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Assessment for Learning: The Missing Element for Identifying High Potential in Low Income and Minority Groups

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This brief analysis is intended to call attention to the important difference between Assessment *For* Learning and Assessment *Of* Learning. Classic measurement theory makes a distinction between these two types of assessment. Assessment of learning, called summative assessment, is used to evaluate student content learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period—typically at the end of a project, unit, course, semester, program, or school year. Summative assessments are generally formal, structured, norm or criterion referenced, and are often used to normalize performance so that students can be measured, compared, and then remediated, usually through skill targeted drill and practice instruction. Information about instruments that assess these factors is available in both print format (Renzulli, 1997) and digital availability (Field, 2009; Renzulli & Reis, 2007). This type of assessment has dominated most school related decision making through the use of state administered standardized achievement tests.

Assessment *for* learning falls into the category called formative assessment. Formative assessment is ongoing, flexible, and usually informal. It includes information that is gathered for the purposes of modifying instruction during an individual lesson or for future instructional planning. It is based on information gathered from the students during or prior to instruction (i.e., pre-assessment); and is used to adapt teaching to meet student needs. Both types of assessment are important but, “Formative assessment with appropriate feedback is the most powerful moderator in the enhancement of achievement” (Hattie & Timperley, 2007). Assessment for learning gathers data, usually from the students themselves, and focuses on students as individuals. These data typically include interests, instructional style preferences, preferred modes of expression, and other co-cognitive factors. This type of information provides insights into how teachers can modify teaching and learning activities for individuals.

The focus of the remainder of this commentary will be the types of assessment for learning that emphasizes students’ individual learning characteristics and preferences. This type of assessment focuses on individual rather than group data and is not used to rank students, though it can be used to form small groups who share relevant interests or other characteristics. A figural representation of these two types of assessment and suggested characteristics that should be a focus of assessment for learning is presented in Figure 1.

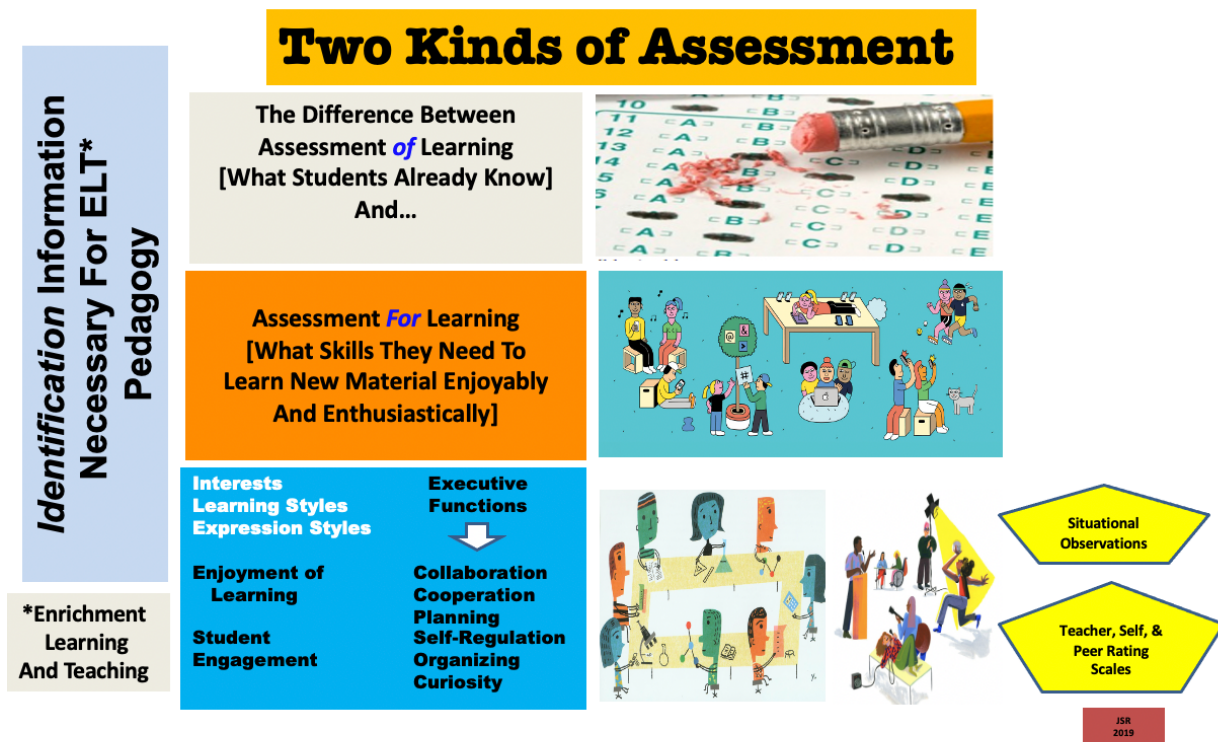


Figure 1. Two types of assessment.

One of the fastest growing topics in the identification of young people for talent development opportunities is a focus on non-cognitive skills variously referred to as “soft skills,” “character skills,” “social intelligence,” and “executive function skills.” One of the reasons for this new emphasis is the greater attention being paid to these skills by both college admissions officers and human resource specialists in all areas of job employment, especially for high level jobs that require leadership, innovation, and the ability to work collaboratively with others. Although these skills are not as easily measured as the cognitive skills measured by standardized aptitude and achievement tests, they do, nevertheless, add a new dimension to the ways in which we look at human potential. They cannot be taught or evaluated in the same didactic and prescriptive manner that we teach young people to memorize information for traditional “right-answer” tests. And since today’s emphasis on social emotional development is consistent with the types of skills described below, this work gives some direction to the social and emotional skills whose importance has recently been recognized and that are now being included in educational planning.

Developing Students’ Executive Function Skills

These skills are challenging to place into a workable framework, and a great deal of interaction exists between and among the many skills that have been identified as important in the taxonomy shown in Figure 2. Indeed, several of these skills could potentially be categorized under other

headings, and one of the goals of our current research is to determine the most accurate organizational structure for understanding these skills. We believe there is sufficient evidence in the soft skill literature to support some general suggestions about the types of pedagogy that are likely to make developing these skills enjoyable and engaging for both teachers and students (Anderson, 2002; Culclasure et al., 2019; Dawson & Guare, 2004; National Research Council et al., 2012; Ornellas et al., 2019).

Taxonomy of Executive Function Skills

A. Action Orientation Goal setting Decision Making Networking Organization Persistence Time Management Delegation of Responsibilities Focus Attention to Details	B. Realistic Self-Assessment Appraisal of Personal Strengths and Weaknesses Confidence in Leadership Skills Willingness to Accept and Act Upon Constructive Feedback Optimism Self-Management Self-Motivation Sense of Humor
C. Social Interaction Listening Written, Verbal, and Non -Verbal communication Friendliness Respect for the Opinions of Others Cooperation and Collaboration	D. Awareness of the Needs of Others Empathy Tolerance Generosity Kindness Patience Calmness Trust
E. Altruistic Leadership Teamwork Positive Reinforcement Recognition of Other’s Strengths Negotiation and Mediation Openness to Idea Exchange	

Figure 2. *Taxonomy of executive function skills.*

The best way to develop these skills in young people is to provide them with experiences in which executive function skills must be used and applied, rather than taught through direct instruction. Simulations and project-based learning are authentic ways of getting students both academically and socially and emotionally involved in more real-world experiences. Simulations are instructional scenarios where the learner is placed in a situation defined by the teacher. They represent a reality within which students interact. The teacher controls the parameters of the situation and serves as the guide-on-the-side rather than the information giver. Asking students, for example, to play different roles in designing a safe playground for preschool children, planning a school magazine or school ground exercise program, or dealing with a bullying situation are all easy ways to promote the cognitive as well as non-cognitive traits that are part of learning new skills. Thousands of free game-based simulations can be found on-line (e.g., <https://www.learn4good.com/kids-games/simulation.htm>) that simulate everything from learning to fly an airplane to building a zoo or dissecting and preserving your own mummy. Publications on Interact sites offered by Social Studies School Service provide simulation-based curricular units for social studies, math, science, and literacy (<https://www.socialstudies.com/?s=Interact>).

Real-world projects from examples we have observed, including putting on a school book sale or building hydroponic gardening tables for senior centers, are excellent ways for students to develop empathy and the cooperative and collaborative skills that are mentioned in the taxonomy. These projects also provide a real-world application of curricular topics (e.g., math skills in a school store; biological knowledge for a hydroponic garden).

A key to successful project-based learning is giving students a choice in the area in which they would like to work. In teacher-initiated projects, students may wish to select their role within the overall project (such as designing the hydroponic setup or selecting appropriate plants in the gardening tables for senior centers example mentioned above). In our enrichment cluster program¹ (Renzulli et al., 2013), students choose both the topic and the various role(s) they would like to play in the project. First, they select the cluster of greatest interest in which to participate, and then they select which role they will play to support the cluster's major goal, which is to produce a product, performance, or presentation that is designed to have an impact on one or more targeted audiences. Many of the executive functions “come together” as students in enrichment clusters work cooperatively to bring their audience-oriented projects to the highest possible level of development. We sometimes describe this type of work as encouraging young people to be thinking, feeling, and doing like practicing professionals, even if their work is at a more junior level than adult professionals in a given field.

Executive functions contribute to improved academic outcomes as well as supporting social and emotional learning, self-confidence, and self-efficacy (Culclasure et al., 2019; Durlak et al., 2011; Richardson et al., 2010). By prioritizing the integration of academic and executive functions skills, we can make learning a more enjoyable and engaging process. The key to successfully integrating cognitive and co-cognitive skills is to avoid the direct teaching of executive function skills, focus on the project-based learning method, providing teacher guidance on locating and using how-to information, and emphasize the importance on student-selected product genre, design, format, and target audiences.

An Extension and Enhancement to Universal Screening and the Use of Local Norms

The big buzz today when it comes to identifying low income and minority group students is the use of universal screening and local norms, concepts that we support and introduced into our own state identification guidelines many years ago. But the larger question is what kinds of instruments and procedures we should be using to to make decisions about the opportunities, resources, and encouragement that need to be provided to low-income and minority group students because universal screening tools favor traditional types of skills and creative thinking styles, which may be more indicative of exposure to enriching environments than academic potential. Any kind of screening that focuses on norms seldom take into account exogenous factors that influence any and all types of testing and school performance. Predictably, this has resulted in more affluent, White students receiving a gifted designation. And when all is said and done, local norms still use the cut-off-score approach that has dominated our identification process.

¹ For persons not familiar with our enrichment cluster program, a brief article summarizing the book on this topic can be found at https://gifted.uconn.edu/wp-content/uploads/sites/961/2022/06/Enrichment_Clusters.pdf.

In most states and countries, almost all students at the third-grade level and above are universally screened by taking state or education ministry required standardized achievement tests. Current research is currently being conducted on performance-based assessment that shows promise of using this type of assessment procedure for universal screening of primary grades children (Little et al., 2018; Kearney, et al., 2019). Most states and other countries also use some kind of teacher rating scales which are usually analyzed utilizing locally developed norms or norms provided by the distributors of the scales. When we use any kind of norms (national, state, local) we are continuing to use criteria that makes comparisons between and among students rather than the individual strengths and interests of any individual student. Although metric-based scores and national, state, and even local norms inform us about the distribution of traditionally measured academic abilities of groups, they do not zero in on individuals' cognitive strengths that are so important for decision making about the need and opportunity to provide supplementary services. These strengths don't make a person gifted or not gifted in the norm-based or entity interpretation of the word, but they are a starting point for decision making about who should be considered for advanced learning and creative/productive opportunities in particular academic domains and topical strength areas. When all is said and done, local norms tell us *how we interpret* any kind of metric-based information we collect; however, the more important issue is *what kind of information* we choose to gather.

We can achieve greater equity in gifted education programs for underrepresented populations by supplementing norm-based approaches to identification with additional information that documents students' interests, talents, learning styles, expression style preferences, motivation, and executive function skills in singular areas where there is performance-based evidence of high potential emanating from students' actual participating in challenging activities. As Paul Brandwein, the author of a classic book on gifted students as future scientists consistently noted, "By their deeds, ye shall know them."

What Terman Might Tell Us Today About Developing

Gifted Behaviors in Young People

The monumental work of Lewis Terman (1959) on identifying high IQ young people is well known, but he is also known in the research and evaluation literature for conducting one of the world's most famous longitudinal studies. What was learned after following up these subjects for almost 40 years? The following quote from the final volume his five-book series called *Genetic Studies of Genius* provides a hint of often unrecognized conclusions of Terman's work.

A detailed analysis was made of the 150 most successful and 150 least successful men among the gifted students in an attempt to identify some of the *non-intellectual factors* that affect success. Since the less successful subjects do not differ to any extent in intelligence as measured by tests, it is clear that notable achievement calls for a lot more than a higher order of intelligence.

The results [of the follow up study] indicated that personality factors are extremely important determinators of achievement. The four traits on which the [most and least successful groups] differed most widely *were persistence in the accomplishment of ends, integration toward goals, self-confidence, and freedom from inferiority feelings.*

In the total picture the greatest contrast between the two groups in *all-round emotional and social adjustment, and in drive to achieve*. (Terman, 1959, p. 148; italics not in the original).²

These traits are obviously more difficult to measure or create norms for than the assessment of achievement or cognitive abilities. If, however, they were considered by Terman to be major determinants of high creative productivity, should we look both for the means to identify them in young people? And more importantly, should we consider the ways to develop them through the types of challenging learning experiences that we provide for *all* young people. This is exactly the reason why we recommend two types of general enrichment for *all* students in our Schoolwide Enrichment Model (Renzulli & Reis, 2014). The ways in which students respond to these general enrichment experiences can serve as an example of ongoing performance-based assessment. We have also encouraged regular classroom teachers to do the same thing by *infusing* high-engagement enrichment activities into prescribed curricular topics (Renzulli & Waicunas, 2018).

Very few identification procedures make any use of information based on *student* completed instruments or information that teachers gather by observations they acquire from performance in regular curricular activities or special enrichment opportunities. We call the use of these student-completed instruments Assessment *For* Learning as opposed to metric-based assessments that provide information about assessment *of* learning—what a student already knows as opposed to what he or she might want to do if we look at the results of these student-completed instruments. We call the use of these student-completed instruments Assessment *For* Learning as opposed to metric-based assessments that provide information about assessment *of* learning—what a student already knows as opposed to what he or she might want to do if we look at the results of student-completed instruments. We have, therefore, also recommended a series of student completed questionnaires that focus on some co-cognitive developed tools for the assessment *for* learning. These instruments don't replace but rather supplement traditional assessment of learning tests. The ways in which students respond to these student-completed assessments helps determine advanced level follow up opportunities, resources, and encouragement.

Building A Multi-Criteria Identification Process

The assessment for learning traits can be integrated into a multi-criteria identification process by preparing a strength-based profile for every student. As mentioned above, both print and digital formats of these co-cognitive instruments are available for teacher and student use and even parent ratings about their child's interests and strengths can be included (Renzulli, Foreman & Brandon, 2017). Information from these ratings and performance-based assessment notations from a teacher observations form called the *Action Information Message* (Renzulli & Reis, 2014, pp. 80–84) should be included in regularly scheduled grade level or school wide enrichment team meetings. Two “ground rules” should serve as guides at these meetings. First and foremost, the focus should always be on strengths rather than deficits. Second, equal attention should be placed on the assessment for learning information as well as information that based on cognitive

² It is partially this research that resulted in having Task Commitment as one of the three major components in the Three Ring Conception of Giftedness (Renzulli, 1978).

and achievement test results. Minority, culturally and linguistically diverse, and low-income students are frequently excluded from special programs mainly because of lower test scores. These young people, however, do not differ as much from more economically privileged students in their capacity to develop strong interests, to work cooperatively with others, and to display many of the executive skills listed in Figure 2). In some ways, the strategies they have developed as they have met and overcome challenges in their own lives have provided them with strong leadership and other executive function skills (Hackman, Gallop, Evans &, Farah. (2015). Our goal for using assessment for learning skills in identification is not to label students as gifted or non-gifted, but to determine how understanding these strengths will serve as a compass for pointing us in the direction of challenging, enjoyable and engaging learning experiences.

Thinking Like a Swiss Army Knife

All of the above is predicated on the belief that we are willing to rethink identification as a talent development process rather a labeling process—some students are “gifted” and receive all of the services and some are not, and therefore receive nothing but a prescribed one-size-fit-all curriculum. A talent development process means that we will do our “universal screening” by looking at the interests, strengths, motivation, and a broad range of other co-cognitive skills in our total school population and provide appropriate services when there is recognized potential in any areas of interest or strength. To do this, we must use a variety of assessment instruments and procedures that look at many different cognitive and non-cognitive potentials. Thanks to advances in technology, several of these instruments can be completed and analyzed on-line using various Internet based and artificial intelligence programs.



A regular pocketknife has two blades, both used for cutting (no pun intended), but a Swiss Army Knife has approximately 29 tools that do many different jobs. Quick fixes based only on cut-off score, regardless of whatever norms one chooses to use, means that the potentials of many young people will never have the opportunity to benefit from the kinds of services that have made the field of gifted education an important contributor to the education landscape.

Summary

Assessment For Learning is a personalized approach to providing young people with opportunities, resources, and encouragement to develop their special interests and talents and encouraging them to express themselves in preferred modes of communication. We don't want to fall into the norms trap that overshadows summative assessment and even the use of local norms, both of which are widely used to create percentiles and other statistics for making comparisons between and among students of various age and demographic groups. A personalized approach means that students examine themselves by responding to surveys about themselves, and that teachers use this information to make informed decisions about how to capitalize on student interests and strengths. We have already developed a number of these instruments (Interests, Learning Styles, and Expression Styles) and have included them in the Student Profiler that is part of the Renzulli Learning System (<https://renzullilearning.com/>).

We are currently seeking teachers to help us validate an instrument for assessing students' executive functions (<http://s.uconn.edu/efpilot2>), and we plan to develop a student-completed version in the near future. We are also creating two other tools that teachers and their students will complete to examine the students' perceptions of learning at school. One tool is designed to measure perceptions of School Relationships, Enjoyment of Learning, and Engagement in Learning, and the other is designed to provide a profile of the types of enriched educational experiences students perceive. We hope that these measures can later be used to examine correlations between these perceptions and more traditional objective measures, such as academic outcomes and attendance.

A major challenge facing the field of education of the gifted and talented is the underrepresentation of low income and minority students as well as students who have been labeled twice exceptional (extremely high ability while simultaneously being challenged with learning disabilities). In order to open the door wider for these students to have access to talent develop opportunities, we must not ignore traditional normative approaches; however, we must be flexible enough to add additional important information that can be gained through assessment for learning.

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