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# An analysis of the holistic model for blended learning versus face-to-face instructions used to teach at-risk students in an alternative school

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## Abstract

The purpose of this research project was to explore the effectiveness of a holistic model for blended learning compared to a face-to-face model. Within the context of this study, blended learning is defined as the combination of face-to-face and online instruction. The goal of the research project was to analyze the impact of a holistic approach of blended learning on the academic success of at-risk students in an alternative educational program.

**Keywords:** On-line learning, at-risk youth, alternative education, blended learning

### 1. BACKGROUND / INTRODUCTION

As resources dwindle, there is an increased demand for educational systems to provide conducive learning environments for all students. The effectiveness of alternative education and how an holistic model for blended learning might better serve 'students at risk' is currently being studied as researchers attempt to determine the most productive and cost-effective educational models to meet students' needs.

Watson and Gemin (2008) indicated that educators have adopted innovative technologies to bridge the gap between learning that occurs inside and outside of the classroom. One of those innovations involves online learning. Online learning are growing at a rapid pace of 30% annually (Watson and Gemin, 2008). More than half of the 13,976 school districts in the United States and District of Columbia are currently using online learning technologies and strategies in some form (U.S. Department of Education, 2008-09).

Historically schools disciplined disruptive youths by suspending or expelling them from school. Oftentimes, students who had been removed from school due to behavioral issues or a failure to meet educational requirements were forced to seek their own means of completing their education. Problem students or expelled youths were not highly prioritized until and unless they became involved in the legal or child welfare systems (Stone, 2010).

Traditional schools are those that maintain an educational environment in which students learn through conventionally accepted methods include textbooks, worksheets, lectures, and group work. Traditional methods are usually teacher-centered in their focus and include relatively large class sizes. Traditional schools are encouraged "to provide classroom activities and classroom environments that stress high academic achievement while also building students' self-esteem and self-confidence" (McMillian & Reed, 1994, p. 139). The classroom environment should "facilitate time on-tasks, student interaction, student success, and positive reinforcement for desired classroom behaviors" (McMillian & Reed, 1994, p. 139). Establishing a safe and positive learning environment allows students to feel accepted and cared for and fosters stronger relationships with peers and teachers.

The terms "alternative education," "alternative school," and "alternative program" are often used interchangeably. White and Kochhar-Bryant (2005) define alternative education as: programs, schools, and districts that serve students and school-aged youth who are not succeeding in the regular public school environment. Alternative education offers to students and school-age youth who are underperforming academically, may have learning disabilities, emotional or behavioral problems, or may be deliberate or inadvertent victims of the behavioral problems of others, additional opportunities to achieve academically and develop socially in a different setting ( p. 2).

A powerful change agent has come in the form of technology. The acceptance of the Internet as a strategy to educate students who have been classified as *at-risk* created a paradigmatic shift in the way students learn. Wiley (2000) explained: "a major change may also be coming in the way educational materials are designed, developed, and delivered to those who wish to learn" (p.2). An instructional technology called

*learning object* (LO) (LTSC, 2000a) currently leads other options as the technology of choice in the generation of instructional design, development, and delivery, due to its potential for reusability, adaptability, and scalability (Hodgins, 2000; Urban & Weggen, 2000; Gibbons, Nelson, & Richards, 2000). For the purpose of this study, Wiley's (2000) definition of learning objects, "any digital resource that can be reused to support learning" (p.7), is used. Learning Objects can be used interchangeably with technology-supported learning. "Examples of technology-supported learning include: computer-based training systems, interactive learning environments, intelligent computer-aid instruction systems, distance learning systems, and collaborative learning environments. Examples of learning objects include: multimedia content, instructional content, learning objectives, instructional software and software tools, and persons, organizations or events referenced during technology-supported learning" (LOM, 2000).

Teaching methods vary from program to program. Some programs use the traditional face-to-face teaching model. Others use distance learning or education through online learning programs. Still other systems have implemented blended learning, which combines face-to-face instruction with online learning. Finally, some programs have instituted a new initiative of teaching termed the *Holistic Model for Blended Learning*. One of the founders of this model and CEO of Virtual Learning Network Partners (VLN Partners), Dr. Alex Stone defined this model to help public school districts use customized online lessons to influence the educational experience offered to students in auxiliary learning environments. Stone (2008) found that this approach is especially attractive in alternative education programs for at-risk and disruptive youth.

### **Problem statement**

Alternative educational programs have been designed to address students who have displayed disruptive behavior in the traditional classroom and no longer can be safely maintained in the general school population. While this has helped adjust student behavior, there has been little focus on the academic success of these students. Teaching modes and models have been implemented to educate these students in alternative education;

however, the effectiveness of these teaching modes and models has not been the focus of research. This research was developed to explore whether a holistic model for blended learning provides a better opportunity for students' academic success in an alternative educational program, as compared to a more traditional face-to-face model

## 2. LITERATURE REVIEW

Moore and Kearsley (1996) state "distance education means that students can have access to more and better learning resources than in the past. Rural and inner-city students can take courses previously available only to students in suburban areas. Handicapped and disabled students can have access to the same courses as everyone else – even if they are homebound or institutionalized" (p.15)

Distance learning and distance education are terms that have the same meaning and are used interchangeably. Distance learning has evolved a great deal; today's web-based technologies began from previous decades' correspondence study, open universities, teleconferencing, networks and multimedia (Passerini & Granger, 1999). The new teaching approaches, which include the adjustment of instructional materials supported by different delivery media, is what sets apart current 2011 web-based technologies from the earlier modalities. The introduction of the Internet brought forth another edition of distance learning. Passerini and Granger (1999) explained, "complementary to the models, Internet-facilitated instruction allows for the implementation of synchronous and asynchronous interaction and opens a new series of learning opportunities for education. Increases in bandwidth technologies and worldwide access to interconnected networks enable the Internet and the World Wide Web to develop into a viable delivery system for distance education" (p. 2). However, Moore and Kearsley (1996) clarify that the addition of a new technology to distance education does not necessarily provide good distance education; teams of specialists need develop courses in addition to being taken by many students across a large number of educational institutions.

Further, Moore and Kearsley (1996) define distance education as "planned learning that normally occurs in a different place from teaching and, as a result, requires special

techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as organizational and administrative arrangements" (p.2).

The critical elements that must be included in distance education systems are: delivery medium (electronic or other technology), communication methods, and strategies of course design. Two key elements in the implementation of distance education are organizational and administrative support (Passerine & Granger, 1999). Elements are not equally proportionate in every distance education model. Administrative and organizational resources play a greater role than other elements, such as individual course design techniques, in a distance learning institutional implementation. On the other hand, course design and management techniques play a heavier role in an individual delivery unit (Passerine & Granger, 1999).

Distance education can be viewed in three evolutionary stages. Moore and Kearsley (1996) identified these stages as generations. The first generation, which occurred during the end of the 19th century and the beginning of the 20th century, included correspondence learning. Printed materials, generally customized textbooks that contained lesson outlines and exercises, were the foremost means of communication in correspondence learning. Assignments were given to students through textbook instruction. Once assignments were completed, students would mail the completed assignments to the instructor and the instructor would mail assignment feedback.

In the early 1970s, the second generation of distance education was born. The focus of this generation was to reach off-campus students resulting in the development of open-universities. Instruction was delivered through radio, television, recorded audio-tapes and correspondence tutoring (Passerine & Granger, 1999). In addition, conducting a class using the telephone, or audio-conferencing, was included in the second generation of distance education.

The third generation of distance education occurred in the early 1980s and was based on satellite technologies and the materialization of communication networks. This made possible the delivery of analog and digital content to computer workstations. New forms of real time

interaction with two-way videoconferencing, or one-way video and two-way audio communications, were also facilitated with these technologies (Passerine & Granger, 1999). CD-ROM products for multimedia self-paced learning were launched during this time. Passerine & Granger (1999) report that during this generation, "computer networks link instructors and students, enabling electronic communication exchanges based on course material, [and] students learn by reviewing videotapes, audiotapes, textbooks or multimedia CD-ROMs. Bulletin boards made their first appearance in group interaction in distance education, offering central repositories for class communication" (p. 3).

Distance education has been shifted to an entirely new instructional approach due to the advancements in telecommunication technologies. The most prominent telecommunication technology that has led to this shift, and that also leads to a new generation of distance education, is the Internet (Passerine & Granger, 1999). "Internet technology empowers the joint exploration of the delivery mechanisms of previous generations, adding stronger collaborative learning elements" (Passerine & Granger, 1999, p. 3). Internet technology also led to a significant swing from an instructor-led approach to a more genuine learner-centered approach. In the learner-centered approach, the instructional content is not only created by the instructor, or the producer of the videotape, or the developer of the multimedia component. Instead, Internet technology permits open communication between people, no matter if it is among students or between students and instructors who are physically distant from each other. Ultimately, a more affluent learning environment is the end result because of the opportunities for interaction and collaboration provided by the Internet. Passerine and Granger (1999) stated, "Asynchronous and synchronous interactions on the network are the main instructional components of the virtual classroom, and the instructional materials (lesson notes) are only the background material, from which class 'discussion' originates" (p. 4).

While implication of distance education is a physical distance between those who are interacting, those participating in distance education often are receiving a "closer" experience than those in a traditional classroom (Passerine & Granger, 1999). Passerine and

Granger (1999) provided the following example: "Interaction may take place more actively than in a traditional classroom, especially when traditional instruction is conducted in large classrooms and is not conducive to frequent exchanges of ideas" (p. 4).

In 2000 the fourth generation of distance education introduced a sway toward instructor-led learning. In previous generations, students' only decisions were *when* to study and complete the work. In the fourth and current generation of distance education, which is through a networked environment, students have a choice of *how*. Interactions in the virtual classroom instead of a self-paced mastery of instructional material produce the education. Several of the variety of communication channels now available to students are student-content, student-to-student, student-to-instructor, student-to-other-hypermedia content, and student-to-other-instructors. These communication and interaction options provide unique opportunities for students to participate with others who are from diverse backgrounds and/or have different experiences. In addition, with this generation of distance education, boundaries become non-existent, both geographically and content-wise. A degree can now be earned from anywhere in the world, and information and supporting resources can be retrieved from any hyper-linkable site. Ultimately, Internet technologies and the World Wide Web provide endless possibilities to those who want to learn and be educated.

### **Virtual learning partners (VLP)**

VLN Partners is a full service company that works with public schools to help develop and maintain virtual school programs emphasizing *practical* uses for instructional technology. Their Holistic Model for Blended Learning is designed to leverage the very best aspects of the bricks-and-mortar classroom and the online learning environment (Virtual Learning Network Partners, 2010).

In 2004, a panel of instructional technology experts and business professionals were engaged by the founders of VLN, Alex Stone and Greg Voss. The goal of this team was to create a new model for distance learning, particularly for learners in K-12, teachers and public school administrators. The Holistic Model for Blended Learning was the end result of the team alliance. In the beginning, the thought was to create a

cyber charter school. Although VLN began the application process with the Pennsylvania Department of Education (PDE), the process was quickly stopped because "they realized that they could serve PA's public schools better if they offered their products and services directly to districts" (Virtual Learning Network Partners, 2010). VLN began to construct a network of districts. In order to construct the network of districts, the panel described the model as: "Our Holistic Model for Blended Learning is designed to help districts offer online lessons that match the scope and the sequence of instruction presented in traditional bricks-and-mortar classrooms. We also offer a complete bundle of products and services that enable educational organizations to establish and maintain their own cyber schools and blended learning programs" (Virtual Learning Network Partners, 2010).

Stone (2010) characterized this model as "specifically designed to help public school districts use customized online lessons to directly influence the educational experience offered to students in auxiliary learning environments. We've found that our approach is especially attractive in alternative education programs for at-risk and disruptive youth for four main reasons:

1. We rely upon stored media (videos, interactive multimedia exercises, flash movies, etc...) students are more actively engaged in the instruction than they would be if a traditional didactic model were used.
2. The primary instructional message is presented in a stored media format, facilitators in the delivery are freed-up to offer targeted assistance and behavioral support.
3. Learning is differentiated. Our delivery system enables us to offer each student in the environment an appropriate learning experience.
4. Lessons are customized to match the scope and the sequence of the instruction presented in students' home classrooms. This minimizes the remediation challenge that often occurs when these students are re-introduced into the general population." (Stone, personal communication, December 21, 2010).

Stone (2008) concluded "The situation in Pennsylvania's public schools underscores the assertion that there is a pressing need for a paradigm shift within the field of instructional technology as we collectively address the need for a practical model for K-12 distance education" (p. 69).

### **Holistic model for blended leaning**

The Holistic Model for Blended Learning has the following key attributes which distinguish it from all others:

- "Online lessons utilize learning objects (LOs) to carry a large portion of the instructional message.
- A universal user interface, a single login, and some form of Learning Management System (LMS-based performance monitoring and assessment capability) is provided via a proprietary LMS.
- Online lessons can be used to support classroom instruction and they can be influenced by classroom teachers.
- Employment of curriculum directors who 'piece together' customized online lessons that typically mirror the flow of the instruction presented in the traditional brick-and-mortar classroom" (Stone, 2008, p. 65).

In the online learning environment for K-12, Stone (2008) indicated that the one critical component of coursework that has been missing is context. The attributes stated above work in combination to offer context. The starting point for the Holistic Model for Blended Learning is using current classroom instruction and then then applying collaborative development techniques and a rapid prototyping process. This combination "creates online lessons that are delivered as whole and complete products that have utility in both the classroom and in auxiliary environments" (Stone, 2008, p.65). The Holistic Model for Blended Learning alleviates the threat of online classes as competition for classroom instruction. In the past, the threat of online classes to classroom instruction existed because online classes either furnished an "instructional message that directly competes with classroom instruction in an isolated computer-based learning environment, or they impose[d] a need for software training upon teachers who are often reluctant to abandon the current paradigms that drive their activity in the classroom" (Stone, 2008, p. 65).

Although there are several definitions of blended learning, Stone used the definition developed by Bonk and Graham (2007) that defined "blended learning [a]s a combination of online and face-to-face instruction" (p. 3). His definition allows the field of instructional technology to be challenged by the instructional delivery. Moreover, a real person is anticipated to take part, which this definition allows and encourages (Stone, 2008).

A new form of instructional delivery called Learning Object-Based Instruction (LOBI) is the force behind the Holistic Model for Blended Learning (Stone, 2007). Stone (2008) defined LOBI as "a new form of learning and teaching that harnesses the power of the Internet, allows for open architecture content authoring, and thrives in the Holistic Model for Blended Learning" (p. 65 – 66).

Those who utilize the Holistic Model for Blended Learning are able to use the collaborative development process to develop and implement custom-made online lessons. The collaborative development process differs from other processes, such as the systematic design and development processes, used in developing courseware bundles because digital media artifacts (learning objects) are viewed as tools used by curriculum directors to develop customized Web-based lessons and can be utilized transversely among several auxiliary learning environments (Tripp, 1990; Wilson, 1995; Hickman, 2002; Wiley, 2003; Stone 2008).

In a traditional courseware development process, a subject matter expert presumes the primary role. In the Holistic Model for Blended Learning, the classroom teachers assume this role. "Rather than shouldering the burden of producing digital materials, or wading through the seemingly endless sea of digital resources that are available today to create their own online lessons, classroom teachers work with curriculum directors to guide the development process, ensure the quality of the finished product, and verify that the sequence of lessons presented online mirrors the sequence of the instruction presented in their classrooms" (Stone, 2008, p. 66). Furthermore, while it is not a requirement, teachers are welcome to join the open architecture authoring process by constructing digital artifacts which can be collapsed into the completed online lessons. The finished product obtained from this collaboration

is a tailor made online curriculum which can be conveniently made use of in the classroom and in auxiliary learning environments.

Stone (2008) stated, "This model offers an enormous amount of freedom to harness the power of learning objects, a universal user interface, open architecture content authoring, and a dynamic LMS to provide a customized learning experience that takes advantage of many of the opportunities offered in a Web-based delivery environment"(p. 67). Despite the benefits, there is a tendency for the Holistic Model for Blended Learning to be underutilized. The two most prevalent reasons for underutilization are:

"They [instructors] neglect to fully capitalize upon the ability that this model affords them to blend online lessons with classroom instruction because they are not affiliated with any institutions that provide classroom instruction.

- They [instructors] fail to utilize the LOs that are produced by textbook publishers because textbook publishers are, by default, allied with public schools, and they are reluctant to support organizations like cyber charter schools that compete with their primary customers"(Stone, 2008, p. 68).

When it comes to conveying significant online lessons, several features stand out and set the model apart from other models. These features are:

- "Lessons are designed, from the outset, to utilize a dedicated facilitator in the learning that takes place in the ideal target delivery environment.
- Curriculum directors work with classroom teachers to create online lessons that match the scope and the sequence of the instruction presented in the traditional brick-and-mortar classroom.
- Learning objects used to support online instruction can also be used to complement classroom instruction.
- The LMS can be modified at the server side to maintain one universal interface and navigation scheme (i.e., the LMS can be easily modified to address login and navigation difficulties that invariably arise when accessing content from different publishing companies).

- The LMS can accommodate open architecture, and interoperable, content authoring so "native" digital materials can easily be folded into online lessons and delivered alongside content from other publishers" (Stone, 2008, p. 68 - 69).

### 3. Methodology

#### General context for the study

Parents at a Pennsylvania school district questioned whether the Virtual Learning Network (VLN) program purchased to teach students in the alternative educational program was meeting the needs of the students, providing desired outcomes, and worth the money invested. An administrator stated the question could not be answered because they had not evaluated the program as a whole. The parents became upset due to the lack of information and the apparent lack of interest in obtaining it; one parent demanded that the school board look into this matter and determine if the VLN program was effective. If it was found that the program was not working, the parent argued, the tax dollars spent on it should instead be spent on proven means of educating the students in this program. Moreover, this research could help address the fundamental concern of determining the best way to educate at-risk students in an alternative educational program in order for every student to achieve academic success.

The Holistic Model for Blended Learning uses "current classroom instruction as the starting point, then employs collaborative developmental techniques (Stone, 2007) and rapid prototyping processes (Tripp & Bichelmeyer, 1990) to create online lessons that are delivered as whole and complete products that have utility in both the classroom and in auxiliary environments" (Stone, 2008, p.65).

**Hypothesis:** Students who received instruction under the Holistic Model for Blended Learning are more academically successful than students who receive face-to-face instruction.

#### Research data

A collection of secondary data of students' academic records from 2005-2010 was used to explore the hypothesis. The collected academic records were from all students who participated

in the Penn Hills Alternative Educational Program at some point in the school years 2005 to 2010. The students who participated in the Alternative Educational Program were unable to function in the traditional classroom environment due to disciplinary problems, severe truancy issues and/or poor relationships with peers, parents and authority figures. In addition, the students' behavior required that they be removed from their regular classes for an extended period of time (more than 10 consecutive days). Records from all the students were included in the study and no records were excluded. In order to ensure confidentiality, students' names were removed by the Pennsylvania Department of Education (PDE) before the records were released for the purposes of this research. Student records were divided into two groups. The first group contained the academic records of the students who participated in the Alternative Educational Program at some point during the years 2005 to (June) 2007. This group of students were educated using a face-to-face instruction model. The second group contained the academic records of the students who participated in the Alternative Educational Program at some point during the years (August) 2007 to 2010. The VLN Holistic Model for Blended Learning was used to teach the second group of students.

The school records for both of these groups contained general demographic information including gender, race, grade level and the school district of each student. In addition, information such as start date in the program, end date from the program, number of days in program, reason for placement in the program, student achievement. Stone noted, "Our model is specifically designed to help public school districts use customized online lessons to directly influence the educational experience offered to students in auxiliary learning environments. We have found that our approach is especially attractive in alternative education programs for at-risk and disruptive youth" (Stone, personal communication, December 21, 2010).

For the purpose of this study, the list below shows all variables that were used to test hypotheses.

Variables:

1. The Holistic Model for Blended Learning (HMBL) or Face-to-Face
2. Success by Groups

3. Gender ( Male/Female)
4. Risk Factors

This paper is a product of a field project that addressed all of the above research questions, but we are only addressing the first research questions.

The Pearson Chi-Square Test for Independence was used to explore the relationship between two categorical variables. The observed frequencies or proportions of cases that occur in each of the categories were compared with the values that would be expected if there were no association between the two variables being measured (Pallant, 2007). A cross-tabulation table was created with cases classified according to the categories in the variable (e.g. Holistic Model for Blended Learning/Face-to-Face). As stated, the Pearson Chi-Square Test for Independence was used to further explore the statistical significance of any differences between students' academic success from 2005-2007 using a face-to-face instructional model, compared to students' academic success using the Holistic Model for Distance Learning from Fall 2007-Spring 2010.

To determine student success after the introduction of the Holistic Model for Blended Learning compared to face-to-face instruction, Pearson's Chi-Square Test of Independence (Field, 2005) was conducted.

There were a total of 352 student records analyzed, the two independent variables were identified as students who were educated through the Holistic Model for Blended Learning and students who were educated by face-to-face instruction. A total of 248 students were instructed under the Holistic Model for Blended Learning, compared to 104 students taught using face-to-face instruction. An analysis was conducted to determine whether a student was successful or not for each independent variable identified as either the Holistic Model for Blended Learning or face-to-face instruction. A cross tabulation procedure was also conducted to gain the following insights: 32.2% of Blended students were successful and 67.7% of students were not successful. In comparison, 29.8% of students were successful through face-to-face instruction and 70.2% of students were not successful. Therefore, chi-square value of .204 was produced. Due to the use of a 2 x2 table, the continuity correction value was .106 with an associated significance level of .74. To be

significant, the Sig. value needs to be .05 or smaller. In this case the value of .74 is larger than the alpha value of .05, so the conclusion is that the result is not significant. This means that the proportion of students using the Holistic Model for Blended Learning is not significantly different to face-to-face instruction. No association exists between success by groups and the Holistic Model for Blended Learning or face-to-face instruction.

### **Summary of results**

The hypothesis claimed that students who received instruction under the Holistic Model for Blended Learning are more academically successful than students who receive face-to-face instruction. The findings in this study were counter to the research hypothesis based on continuity correction and associated significance levels when comparing the two groups using Pearson's Chi-Square Test of Independence.

Finally, the results of this study did not provide evidence to support the hypothesis that students using the Holistic Model for Blended Learning have more academic success compared to students receiving face-to-face instruction

### **4. CONCLUSION / RECOMMENDATIONS**

One surprising element learned in completing the study was that students do not earn grades while enrolled in the alternative educational program. Instead, students earn satisfactory or unsatisfactory marks. In order to return to the traditional classroom, each student has to earn satisfactory marks and successfully complete the four phases. Failure to do so will result in the student remaining in the alternative educational program. Although credits are earned in core subjects and applied to graduation requirements, actual progress is not readily observable. It is recommended that there be more emphasis placed on the academic success of students and not solely on behavior. To facilitate the evaluation of the student academic success, it is recommended that a grading scale be instituted, in lieu of satisfactory and unsatisfactory marks. If a grading scale were implemented, a repeated analysis could be conducted to evaluate whether the current teaching model promotes academic success and if success is being achieved while attending the alternative educational program.

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