The Effectiveness of Distance Education for the Academically Gifted Student

Debra Lowe
A00299760
December 11, 2008

The Effectiveness of Distance Education for the
Academically Gifted Student

The education of gifted students has always been a challenge for educators. When a select few students always seem to finish early and still seek more knowledge, it can frustrate even the most prepared teachers. Often these students are relegated to the role of tutor or aide in a classroom when they have completed necessary assignments, but this may not help these bright individuals as they prepare for college and beyond. And to make matters worse, small or rural schools may not have challenging enough material to keep the interest of gifted students (Renzulli & Park, 2000). While some districts have created programs for academically gifted students, this is not always feasible. This has left educators with the dilemma of how to engage gifted students.

For years, distance education has been touted as a possible solution to the challenge of educating gifted students. Students who need enrichment or acceleration can access courses to which they would otherwise not have access, but distance education also has its critics. Are gifted students really benefiting from this alternative setting? Are they being robbed of the full classroom experience? These questions call for an investigation of the role of distance education in the experience of gifted students.

Qualifications of giftedness

Educating gifted children in a manner different from their age-group peers has always been controversial. One problem is that there is no set definition of giftedness. Some experts want to make the definition more inclusive, but others more selective. With Gardner's concept of multiple intelligences (1992) becoming more prevalent, could not all students be considered gifted?   For the purpose of this paper, the definition of gifted will be limited to the academically gifted. This is defined by the federal government in the 1972 Marland Report and subsequently modified in the 2001 Elementary and Secondary Education Act (No Child Left Behind) as: "Students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily provided by the school in order to fully develop those capabilities" (Title IX, Part A, Section 9101(22), p. 544).

It should be noted that this definition is still somewhat ambiguous as it does not define high achievement. It is interesting to note that the set of gifted students is defined by what a school *cannot* do for them. This is unique among subgroups of students, as all others are required to have their needs met through public education.

Because of this broad definition, gifted students may also include those who are bored and therefore inattentive, choose not to work, drop out, or due to their behavior, cause problems for other students. These gifted youth are often not included in studies because their performance does not match with their abilities. Some of these students will be part of the studies of online education, as they prefer to complete their education through alternative means. Fortunately, most of the students who qualify as gifted do not fit into the troubled category.

Distance education defined

Distance education has been a part of learning consistently for nearly 200 years. As noted by Adams and Cross (2000):

Distance learning actually has its roots in Europe in the 1830s when one could study composition through correspondence in Sweden and shorthand through correspondence in England (Holmberg, 1986). In 1873, Anna Eliot Ticknor founded the Society to Encourage Studies at Home, attracting more than 10,000 students (mostly women) over a period of 24 years. (p. 88)

Early courses were paper-based and carried to distant students in the rudimentary mail system available at the time. During the next hundred years little changed, although correspondence courses did become more

common. The advent of television expanded the use of telecourses and video in distance education.

Personal computers changed distance education forever. With the widespread use of these computers, distance courses became more convenient for both universities and students. Most courses were still sent by mail, but on discs, enabling the use of interactive programs, enhanced graphics and a screen-based interface. The Internet was the next revolutionary step. As more students had access, and technology speeds increased, it became possible to have interactive conferences, face-to-face discussions, and a setting closer to the traditional classroom.

Most distance education now involves some type of online access. Most courses are sponsored by universities or large school districts. For the sake of clarity, distance education will be divided into real-time or synchronous instruction, and recorded instruction, which includes media accessible by the student at any time.

Distance education and gifted students

Because gifted students have a deficit in their educational opportunities, distance education seems to logically fill that gap. In some large schools that are well funded, gifted programs may be available, but often students have additional interests that surpass the abilities of the local instructors. Similar problems have been found in Australia, a leader in gifted

education. While Australia has a specialized school for the gifted, it is not feasible for students to relocate to attend. This is why Australia has become a leader in distance education (Belcastro, 2002), which was developed because of the long distances across the continent and the quantity of rural communities.   By not necessitating relocation, more students have been participating in the Academic Talent Program (McLoughlin, 1999). Australia has found great success in delivering instruction this way, and thousands of students have used this program.

In the United States, problems have arisen in both rural and inner-city schools. It is difficult to attract qualified teachers to teach courses aimed at college preparation in these areas (Adams & Cross, 1999/2000). Adams and Cross further cite studies that demonstrate that highly qualified teachers are not lured to these areas by higher salaries and the promise of great students (1999/2000). Because traditional teaching does not meet students' needs, distance education is filling the gap.

Not only are rural students benefiting from distance education, but distance education serves other purposes. Many studies note that the gifted can have early access to courses, flexible schedules, and a non-traditional setting which may serve gifted students better (Olszewski-Kubilius & Lee, 2004). If distance education was not an option, these students would not be able to take the desired courses. Belcastro notes, "The intent of electronic technology is not to be an alternative to a high quality teacher and classroom;

the intent is to be an alternative to nothing, and that is what many rural

gifted students are getting right now" (2002).

One of the past barriers to traditional gifted education has been

funding. If only 5-25% of students can be labeled as gifted (depending on how

"giftedness" is defined by the district or state), that area will not be likely to

allocate additional resources for that small group of individuals. It is hard to

justify a Latin teacher if only five students want the course in a school, or

fifteen in a district. Difficult courses are very popular among gifted students.

While many traditional teachers believe their classes are challenging, many

gifted students are disappointed by the ease of their classes (Gallagher,

2001).

Unexpected advantages

Because distance education has been a part of Australia's programs for

the gifted for many years, long-term studies have been conducted regarding

the consequences of distance education for gifted students. Online education

has improved to allow for collaboration and interaction between peers who

share common interests. These students have been able to "share, discuss

and evaluate concepts, thereby leading to higher-order thinking"

(McLoughlin, 1999). This has created a sense of community and increased

natural abilities of these bright students.

It is hard to tell whether bright students are taking distance education courses, or whether the process of distance education improves student understanding. Wilson noted that to "perform well in a distance learning course, a student must be highly motivated, self-disciplined, and able to work independently without constant supervision" (1997/1998). It may be that when these motivated students are in a community of education where they work together, it both enhances and utilizes these skills, creating a positive feedback loop.

Not only has this collaborative effort increased student abilities, but evolution has taken place within the minds of the instructors. McLoughlin continues her appraisal of the paradigms which have changed in education, including a different concept of what a classroom is, what technology is, how students interact and how educational communities are organized (McLoughlin, 1999).

In North Carolina, distance courses aimed specifically at the gifted have been developed. In a survey of students who have completed gifted courses, several benefits were listed by the students. Wilson noted the benefits include (1997/1998):

1.   Access to outstanding faculty;

2.   Opportunities to take courses that they would not have otherwise been able to take;

3.   The chance to interact with students from other schools

     and other sites;

4.   The opportunity to test their "metal" against prestigious

     courses from the North Carolina School of Science and

     Math;

5.   A chance to develop independent skills and study skills

     that they felt would better prepare them for college; and

6.   The opportunity to hone their communication and

     thinking skills. (p. 96)

This study did not enumerate all of the criticisms of distance

education, but did note a few. Overall, the students had a very favorable

opinion of distance education after completion of their classes.

One of the most noted advantages of distance education is more

flexibility of student involvement than in non-traditional classrooms. Adams

and Cross noted that among these was the ability to learn in many locations,

decentralizing the instruction process. Also, students could actually fit

distance education into a traditional school setting by allowing students to

work distantly during a free period. They also noted the increased

educational community, the impact on the traditional school and its environs,

improvement of programs within the school and partnerships with businesses

and industry (Adams & Cross, 1999/2000).

These advantages are most noted in pre-recorded courses, also called asynchronous courses. Skills improved dramatically as students have more time to reflect between reading or receiving the material and when they need to respond (Siegle, 2002). This was said to allow for more egalitarian participation and more in-depth discussion.

Disadvantages

Of course, not all people are champions of distance education. Some educators, participants, and parents have been skeptical about the role of distance education in the lives of developing adolescents. One of the main criticisms is the perceived lack of interaction and socialization with an online course. It is true that many courses still function like the paper-based curriculum developed in the 19th century. Many courses involve reading then responding to the reading through quizzes or tests, or perhaps written works. These classes do lack some socialization which is thought crucial to the construction of knowledge.

Studies have noted that distance education courses, especially the asynchronous courses, lack the opportunity for informal conversation, and therefore informal learning, between instructor and student. If the course is a live, synchronous course, often it is uni-directional, without as many opportunities to ask questions as a live classroom (Wilson, 1997/1998). This problem was addressed by proposing more online interaction between

students. It is believed that if this connection is part of the course, then "students often get to know each other better than students do in a campus course" (Siegle, 2002).

This does not mean that distance education is the solution to all problems for gifted students. The group of gifted students also includes students who have poor work skills and those who do not see the advantage of formal education. Because of this, the under-performing gifted student may not succeed in an online course. As Siegle notes (2002):

> Online learning is not for everyone. It requires self-discipline
> and time management skills. Online learning also requires
> active participation in the learning process. Participants need
> good reading and writing skills and should be comfortable with
> technology. Without a regularly scheduled, physical class to
> attend, participants with poor time management skills often fall
> behind in online courses. (p. 31)

Some gifted students are particularly at risk because they have not learned good study skills. If education has been easy and the student has never had to manage their time effectively, this will be a new skill set to learn, and the student may become frustrated.

One of the chief complaints of distance education is the very thing which makes it so widespread. Technology is both the boon and bane of distance education. Differences in computer capabilities, interruptions of

Internet service, and incompatible programs create nightmares in the field of education. In one study, a full fifth of students dropped out due to the software being too advanced for the server at their schools (Adams & Cross, 1999/2000). Elsewhere, the expense of new technology has been a barrier, especially in rural schools (Belcastro, 2002).

Other studies noted that time constraints were a problem with asynchronous education. For example, an asked question may not be answered for days. By then, interest may have waned (McKinnon & Nolan, 1999). Also, tutorial sessions may not be available when needed most (McKinnon & Nolan, 1999). Because of this disconnect, students may not feel invested in the course, or feel that the instructor has no concern for their interests. Students may disengage and drop out of the class.

Some would argue that the answer to these problems is live, or synchronous instruction. Siegle notes serious challenges to this type of instruction as well. First, schedules must be coordinated to fit around the course, destroying flexibility – one of the most appealing facets of distance education. This also prevents instruction to many parts of the globe. Second, if the technology fails during a synchronous class, students can miss valuable information. Third, if the class is large and everyone is participating online, it may be too distracting for most students (Siegle, 2002). Live classes on the Internet are fraught with problems. While elements of both live and recorded instruction are useful, each has its own drawbacks for the general population.

Traditional vs. distance education

It is difficult to contrast effectiveness and appropriateness of traditional versus distance education. Teaching styles differ online just as they do in a traditional classroom. No generalities can be made as to which involves more interaction, complexity, or opportunities for student expression. The one obvious difference is the physical presence of the instructor. This may a larger disadvantage for the instructor than for the students. One study noted that more information presented online resulted in an increase of visual aids in the presentation. This increased the time needed to prepare the lesson. Also, an instructor cannot receive as much feedback from the students to regulate instructional pace. Different strategies must be used to keep students engaged (Wilson, 1997/1998). While these are challenges the instructor must face, these are skills that can be developed, and once a course is created, it may serve for several years.

The most important question which must be faced is what type of education will best serve students. Again, this is not an easy question to answer. Some students thrive in structured environments, while others when there's more freedom. Some students will do well with one instructor, or with one course, and not with another. Few studies have been done which have paired the two directly (Olszewski-Kubilius & Lee, 2004). Indeed, it would be hard to have a direct comparison between the two.

When distance education and traditional education have been contrasted, there have been disagreements over what the results mean. Wallace noted that former studies show that there are no differences in outcomes, but some difference in satisfaction. Others show very different results, but study conditions are very different, so it's impossible to determine conclusively what is better for students (Wallace 2005). The study did find that there is generally higher performance with asynchronous distance education, but not with live distance education.

One other study of note involved two routes to the same end. At Troy State University, students could take one or more online courses or all traditional courses (Sonner 1999). All students had to complete a capstone course at the end of their instruction. Students who took one or more online courses performed "significantly better' on their capstone project than those who took none. Although their scores were comparable in their traditional courses, this difference led Sonner to conclude that students with distance-education experience were better able to work independently (Sonner 1999). Whether this means more organized students take online courses or whether the course causes organization is up for debate.

The future of distance education

Distance education is in a great transition. With Internet education just over a decade old, developments are being made continually. There is a trend away from the traditional classroom even in a traditional school room

as more instructors re-think their role in the classroom. New technologies are being embraced and students are naturally comfortable with an online environment. This means that distance education has great potential for the future. This is especially true for gifted students.

Gifted students have a vast supply of knowledge available at their fingertips through the Internet. Knowledge scarcity is no longer a problem, but analysis and structure is. Students, especially gifted students, can no longer be fed a series of facts disconnected from the context and community to which it belongs. One of the most appealing components of distance education is the opportunity to connect with an international community previously unreachable. Although traditional classrooms are still essential to education, the style, if not the actual courses, of distance education is moving mainstream.

For example, McLoughlin's work showed that the use of technology in the classroom through methods that were traditionally distance education tools resulted in increased student performance. This "electronic classroom" created an atmosphere of more student freedom and control and more higher-order thinking skills. When students were allowed to collaborate, the technology became not only a presentation tool, but a tool of communication between all parties (Olszewski-Kubilius & Lee, 2004). Traditional educators could learn from the distance educators.

The distance educators also bring a skill set to the classroom and computer that reaches gifted students and regular students alike. When using distance education tools, the instructor is forced to be more interesting, more flexible, plan better, and be ready to embrace new technology (Wilson, 1997/1998). These skills improve the whole education community, and helps all students see education in a new light. Gifted students will benefit in a classroom where the teacher has learned these skills, whether in their own community or half-way around the world.

Future Research

As distance education progresses over the next decade, changes are sure to result. More data will result in a better understanding of how students learn and how educators can best reach them. As gifted students are significant consumers of online courses, more studies need to determine how to best serve their needs. We now have the capabilities to do a more thorough study across many cultures, countries, and demographics.

A similar study should take place contrasting how gifted students perform in a traditional classroom versus an electronic classroom, and then contrasting an electronic classroom versus a distance-education electronic classroom. This would be more definitive as to whether benefits come from the technology alone, or whether the technology plus the interpersonal connection of a teacher in the room would be better for more students.

Long-term studies would also be instructive as to whether logical processing skills are retained, or whether they tend to normalize over time. Do students that take online courses every year have improvements over those who only take a single course? No studies have been done to determine what the benefits are. A whole field of research is open where gifted education intersects with the technologies of the 21st century.

Conclusion

Distance education has filled an important gap in the education of many gifted students so far. Individuals formerly disadvantaged by location have benefited most by online education, although all students have these additional opportunities available. While distance education has its critics, there is growing evidence that it is at least as effective as traditional education, and possibly even better. The methods employed in distance education have improved education in the traditional classroom as well.

As education moves forward, new methods have to develop to utilize technologies and to prepare students for the next chapter of the digital age. Free and open communication has changed how students communicate and the size of the communities they associate with. The future has never looked brighter for the education of gifted students.

Resources

Adams, C. M. & Cross, T. L. (1999-2000). Distance learning

    opportunities for academically gifted students. *Journal of Secondary*

    Gifted Education, 11 (2), 88-96.

Belcastro, F.P. (2002). Electronic technology and its use with rural gifted

    students. *Roeper Review, 25* (1), 14-16.

Gallagher, J. J. (2001). Personnel preparation and secondary education

    programs for gifted students. *Journal of Secondary Gifted Education,*

    12 (3), 133-38.

Gardner, H. (1992). Multiple intelligences. *Instructor, 102* (1), 48-49.

McBride, R. O. & Leris, G. (1993). Sharing the resources: electronic

    outreach programs. *Journal for the Education of the Gifted, 16* (4),

    372-86.

McKinnon, D. H. & Nolan, C. J. P. (1999). Distance education for the gifted

    and talented: an interactive design model.. *Roeper Review, 21* (4),

    320-325.

McLoughlin, C. (1999). Providing enrichment and acceleration in the

    electronic classroom: a case study of audiographic conferencing..

    Journal of Special Education Technology, 14 (2), 54-69.

Olszewski-Kubilius, P. & Lee, S-Y. (2004). Gifted adolescents' talent

    development through distance learning. *Journal for the Education of*

    the Gifted, 28 (1), 7-35.

Ravaglia, R. & Sommer, R. (1999). Expanding the curriculum with distance

    learning. *Principal, 79* (3), 10-13.

Renzulli, J. & Park, S. (2000). Gifted dropouts: The who and the why.

    Gifted Child Quarterly, 44 (4), 261-272.

Siegle, D. (2002). Learning online: a new educational opportunity for

    teachers and parents.. *Gifted Child Today, 25* (4), 30-33.

Sonner, B. S. (1999). Success in the capstone business course – assessing the

    effectiveness of distance learning. *Journal of Education for Business,*

    74 (4) 243-47.

U.S. Department of Education. (2001). *PL 107-110, the No Child Left*

    Behind Act of 2001, Section 5464. Online at

    http://www.ed.gov/policy/elsec/leg/esea02/pg72.html

Wallace, P. (2005). Distance education for gifted students: leveraging

    technology to expand academic options. *High Ability Studies*

    16 (1), 77–86.

Wilson, V., Litle, J., Coleman, M. R., & Gallagher, J. (1997-1998). Distance

    learning: one school's experience on the information highway.

    Journal of Secondary Gifted Education, 9 (2), 89-100.