



EDUCATING ADVANCED LEARNERS FOR THE 21ST CENTURY

A Strategic Roadmap for the
Johns Hopkins Center for Talented Youth



JOHNS HOPKINS
CENTER *for* TALENTED YOUTH



Introduction

The world has changed dramatically in the more-than-40-year history of the Johns Hopkins Center for Talented Youth and never more so than in the two years since the onset of the COVID-19 pandemic. The global education landscape has evolved significantly during this time, and CTY is ready and uniquely positioned to reimagine what the field of gifted education—and education more broadly—needs from a 21st century, University-based center committed to supporting advanced learners from every community and every demographic through its research and programmatic work.

The time has come for CTY to reinvent itself as a center for innovation. To do so, the organization must be forward-looking with the goal of being both evidence-informed and evidence-generating in all aspects of its work. Every activity that CTY undertakes should be viewed through a lens of how it can advance the field and must start with a set of philosophical foundations and organizational objectives that the organization commits to meeting and from which it commits to learning and sharing with the field.

CTY is well positioned for success as it embarks on this roadmap because:

- it has a history as the oldest and largest talent search organization;
- it makes its home at one of the world's premier research universities;
- its staff has proven remarkably resilient and creative in the face of challenge in recent years;
- it has an established research agenda focused on advancing access and inclusion in advanced-learning classrooms;
- and it has cultivated a large and loyal community of families, alumni, school partners, and friends.

CTY's community and the field of gifted education continue to look to it as a leader, and this strategic roadmap will support the organization's goals as it aims to deliver on its mission of nurturing advanced learners and supporting the gifted education community, while also fulfilling the larger Johns Hopkins University mission of delivering knowledge for the world.

I. Foundational Pillars

For CTY to authentically serve as the preeminent thought leader in the characterization and support of advanced learners, we need to design, deliver, and study innovative educational models and approaches under a clearly articulated philosophical foundation. CTY has a unique opportunity to engage in the development and evolution of novel approaches to serving advanced learners by drawing upon its long history of unique offerings and articulating a philosophical foundation that will drive its curricular model across modalities and shape its research agenda.

The pillars of that foundation are as follows:



IDENTIFYING & SUPPORTING ADVANCED LEARNERS IN EVERY COMMUNITY AND DEMOGRAPHIC

The field of gifted education, in the U.S. and across the world, has wrestled with the fact that the demographic distribution of students in programs designed for advanced learners does not align with the demographic distribution of the broad student population. In simplistic terms, CTY sees inequity among racial/ethnic categories and along economic conditions. While these are two distinct dimensions that impact access and inclusion in gifted educational programming, the greatest inequity exists at the intersection of these categories. The access disparities are driven largely by the combination of identification tools developed on narrowly defined groups and differences in the educational opportunities afforded different groups (see Flynn & Shelton, 2022 for commentary). Although many solutions have begun to increase access to gifted programming for under-represented populations, they have largely been applied efforts that do not identify and treat root causes. This limited approach can in some instances ensure the identification of a certain number of students. It does not, however, create a systemic change toward equity.

CTY starts from the premise that if we need to select assessments that choose artificial cutoffs to raise or lower the bar for identifying students as talented youth, then we are likely using the wrong assessments. The organization has an established research agenda aimed at this critical question, focusing on tools for identification/characterization in both instrument development and using bespoke programs for some of our most vulnerable populations. For example, for nearly a decade, CTY



has been building the CTY Baltimore Emerging Scholars program with the Baltimore City Public School System (City Schools) to serve students from Baltimore schools in low resourced communities, where students have historically performed less successfully on traditional assessments.

CTY also is testing an alternative approach in the U.S. Virgin Islands with the CTY Math Academy for Promising Scholars program, where potentially advanced students are difficult to recognize because of systemic underperformance on grade-level metrics. In parallel with its bespoke program work, CTY has additional lines of research on alternative tests using the broader CTY population. In this work, we are exploring how fundamental cognitive skills might be more equitable markers of advanced ability because they are less dependent on formal academic opportunities. The multi-faceted work in this area focuses on examining existing tools, developing new tools, and assessing factors the reduce identification gaps along racial/ethnic and economic lines.

Going forward, CTY aims to expand its research agenda through more deliberate design and testing of inclusive practices beyond identification and characterization. Teams throughout CTY will work together toward a more inclusive curriculum, courses, and environments, in person and online. This design work will be couched within a set of research questions designed to inform the field of gifted education on how to effectively move from an approach that accounts for equity and inclusion as an *addition* to current practice to an approach that is designed to be equitable and inclusive.

DIFFERENTIATION AMONG ADVANCED LEARNERS

Advanced learners can be viewed as occupying one end of the distribution of learning ability. The above-grade-level testing approach to CTY identification was a deliberate effort to effectively stretch out that tail and determine where within the advanced learner population a high-potential or high-achieving student was situated. Our identification structure and programming has continued to use this tiered identification structure because we believe that one size does not fit all, even among advanced learners. Any innovative approach should be asking the question: Is differentiation appropriate to any given situation, and if so, what is the right degree of differentiation or how granular does it need to be? As we move forward to design a curricular approach, CTY will test these waters to better understand when, how, why, and for whom differentiation among advanced learners is effective, building on our history with an eye toward innovation and advancement.

ACCELERATION AND ENRICHMENT

The field of gifted education often makes a distinction between programs that offer acceleration and those that offer enrichment. Acceleration refers to course work that advances a student more quickly through an academic path (e.g., taking algebra earlier and perhaps over one semester instead of two), whereas enrichment refers to coursework in an additional topic that takes one deeper or covers a novel area outside of what one would expect in a typical curriculum (e.g., Junior Great Books).

In offerings that historically have been most valued by its students and families, CTY has often blurred the lines between acceleration and enrichment, offering advanced content through novel contextualized courses. This ability to deliver concepts that are above grade level but in a novel context or with a novel approach makes CTY unique in the educational landscape. Support for the effectiveness of this integration of acceleration and enrichment comes from a massive amount of anecdotal evidence at CTY and from notes in the literature about the importance of relevant context for engagement (Alangui, 2017; Kang & Keinonen, 2018; Walkington, 2013), which together offer a robust set of research questions around such issues as what relevance means to 21st century students and how thorough and robust is content learning when taught within a context compared to traditional delivery.

FACILITATED LEARNING OVER DIRECT INSTRUCTION

Another distinguishing feature of CTY programming has been the desire to move away from direct instruction—the delivery of content for the purpose of retention—and toward a facilitated learning approach in which instructor and students come together to explore and learn. The goal of this approach is to create learning experiences where the CTY-trained content expert facilitates learning and where students act as self-learners and problem-solvers through synthesis and application of information, vetting of sources, and verification and validation of ideas. Although content delivery by an expert will still be an essential component, CTY aims to provide students with opportunities to learn in a context that pushes them to think beyond the bounds of direct instruction. Providing experiences that encourage and foster novel thinking versus “learning algebra” or “learning computer science” will serve a mission of helping students achieve their full potential as learners and global citizens.

Working in this more contextualized learning space capitalizes on evidence-informed practices (e.g., Kang & Keinonen, 2018; Nisa et al., 2018) and opens the door to designing and testing classroom models aimed at optimizing engagement and learning (see Jung & Shelton, 2023).



STRENGTH THROUGH COLLABORATION/ PARTNERSHIPS

CTY has had a history of building internal capacity to serve the identified needs of its students and families. This effort, while well-intended, has at times diffused CTY resources and deprioritized work where CTY has unique strengths, limiting innovation and the potential for transformational research. As a center for innovation, CTY must be committed to developing mutually beneficial collaborations. Where there is an identifiable or potential support for advanced learners that would serve the broader CTY mission, we must start with the question of whether other entities already offer such support in ways that are beyond CTY’s expertise. Collaborating or partnering with other units and organizations (at JHU or elsewhere) opens the door for adapting and testing those practices rather than reinventing them internally, therefore enriching opportunities for research.



VALUE OF COMMUNITY & PEER NETWORKING

One of the clearest CTY benefits is the robust and meaningful peer communities that form during critical windows of social and emotional development for young people. In both our formal and informal observations, we find that students and instructors value participating in a community of peers and learning about the diversity of interests, personalities, and cultures that make up the global community of advanced learners. CTY’s ability to build communities of learners and foster ongoing relationships grew organically out of programming. Going forward, these efforts need to be deliberately designed and tested to better determine which of CTY’s features, activities, and approaches best foster community and enable participants to build life-long networks.





II. Strategic Goals

To put these philosophical foundations into practice, CTY must define specific goals and operationalize them. As a center for innovation, CTY's programs must serve as backdrop for testing innovative approaches. To achieve this, CTY will articulate a model that is designed around the use and generation of evidence, which will put CTY in a position of setting standards for the field as opposed to trying to keep up with standards set in more traditional educational settings. The following is a draft of the elements of this center-for-innovation model and the changes needed to instantiate them. These elements are designed around the concept that every activity at CTY must generate new knowledge and/or be a necessary component of a healthy organization that allows us to generate new knowledge.

GOALS FOR CTY CURRICULAR APPROACH, PROGRAM INTEGRATION, AND RESEARCH

CTY has a long history of delivering programs that are described as “unique” and “life changing” for our students. However, the CTY curricular approach that drives these experiences has live and thrived organically in the organization. A crucial next step in the evolution of CTY is to define and formalize a unified CTY approach that applies across modalities. The approach must be both evidence-informed and innovative, with clear plans to evaluate and evolve in response to evidence (internal and external) and in service of testing new methods and strategies that will advance our understanding of advanced learners and effective practices for supporting them. This fully articulated approach will become the necessary backbone for a comprehensive research agenda.

Under this fully articulated approach, CTY will break down the current framework for courses that has been based on having separate Online Programs and On-Campus Programs. In its place, CTY will develop a framework around Summer Programs and School-Year Programs, each of which will have in-person and online offerings that are aligned with the mission, developed under the CTY approach, and tested under the comprehensive research agenda.

GOALS FOR CTY AS A RESEARCH STUDY

To fully realize CTY's role as a thought leader and game-changer in the field, CTY can most effectively set the stage for research by setting a clear and comprehensive research agenda. To do this, CTY must conduct a continuous longitudinal study of advanced learners.¹ When parents provide their consent for CTY participation, they will permit their child to join the research study. Every family will be informed that anonymized data will become part of a longitudinal database that contributes to continuous improvement, innovation, and generalizable knowledge of advanced learners and how to serve them. The optional, out-of-school nature of CTY offers a distinct opportunity for this layering of research directly onto all activities.

This base study of students over time will then provide a research foundation for developing individual studies along the continuum from snapshots in time to cross-sectional and longitudinal comparisons. The research must be defined in a comprehensive agenda that builds upon the extant literature and offers transformative approaches in the areas that CTY aims to cover with its services and programs, such that each activity at CTY is either the venue for research or supporting our ability to do research. Some of the areas include the following:

- Characterization and identification
- Resources and support
- Pedagogy/learning models
- Social and emotional learning
- Community building



GOALS FOR TRAINING CTY EXPERTS

One of the key evidence-aligned elements of the historical CTY model is the focus on facilitated learning or the expert instructor as a fellow learner, so it is essential that we place CTY-trained content experts at the helm of our courses and programs. For this to be effective, we need to ensure that individuals are highly trained on best practices in gifted education instruction, familiar with the CTY curricular approach, and literate in the action research associated with the approach. The goal will be to recruit and train a diverse population of instructors who represent the community we aim to serve.

1. Many people point to the study of mathematically precocious youth (SMPY) and its successor, the study of exceptional talent (SET), as longitudinal studies of this nature. Although SMPY has generated a great deal of longitudinal data, it is still based on a limited number of students from specific cohorts from early decades of the program. SET had continuous enrollment over many years but had not employed systematic, question-driven longitudinal data collection and was limited to a highly selective and demographically narrow group of students. The new vision is a much more expanded approach that covers the students of CTY across the different domains and levels of advanced learning ability.



This internal professional development program will train CTY staff on gifted education, the needs of advanced learners, and CTY’s unique approach to teaching these students. Instructors, or our faculty, will then be a part of the on-going evolution and testing of effective practice. As CTY continues to evolve in response to internal and external evidence, so too will this training, providing both a mechanism for sharing new knowledge and a venue for testing the how and why of effective practices in teacher training.

External professional development programs that serve schools or districts or other educational entities should naturally emerge from the CTY training model as it grows and forms its own evidence base. By extending the training to broader audiences, CTY will be positioned to study and inform effective practices for capacity building throughout the gifted education field.



GOALS FOR COLLABORATING ACROSS JOHNS HOPKINS UNIVERSITY TO MUTUAL BENEFIT

Much of this more deliberate and focused approach involves both leveraging more expertise from outside CTY and finding ways to utilize CTY strengths in other spaces. This will require outreach to colleagues and departments across Johns Hopkins University so that we can proactively identify opportunities for collaboration that advances CTY’s goals and the goals of our collaborators. CTY has had limited experience working with external organizations in this manner and must now leverage this experience more intentionally to strengthen its relationships within the University where it makes its home.



GOALS FOR COLLABORATING WITH EXTERNAL EDUCATIONAL ORGANIZATIONS

Families turn to CTY for all manner of educational resources, from college counseling to how to get ahead in school. In many of these cases, with the abundance of resources available for families seeking support, CTY may be best positioned to serve as a conduit to those other resources. In many cases, the resource offerings are not knowledgeable about the logistics of serving minors (and different age groups among minors). Rather than building infrastructure to deliver these supports, CTY could consider vetting the available programs and building partnerships to help those programs understand and serve a younger population.





III. Closing

The significant challenges of the last few years have presented CTY with a genuine opportunity to reinvent the organization by leveraging historical strengths, refocusing on and refining the core mission, and aligning to the larger University mission. The goals set forth in this document are ambitious, but it is difficult to imagine an organization better positioned to achieve them.

Success will depend on the organization's ability to:

- Innovate in critical areas that advance diversity and access;
- Collaborate both within and beyond the University to mutual benefit;
- Create and investigate experiences that pair rigorous content with novel approaches in a context that fosters a community of learners;
- Research and deliver effective practices for the field.

At the end of this journey, through a culture of continuous improvement and innovation, we will drive ongoing transformation in efforts to identify and nurture the advanced young learners who will become the world's future problem solvers, while retaining the heart of what has made CTY special: its programs and its core mission.



IV. Citations

- Alangui, W. V. (2017). Ethnomathematics and culturally relevant mathematics education in the Philippines. In *Ethnomathematics and its diverse approaches for mathematics education* (pp. 183-208). Springer, Cham.
- Flynn, A. S., & Shelton, A. L. (2022). Solving the Right Problem: The Need for Alternative Identification Measures in *Gifted Education*. *Gifted Child Quarterly*, 66(2), 144–145. <https://doi.org/10.1177/00169862211046394>
- Jung, S. B., & Shelton, A. L. (2023). Good News! New is Good: Novelty as a Key Feature of Advanced Academic Programs that Create Positive Learner Experiences. *Gifted Child Today*, 46(1), 38-47. <https://doi.org/10.1177/10762175221131067>
- Kang, J., & Keinonen, T. (2018). The effect of student-centered approaches on students' interest and achievement in science: Relevant topic-based, open and guided inquiry-based, and discussion-based approaches. *Research in science education*, 48(4), 865-885.
- Nisa, E. K., Koestiari, T., Habibulloh, M., & Jatmiko, B. (2018, March). Effectiveness of guided inquiry learning model to improve students' critical thinking skills at senior high school. In *Journal of Physics: Conference Series* (Vol. 997, No. 1, p. 012049). IOP Publishing.
- Walkington, C. A. (2013). Using adaptive learning technologies to personalize instruction to student interests: The impact of relevant contexts on performance and learning outcomes. *Journal of Educational Psychology*, 105(4), 932–945. <https://doi.org/10.1037/a0031882>