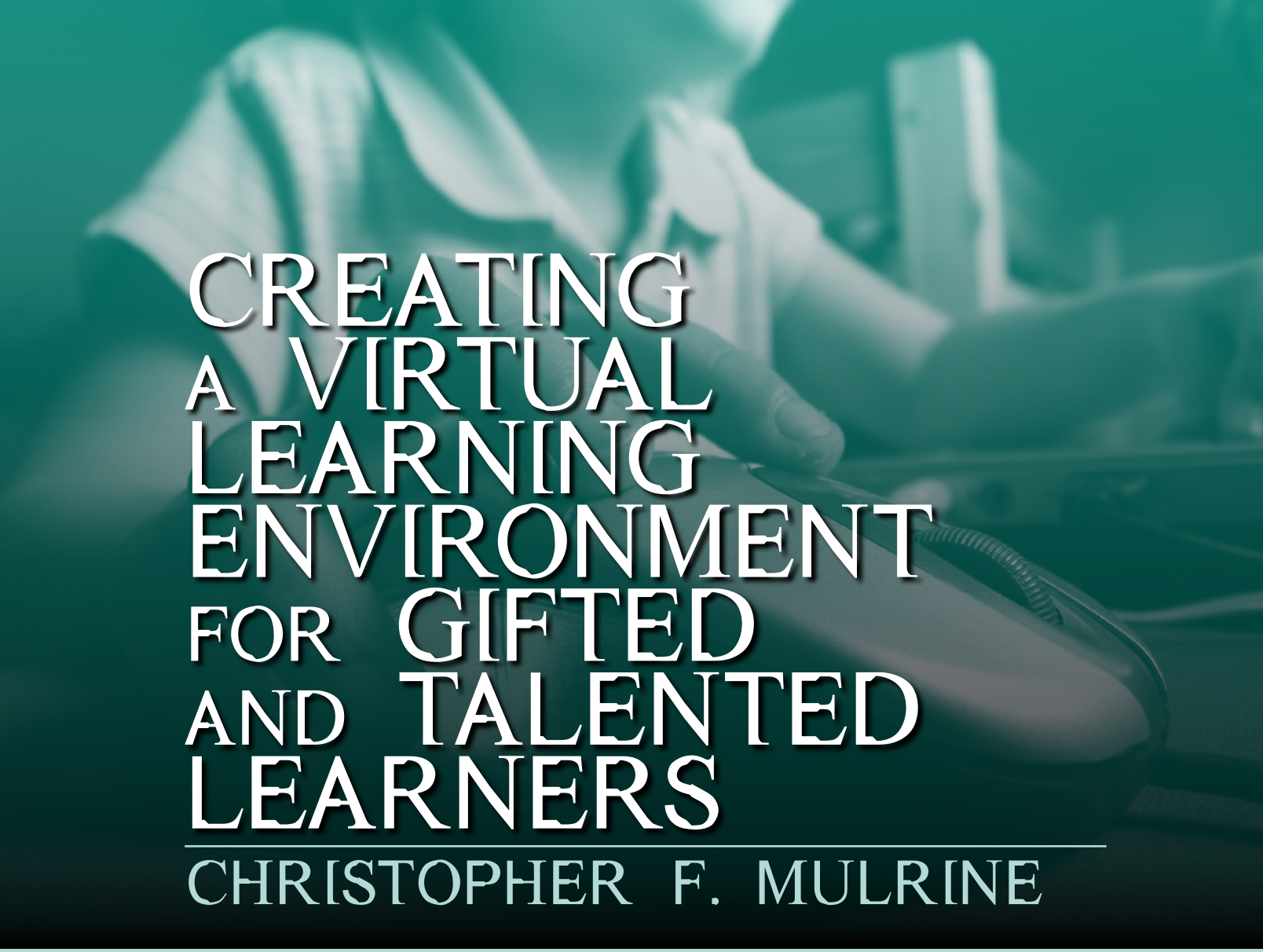

CREATING A VIRTUAL LEARNING ENVIRONMENT FOR GIFTED AND TALENTED LEARNERS

CHRISTOPHER F. MULRINE

Your school has just eliminated the gifted and talented pull-out program due to budgetary constraints. Therefore, all gifted and talented students will now be taught in the general education classroom. One of your kindergarten students, Sean, is academically gifted and is advanced beyond his peers in math, social studies, and science. He is computer literate. Sean is constantly playing computer games and uses the computer for his classroom and homework assignments. Although this student is gifted, he also has a disability. His low vision requires assistive technology to aid him in reading text. You query this predicament: "How can I meet Sean's educational needs while simultaneously reaching out to the needs of the other students in my class?"

This is a common scenario for many teachers in today's schools. Among the many diverse challenges being faced by the general education teacher, one challenge is particularly perplexing. How does one address both the special needs of students with extraordinary academic ability (Wallace, 2005) and the needs of those students who are not as advanced? Unfortunately, the harsh reality of overcrowding and budget cuts makes it increasingly difficult to meet the educational needs of every student. Teacher-centered instruction, or teaching the same curricula to all students, is no longer a viable solution (Rapp, 2005).

Teachers have to find creative ways to stimulate thinking and to create higher order learning opportunities for all students, especially gifted and talented learners. Teachers of the gifted and talented need to be creative to effectively develop or modify programs and curricula for their students (Rejskind, 2000). One way to modify the curriculum is through an enrichment activity that merges subject matter with computer technology. This article illustrates how teachers can infuse best practices from both gifted and talented education and information technology to benefit gifted and talented students through the creation of a virtual classroom learning environment. I have used this assignment in an assistive technology course as an assignment for teacher preparation candidates. It is important to prepare teachers to not only use technology but also to integrate it into instruction (Sandholtz, 2001). This type of activity can be used by teachers of gifted and talented students to merge their subject matter with the Internet.

Best Practices in Gifted and Talented Education

To effectively teach the gifted and talented learner, teachers need specialized knowledge on best practices from the field. One common strategy used for teaching gifted and talented students is to differentiate instruction, which can be accomplished through several methods, including curriculum compacting and enrichment. Curriculum compacting is an instructional technique used for modifying the regular curriculum to meet the needs of high-ability students by carefully assessing the work they already know and substituting or streamlining it for more challenging content through curriculum enrichment (Reis, Burns, & Renzulli, 1992). Curriculum enrichment is a technique used to deepen students understanding of issues (Wasserman, 2001). Several instructional strategies and curricular enrichment activities that are commonly found in classrooms for the gifted and talented student are conceptual thematic units, questioning strategies, development centers, independent study, and mentorships (Troxclair, 2000).

Best Practices in Information Technology

Computers can be used as a resource to help plan curricular activities (Veronikas & Shaughnessy, 2006). In recent years, information technology has become a common instructional method used with gifted and talented learners (Kalchman & Case, 1999; Wallace, 2005; Wasserman, 2001). It can be used to enhance and replace existing delivery methods and to improve education for the gifted student (McKinnon & Nolan, 1999). This same information technology can also be used to design a virtual learning environment that allows for enriched learning experiences and more advanced study for these high-ability learners.

Creating a Virtual Learning Environment

Creating a virtual learning environment is a way to differentiate instruction by merging the fields of gifted and talented education and information technology. Children of every ability level are motivated to create technology-enhanced projects using the Internet, online databases, scanned pictures and drawings, video clips, and hyperlinks (Bergen, 2002). A Virtual Learning Environment (VLE) refers to computer-based environments for delivering learning materials on the Internet (Wilson, 1996). VLEs may be used to develop cultural experiences in the visual, creative, and performing arts; visit all types of museums, industries, governmental agencies, and institutions; expose students to different ideas through prominent and/or controversial persons; and provide advanced study in the content areas that include research activities (Belcastro, 2005). They can be an exciting learning approach for students because of the unlimited amount of information that is available online. Instant information is as close as a search engine away (Will, 2005).

Creating a Virtual Thematic Unit

Thematic units are used as a strategy to integrate abstract, complex ideas into the curriculum (Riley, 2003). To begin developing a virtual learning environment, a teacher needs to choose the content for an integrated thematic unit. Teachers can use Internet sites such as A–Z Teacher Stuff

(see http://www.atozteacherstuff.com/Themes) to find thematic units on topics such as Harry Potter, St. Patrick's Day, Martin Luther King, oceans, magnets, and many others. These units include lesson plans, activities, and other interesting information. The C.O.O.R school district's Web site (see http://www.coorisd.k12.mi.us) includes other examples of integrated thematic units. It is helpful to ask a librarian for assistance in planning these learning activities and recommendations for additional resources.

The content for the virtual thematic unit used in this article focuses on multicultural awareness that integrates technology with the curricula. It was designed with the gifted kindergarten student in mind, using accelerated grade-level learning standards. This unit can be used as a 2-week independent study activity using designated sites on the Internet—with a minimal amount of teacher involvement.

In this particular unit, students study Korean, African, and Mexican cultures in order to gain an appreciation for other cultures. Third-grade language arts standards were used as a basis for the unit, and sixth-grade social studies and seventh-grade World Languages standards were also included.

Hyperlinks to Lessons. Teachers first need to locate virtual lessons from the Internet to enrich the concepts from their unit. There are many lesson plan sites that can be found on the Internet. Two good examples for virtual lessons can be found at The Educator's Reference Desk (see http://www.eduref.org/Virtual/Lessons), where a teacher can browse or search for lesson plans from all subject areas or grade levels. Another good resource is Web Sites and Resources for Teachers (see http://www.sitesforteachers.com/resources_sharp), which includes lesson plans, instructional materials, online activities and projects, and virtual trips to museums and countries around the world. There are many lessons available that can enrich the concepts taught in the multicultural awareness unit.

Assistive Technology. Teachers next need to adapt these lessons for any students who may have special needs. At the beginning of this article, there was a mention of Sean, the low-vision student requiring assistance with his reading. Assistive technology is any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. There are many assistive technology devices available for students that help them in reading, writing, and speaking, as well as accessing the Internet. One comprehensive site that offers a wealth of information for teachers about assistive technology is AbilityHub (see http://www.abilityhub.com). There are a number of different types of assistive technology available for students with low vision. These include large screen programs, large faced keyboards, and even the magnifier feature found in Microsoft Word.

Virtual Museum Tours. Next, the teacher needs to identify any Internet resources that might enhance the concepts within the unit and make the lessons more interesting. One method for integrating additional content is through virtual museum tours. A virtual museum tour is useful because field trips to museums can spark intense student interest and nurture thinking skills, but they are not always geographically feasible (Cromwell, 2005). To find online museum tours to supplement virtual unit lessons, teachers can access Eduscapes' Digital and Virtual Museums (see http://eduscapes.com/tap/topic35a.htm) or Education World (see http://www.education-world.com/a_curr/curr057.shtml), which provide links to art muse-

ums, science museums, natural history museums, and others. Education World has a link to the Museum of Science and Industry (see http://www.msichicago.org), where students can explore the Coal Mine exhibit and then write a paragraph explaining whether they would like to work in a coal mine. One way to incorporate a virtual tour in the multicultural unit is to locate a Web site that features an online tour of a specific location in Africa. This will give students the chance to experience African culture from afar.

Online Learning Games. In addition to virtual museum tours, teachers may want to enhance learning concepts from the unit through the use of online learning games (Westwater & Wolfe, 2000). Gifted and talented students enjoy stimulating and challenging activities. Sean, for example, liked to play computer games. There are quite a few online educational games sites that have great games and are very nicely executed for all students. Teachers can find games titled Math Bingo and Wacky Wordplay at Education World's Online Game Archives (see http://www.educationworld.com/a_lesson/archives/learninggame.shtml) or subject-area action games at About.com (see http://homeschooling.about.com/od/games). Online learning games can be used to reinforce concepts in the multicultural unit. For example, students can use the Internet to learn about the Mexican game Lotería, and then use their newfound knowledge of the game to develop their own version to use in the classroom.

Assessment Rubrics. As with every learning activity, there needs to be an assessment component. Teachers can find rubrics online to help assess the learning objectives developed for the unit. When using a rubric, both the student and the teacher should understand and agree how projects will be evaluated (Tuttle, 1996). A good, free online rubric generator is Rubistar (see http://rubistar.4teachers.org), where you will find rubric templates for a variety of subjects. These rubrics can be modified specifically to assess the virtual learning unit.

Conclusion

Gifted and talented students can be educationally enriched through a virtual learning environment. Virtual learning environments can be used as a way to integrate the curriculum with information technology. The examples given in this article are only a few of the many creative possibilities teachers can use to develop their own virtual environments. Why not try it with your student like Sean? It can be an exciting way to pique student interest and enrich learning. GCT

References

Belcastro, F. (2005). Applications of electronic technology to rural gifted students who are blind or visually impaired. *Information Technology and Disabilities E-Journal.* Retrieved August 11, 2006, from http://www.rit.edu/~easi/itd/itdv11n1/belcast.htm

Bergen, D. (2002). Differentiating curriculum with technology-enhanced class projects. *Childhood Education*, 78, 117–118.

Cromwell, S. (2005). Take a museum field trip—without leaving your classroom! *Education World*. Retrieved August 1, 2006, from http://www.education-world.com/a_curr/curr057.shtml

Kalchman, M., & Case, R. (1999). Diversifying the curriculum in a mathematics classroom streamed for high-ability learners: A necessity unmassaged. *School Science and Mathematics*, *99*, 320–330.

McKinnon, D., & Nolan, C. (1999). Distance education for the gifted and talented: An interactive design model. *Roeper Review, 21*, 320–325.

Rapp, W. (2005). Inquiry-based environments for the inclusion of students with exceptional learning needs. *Remedial and Special Education*, 26, 297–310.

Reis, S. M., Burns, D. E., & Renzulli, J. S. (1992). *Curriculum compacting: The complete guide to modifying the regular curriculum for high ability students*. Mansfield Center, CT: Creative Learning Press.

Rejskind, G. (2000). TAG teachers: Only the creative need apply. *Roeper Review, 22*, 153–157.

Riley, T. (2003). Take a summer vacation cruising the Internet. *Gifted Child Today*, *26*(3), 8.

Sandholtz, J. H. (2001). Learning to teach with technology: A comparison of teacher development programs. *Journal of Technology and Teacher Education*, *9*, 349–374.

Troxclair, D. (2000). Differentiating instruction for gifted students in regular education social studies classes. *Roeper Review, 22*, 195–198.

Tuttle, H. (1996). RUBRICS. *Multimedia Schools, 3*(1), 30–33.

Veronikas, S. W., & Shaughnessy, M. (2006). An interview with Kathy Schrock about teaching and technology. *TechTrends, 50*(3), 8–11.

Wallace, P. (2005). Distance education for gifted students: Leveraging technology to expand academic programs. *High Ability Studies*, *16*(1), 77–86.

Wasserman, S. (2001). Curriculum enrichment with computer software: Adventures in the trade. *Phi Delta Kappan*, *82*, 592–598.

Westwater, A., & Wolfe, P. (2000). The brain-compatible curriculum. *Educational Leadership*, *58*(3), 49–52.

Will, R. (2005). The educator's guide to the Read/Write Web. *Educational Leadership*, *63*(4), 24–27.

Wilson, B. G. (1996). Constructivist learning environments: Case studies in instructional design. Englewood Cliffs, NJ: Educational Technology Publications.