. 67).

While research in this area is still new, several current theories offer more extensive definitions of and classify specific learning actions within blended-learning programs. Picciano (2009) stated that blended learning practice can take on many configurations, but that all must employ both face-to-face and online instruction that includes content delivery, social/emotional engagement, dialectic questioning, synthesis of information, and some form of collaboration.

Additionally, Alonso, López, and Manrique (2005) defined an instructional model for technology-assisted teaching that named seven aspects of learning and teaching. They stated that instructors of blended-learning programs go through several phases while teaching students using technology or web-based instructional methods: analysis (of the learning task), design (of the learning process, or lesson), development (of concepts), implementation (creating lessons), execution (interacting with the learner via the online portal), evaluation (of learner's progress and data collected during lessons), and review (with the intent to refine the learning process for subsequent lessons). Finally, Jimison (2011) described blended learning as instruction in which traditional teaching is mixed with digital learning and contains five stages of teaching and learning: engagement, exploration, explanation, elaboration or extension, and evaluation.

2.2 Integration of collaboration and inquiry

As time passed, and learning theorists began studying the effects of socialization on the learning process, the educational community adopted a new pedagogical approach: collaborative learning, which allowed students, often of varying ability levels, to interact with one another while engaged in a learning activity, often creating a common product that represents the efforts of each student, as well as the efforts of the group as a whole. With this, pedagogical changes were largely associated with student-centered learning outcomes (Kalmbach, 1996). Within this approach, students were encouraged to work together to solve complex problems. Inquiry-based learning, in which students were allowed to use critical thinking skills to discover content through guided questioning and exploration, began to emerge and students became discoverers of information instead of just recipients. Learning became an exchange between students and teachers, and information delivery flowed back and forth between students and the teacher.

2.3 Learning Needs of Students Today

Today, learning environments that are most effective are those that focus on the delivery of differentiated curriculum. A curriculum that can be diversified for the needs of all students in a particular class or school is important because it enables each student to work toward individual measures of success. The ideals of differentiation address the learning levels of all students, and with a focus on collaboration to prepare

students for the demands of the 21st century workplace, technology-based teaching methods have emerged as a way to target individual skills. Via technology, educators can purposefully incorporate inquiry-based learning and collaboration into educational programs with the use of tools such as wikis, websites that allow collaborative editing of content so students can collaborate either virtually or in person using internet-based tools, and other exploration-based programs, without compromising instructional delivery for the class. Just like the introduction of typewriters into the classroom in 1929 to improve student interest and ability in writing (Kalmbach, 1996), teachers today look to technology to enhance student learning. Consequently, using a pedagogical approach that includes technology use to differentiate for the individual student along with face-to-face instructions can maximize learning time and cut down on student passivity, as well as time in class wasted on operational activities, such as note-taking, grading, and offering feedback (Flumerfelt & Green, 2013).

2.4 Blended learning as an innovative pedagogical approach

Blended learning today can be used for several aspects of teaching and learning. Often, students prefer blended techniques because they offer immediate feedback, which can help them assess their own learning and set a path for improvement. Borup, West, and Thomas (2015) found through studying text versus video assessment and feedback, that students preferred the efficiency of individualized video feedback instead of feedback written by the instructor on the assignment because it helped them narrow the gap between their current level of performance and desired level or performance on assessments and writing assignments. By interviewing and administering scaled survey questions to 30 university students and 9 university instructors asking them to compare video feedback with feedback received through writing, researchers found that feedback via recorded video was more supportive and tended to be longer in length, thus offering students more insights into their strengths and ways in which to improve (Borup et al., 2015). This example of differentiation is one type of individualized feedback and can offer students more specificity when working toward improvement.

3. METHODOLOGY

With technology use increasing in schools, educators are progressively looking at technology as a means to differentiate instruction for diverse students and better equip students for the rigor demanded by common core state standards and state assessments. In today's digital age, it is also increasingly important to teach students 21st century learning skills such as inquiry, critical thinking, and writing so that they can compete in the current digital and global markets.

3.1. Research questions

(1) To what extent do schools that utilize blended-learning programs attribute their success to these blended programs?

(2) How are administrators and teachers of schools that utilize blended learning models using blended learning to help their students attain success on established outcomes?

3.2. Research design

To answer these research questions, the researcher employed a mixed-methods research design. A tradition that allows the researcher to analyze both qualitative and quantitative data (Plano Clark & Creswell, 2015), mixed methods research is useful when the researcher wants to explore and explain an area of research in such a way as to pose both specific and open-ended questions and to collect a variety of data. Mixed methods approaches usually vary in the ways that researchers relate the quantitative and qualitative data, and in the order in which the various data are collected.

3.3 Participants of the study

The collection of the survey data was dependent on the participation of the administrators and teachers to whom the survey was sent. Survey data are difficult to obtain because it is unlikely that all or even most individuals to whom the survey is sent will respond. To compensate for the possibility of a 25% or lower response rate, the researcher sent enough surveys to teachers and administrators to maximize the probability of obtaining a survey data set that contained close to 50 administrators and at least 185 teachers.

The subjects for this research were chosen from a sample of volunteer participants. Thus, values, attitudes, and beliefs of participants may not necessarily be generalizable to schools not included in the study. During interviews, data collected were most likely subjective based on each participating individual and may not have been a representation of the values, beliefs, and attitudes of all teachers and administrators at the school sites.

3.4 Data collection method

Data collected during document analysis were analyzed using an open coding system, in which the researcher looked for major categories of information. Once a category was found, the researcher employed a constant comparative method in which previously coded data were reread to see if each recently identified theme was present in the prior data, as well. Specific themes were then identified within each category. After all qualitative data were collected, the researcher applied axial coding to the emerged categories and themes to identify five major themes present among all data sets.

3.5 Data analysis

3.5.1 Surveys

The researcher analyzed the data over a 2-month period, after collecting survey results and coding all qualitative data from the school sites involved in the case study. To analyze the quantitative data, the researcher used the Qualtrics analytics program to view survey respondent data and create cross-tabulations with the intent to discover relationships between the key elements of blended-learning schools and the types of blended-learning programs offered at those schools. The researcher analyzed surveys taken by both teachers and administrators.

3.5.2 Interviews

Data collected during interviews were analyzed using a constant comparative method, in which the researcher took information from each interview and compared it

to emerging categories (Creswell, 2013). Categories were created based on emerging data, and themes were identified after each interview transcript was reviewed. As soon as a new category emerged, the researcher went back to previously reviewed data sets to seek possible evidence of these themes in the prior data. This process continued until all interview data were analyzed, and a complete list of categories and themes was created.

3.5.3 Observations

Data collected during observations assisted the researcher by providing a context in which to couch the interviews and survey data. These observations provided insight into the learning environment and teaching techniques used by teachers within the schools in the multiple case study. The researcher collected observational data as a non-participant during the observations and took both descriptive and reflective notes using a predetermined observational protocol (Creswell, 2013).

4. FINDINGS AND DISCUSSION

With so many different types of blended-learning programs though, how can administrators and teachers determine best practices to promote student effectiveness and success? What are the actual elements of a blended-learning program that most contribute to students' success? The purpose of this study was to investigate the processes, policies, and programs used by schools that employ blended learning to discover how these schools are helping students attain academic success and the abovementioned skills necessary for the workforce.

4.1 **To what extent do schools that utilize blended-learning programs attribute their success to these blended programs?**

The researcher cross-tabulated the type of blended-learning model used among survey participants (question three) with the factors of school programs identified as attributing most to participants' students' success (question 16). Respondents were given the option of choosing multiple factors that contribute to student success. Ninety-one percent of respondents reported that they believed their students' success could be attributed to face-to-face teaching, and 67% attributed their students' success to the online programs used at their school. Other factors that participants indicated attributed to students' overall success included:

1. Lessons and activities used to enhance learning prior to and during learning.
2. Student ability.
3. Assessment strategies.
4. Physical activity and brain breaks.
5. Achievements of the school district.
6. Google classroom.
7. Differentiation.
8. Student collaboration.
9. Immediate feedback from LMS (Learning Management System) and continuous access to review content and practice.

The *p*-value for this cross-tabulation was 0.71, indicating weak evidence against the null hypothesis. However, with a chi square less than the degrees of freedom, the researcher noted that a rejection of the null hypothesis may not be necessary for this particular case. Nonetheless, due to the *p*-value and chi square numbers, the researcher could not determine with confidence that any of the listed programmatic factors could be considered by educators included in the survey to have a measurable positive effect on student learning within the context of their particular blended-learning model (Figure 1). To answer question two (how are administrators and teachers of schools that utilize blended-learning models using blended-learning to help their students attain success on established outcomes?), the researcher asked participants to identify to what degree various facets of their blended-learning programs attributed to their students' success (survey question 18). The results are indicated in Table 1. The researcher then cross-tabulated questions 18 and three to determine to what degree teachers in each type of blended learning course attributed their students' success to the facets of their programs. The results are indicated in Table 2. "Opportunities that develop higher order thinking skills" was rated most often as greatly contributing to students' success (68.63%), followed by "opportunities for students to self-monitor" (62.38%).

Table 1

Degree to Which Teachers Perceive Different Classroom Activities/Opportunities Contribute to Student Success in All Blended-Learning Programs Represented in the Survey

Activity	Does not provide (%)	Does not contribute to student success (%)	Somewhat contributes to student success (%)	Greatly contributes to student success (%)	*N*
Opportunities for student self-monitoring	*0.99*	*3.96*	*32.67*	*62.38*	*101*
Higher order thinking skill practice/ development	*0*	*1.96*	*29.41*	*68.63*	*102*
Opportunities to develop social skills	*0*	*6.86*	*48.04*	*45.10*	*102*
Organizational skill development	*2.94*	*2.94*	*49.22*	*57.84*	*102*
Self-advocacy	*2.94*	*1.96*	*42.16*	*52.94*	*102*
Cooperative group work	*1.96*	*5.88*	*43.14*	*49.02*	*102*
Assistance with time management	*1.96*	*1.96*	*46.08*	*50.00*	*102*
Opportunity for extracurricular involvement	*22.51*	*11.76*	*48.04*	*15.69*	*102*
Increased time on task	*0.99*	*9.90*	*40.59*	*48.51*	*101*
Increased levels of differentiation	*0*	*1.98*	*40.59*	*57.43*	*101*

On the other hand, "engaging in extra-curricular activities" was rated most often as "not contributing to students' success" (11.76%) in a blended learning program, followed by "increased time on task" (9.90%).

Table 2

Degree to Which Teachers Perceive Different Classroom Activities/Opportunities Contribute to Student Success in Each Type of Blended-Learning Program

	Mean						
	1 = greatly contributes				3 = does not contribute		
Program element	Rotation model	Flipped classroom	Blended learning files	A-La-Carte	Enriched virtual	*p*-value	Chi square
Opportunities for students to self-monitor their progress	1.46 n=57	1.30 n=27	1.31 n=32	1.67 n=3	1.33 n=15	0.86	9.34
Higher order thinking skill practice and development	1.40 n=57	1.30 n=27	1.21 n=33	1.67 n=3	1.31 n=16	0.67	12.14
Opportunities to develop social skills	1.53 n=57	1.67 n=27	1.61 n=33	2.00 n=3	1.88 n=16	0.54	13.76
Organizational skill development	1.51 n=57	1.37 n=27	1.30 n=33	1.33 n=3	1.56 n=16	0.96	6.93
Opportunities to develop self-advocacy skills	1.54 n=57	1.52 n=27	1.45 n=33	2.00 n=3	1.63 n=16	0.36	16.34
Engage in cooperative group work	1.44 n=57	1.67 n=27	1.79 n=33	2.33 n=3	2.13 n=16	0.00	37.40
Assistance with time management	1.58 n=57	1.33 n=27	1.45 n=33	1.67 n=3	1.75 n=16	0.25	18.28
Engagement in extracurricular activities	2.37 n=57	2.48 n=27	2.42 n=33	2.67 n=3	2.63 n=16	0.99	4.76
Increased time on task	1.53 n=57	1.77 n=26	1.63 n=32	2.00 n=3	1.67 n=15	0.70	11.78
Differentiation	1.42 n=57	1.42 n=26	1.50 n=32	1.67 n=3	1.53 n=15	1.00	3.11

4.2 How are administrators and teachers of schools that utilize blended learning models using

blended learning to help their students attain success on established outcomes?

The researcher asked participants to identify to what degree various facets of their blended-learning programs attributed to their students' success (survey question 18). The results are indicated in Table 1. The researcher then cross-tabulated questions 18 and three to determine to what degree teachers in each type

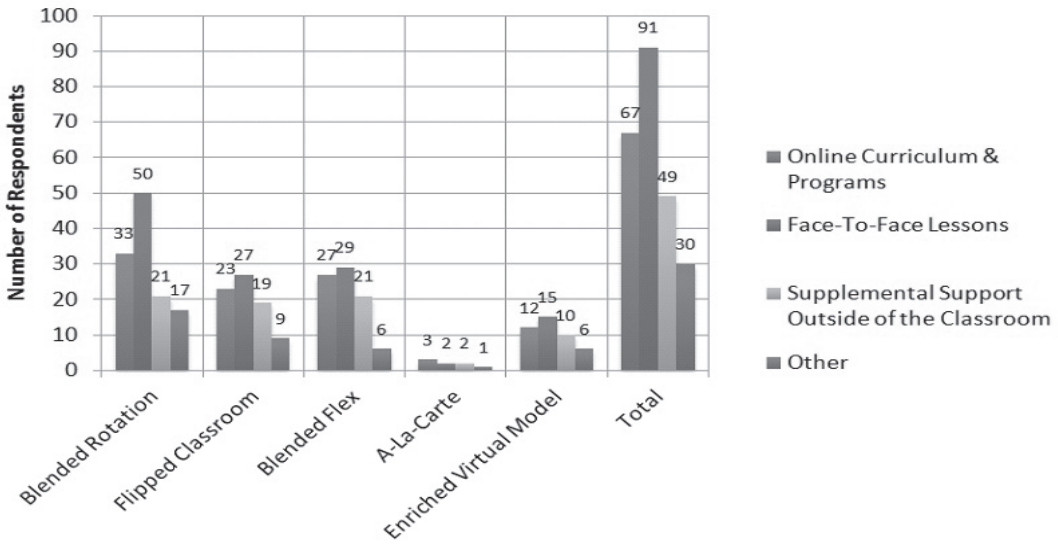

Figure 1. **Factors teachers attributed to student success within each type of blended- learning model.** *p*-value = 0.71; degrees of freedom = 20; Chi square = 16.18. of blended learning course attributed their students' success to the facets of their programs. The results are indicated in Table 2. "Opportunities that develop higher order thinking skills" was rated most often as greatly contributing to students' success (68.63%), followed by "opportunities for students to self-monitor" (62.38%). On the other hand, "engaging in extra-curricular activities" was rated most often as "not contributing to students' success" (11.76%) in a blended learning program, followed by "increased time on task" (9.90%).

5. CONCLUSION

Data from the surveys and school site visits revealed a tendency of blended learning programs to offer highly individualized curricular paths and a variety of curricular choices for students. All programs included in the research employed several types of teaching methods including face-to-face discussions, practice through the use of online and paper-based activities, collaboration, and the facilitation of activities requiring higher order thinking skills, such as problem solving, classifying and interpreting ideas, making inferences based on evidence, and expository writing. Participants noted that increased opportunities for differentiation led to the most effectiveness for students, as well as activities facilitated through face-to-face lessons, such as modeling and discussion. The teachers in schools visited employed face-to-face lessons, re-teaching, coaching, and goal-setting with students, as well as repetition and practice with the use of technology.

Administrators and teachers both in traditional and blended programs would benefit from using an individualized approach similar to programs included in this study. The educators in the schools researched believed that it was their ability to differentiate that helped their students the most. Thus, practitioners who can find ways to offer highly differentiated programs and practice for students in ways in which they can make some choices about their curricular path or pace, using guidelines established by staff, will be

most effective and successful in leading their learners toward attaining learning goals. If teachers can find ways to create academic interventions tailored to individual students that offer some level of flexibility and administrators can find ways to support teachers and assess student progress on an individual basis as they teach these programs, students of all ability levels will be more likely to make academic gains.

When employing blended-learning methods, this study may suggest that student success is not derived from the use of the blended model itself, but rather from the strong and intentional teaching techniques expended by practitioners. Thus, educators need not become experts in blended learning, but rather in the teaching methods that can best be facilitated through the creation of a blended-learning environment. The instructor's task then becomes not to infuse technology-based learning into his or her classroom, but rather to harness the power of technology to maximize the efficacy of the face-to-face time he or she has with students.

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