

Distance Education, Traditional Education and Hybrid Education: Comparative Analysis of Benefits

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Abstract

The purpose of this phenomenological case study is to provide valuable information to educational leaders (as well as other stakeholders in high school education) to assist in making vital decisions regarding the implementation of DE in high schools. It has been demonstrated that DE poses great potential in solving many problems faced by high schools. Problems such as hiring and maintaining highly qualified teachers and providing an adequate array of advanced courses can be alleviated by the use of DE as part of a school's overall curriculum. A product from this study will be a set of guidelines for implementing successful and sustainable DE programs in schools similar to the target school. Furthermore, little research exists that compares the desires of parents and students regarding DE with the DE decisions that are made by educational leaders, including local school boards. This project is designed to add valuable insight into this area as well.

Keywords: Distance Education (DE), synchronous, asynchronous, hybrid DE, web 2.0.

1.0. Introduction

Institutions in most developed countries, including those described as “DE institutions,” face the same challenges that common high schools across the world (Palaich, Augenblick, Silverstein, & Brown, 2005). Funding and the hiring of highly qualified teachers tend to be the major issues that DE institutions face (Jimerson, 2005). At the same time, distance education (DE) is often seen as a bridge to the solution of both of these problems. DE today, mostly in its electronic form, can be used to provide access to highly qualified teachers as well as reduce the cost incurred in providing valuable classes to limited numbers of students. There are barriers, however, associated with the use of DE in high high schools and institutions. These barriers are most often linked to time and/or financial resources (Bral, 2007). This paper is designed to investigate the current pattern of usage of DE at high schools and institutions and identify potential barriers to the incorporation of this form of instruction.

2.0. Problem Statement

The problem is that though distance education may be a viable alternative or addition for many high high schools in the world, there are also many obstacles in establishing and maintaining a DE program that must be overcome to ensure success. Funding for DE has proven to be a major challenge across the Europe and the USA (Bral, 2007; Hannum, Irvin, Banks, & Farmer, 2009). In addition, fulfilling the federal mandate of hiring and retaining “highly qualified” teachers is particularly difficult for high schools (Hannum et al.). Many high school districts serve populations classified as moderate or highly poor, and these areas are not attractive for many teachers. The lack of potential income, professional isolation,

as well as social isolation of many high districts pose hurdles not only in hiring but also in retaining highly qualified teachers (Bryant, 2010).

In Germany, for instance, only 15 of its 165 high districts had 100% highly qualified teachers (McClure, 2006). As early as 2016, schools in Frankfurt were using DE to fulfill the requirement of having highly qualified teachers in each classroom (McClure). The level of rigor in DE courses and even pupil attendance for state funding (in addition to the challenges mentioned above) also present significant obstacles to DE implementation and are each issues currently being dealt with by high school leaders wishing to take advantage of DE to supplement the curriculum at their schools (Matuga, 2009; Picciano & Seaman, 2007).

The target high school has demonstrated some success in expanding its curriculum with the use of DE and therefore has been chosen for this study. For instance, the target high school has annually expanded its DE course offerings to students, most recently to include "Introduction to Literary Studies".

3.0. Review of Literature

Distance education (DE) in the United States dates back at least two centuries (Prescott, 2004). In its earliest form, DE amounted to correspondence through the US postal service between instructor and student. As technology advanced, DE included radio technology, television, and satellite connections in which students from various parts of the country could link with their teachers who were often thousands of miles away (Bernard et al., 2004). In the latter two decades of the twentieth century, technology had progressed to the point that students could take courses via the Internet (Prescott).

DE courses now enroll an ever-increasing number of secondary students (Aud et al., 2012). Approximately one million more high school students were enrolled in DE courses for the school year 2009-2010 (1.3 million) than there were just five years earlier (310,000) (Aud et al.). These courses can be delivered in synchronous, asynchronous, or hybrid formats, meaning that students have the option to participate in class either at the same time, at different times, or a combination of both. In addition, Web 2.0 software now enables students, their instructors, and their peers to collaborate in ways that have never before been possible (Beldarrain, 2006). Because of the advances in this technology, students can now interact in virtual real time, thus simulating the on-site classroom experience (Beldarrain).

According to the National Center for Education Statistics (2007), 97% of public schools in the United States are connected to the World Wide Web via broadband. Furthermore, high public schools have Internet access in 95% of their classrooms (NCES). As of 2008, there were 4,500 charter schools in the US and of these charter schools, 180 were virtual or online schools (Cavanaugh, Barbour & Clark 2009). Distance education today offers a variety of advantages to all aspects of modern learning. Modern DE, predominantly in the electronic format, now allows schools the opportunity to offer courses to unlimited numbers of students when, in the past, this may not have been feasible. Schools with smaller enrollments now have the opportunity to offer many of the advanced courses that they could not previously offer (Hannum et al., 2009). Students in schools that offer a variety of DE courses to supplement their curriculum may also be able to take elective courses that they otherwise would not have had the opportunity to do (Hannum et al.). A number of studies have reported that students who take DE courses via the online format perform at least as well as, and in some cases better than, their counterparts taking classes in the brick and mortar classroom (Reviea, 2010; Sheppard, 2009, Torain, 2009). Some studies even point to learning opportunities being equivalent when comparing courses delivered online versus those delivered in the more traditional, face-to-face format (Lapsley et al., 2008; Weber & Lennon, 2007).

As advantageous as DE appears, there are several factors within the discussion of supplementing instruction in this format that present themselves as real barriers to implementation. Hannum et al. (2009) demonstrated funding as a potential barrier for high schools across the country to include DE courses in their curriculum. Bral (2007) also found money to be a key issue when small schools in the Midwest were deciding to implement DE as part of their course of study. Traditional attitudes against change in this way and technology issues also pose real hurdles for school districts when considering DE (Bral).

4.0. Comparing Distance Education (DE), Traditional Education (TE) and Hybrid Education (HE)

Over the course of time, a multitude of projects have reported that there are no real differences in achievement between students who take courses in a traditional, face-to-face setting and those who receive their coursework via DE (Russell, 1999). In addition, Allen et al. (2004) found that DE demonstrated slightly better results than traditional face-to-face courses in student achievement. Allen et al. declared that even if no significant gain could be found in their study when comparing DE courses to those delivered in the traditional format, there was also no clear decline in achievement for students taking courses via the DE method (Allen et al.). The study concluded, however, that because the reviewed studies were not homogeneous, no clear determination between the two formats could be made (Allen et al.).

More current research demonstrates the same type of mixed results when comparing achievement and course satisfaction for traditional and distance education students. Torain (2009) tested 66 undergraduate students and found that there were no statistical differences in results on unit tests or final grades between a group that had taken a course online and another that had taken the same course in the traditional, brick and mortar format. In Torain's study, the same instructor taught both sections of the course. Similarly, when Advanced Placement test scores were compared between students in The world who took AP courses through the Virtual The world program with those who took the courses in the traditional method, the scores were similar (Reveia, 2010). Furthermore, when surveyed, students and local school administrators from the world's virtual program VW, responded that they were satisfied with the Virtual World courses and program (Reveia).

A Sheppard (2009) study compared high school students in high and urban settings taking chemistry and physics courses in both the traditional and online formats. In this study, Sheppard found that when comparing achievement results of students taking the courses online in high areas with those taking the same courses in the more traditional classroom in the urban setting, there was no statistical difference in achievement. However, when only comparing students in high and urban areas who took the science courses via the traditional, classroom format, urban students showed greater achievement (Sheppard). This, according to Sheppard, lends evidence to a rationale of using DE in high areas to help close the achievement gap between high and urban students.

As demonstrated in the Sheppard (2009) study, the results when comparing DE to traditional education are not all commensurate. Recently, some studies have shown that face-to-face instruction has greater benefits for students than the stand alone, DE approach. In a study that compared college-level remedial English students, Carter (2012) found that students who took the course in the traditional format performed better than their DE counterparts. Carter did find, however, that when assessing the rate at which students exhibited higher order thinking skills along Bloom's taxonomy, DE students out performed traditional students. Karataas and Simsek (2009) found that not only did the face-to-face students perform better in initial achievement testing, these students also showed a higher level of permanence of learning when given post-tests. Master's level students who participated in a Ferguson and Tryankowski (2009) study showed similar performance results with face-to-face students achieving at a better rate than DE students. The lack of technology skills poses some tribulation for master's level students taking online courses (Ferguson & Tryankowski, 2009). According to Ferguson and Tryankowski, it is important to pre-assess the technological abilities of students taking online courses. The researchers suggested that a screening system, administered either by the school, the professor, or by the student, enlightened all involved as to the student's predisposition to success based on several of the following factors gleaned from a pre-course screening: preferred learning styles, organizational issues, study habits, motivational issues, and the ability to communicate effectively in an online course. Ferguson and Tryankowski also suggested that instructors work to ensure that a high level of community is present in their courses as they believe that this too relates to student success in online courses. Though there is some support for both the traditional and DE course designs, some believe that a blended, or hybrid, approach will produce the best results (Ge, 2012; Hannum, Irvin, Pui-Wa, & Farmer 2008). Though hybrid models vary from a teacher/facilitator in a set classroom to multiple teachers located virtually anywhere, the concept behind the hybrid approach is that elements of synchronous and asynchronous courses are blended (Doering, Miller, & Veletsianos, 2008; Hannum et al., 2008). In a common model, students are all present in a brick and mortar classroom setting in a school computer lab with an adult who is designated as a facilitator. In this situation, it is possible that all students take a different course via the online format (Hannum et al., 2008).

Advances in Internet-based teleconferencing have led to the synchronization of some previously asynchronous courses, resulting in higher student satisfaction amongst those students who classify themselves as having a greater level of social orientation (Stafford & Lindsey, 2007). In the case of an Adventure Learning course, the students and their teacher are connected with content experts anywhere in the world and complete an inquiry-based curriculum (Doering, Miller, & Veletsianos, 2008). This hybrid model promises a rich educational experience, according to Doering et al., Hannum et al. (2008), found that it was best to have a trained facilitator in the classroom with students taking DE courses. In their controlled study, Hannum et al. found that those students who took a DE course with a trained facilitator performed at a higher rate and were more likely to complete the course than those students who had a facilitator in the classroom who had not been trained. Students have also noted the benefits of using technology as carried out in a hybrid model (Yudko, Hirokawa, & Chi, 2008). In addition, some students in the college setting reported that a hybrid model combining DE components with a traditional course has a negative impact on student attendance, but they were otherwise satisfied with the DE/Hybrid experience (Yudko et al.). Ultimately, public schools surveyed by Picciano and Seaman (2007) reported at a rate of 66% plans to increase their offerings of hybrid/blended courses.

With mixed results when comparing the achievement results of purely traditional, face-to-face students with those who take courses in a standalone DE format, some have suggested a blended or hybrid approach to DE may be the best of both worlds (Hannum et al., 2009; Ge, 2012). The hybrid approach has also been supported by the National Research Center for High Educational Supports as the best means to implement DE in high schools (Hannum et al., 2009).

5.0. Discussing Benefits

Many high schools today take advantage of DE to offer Advanced Placement courses to their students that they may not have been able to in the past (Weldon, 2009). Because of a lack of qualified teachers, or a lack of students requesting particular AP courses at high high schools, DE is seen as a viable alternative to meet the needs of advanced learners (Hannum et al. 2009). Others believe that one advantage DE has over traditional, on-site learning is the opportunity for higher quality courses (Cavanaugh et al. 2009). Cavanaugh et al. do admit, however, that higher quality courses are simply a potential benefit that is dependent on how the course is delivered. If the DE delivery system (i.e. local college/university, local community college, or state sponsored virtual school) designs its courses such that the instructors are restricted in how to effectively teach the course, higher quality courses may not be the outcome (Cavanaugh et al.).

Other than additional rigor or enrichment to the traditional experience in the form of an AP course, DE more recently has been used to expand the course offerings available to schools, particularly by high schools (Picciano & Seaman, 2007). The offering of these additional courses is a response to the need for greater teacher quantity and quality at high schools (Hannum et al., 2009). With the mandates of the No Child Left Behind Act (2001), many high schools struggle to hire and retain “highly qualified” teachers (Hannum et al.). Distance Education is used by many high schools as a means to fill this gap or shortage and, by doing so, these schools are also able to offer more course choices to their students (Hannum et al.).

Beyond the opportunities to offer more advanced courses and to employ more highly qualified teachers, many schools today have taken advantage of DE by offering students in high school the chance to earn college credits that they may otherwise not be able to receive. Sequoia Choice Arizona Distance Learning has developed a program in which they pay up to \$1000 per semester for high school students to take college course via DE (Program Provides Free College Credits for High School Students, 2010). If the students maintain at least a “C” average, they are not charged for the course. In 2004-05, 40% of school districts that utilized electronic distance education had students enrolled in courses that earned them dual credit (Zandberg et al., 2008). Simply put, dual credit courses are those courses in which high school students can be enrolled in, and are able to earn secondary and postsecondary credits for the satisfactory completion of individual courses (Olive, 2010). Added benefits of dual enrollment courses are that they can be a predictor of postsecondary attendance, retention, and graduation (Olive, 2010).

Distance Education has been used for much more than simply expanding the curricula for upper level, college bound students. In fact, the inclusion of lower performing students taking DE courses has shown continual growth over the past several years (Cavanaugh et al., 2009). Many students today take DE courses to recover credits for courses not passed (Watson & Gemin, 2008). According to Watson and Gemin, the student has already put in the seat hours required to earn credit but still needs to demonstrate mastery of skills or content for a particular course, and the DE class fills this gap. The recovery of credits not earned during the regular course may have the added benefit of supporting the student’s self-esteem, particularly for students finishing their freshman year of high school (Franco & Patel, 2011). As Franco and Patel pointed out, students who do not earn enough credits to matriculate often exhibit lower self-esteem as a result and are more likely to drop out of school. In a study of a Michigan high school that implemented a credit recovery program, Franco and Patel found that most students who attempted DE credit recovery courses in the summer program passed and were able to move to the next grade. Though many schools rely on face-to-face instruction in their credit recovery programs, more schools today are moving towards all online and hybrid approaches to accomplish this task (Dessoiff, 2009). Students who have dropped out of school can benefit from DE as well. According to a 2011 Gungor and Prins study, DE holds great potential for reaching learners who would otherwise be unable to enroll in a GED program or attend classes regularly, including people who live in remote areas, who do not have reliable or affordable transportation, who have young children and limited access to childcare, who have physical disabilities, and whose work schedules preclude class attendance. (p. 1)

Whether an individual has need for a more challenging curriculum or they wish to take a course not offered at their high school, DE provides the benefit of access to these courses for students (Hannum et al. 2009; Piccano & Seaman, 2007). Distance education is also being used extensively to meet the needs of lower performing and “at risk” students in order to move them along towards graduation (Cavanaugh et al., 2009; Gungor & Prins, 2011; Watson & Gemin, 2008;). In either case, DE demonstrates potential benefits to students in virtually every aspect of education. Of interest for this study is the impact that these perceived benefits have on stakeholders in education when making the decision whether to use DE as a means of supplementing the curricula at high secondary schools.

6.0. Conclusion

As mentioned previously in this paper, DE in the United States has been growing at a rapid rate since the turn of the 21st century (Hannum et al., 2009). With the advent of newer and greater technology, K-12 educational institutions have taken greater advantage of the opportunities afforded by choosing to implement DE (Aud et al., 2012). High schools in the United States in particular have needs and concerns that drive them to make use of DE to supplement the curricula they offer (Irvin et al., 2010). A lack of qualified teachers, lower enrollments in specialized or advanced courses, and the need to expand course offerings are reasons that high schools turn to DE to fill gaps in service for their students (Irvin et al.).

Current research suggests that DE can, in fact, be a tool used by high schools to bridge the gaps in existing curricula (Bral, 2007; Hannum et al; Irvin et al.).

A preponderance of the research that is available today on DE was conducted based on the experiences of students, faculty, and administrators at the post-secondary institutions (Davies, Howell & Petrie, 2010). More recent studies have delved into the impact and implications of DE at the secondary level, but again, the amount of research that focuses solely on secondary DE is limited (Cavanaugh & Barbour, 2009). Therefore, there is a need to investigate in greater detail the processes, problems, and solutions in implementing DE on the secondary level. Furthermore, when one researches DE at the high secondary level in the United States, the depth and breadth of information available becomes even more limited (Davies, Howell & Petrie, 2010). To this point, no study has been uncovered that examined a single high school's experiences with DE.

Theory and statistical data can only explain so much of the realities of DE at the high secondary level. This proposed phenomenological case study on a target high school in central The world will fill some of the gaps in research that larger, more empirical studies simply have not. High secondary schools in the U.S. face numerous challenges in educating children within their districts. For some schools, providing highly qualified teachers is a difficult problem to overcome (Hannum et al., 2009). For others, being able to ensure that all of their students have to opportunity to take courses that match their interests and abilities is a driving force to take part in DE. For many high schools, the provision of Advanced Placement courses, courses that require highly specialized instructors and often have limited enrollments, have been a significant concern in the past. The implementation of DE at high schools has been demonstrated as a possible solution to each of these problems (Hannum et al.).

The use of DE to meet the particular needs of high secondary schools does not come without challenges. A major barrier to the implementation of DE at high schools is funding. Bral (2007) and Hannum et al. (2009) each identified funding as a major obstacle for these schools to overcome. Funding is seen as a major issue, in that many schools find it difficult to pay for DE infrastructure and for courses offered by outside sources (Bral; Hannum et al.). Funding is also an issue with respect to whether students who are not physically present at high schools, yet are enrolled through these schools in DE courses, actually count towards the attendance numbers that are used to determine the level of funding a school receives (Picciano & Seaman, 2007). Scheduling conflicts and the setting of DE as a school or district priority are troublesome for many high schools as well. Finally, many secondary schools that use DE also deal with problems incurred when high school students take courses provided by college and universities. Studies suggest that these issues may stem from high school students not being adequately prepared or the college professor not being sufficiently aware of the unique needs of the high school student (Matuga, 2009). Whatever challenge is presented to high schools, solutions to these various problems must be derived for high secondary schools to receive the benefits of DE.

The benefits of DE at the secondary level are many. Increased ability for schools to offer a variety of courses that they previously could not, the virtual acquisition of highly qualified teachers, and the provision of advanced courses for interested students are benefits available to high high schools that implement DE to supplement their curricula (Weldon, 2009). Furthermore, many students are using DE as a means to recoup credits previously lost in the traditional classroom (Watson & Gemin, 2008). Others who have found it difficult to complete high school are using DE to earn their General Equivalency Diploma (Gungor & Prinis, 2011). The benefits that high schools and their students can receive from DE are real if the leaders in the school community choose to implement DE.

The success of any DE program, as it is implemented by high high schools, is based to some degree in DE theory. Moore's Transactional Distance Theory identifies the major components of DE and the interplay that occurs among them (Moore, 1996). An understanding of the distance that is inherent in DE is central in understanding how to best use and evaluate DE at the high school level. Holmberg's theory on communication provides a basis for associating the importance of the way in which the various components of DE (students, teachers, and content) communicate and helps to develop an understanding of how each component relates to the other two (Holmberg, 2003).

Possibly the most applicable theory for DE decision makers at high secondary schools is referred to as the No Significant Difference Phenomenon (NSDP). According to the precepts of the NSDP theory, both traditional and DE methods of instruction should produce comparable results (Russell, 1999). There is some dispute as to the measures that were used in determining this theory, but nonetheless, the concept of comparable outcomes for DE as compared to traditional education is supported by many (Russell).

Recent research on the Equivalency Theory seems to support the idea that DE can produce the same learning results as traditional methods of teaching students (Lapsley et al., 2008; Weber & Lennon, 2007). components of DE (students, teachers, and content) communicate and helps to develop an understanding of how each component relates to the other two (Holmberg, 2003).

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