

Renzulli Learning White Paper on Differentiation

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“True differentiation requires that we look at all the characteristics of the learner in addition to achievement level.”

— Dr. Joseph Renzulli

The diversity of skills, talents, and interests of students that we serve in our schools requires a remarkable range of teachers' skills, time, and resources. This brief article focuses on differentiation and the ways that teachers can adapt and differentiate the regular curriculum to meet the academic needs of all of their students. Challenges and solutions about how differentiation can be implemented will be discussed, as will a variety of strategies that can be used to differentiate as well as challenge and engage all students. Defined simply, differentiation is matching a required curriculum with the learning styles, expression styles, interests, and abilities of students. It's predicated on the simple belief that engaged, motivated students score higher and enjoy learning more. Both research and current practice illustrate the importance of differentiated instruction in meeting every child's needs as well as raising achievement — and some of that research is summarized in this article.

Defining Differentiation

In order to accommodate the needs of students of differing levels of academic achievement, teachers across the country have implemented within-classroom strategies referred to as *differentiated instruction* or *differentiation*. Differentiation is an attempt to address the variations among learners in the classroom through multiple approaches that modify instruction and curriculum to match the individual needs of students (Renzulli, 1977; Tomlinson, 2000). Students vary in their abilities, interests, and prior knowledge. Differentiation serves to address this variation by matching content, instruction, and assessment to students' needs and interests. Tomlinson (1995) emphasized that, when teachers differentiate curriculum, they stop acting as dispensers of knowledge and serve as organizers of learning opportunities. Differentiation of instruction and curriculum suggests that educators can work with — and provide materials to — students who require varied levels of difficulty, different levels of assistance, various types of grouping, and different environments in the classroom. In other words, differentiation is the opposite of a one-size-fits-all curriculum.

Five Dimensions of Differentiation

The three components that are most often associated with successful differentiation are:

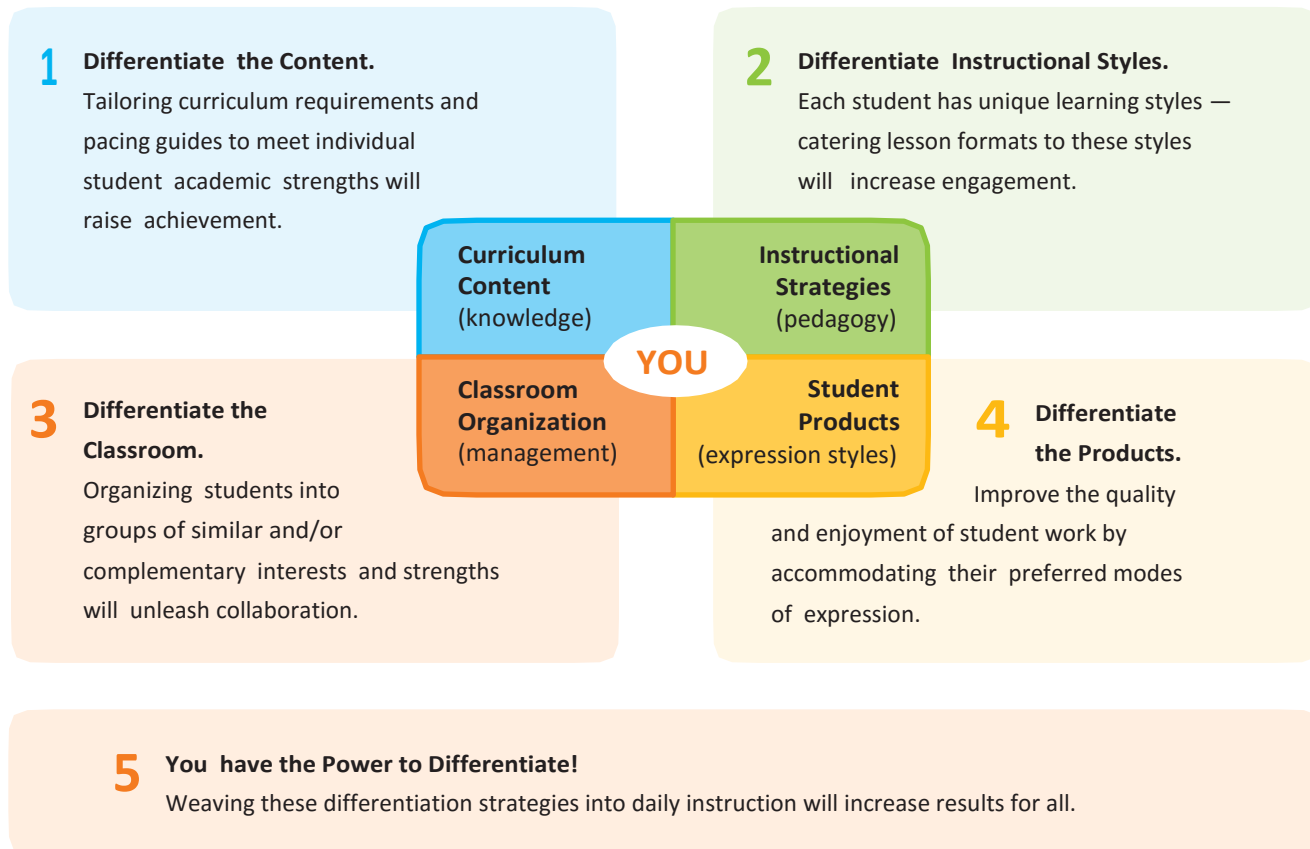
- Curriculum or content (what is being taught)
- Instructional pace (how quickly or slowly it is being taught)

! Student product (tangible results based on students' levels of comprehension)

In recent years, Renzulli Learning expanded these components in the "Five Dimensions of Differentiation" (See Figure 1)

Figure 1

Renzulli's 5 Dimensions of Differentiation*



* Source: Five Dimensions of Differentiation. Dr. Joe Renzulli and Dr. Sally Reis 2005.

- 1. Content:** Students have different academic abilities and interests, and teachers can differentiate the *content/curriculum* delivered to their students. Some students need content that matches their interests. Some require material that is more challenging, less challenging, or appropriate for their reading level; not every student should receive the same content in any given lesson. The differentiation of content involves adding more depth to the curriculum by focusing on structures of knowledge, basic principles, functional concepts, and methods of inquiry in particular disciplines. Within the content area, representative topics are explored and webbed, with open-ended questions that probe into a particular field of knowledge (Renzulli, 1997; 1988; Renzulli & Reis, 1997).
- 2. Instructional Strategies:** Students also possess different learning styles. Some learn best through group work, and some excel when working alone; some learn best by doing projects, while others learn best by discussion, simulations, or computer-driven programmed instruction. Teachers can differentiate by using varied instructional strategies that match the preferences of individuals or groups in their classrooms.
- 3. Classroom Organization and Management:** Teachers can differentiate the learning environment itself, as well as how they manage it. They can give students the opportunity to work in groups with other students who share similar interests, learning styles, or levels of comprehension. Some

students prefer to work in groups where each individual has a chance to demonstrate his or her particular strengths, interests, or preferred modes of communication.

Introducing guest speakers; offering various types of media or technology; taking students on a field trip; and arranging time in the computer lab or library are ways of organizing and managing learning to accommodate diverse needs. Private spaces constructed with bookcases or temporary partitions for independent study or small-group work create environments that facilitate within-classroom differentiation. Teachers can change the physical environment and grouping patterns they use in class and vary allocation of time and resources for groups as well as individuals. The internet also can enhance classroom differentiation strategies greatly. Online tools and resources offer educators virtually unlimited avenues to differentiate instruction and engage students while expanding the learning environment beyond classroom walls.

4. **Products:** Students express what they've learned in different ways: Some prefer expression styles that are written or oral; others do better with technology or social action; and others prefer to present visual, musical, or dramatic expressions of what they have learned. Students can apply all these expressions to products that are legitimate outcomes of various curricular experiences. For example, a dramatization of the Founding Fathers debating constitutional issues, students preparing and presenting a revolutionary-era song or poetry, and a slogan competition are all ways of respecting different product styles and promoting higher levels of student engagement. Teachers can differentiate products by giving students options, when practical, to choose their own modes of expression to demonstrate what they have learned.
5. **The Teacher:** Obviously, teachers would be hard-pressed to differentiate every lesson every day, so differentiation is about the decisions and choices that teachers make about how to differentiate the curriculum for a diverse group of students. Differentiation requires that teachers consider their students' learning styles, interests, abilities, and expression styles — and that they accept the freedom, flexibility, and creativity to implement this process in the classroom. Teachers can differentiate *themselves* by modeling the roles of athletic or drama coaches, stage or production managers, promotional agents, and academic advisers. All these roles differ qualitatively from the role of teacher-as-instructor. Teachers also can inject themselves into taught material through a process called *artistic modification* (Renzulli, 1988). This process helps teachers enhance content by sharing direct, indirect, and vicarious experiences related to their personal interests, travel experiences, collections, hobbies, and extra-curricular involvements.

Five Dimensions of Differentiation Described in a Classroom

What would a differentiated classroom be like if each of these five dimensions were implemented? Content would adjust and change to meet the unique needs of all students. In reading, for example, advanced, self-selected reading materials would challenge talented readers; and less-than-challenging but high-interest content would be used to engage struggling readers and produce higher achievement (Reis, McCoach, Little, Muller & Kaniskan, 2011). Instructional strategies or *processes* would teach and stimulate student problem solving and critical thinking. These strategies would include problem-based learning, simulations, independent study (both guided and unguided), and higher-level thinking questions. The higher-level thinking training would incorporate critical-thinking skills to enable students to conduct research, brainstorm, identify problems, and develop an action plan, as well as motivate children to pursue independent investigations of real-world problems that Renzulli called *Type III studies* (Renzulli, 1977).

The types of *products* associated with a differentiated approach would reflect both the learners' expression styles and the applied skills of a field of study. The products would emerge through exposure to learning opportunities developed in the classroom or in environments such as agencies, museums, TV, radio, community organizations, mentorships, and apprenticeships. When differentiation occurs in a classroom environment, teachers use a combination of interest and learning centers and organize study areas, computer stations, and work areas for products as well as artistic, literary, and scientific work. Some students will need to use additional out-of-school learning areas (e.g., library, gym, auditorium, lab) if the topic being investigated requires additional resources or some physical movement. In the last dimension of differentiation, the teacher extends him/herself by becoming part of the learning exploration through discussing direct personal experiences, sharing an opinion or belief that sparks a curiosity or confrontation with knowledge, or modeling the love of learning. Using the five dimensions of differentiation, educators can adapt and implement differentiation in a consistent and progressive manner to meet the needs of all learners

Differentiation by Competency, Grouping, and Using Compacting

Teachers can use assessment data to modify curriculum and instruction in order to address differences in students' readiness, interests, and learning profiles (Renzulli, 1988; Tomlinson, 2001). Learning is most effective when teachers can assess students' levels of achievement as well as their learning preferences, then use this information to help students progress to more advanced levels of functioning and more advanced learning.

The online state and Common Core assessments automatically link test results with instructional learning paths aligned with each student's mastery of state or Common Core objectives. It also allows users to import the Northwest Education Association's (NWEA) Measures of Academic Process® (MAP®) scores into the system for automatic translation into skill-aligned instructional learning paths, based on each student's instructional ranges. As a result, each student in the teacher's classroom receives instruction based on his or her ability level.

Differentiated instruction also involves adjusting learning tasks to accommodate different patterns of flexible *grouping*. In some cases, for example, whole-group instruction is the most appropriate delivery model, while, in other instances, students benefit most from working in small groups or individually to complete tasks that are targeted to their own levels of readiness, interests, and learning preferences.

Many researchers have studied the use of different types of grouping —

The practice of organizing classrooms in graded schools to combine children who are similar in achievement. Results have consistently demonstrated that, when students are grouped with other students of similar achievement levels, they experience higher degrees of achievement. In a three-year longitudinal study, for example, Gentry and Owen (1999) found that flexible cluster grouping had positive effects on all ability levels of students in a small, rural, Midwestern elementary school district. The use of online assessment tools, profilers, and management systems, like those of Renzulli Learning, enable easy grouping of students based on their readiness, interests, and learning preferences.

Another proven strategy for differentiation is *curriculum compacting*. A service described by Joseph Renzulli and Sally Reis, curriculum compacting is another process that can be used to eliminate or modify work based upon student demonstration of content mastery. This strategy is one of the most widely used approaches to encourage curriculum differentiation (Renzulli & Reis, 1992). Curriculum compacting is an instructional technique that is specifically designed to make appropriate curricular adjustments for students in any curricular area and at any grade level. Essentially, the procedure involves:

1. Defining the goals and outcomes of a particular unit or segment of instruction
2. Determining and documenting the students who have already mastered most or all of a specified set of learning outcomes
3. Providing replacement strategies for material already mastered through the use of instructional options that enable a more challenging and productive use of the student's time

Research on compacting shows that approximately 40–50% of traditional classroom material could be compacted for students who master the work in one or more content areas, and students whose curriculum was compacted actually scored higher or as well in all academic content areas (Reis, Westberg, Kulikowich, & Purcell, 1998).

Technology-based programs can provide pre-tests that determine student mastery of defined material and then direct students to appropriate instruction based on the test's results. Additionally, the programs can allow teachers to create differentiated instructional assignments from resource databases, based on their knowledge of students' mastery of the unit/lesson. As a result, students who need direct instruction for the unit receive it, and students who can benefit from curriculum compacting also receive appropriate instruction.

Differentiation with Enrichment

Educators can use individualized enrichment opportunities to differentiate and extend the regular

curriculum. Examples of enrichment include exposure to new topics and ideas, training in creative and critical thinking skills, problem solving, first-hand investigative opportunities, the development of an independent study in areas of choice with individual research, and the use of advanced research methods. There are a variety of factors to consider when using enrichment to differentiate instruction and content. For example, what types of enrichment opportunities can and will be made available? Will the regular curriculum be extended with enrichment, or will it be compacted and replaced with teacher-selected advanced content? Will students have the opportunity to pursue their personal interests using independent study? Enrichment can take many forms, and these questions about content and how curriculum can be enriched are at the core of the decisions that guide enrichment selections.

The Triad Model, along with its larger-scale translation into the Schoolwide Enrichment Model (SEM) (Renzulli, 1977; Renzulli & Reis, 1997), is one of the most popular approaches in enrichment- education pedagogy (Van Tassel-Baska & Brown, 2007), and it has been used with students in urban, suburban, and rural schools across the country with positive outcomes for the last three decades (Reis & Renzulli, 2003). Both gifted and regular education programs benefit from the broad applicability of the SEM's three central goals: developing talents in all children, providing a broad range of advanced level enrichment experiences for all students, and providing follow-up advanced learning opportunities for children based on interests. The SEM emphasizes engagement and the use of enjoyable and challenging learning experiences constructed around students' interests, learning styles, and product styles. The Enrichment Triad Model is often used as an organizational and service delivery model for differentiation with three components: Type I enrichment (general exploratory experiences), Type II enrichment (group training activities), and Type III enrichment (individual and small-group investigations of real problems).

In summary, classroom teachers can provide differentiated levels of enrichment to many students using various enrichment types that include exposure to new topics, training in thinking and research skills, and opportunities for self- or teacher-selected investigative activities of problems. Enrichment usually includes emphasis on authentic content and process, enabling students to serve as firsthand inquirers who explore the structure and interconnectedness of knowledge. Enrichment teams, as advocated by Renzulli and Reis in the SEM, can help plan enrichment experiences for the entire school. All students benefit from a planned, articulated, and coordinated enrichment program that provides differentiated challenges as well as engagement and enjoyment of learning.

Differentiation Using Renzulli Learning

Renzulli Learning, an online educational profile and matching database, based on the Enrichment Triad Model, provides students with differentiated experiences that help them enjoy the process of learning through personal engagement. Featuring a vast array of educational activities and resources designed to enrich students' learning, it is geared toward enrichment resources; creative productivity; and high-end learning that matches student interests, learning styles, and expression styles. Using Renzulli Learning's cutting-edge technology resources, students can explore, discover, learn, and create independently in a safe environment.

Field (2009) studied the use of Renzulli Learning with students in an urban school and a suburban school. In this 16-week, experimental study, both gifted and non-gifted students who participated in an enrichment program and used Renzulli Learning for 2–3 hours each week demonstrated significantly higher growth in reading comprehension than control-group students who did not participate in the program. Participating students also demonstrated significantly higher growth in oral reading fluency and in social studies achievement than did non-participating students.

Four steps to differentiation

Teachers can use Renzulli Learning to differentiate instruction using four steps. The first step is 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 thirty minutes, results in a personalized profile that highlights individual student strengths and sets the stage for the next step.

In the second step, a differentiation search engine examines thousands of resources that relate specifically to each student's profile, or to the profiles of grouped students who share common interests. A project-management tool guides students and teachers to use specifically selected resources for assigned curricular activities, independent or small-group investigative projects, and a wide variety of challenging enrichment experiences. Another management tool enables teachers to form instructional groups and enrichment clusters based on interests and learning-style preferences. Teachers have instant access to information in student profiles, including all sites visited on the Web and the amount of time spent in each activity. Parents also may access their child's profile and Web activities, and, to strengthen the school-home connection, it is suggested that students actually work on some of their favorite activities with their parents.

The differentiation search engine's enrichment database contains 40,000 enrichment activities, materials, resources, and study opportunities that are grouped into the following categories: virtual field trips, real field trips, creativity training, critical thinking, projects and independent study, contests and competitions, websites, fiction and non-fiction books, summer programs, online activities, research skills, and high-interest videos and DVDs. These resources are not merely intended to deliver students news or to occupy their time surfing; rather, they are vehicles to help students find and focus on a problem or creative exploration of personal interest to pursue in greater depth. Many of the resources provide methods of inquiry, advanced-level thinking skills, creative problem-solving skills, and investigative approaches. They guide students toward the application of knowledge through the development of original research studies, creative projects, and action-oriented undertakings that put knowledge to work in personally meaningful areas of interest, and provide students with suggestions for outlets and audiences for their creative products. The resources available in step two also provide students with opportunities to pursue advanced-level training in their strength areas and areas of personal interest.

The third part of Renzulli Learning for students is a project organization and management plan called the Wizard Project Maker. Using this project planner, teachers can help students focus their Web-based explorations on 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 a student can use in conjunction with investigative activity. It is designed to fulfill the requirements of 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 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; project future outcomes; and monitor progress, making necessary adjustments as a project unfolds. The Wizard Project Maker helps students make the best use of Web resources, helps to focus their interests as they pursue advanced-level work, and 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 begin to regard their teachers as mentors rather than just as disseminators of knowledge.

The final step in Renzulli Learning 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. This management tool allows students to evaluate each site visited and each 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. Teachers and parents can use an access code to review the portfolio at any time. This allows teachers to give feedback and guidance to individual students and provides parents with information about students' work and opportunities for involvement. The Total Talent Portfolio travels with students throughout their school years to remind them of previous activities and creative accomplishments they might want to include in college applications. It is an ongoing record that can help students, teachers, guidance counselors, and parents make decisions about future educational and vocational plans.

The Future of Differentiation

While most teachers, if asked, would indicate that they are committed to meeting students' individual needs, many teachers do not have the background information to put this commitment into practice. Research demonstrates, for example, that many academically talented students receive little differentiation of curriculum and instruction and spend a great deal of time in school doing work that they have already mastered (Archambault, Westberg, Brown, Hallmark, Emmons, & Zhang, 1993; Reis, Westberg, Kulikovich, Caillard, Herbert, & Plucker, 1993; Westberg, Archambault, Dobyms, & Salvin, 1993). Many educators would like to adapt, modify, or differentiate the regular curriculum for all of their students. Accomplishing this, however, is no small task. Too little time, too many curricular objectives, few resources, and poor organizational structure keep even the most dedicated professionals from differentiating at the highest level. Many teachers still struggle to implement differentiated instruction, and among the challenges they face in implementing differentiation are concerns about planning for and managing differentiation, as well as fear of state assessments and little administrative support (Hertberg-Davis & Brighton, 2006; Moon et al., 2003; Reis et al., 1998; VanTassel-Baska & Stambaugh, 2005).

Differentiated instruction enables teachers to assess students' current levels of functioning and learning preferences and then use this information to help every student progress to more advanced levels of functioning and more advanced and personalized learning. Differentiation is a journey that every teacher must take to enable all students to learn at appropriately challenging levels. With multiple levels of achievement, interests, readiness, learning, and expression styles represented in every classroom, effective and meaningful differentiation may be the most important attribute of the 21st century teacher who wants to enable each of his or her students to make continuous progress in learning. With support from the use of technology, their colleagues, and administrators, more teachers can and will learn to differentiate instruction more effectively.

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APPENDIX



Virtual Field Trips:

In the Renzulli Learning System, these virtual field trips will enable you to “virtually” visit exciting places such as castles, museums, and even the pages of award-winning children’s books. We have located and catalogued hundreds of outstanding virtual field trips for students that cover a wide variety of content areas. Think of our Virtual Field Trips as a taking a road trip without ever having to leave your seat!



Real Field Trips:

In this category, you can find the most exciting field trips for students in every state in the country. Many of these trips can be made via websites and virtual tours, but these are also places that you visit in person.



Creativity Training:

Creativity training enables all students to have the opportunity to express their creativity. Creative kids can learn to be more open to new experiences and to develop fluency (to have *more* ideas), flexibility (to have *different* ideas), and originality (to have *new* ideas).



Critical Thinking:

Critical thinking has been defined in many ways, but, in Renzulli Learning, we define it as the ability to analyze material critically point of view, bias, logically supported conclusions, sequential development of a point, and other skills. Critical thinkers plan their actions as well as, clarify, explain, and interpret information. They can also carefully consider which information is accurate and use good judgement to make decisions.



Projects and Independent Study:

These projects and independent studies are available in every area of interest section of Renzulli Learning. These high-quality enrichment projects let students pursue areas of interest and help them enjoy learning more about exciting projects in areas such as building bridges, writing short stories, studying castles, and creating all kinds of products.



Contests and Competitions:

Contests and competitions can provide students with many opportunities to learn important skills and life lessons. We have found contests in hundreds of areas, from building bridges to writing poetry. Contests and competitions provide an exceptional way to match students’ talents with exciting outlets. Contests can help students learn some important lessons and aspire to higher levels of excellence while having fun.



Websites:

Websites can provide students with challenging learning experiences that invite them to learn more. In Renzulli Learning, we have located and catalogued the best websites we could find in a wide variety of content areas, extending above and beyond the core curriculum. These diverse and interesting websites enable students to access information and learn about exciting places to visit, help students to do research, and help students better understand challenging material.



Fiction Books and e-books:

We have found hundreds of high-interest fiction books in a variety of interest areas that provide enrichment and challenge. Many of these books are available in school and public libraries as well as online.

**Non-Fiction Books and e-books:**

We have found hundreds of high interest non-fiction books in a variety of interest areas that provide enrichment and challenge. Many of these books are available in school and public libraries as well as online.

**How-To Books and e-books:**

How-to books can demonstrate outstanding ways to learn thinking skills, methods of research, and ways of doing specific projects (like making pop-up books or conducting a science experiment). We have found hundreds of how-to books that students can use when completing in-depth independent projects and other interesting projects in school and at home.

**Summer Programs:**

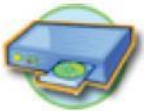
Exciting summer programs that provide students exciting learning opportunities are available nation-wide. Some are available online, some are overnight programs and camps, and some are day programs. Scholarships are available for some, and students be able to secure funding for others from a variety of sources.

**Online Activities and Classes:**

Activities are readily available online to help students become more involved with online learning in a variety of interest areas. Both activities and classes are available in areas including writing, reading, science, and math.

**Research Skills:**

Learning research skills can help students conduct real research. With these skills, students can learn how to do historical research, scientific research, and even research about art, music, and writing.

**Videos and DVDs:**

Videos and DVDs can enable students to pursue their interests in literature, history, and science, and they can provide enrichment in a wide variety of areas. Many of these resources are available at no cost from local libraries. Whether students want to find in-depth information from historical videos or be exposed to different topics in science or literature, these resources can enrich their lives and provide a high level of engagement.
