The Impact of Outside-of-School Learning: Insights from "Super Users" of Supplemental Gifted Programs

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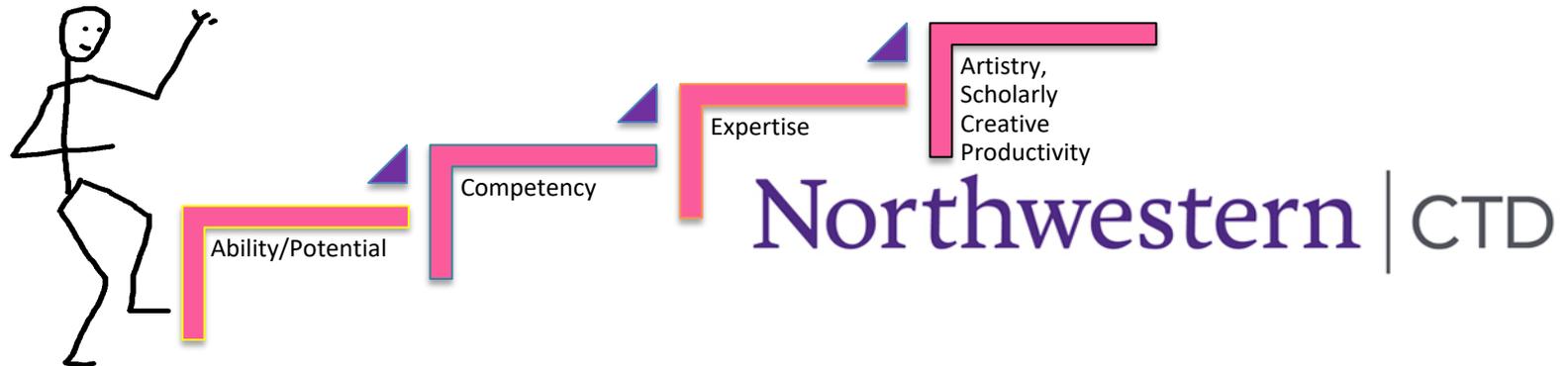Paula Olszewski-Kubilius, Ph.D
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CTD Programs

- Supplementary educational programs for students age 4 through grade12

- Summer, Weekend, Online

- Enrichment and accelerative models

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CTD Programs

- Domain oriented
- Pathways K-12 within domains
- Articulated across venue (e.g. summer, weekend)

Ability/Potential

Competency

Expertise

Artistry,
Scholarly
Creative
Productivity

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Talent Development Occurs In- and Outside-of-School

Primarily Within-School

- Academic Domains

Primarily Outside-of-School

- Performing Arts
- Visual Arts
- Athletics

No Talent Domain Is Developed Completely Within School

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Research on Outside-of-School Activities

Milgram, R. M. (2003). Challenging out-of-school activities as a predictor of creative accomplishments in art, drama, dance and social leadership. *Scandinavian Journal of Educational Research*, 47, 305-315.

- pursuit of challenging activities in a talent domain during the school years leads to adult creative accomplishment in that domain
- for both gifted and typical students, out-of-school activities predict adult vocational domain

Wai, Lubinski, Benbow and Steiger (2010) – students with a richer density of pre-college educational activities, what they called a "higher STEM dose" (p 860) – had a higher rate of notable STEM accomplishments as adults, indicating that opportunity matters.

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Rationale for Outside-of-School Programs

1. Talent development requires it
2. Intellectual peers are important for support
3. Benchmarking for talent development
4. Tacit knowledge about education & careers
5. Preview authentic work of professionals
6. Development of psychosocial skills for high achievement
7. Scholar identity for a domain is developed
8. To compensate for deficits in schools
9. To remediate under-achievement due to lack of opportunity

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The Study

Key Research Questions

1. What are the initial reasons that students participate in outside-of-school gifted programs? Why do they continue to engage in such programs

2. How do these frequent participants perceive their learning experiences and environments within and outside of their regular schools?

3. What impact does frequent supplementary education have on students' in-school learning, educational choices, and long-term career planning?

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Data: Interviews of 60 Super Users

1. Interviews were conducted with a semi-structured protocol consisting of 41 non-directive (open-ended) questions.

2. All interviews were conducted by phone, recorded, and transcribed into text.

3. Average length of each interview was 37 minutes.

4. Response rate 60/361 = **16.6**%

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Who Were the 60 Super Users?

- Each of them took at least **5** CTD courses from 2005-2015. Mean of courses taken was **8**, maximum was **31**.

- **36** males, **24** females

- Aged **12 to 18** at the time of the interviews (March-September , 2015), and 39 (65%) were in **8th to 10th grade.**

- 54 (94.7%) students reported attending a traditional primary or secondary school.

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Who Were the 60 Super Users?

- The majority of them were from families with at least average or above average socioeconomic status.

- Student self-identified race:
  - 31 White
  - 9 Asian (predominately Chinese)
  - 8 South Asian or Indian
  - 7 Multi-Racial
  - 2 Hispanic
  - 1 African American
  - 2 unknown

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Emergent Categories of Super Users

1. Homeschoolers: Students who described using CTD courses and other out-of-school options instead of attending a traditional school.

2. Enrichers: Students who used CTD courses *primarily* to explore topics not typically covered in school

3. Accelerators: Students who used CTD courses *primarily* to gain early access to advanced curriculum to prepare for or replace individual courses in their regular schools.

   – Blenders: Students who took some CTD courses based on personal interests and others for the purpose of accelerating academically.

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Home Schoolers

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Alyssa

During 7th grade year

ACT Test

Summer After 7th grade year

Intro to Biology

During 8th grade year

Biology Honors   SAT and ACT Tests

Summer After 8th grade year

Biomedicine Honors

During 9th grade year

AP Biology   World History Honors   Chemistry   ACT Test

Summer after 9th grade year

Physics Honors

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During 10th grade year

French (U of WI)   World Lit

Reasons for Homeschooling

- Challenge
- Ability to focus on subjects they liked
- Learning more without all the distractions of a face-to-face course in school

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Advantages of CTD Classes

- Course choices in domain of strength
- Flexibility
- Self-pacing
- Individual attention of teacher
- Richer discussions with students

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Benefits Perceived by Students

- Can move ahead at their own pace
- Learning how to think due to greater challenge
- Can accelerate high school and enter college
- Has gained confidence to take on challenging courses

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Reasons for Taking Enrichment Courses

- Personal interest in course topics, "surfing"
- Personal improvement
    - "Broadening horizons" beyond school, across domains
    - Developing more advanced knowledge/skills in a low stakes context
- Interacting with peers rarely mentioned as a motivator for first course experience but cited as motivator for returning
- Parents were supportive of student participation, but students reported choice in whether to participate and choice of courses

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Reasons for Taking Enrichment Courses

- "Fun" and "having fun" were important to enrichment super users.
  - Experiences vs. long term goals: "When we're at school, it's like 'you gotta learn this 'for your education.' It might not be fun, but deal with it. But, at CTD, it's about your *experience*. I mean, you still learn things, but *it's how you learn things that really matters.*"
- Ideas about what constituted fun varied widely
- Enrichment super users are curious, intrepid, and present.

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Advantages of Enrichment Courses

- Students reported high levels of intrinsic motivation

- Students reported surprisingly little sense of feeling conflicted between course taking and social life, other activities.

- Super user students reported high levels of challenge but few negative examples of feeling stress or anxiety related to program course experiences

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Acceleration Focus

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Summer after 4th grade year & Summer after 5th grade year

Cell Biology   Intro to Genetics

During 6th grade year

EXPLORE Test

Summer After 6th grade year

Breakout Biology

Summer After 7th grade year
Algebra I (accelerated, credit)

Summer After 8th grade year

Algebra II & Trigonometry

During 9th grade year

CivicWeek (service-learning)   ACT Test

Summer after 9th grade year

International Relations (accelerated, credit)

Reasons for Taking Accelerated Courses

- Ready for the rigor, needed a challenge
- Testing out of regular curriculum
  - Get out of a basic-level course or gain access to a course with a prerequisite
- Expanding course options
- Interest in the topic
- Finding a peer group
- Credit

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Advantages of Accelerated Courses

- Pace
  - fewer repetitions
  - cover more material
- Better match to readiness to learn
- Richer discussions with peers

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Benefits Perceived by Students

- Learning how to think critically due to greater challenge

- Better understanding of abilities and areas for growth

- Gaining confidence to take on challenging courses

- Learning how to "fail"

- Get a sense of what to expect in college or career

- Developing executive functioning skills

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"Was participation in supplemental courses helpful to your regular school learning? (In what ways?)"

Consistent Themes	# of students speaking to theme	Percentage (n=58)
Content learned applicable to school learning and/or understood more completely	33	57%
Good preparation for future school coursework	25	43%
Fostered broad academic skills (i.e. writing, study skills)	24	41%
Fostered time management and organizational skills	10	17%
Fostered greater critical thinking and problem solving	7	12%
Promoted socialization and interaction skills with intellectual peers	7	12%

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Content learned applicable to school learning or as understood more completely

Student #32: *"Because I took a lot of writing courses and a little public speaking, I feel like **my writing skills were improved** and I was **exposed to a lot more material.** I had some **different context** in addition to what I learned in school."*

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Good preparation for future school coursework

Student #36: *"Yes, several courses, like the science courses and the debate courses, helped me a lot. **[I had] more knowledge going in and I had an understanding of how I had to think** going into those school courses."*

Student #49: *"I took Pre-Algebra because I wasn't going to take it at school. That **gave me the foundation I needed** for Algebra I and allowed me to succeed in that class."*

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Fostered Broad Academic Skills (i.e. writing, study skills)

Student #21: *"I certainly **learned how to study** a lot better at CTD. Before CTD, I never really needed to study that much, but it forced me, like, to figure out how to study, and that helped me a lot...when I had a much larger content load in my AP classes. I had four AP classes."*

Student #50: *"I think I learned **a lot of good writing technique and style**. In school, I feel a lot of my **writing is sort of influenced by the stuff I've learned** here. My arguments, the way I construct my arguments, are the way they are because class at CTD have told me to write in certain ways."*

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Fostered Time Management and organizational skills

Student #35: *"I think I have developed a **skill to be independent.** Especially with the online courses, I have learned to be more independent and I have **learned to organize my time better** so that I have more time for the course and to really study. With the online courses there's no set time when you have to go to class. You usually have like a week and you can do the lesson for that week any time during the week. So I have just learned how to manage my time and be more independent with the online courses."*

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Fostered Greater Critical Thinking and Problem Solving

Student #12: *"Absolutely, it has taught me so much about learning new material. It teaches you **how to look at a new topic you've never heard of** and how to **approach problems that are difficult** or hard."*

Student #48: *"I would say probably a couple of the skills have been **leadership and especially critical thinking**, because [at CTD] you really have to **step up for yourself and express your own thoughts and ideas**. . . .you can actually think about why this is happening or what's the purpose of something, instead of just what it is."*

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Promoted socialization and interaction skills with intellectual peers

Student #41: *"I feel like being in the environment and being thrown into a new environment where you don't know anybody else and you're not familiar with the area at first, has helped me because it's **allowed me to be more adaptable and more fluid.** That helped like when you make the transition from middle school to day school or from grade level to grade level. The first day of school or as the school year goes on, it does **help me on the social aspect** as well."*

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Cross-over to School

- Teach
  - broad academic skills
  - Time management
  - Study skills
- Encourage collaboration
- Integrate pieces that matter to gifted students
  - Choice, depth, breadth, pace
  - Importance of intellectual peers

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Areas to Think About

- How to put greater emphasis on
  - Creative thinking
  - Social skills
  - Learning and study strategies

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