



Enrichment

2.0

Gifted and Talented Education for the 21st Century

History of Enrichment Clusters

Enrichment clusters, a component of the Schoolwide Enrichment Model, are multigrade investigative groups based on constructivist learning methodology (Renzulli, 1994; Renzulli & Reis, 1985). Enrichment clusters are organized around major disciplines, interdisciplinary themes, or cross-disciplinary topics. Within clusters, students are grouped across grade levels by interests and focused toward the production of real-world products or services. When the enrichment clusters model was first articulated by Joseph Renzulli, it was modeled after the ways in which knowledge utilization, thinking skills, and inter-

personal relations took place in the real world (Renzulli, 1994; Renzulli & Reis, 1985). Thus, all work was directed toward a common goal—the creation of a product or service. Enrichment clusters have been successful in developing creative producers in the 20th century (Reis, 2008).

Rationale for Enrichment 2.0

Over the last 5 years, there has been a significant change in the Internet. The term “Web 2.0” was coined in 2004 by Dale Dougherty, a vice-president of O’Reilly Media Inc. (Anderson, 2007). Services and software, collectively known as Web 2.0, are changing the Web from

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Enrichment 2.0

a read-only medium to one where anyone can publish and share content and easily collaborate with others (Richardson, 2006). The Internet has created a global community of learners (Siegle, 2005). Friedman (2005) wrote that we must be active participants in the rapidly advancing collaboration, communication, and specialization of our society. Students need learning that is connected, contextual, relevant, and authentic (Warlick, 2007). “Educators of the gifted strive to provide curricula with complexity and depth. This includes organizing, analyzing, synthesizing, and communicating large amounts of information. Technology can be used effectively in this process” (Siegle, 2004, p. 33). As we enter the 21st century, the protocols of learning and working are changing dramatically, and the Enrichment Triad Model can be updated based upon the currently available tools of collaboration.

Enrichment 2.0, like the model it is based on, the enrichment cluster, is an inquiry-based learning model where students select a topic, are grouped to work on the topic, and prepare an authentic product or service. Enrichment 2.0 allows students who are not physically in the same space to collaborate in an area of interest. School districts might find “sister” districts, or schools in other countries to collaborate with. Students who are homeschooled, students in rural schools, students who are located in school districts without formal gifted programs, and students with interests significantly different than those of their classmates can easily collaborate with peers through community online enrichment clusters.

Tools of the 21st Century

Students in Enrichment 2.0 programs utilize a variety of col-

laborative tools to investigate their topic. Richardson (2006) and Siegle (2007) share many examples of the use of Web 2.0 tools in education. A few of the most popular and most important tools for students in Enrichment 2.0 programs include wikis, social bookmarking, aggregators, podcasts, collaborative documents, and blogs.

Wiki, the Hawaiian word for quick, is an easy-to-edit Web page that does not require programming knowledge (Richardson, 2006). The wiki is the “home” for Enrichment 2.0. The Enrichment 2.0 teacher sets up a wiki for each enrichment cluster. Links to all other files, sources of information, and tools are placed on the main wiki page so that all students can access the information. Most wiki sites keep a chronological history for every page, so nothing is lost forever and revisions can always be undone. Wikis usually include a discussion area, so there can be a dialogue about changes before, during, and after they are made. Wikis are an ideal way for students to collaborate on a project both in the research stage and in the project development stage. Teachers can monitor a wiki or a particular page and receive notification of any changes to that page. Many wiki hosts offer the option of password-protected sites to safeguard students’ privacy. Many wiki hosts, including <http://www.wikispaces.com> and <http://www.pbwiki.com>, offer educators free wiki spaces.

Students use social bookmarking such as del.icio.us (<http://del.icio.us>) to keep track of Internet sites with relevant information and share it with their classmates. When a student locates an Internet site with relevant information, he or she can create an online bookmark of the site that other students can then refer to. Another

social bookmarking site, Trailfire (<http://www.trailfire.com>), allows a teacher or student to create a “trail” of Internet sites related to a particular subject area for other students to follow. Diigo (<http://www.diigo.com>) enables teachers and students to annotate a Web site using virtual sticky notes.

Enrichment 2.0 clusters create their own personal learning communities by utilizing aggregators and RSS (really simple syndication) feeds to keep abreast of current events in news, science, politics, and other fields of interest. An aggregator, or feed reader, is a software or Web application that aggregates syndicated Web content such as news headlines, blogs, and podcasts in a single location for easy viewing (Richardson, 2006). Popular aggregators include Bloglines (<http://www.bloglines.com>), Yahoo Reader (<http://my.yahoo.com/s/about/rss/index.html>), and Google Reader (<http://reader.google.com>).

A podcast is an audio file that is stored on the Internet and can be downloaded and played on a computer or portable media player (Siegle, 2007). Students can subscribe to updated files using a service such as iTunes or an aggregator. When new episodes become available in the podcast, they are automatically downloaded to that user’s computer. The user can then listen on his computer or portable media player. Students have discovered great podcasts on sites such as:

- The Discovery Channel—<http://www.discovery.com/radio/podcasts.html>
- The Education Podcast Network—<http://www.epnweb.org>
- NPR—http://www.npr.org/rss/podcast/podcast_directory.php

- History: Colonial Williamsburg Past & Present—<http://www.history.org/media/podcasts.cfm>
- NASA—<http://planetquest.jpl.nasa.gov/pqPodCasts.cfm>
- National Geographic—<http://www.nationalgeographic.com/podcasts>

Collaborative documents such as <http://docs.google.com> enable students to work together on a word-processing document, spreadsheet, or presentation. Collaborative documents are very similar to their single-user versions but allow students to work together without being in the same room.

A blog or Weblog is a personal space on the Internet where individuals or groups of individuals write and post their thoughts for others to read (Richardson, 2006). There are many types of blogs: personal journals, travel journals, political opinion blogs, research blogs, news, and more. Students can use Technorati (<http://www.technorati.com>), a blog search engine, to find experts in their field and subscribe to their blogs. “Blogs engage readers with ideas and questions and links” (Richardson, 2006, p. 18). Blogs are conversational and allow readers to comment on them. Through this comment feature, students can ask questions of blog authors. Students also enjoy using blogs to reflect on their own learning and share their ideas and learning with others. Students can receive feedback on their blogs from mentors, teachers, other students, and the wider community. Blogs offer a powerful way to extend learning outside the classroom.

How Does Enrichment 2.0 Work?

The first step in any online project is obtaining parental permission for students to be online. A letter detailing the project and the technologies that will be used should be sent home with students (see Figure 1). Students and families should sign an Internet safety contract documenting parental permission for students to participate and the behavior expectations for student in this project (see Figure 2).

The facilitating teacher will locate a wiki host to house the enrichment cluster. The teacher or facilitator groups students in multiage enrichment clusters based on student interest. The National Research Center on the Gifted and Talented has created a database of enrichment cluster topics that can be found at <http://www.gifted.uconn.edu/clusters>. A few topics that work particularly well online include: World Health Investigators,

Dear Parents and Students:

We will be utilizing a set of technologies that are part of what is called Web 2.0, a conglomeration of applications which include blogs, wikis, RSS, video and photo sharing, podcasts, and social bookmarking. It is the goal of the Gifted Kids Network to educate both students and parents so these ventures remain positive and safe.

We will utilize the following technologies and sites:

1. Gifted Kids Network: <http://www.giftedkidsnetwork.com>—GKN is a private network that students will use as their “homeroom.” The network includes wikis, blogs, discussion forums, and space for students to upload their own products (essays, videos, podcasts, etc.). Other than blogging, all student work will only be accessible to students, teachers, or parents in the Gifted Kids Network.
2. Wiki: A wiki is an easy-to-update Web page that is collaborative (all users can update the site)
3. Blogs: A blog or weblog is similar to an online journal or discussion forum. Blogs are a special type of Web page that can be created and easily updated using a Web browser. Each new entry has its own date stamp. Each entry has a comments section where visitors to the blog may leave comments for the author. Students will be posting their thoughts, ideas, and reflections on what they learn in Gifted Kids Network in their blog. This blogging project is designed to minimize risk to your child. The only personal identifying information included in the blog will be their first name. Students are allowed to post their interests and opinions, but not their age, e-mail address, photographs of themselves, or other sensitive information.
4. Video and photo sharing: Students will be creating photo journals, video projects, and other media-rich projects to highlight their research and investigations in. Projects will be housed within our private wikispaces so they will not be accessible by anyone outside our group. When the projects are completed, students will be encouraged to share their projects with parents. Students and families will be offered the opportunity to share the student projects with a wider Internet audience as appropriate. No projects will be shared without student and family written permission.
5. Google Docs: Students will have access to Google applications: word processor, spreadsheet, and presentation programs. Google documents are only visible to students, teachers, and families in the Gifted Kids Network. Students will not share their account ID and password with anyone!
6. Podcast, video files, and other media sources: Students will be encouraged to use the vast resources of the Internet. This may include articles, Web sites, podcasts, videos, and photos. Students should be responsible in their Internet searches.
7. Discussion forums: A discussion forum is a series of short posts that allow students to carry on a conversation about a variety of topics. Discussion forums are monitored (all posts are visible to the adult facilitator).

Figure 1. Letter to families used by Gifted Kids Network (<http://www.giftedkidsnetwork.com>).

Enrichment 2.0

Computer Artists Guild, Students for a Sustainable Environment, Future City Architects Association, Jamming in the 21st Century, The Future of the Game, Great Poets' Society, and the Safe T Toys Union. The teacher identifies multimedia "hooks" that introduce the topic to students. These resources can be found at The Discovery Channel, YouTube, Google Video, TeacherTube, NASA, The History Channel, and PBS.

Students are provided with an initial set of questions, developed as part of the original enrichment cluster model, to get them thinking.

- What do people with an interest in this area do?
- What products or services do they provide?
- What methods do they use to carry out their work?
- What resources and materials are needed to produce high-quality

products and services? (Renzulli, Gentry, & Reis, 2004)

Students make use of Internet-based graphic organizers such as Gliffy (<http://www.gliffy.com>) and Bubbl.us (<http://bubbl.us>) to work collaboratively on concept maps identifying the major concepts and topics within their enrichment cluster area of knowledge. Through discussion forums students develop research questions that they would like to investigate.

The Internet Safety Contract is designed to create a working environment that is scholastic, based on protection of personal information, respectful, and creative.

Rules

- DO use the computers for research on school projects or to connect with other students in a positive manner.
 - DON'T plagiarize or download anything illegally.
 - DON'T search for illegal, rude, or inappropriate things.
 - DON'T harass other students through blogs or discussion forums.
1. I will never post any information more personal than my first name.
 2. I will not post pictures of myself or others (family, students, or staff in my school or enrichment program).
 3. I will use language appropriate for school.
 4. I will not plagiarize; instead I will expand on others' ideas and give credit where it is due.
 5. I will not insult my fellow students or their work.
 6. I will not be afraid to express my ideas, while not making insulting remarks.
 7. I will use constructive criticism, supporting any idea, comment, or critique I have with evidence.
 8. I will take responsibility for anything blogged in my name.
 9. I will try to spell everything correctly, using spell check and proofreading my writing.
 10. I will not bully or harass others in my blog posts or in my comments.
 11. I will not provoke other students in my blog posts or comments.
 12. I will never access another student's account in order to pose as them.
 13. I will only post photos which are school appropriate and either in the creative commons or correctly cited.
 14. I will not spam (including, but not limited to meaningless messages, mass messages, and repetitive messages)
 15. If I find an inappropriate site or image I will hit the back key and contact an adult.
 16. I will not enter a chat room other than those specifically set up and monitored by my teacher.

Infractions of these rules will lead to the following consequences in order of severity and number of offense:

1. Letter of apology to those offended by the infraction (individual students or GKN community), warning by facilitator, and editing or deletion of offending post/comment.
2. Dismissal from Gifted Kids Network program.

Permission

We are asking for you and your child to discuss and sign the following form.

My student _____ has permission to participate in this online learning project from August 1, 2008–June 30, 2009.

I have read and understood these internet safety rules and policies and I agree to uphold them.

Student's Signature: _____ Date: _____

Parent's Name: _____

Parent's Signature: _____ Date: _____

Parent's Phone: _____ Parent's E-mail: _____

Figure 2. Internet safety contract used by Gifted Kids Network (<http://www.giftedkidsnetwork.com>).

Students share resources and ideas through discussion forums, collaborative documents, and the wiki. The goal of each enrichment cluster is to produce a product or service appropriate to the field that the students are studying and to present that product or service to a real audience. Each enrichment cluster is envisioned to be a 3-month activity. The first 2 months are spent gathering information, analyzing the resources, and synthesizing information. The final month is spent on the production of the product or service and presenting the product to the selected audience. Enrichment 2.0 students frequently enter their products in national Internet-based competitions such ThinkQuest (<http://www.thinkquest.org>), eCYBERMISSION (<http://www.ecybermission.com>), InvenTeams (<http://web.mit.edu/inventeam>), Sally Ride Science (<http://www.sallyridescience.com>), ExploraVision (<http://www.exploravision.org>), and Future City Competition (<http://www.futurecity.org>).

Obstacles to Implementation

One major obstacle to the implementation of Enrichment 2.0 in schools across the country is the current trend of schools blocking social networking sites, video sharing and photo sharing sites, and other potentially rich sources of information. Although the need to protect students from inappropriate content and potential predators is compelling, this need must be balanced with the potential benefits of utilizing the resources of Web 2.0 (Richardson, 2006). The Enrichment 2.0 framework suggests allowing students to access these resources. A detailed Internet safety

protocol and contract is an important component of this model (see Figure 2). Students choosing to participate in the Enrichment 2.0 model need to be educated on Internet safety and responsibility. Just as students require education on playground safety before climbing to the top of a playground tower, students using the Internet require guidelines. Blocking these resources may keep students safe in the short term; however, teaching responsible use will keep students safe in the long term.

A second major obstacle to implementation is the lack of high-speed Internet in many rural communities as well as lack of access for students in poverty. Funding to provide computers and high-speed Internet to classrooms across the country is critical to ensure students develop the skills necessary to succeed in the 21st century. Community access points for rural communities and poor urban communities are important sources of access leading to equity and achievement of students in these communities.

Conclusion

The Enrichment 2.0 model, a 21st-century modification of the enrichment cluster model originally proposed by Joseph Renzulli and Sally Reis, has the potential to bring gifted programming to communities and students currently underserved by traditional methods. Opportunities for gifted and talented students to collaborate with other gifted students in areas of interest are important to keeping gifted and talented students engaged and motivated in school. In the era of No Child Left Behind, educators need to continue to find ways to challenge our brightest students. Enrichment 2.0 offers an easy-

to-implement program for enabling gifted and talented students to collaborate using 21st-century tools. **GCT**

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