

Teachers' Time, Technology, And Resources For Talent Development

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Differentiation and personalized learning are the new buzz words of education; however, there is still a need to grapple with how already busy teachers can find the time to make adjustment in these important ways for modifying the curriculum for all students, and in particular, those with gifts and talents. Early use of differentiation and personalization has often been found to apply to content modifications, which is always a good first step, but we believe that “true personalization” should also take into account other important characteristics of the learner. Differentiation, although a noble goal, simply does not happen as often or as well as it should in all schools (Fordham Institute, 2008; Reis, et al., 2004).

Firmender, Reis, & Sweeny (2012) recently conducted research that examined the range of reading fluency and comprehension scores of almost 4000 students across the country, finding that an incredibly wide range of reading comprehension levels exists across all students, with a 9.2 grade level span of reading levels in grade 3, 11.3 in grade 4, and 11.6 in grade 5. How can fifth grade teachers differentiate reading instruction when reading levels span almost 12 grades in their heterogeneous classrooms? Interestingly enough, the widest range of reading comprehension scores, with an increasing range of scores at higher-grade levels, were found in the gifted magnet school, potentially due to the use of non-verbal intelligence scores as an admission test criteria, meaning that differentiation in reading was even more necessary in the homogeneous gifted classrooms in this gifted magnet school.

Time is any teacher's most precious resource and we realized that to carry out the “brand” of learning advocated in enrichment and gifted programs a resource was needed to:

- (1) identify ways in which we could easily develop a “total talent portfolio” for each student; and
- (2) give teachers and students a tool that quickly and easily uses a wide array of engaging resources to differentiate the curriculum and personalize learning.

These challenges led to the development of the Renzulli Learning System (RLS), a technology based engagement and differentiation program that we described in this article.

The Renzulli Learning System: A Four-Step Procedure

Every teacher has watched the excitement of a child “turning on” to a topic or a school experience that demonstrates true joy and excitement in both learning and teaching. We have sometimes wondered how and why these high points in teaching occur, why they do not occur more frequently, and why more students are not engaged in highly positive learning experiences. Teachers are also painfully aware of the boredom and lack of interest that so many of our young

people express about so much of the work they do in school. Highly prescriptive curriculum guides, endless lists of standards to be covered, and relentless pressure to increase achievement test scores have often prevented us from doing the kind of teaching that results in those joyous but rare times when we have seen truly remarkable engagement in learning.

The Renzulli Learning System represents a new generation of applying instructional technology to the learning process. This program is *not* a variation of earlier generations of popular e-learning programs or web-surfing devices being offered by numerous software companies. It is a totally unique use of the Internet that combines computer-based strength assessment with search engine technology, thus allowing true differentiation in the matching of thousands of carefully selected resources to individual strengths as well as learning styles and interests (Renzulli & Reis, 2007). The RLS also has theoretical integrity because it is based on high-end learning theory as recommended in the Enrichment Triad Model (Renzulli, 1977) and numerous research studies dealing with model implementation (Renzulli & Reis, 1994; Reis & Renzulli, 2003). The RLS is a four-step procedure that is based on more than four decades of research and development dealing with the diagnosis and promotion of advanced level thinking skills, motivation, creativity, and engagement in learning.

Step 1: Strength Assessment Using the Electronic Learning Profile. Step One includes a computer-based diagnostic assessment that creates a profile of each student's academic strengths, interests, learning styles, and preferred modes of expression. The online assessment, which takes about 30 minutes, results in a personalized profile that highlights individual student strengths and sets the stage for step two of the RLS. The profile acts like a compass for the second step, a differentiation search engine that examines thousands of resources that relate specifically to each student's profile. Student profiles can also be used to form groups of students who share common interests and to create groups based on interests and product preferences.

Step 2: Enrichment Differentiation Databases. In Step Two, the differentiation search engine matches student strengths, interests, and learning preferences to an enrichment database of approximately 50,000 enrichment activities, materials, resources, and opportunities for further study that are grouped into several categories: Virtual Field Trips; Real Field Trips; Creativity Training; Critical Thinking; Summer Programs; Projects and Independent Study; Online Classes and Activities; Research Skills; Contests and Competitions; Research; Fiction and Non-Fiction Books; and How-To Books.

These resources are not intended to encourage students to occupy time surfing the web. Rather, they are used as vehicles for helping students find and focus a problem or creative exploration of personal interest that they might like to pursue in greater depth. Many of the resources provide the methods of inquiry, advanced level thinking and creative problem-solving skills, and investigative approaches that approximate the *modus operandi* of the practicing professional. Teaching critical thinking and accurate assessment of sources is a key part of RLS. By using RLS, students are guided toward the *application of knowledge* to the development of original research studies, creative projects, and action-oriented undertakings that put knowledge to work in personally meaningful areas of interest. The resources also provide students with suggestions for outlets and audiences for their creative products. The RLS helps accomplish the goals of high-end learning for students of varying interests, abilities, and learning styles and who have their own unique vision for creative products.

Teachers are also provided with multiple resources for managing the individualized activities of their students: A set of learning maps is provided for each of the 14 enrichment resource databases and for the many other resources available, teachers can download numerous curricular activities for use in their classrooms, and management tools classify and cross-reference activities by subject area, thinking skill, and subject matter standards.

Our goal in this approach to learning is to promote high levels of engagement by providing a vehicle that enables a student's engagement in *thinking, feeling, and doing like a practicing professional*, even if they are operating at a more junior level than adult scientists, artists, writers, engineers, or other adults who pursue knowledge in professional ways.

Research on the role of student engagement is clear and unequivocal—high engagement results in higher achievement, improved self-concept and self-efficacy, and more favorable attitudes toward school and learning. A strong body of research points out the crucial difference between time-spent and time-engaged in school achievement. In the recently published international 2006 PISA study (Baldi, Jin, Skemer, Green, & Herget, 2007) study, the single criterion that distinguished between nations with the highest and lowest levels of student achievement was the degree to which students were engaged in their studies. This finding took into account demographic factors such as ethnicity and the socioeconomic differences among the groups studied. Other research has also found that positive engagement in learning influences student achievement and the identification of interests and future majors and careers, as well as their interest in and enjoyment of school (Renzulli & Reis, 2015; Martin, 2006), and positively influences academic achievement (Martin, 2006; Martin & Marsh, 2003). Students who are engaged in learning do better academically than their less engaged peers (Fredricks, Bulumenfeld, & Paris, 2004).

The resources available in step two also provide students with places where they can pursue advanced level training in their strength areas and areas of personal interest. Online courses and summer programs that focus on specific academic strengths and creative talents are ways that any school or parent can direct highly able and motivated students to resources that may not be available in the regular school program.

Step 3: The Wizard Project Maker. A special feature of the Renzulli Learning System is a project organization and management plan for students and teachers called “The Wizard Project Maker.” This guide allows teachers to help students use their web-based explorations for original research, investigative projects, and the development of a wide variety of creative undertakings. The sophisticated software used in this tool automatically locates potentially relevant web-based resources that can be used in connection with the student's investigative activity. This management plan is designed to help students complete a Type III enrichment experience, the highest level of enrichment described in the Enrichment Triad Model. Specifically, the Wizard Project Maker provides students with the metacognitive skills support to:

- Define a project and set a goal
- Identify and evaluate both the resources to which they have access and the resources they need (e.g., time, Internet sites, teacher or mentor assistance)
- Prioritize and refine goals
- Balance the resources needed to meet multiple goals
- Learn from past actions, projecting future outcomes

- Monitor progress, making necessary adjustments as a project unfolds
- Metacognition is generally defined as understanding and monitoring one's own thinking.

The Wizard Project Maker helps students make the best use of web resources, it helps to focus their interests as they pursue advanced level work, and it is a built-in safeguard against using the Renzulli Learning System to merely surf around the web. It also establishes a creative and viable responsibility for teachers in their role as “the guide on the side.” By helping students pursue advanced levels of challenge and engagement through the use of the Wizard Project Maker, students see teachers as mentors rather than taskmasters or disseminators of knowledge. The Wizard Project Maker has a metacognitive effect on students, i.e., they have a better understanding about what the investigative learning process is all about. As one teacher recently said, “The Wizard Project Maker helps my students understand ‘the why’ of using the Internet.” A Wizard Project Maker template is attached to this paper and Wizard software is built into the System to help students acquire resources for the various sections of this planning device.

Step 4: The Total Talent Portfolio. The final step in the Renzulli Learning System is an automatic compilation and storage of all student activity from steps one, two, and three into an ongoing student record called the Total Talent Portfolio (TTP). A management tool allows students to evaluate each site visited and resource used, students can complete a self-assessment of what they derived from the resource, and if they choose they can store favorite activities and resources in their portfolio. This feature allows easy-return-access to ongoing work. The TTP can be reviewed at any time by teachers and parents, enabling teachers to give feedback and guidance to individual students and provides parents with information about students' work and opportunities for parental involvement. The TTP can also be used for:

- Providing points of reference for future teachers
- Making decisions about possible class project extra credit options
- Selecting subsequent enrichment preferences
- Designing future projects and creative activities
- Exploring online courses and competitions
- Participating in extracurricular activities
- Deciding on electives in middle and high school
- Guiding college selection and career exploration alternatives

The TTP “travels” with students throughout their educational career. It can serve as a reminder of previous activities and creative accomplishments that they might want to include in college applications. The TTP also serves as an ongoing record that can help students, teachers, guidance counselors, and parents make decisions about future educational and vocational plans.

Summary

The RLS is designed to be an aid to busy teachers who seek the tools for effective differentiation and personalization as they try to teach to a broad range of individual differences, diverse student needs and interests, and increased pressures to improve student achievement. Through the use of technology and an approach to learning that is the opposite of highly prescriptive instruction, the RLS provides teachers with the “dozen teaching assistants” that every teacher would like to have in his or her classroom. The main goal of the RLS is to simultaneously increase achievement and enjoyment of learning by making available an inexpensive, easy-to-use, research-based system

that promotes student engagement. Although student engagement has been defined in many ways, we view it as the infectious enthusiasm that students display when working on something that is of personal interest and that challenges them to “stretch” for the use of materials and resources that are above their current comfort level of learning. Research on the use of the RLS (Field, 2009) found that the high engagement that emerged from use of RLS resulted in higher achievement, improved self-concept and self-efficacy, and more favorable attitudes toward school and learning. In this study, after 16 weeks, students who participated in Renzulli Learning demonstrated significantly higher growth in reading comprehension and oral reading fluency, as well as significantly higher growth in social studies than a control group of students who did not use Renzulli Learning. Numerous other students involved in our field tests of the RLS summed it up with one word—“Awesome!” Interested readers can learn more about RLS by visiting this website and clicking on <http://lpilearning.org/renzulli-learning-is-back/>

Dramatic changes in technology have the potential to make formal learning a very different experience than it was a few decades ago. Today’s young people are digital learners and active or up-and-coming masters of interactive media technology. Traditional ways of learning, even under the best of circumstances, cannot compete with students who find texting under their desks more engaging than listening to their teachers and professors or memorizing material for a forthcoming test. We can capitalize on the use of students’ new skills with technology and drastically reduce classroom boredom with the appropriate use and fascination students have with technology. We can also foster the development of critical and creative thinking skills and creativity productivity with the right tools, and RLS enables the development of these skills as well as the implementation of effective differentiation and personalization of learning for all students.

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