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Irish Gifted Students: Self, Social, and Academic Explorations (Full Report)

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FULL REPORT

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A Report Prepared for Centre for Talented Youth – Ireland

Full Report - June 2022

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This report is also available at www.dcu.ie/ctyi

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Executive Summary

In 2011, Dr. Colm O'Reilly, the Director of the Irish Centre for Talented Youth (CTYI), and Dr. Tracy L. Cross, the Executive Director of the William & Mary Center for Gifted Education (CFGE) developed a partnership to conduct research with or on behalf of gifted students in Ireland. Over the next ten years, numerous studies were conducted to learn about these students and about gifted education in the country via educators' and parents' beliefs and experiences. Two reports have been published on the former: *Gifted Education in Ireland: Educators' Beliefs and Practices* and *Gifted Education in Ireland: Parents' Beliefs and Experiences,* both available from CTYI. This report describes the findings of research conducted with CTYI students for the purpose of supporting the well-being and maximization of potential among Irish gifted students. It is divided into six chapters

Chapter 1: Introduction – A description of the studies and the participating students

Chapter 2: The Psychology of Irish Gifted Students – Findings of studies on students' beliefs about themselves

Chapter 3: The Social Experience of Irish Gifted Students – Findings of studies on students' relationships with others

Chapter 4: The Academic Experience of Irish Gifted Students – Findings of studies on students' experiences in school

Chapter 5: International Comparisons – Comparisons of psychology, social beliefs, and academics among Irish, Greek, and Indian gifted students

Chapter 6: Recommendations & Conclusions

The Studies

Ten studies were conducted with more than 2600 students attending CTYI programs, two with students in Greece and India. Nearly all participants were secondary students and 46% were female. Three studies were interviews and the remaining used questionnaires. Most students (44%) were from county Dublin, but every Irish county had some students represented. All other students scored at the 95th percentile and above.

The Psychology of Irish Gifted Students

The majority of CTYI secondary students (66%) had resilient personalities – they were sociable, agreeable, conscientious, emotionally stable, and open to new experiences. Nearly all students exhibited high levels of confidence in their academic abilities and most had confidence in all academic and social domains. About a third of students had potential risk factors indicating additional supports may be needed. These personality differences provide a framework for later analysis of students' social and academic experiences.

The Social Experience of Irish Gifted Students

In several studies, CTYI students confirmed the findings from previous research that their exceptional abilities can lead to challenges in their relationships with others. They reported experiences of hiding their abilities and conforming to others' behaviors to maintain positive relationships with peers. Their abilities were often visible to peers and being known as an advanced student was generally a positive experience. The frequent pressure to achieve and always be right was not as positive. Expressing one's gifted abilities could sometimes be a costly experience and some CTYI students preferred to lie over telling the truth in situations when their abilities might be exposed. Painful peer rejection occurred for some CTYI students, but most did not consider themselves to be ostracized. They preferred to work independently and considered themselves more serious about learning than peers. Being able to help peers with their exceptional abilities was positive, but older students sometimes felt the expectation to help was burdensome. CTYI programs gave them a welcome

chance to spend time with intellectual peers whose high levels of interest in learning were similar to theirs.

During the COVID-19 pandemic, online school inhibited social connections, when peers withdrew behind muted cameras and microphones and there was little opportunity to interact in classes. This atmosphere had one advantage: bullying was not possible when there was no face-to-face interaction.

Students were positive about their family relationships and most students were confident they could get support from their parents to solve social or academic problems. About a quarter of students were less confident in their parents' support. Positive attitudes toward school were correlated with students' positive relationships with their parents.

The Academic Experience of Irish Gifted Students

An appropriate education is important not only for students' psychological well-being, but also for the maximization of their potential. CTYI students are capable of learning at an advanced level in some or all subjects. About half of them were confident in their abilities in all subject areas, but others had greater confidence in their abilities in either math, science, or humanities-related subject areas. In school, most CTYI students reported they rarely or never received differentiated lessons targeted at their ability level. They were often bored by lessons because they already knew the material. In interviews, students described a difficult learning environment, often focused on the needs of the typical student, who learned less rapidly and was less serious about their learning. CTYI students considered good teachers to be those with high expectations, who were enthusiastic and knowledgeable about their subjects, and had effective teaching strategies. While they may have had good teachers, they also gave many examples of times when they were not learning. Students readily shared their opinions about CTYI programs offering exciting opportunities for challenge in stimulating subjects.

Compared to in-person school, online school during the COVID-19 pandemic offered less support from teachers, was less motivating, and presented difficulties in managing their own learning. The majority of students were pleased to be back in their home school. CTYI's online classes were perceived by students to be much more motivating and CTYI teachers were perceived to be more supportive than those in their online school.

International Comparisons

Partners at the Center for Talented Youth-Greece (CTYG), at Anatolia College in Thessalonika, and the Jagadis Bose National Science Talent Search (JBNS) in Kolkata conducted studies to parallel a study with CTYI and CAT students. There were many more similarities than differences among the students in psychological comparisons. Socially, all students agreed they were more serious about learning than peers and preferred to work independently. Both CTYG and JBNS students appeared less concerned about hiding their ability from peers than CTYI or CAT students. In academic comparisons, JBNS students reported receiving more regularly differentiated assignments than the other students. While the amount of boredom differed by subject for each country, students in all programs reported being bored once a week or more often in some of their classes.

Conclusion

CTYI students represent a unique population, with social and academic experiences their peers do not share. While most CTYI students have positive, even exceptionally positive, psychological profiles, some students will require support for optimal well-being and, ultimately, achievement of their potential. Adults who work with and care for CTYI students should be aware of the social challenges presented by their abilities and the need to provide an appropriate curriculum, delivered at an appropriate pace. A talent development approach would be an inclusive, effective framework for gifted education in Ireland.

Chapter 1:

Introduction to the Research

There has been interest in the education of exceptionally capable students for centuries. Testing has long played an important role in finding this potential, from the Imperial Examinations to identify civil servants during the Han Dynasty (206 BCE-220 CE) in China (Zhang, 2017) to the IQ tests used by Lewis Terman (1925) in his study of 1000 "geniuses." The Centre for Talented Youth-Ireland (CTYI) continues this tradition by utilizing standardized tests to find primary and secondary students who perform at the 95th percentile and above. These students are often not well served by school systems that focus on the development of average ability students, as is generally the case across Ireland (O'Reilly, 2013). Founded in 1992 based on the model of the Center for Talented Youth at Johns Hopkins University, CTYI has grown exponentially over the past 30 years. It has served thousands of high-ability Irish students by offering enrichment courses that expose students to topics not covered in schools, allowing in-depth exploration. A fee-based program, CTYI has expanded its offerings to low-income students through scholarships and grant-funded courses. The Centre for Academic Talent (CAT) program offers courses for students whose test scores fall between the 85th and 94th percentile, opening CTYI opportunities to an even wider swath of highly capable Irish students. The only centre for gifted education in Ireland, CTYI provides an important educational and advocacy function.

In the fall of 2010, the directors of the CTYI and the William & Mary Center for Gifted Education (CFGE) began a conversation that developed into a strong relationship between the two organizations. The mutual desire to support the needs of gifted students led to numerous collaborative research projects, publications, and presentations around the world. Previous reports have highlighted the beliefs and experiences of educators and parents (J. Cross et al., 2014, 2019). In this report, we will describe the findings of the ten studies with CTYI students conducted between 2012 and 2021. Table 1.1 includes a list of the studies and Tables 1.2 and 1.3 describe participating student demographics.

The Research Questions

Prior to 2012, very few studies had been published about Irish gifted students. In fact, only one study could be found that related to their psychology. In the mid-1990s, Mills and Parker (1998) studied students attending the new CTYI program and compared them with U.S. students participating in the Center for Talented Youth program at Johns Hopkins University. Much more is known about the psychology of gifted students in the US. Research with U.S. samples has considered their mental health (Cross & Cross, 2015; Martin et al., 2010), personality (Mammadov, 2021; Vuyk et al., 2016), self-concept (Dai & Rinn, 2008; Rinn et al., 2010), perfectionistic attitudes (Fletcher & Speirs Neumeister, 2012), achievement goal orientation (Speirs Neumeister, 2004), peer relationships (J. Cross, 2021; T. Cross & Cross, 2022), and attitudes toward their giftedness (Berlin, 2009). This research has led to a focus on the social and emotional needs of gifted students, along with recommendations for practice

One line of research began with Coleman (1985), who proposed that gifted students may encounter a stigma in society that interferes with their ability to be accepted and to develop normally. Coleman's stigma of giftedness paradigm (SGP) has three tenets: 1) Gifted students, like all students, desire normal interactions with their classmates; 2) as others learn of their giftedness, they will be treated differently; and 3) gifted students can increase their social latitude by managing the information others have of them. Researchers found that gifted students did, indeed, sometimes attempt to hide their abilities from peers (T. Cross et al., 1991; Swiatek, 2012). The potential of such behaviors to impact students' psychological, social, and academic development makes this a valuable endeavor. In their influential monograph, Subotnik and colleagues (2011) stress the importance of psychosocial variables in talent development. "Psychosocial variables are determining factors in the successful development of talent" (p. 7), they claim, citing copious research as evidence.

Our primary goal in this research project has been to support the well-being and maximization of potential among Irish gifted students. By learning more about them and their experiences, we hope to provide a foundation on which to build this support in their homes and schools. The questions driving the research in this collaboration emphasized three topics in relation to Irish gifted students:

1. Their psychology, in particular, their self-beliefs
2. Their social experience
3. Their school experience

The research has been approached through both quantitative and qualitative methodologies, allowing for a broad perspective on students' psychology and experiences. Over the years, researchers in other talent search or gifted education programs have become interested in this project. As a result, we are able to draw comparisons with high-ability students in not only the US, but also South Korea, France, the United Kingdom, Greece, and India.

Table 1.1
Studies Conducted 2012 - 2021

Year	Level	Number of Participants	Method	Constructs Included
2012	Primary & Secondary	374	Survey	Self-Concept (SDQI); Social Coping, Social Dominance Orientation
2013a	Primary & Secondary	18	Interviews	Social Experience of Giftedness
2013b	Secondary	295	Survey	Implicit Theory, Ostracism, Self-efficacy, Self-Concept
2014	Secondary	163	Survey	Self-efficacy, Ostracism, Personality
2015	Secondary	494	Survey	Social Cognitive Beliefs Scale, Class challenge/depth, Personality, Self-efficacy, Perfectionism, Ostracism, Implicit Theory
2016	Secondary-CAT	351	Survey	Social Cognitive Beliefs Scale, Class challenge/depth, Personality, Self-efficacy, Perfectionism, Ostracism, Implicit Theory
2017	International-India	457	Survey	Social Cognitive Beliefs Scale, Class challenge/depth, Personality, Self-efficacy, Ostracism, Implicit Theory
2017	International-Greece	146	Survey	Social Cognitive Beliefs Scale, Class challenge/depth, Self-efficacy, Ostracism, Implicit Theory
2018	Secondary	559	Survey	Social Experience Scale, Personality
2019	Secondary	12	Interviews	School Experience
2021a	Secondary	326	Survey	Pandemic Academic Experience
2021b	Secondary	16	Interviews	Pandemic Social Experience

Student Demographics

Between 2012 and 2021, the students listed in Table 1.1 participated in surveys and interviews. Tables 1.2 and 1.3 provide demographics of each dataset[1]. In all survey studies, student anonymity was preserved, with no identifying information collected. Data collected via interviews preserves students' confidentiality. Data was quite evenly distributed between males and females. To reflect changing societal recognition of gender fluidity, additional gender options were included in the surveys from 2018 on. Surveys of primary students were conducted only in 2012. The 2016 students surveyed were in the Centre for Academic Talent (CAT) program. These students scored between the 85th and 94th percentile on standardized achievement tests. All other students scored at the 95th percentile and above. In 2015, 2016, and 2021, students were asked to identify their home counties (see Table 1.4; Figure 1.1). Nearly all Irish counties, including several in Northern Ireland, were represented. The majority of students were from County Dublin.

Interviews were conducted with students in 2013, 2019, and 2021. The 2013 interviews were part of a five-country cross-cultural study of the social experience of gifted students (Cross et al., 2019). In each country, three male and three female students at the elementary (4th and 5th Class), middle (2nd Year), and high school (4th and 5th Year) levels were interviewed, totaling 18 students. In 2019, six male and six female secondary level students (2nd through 6th Year) were interviewed about their school experiences.

In the following chapters, we will go into detail with our findings, making the most of these students' time and openness. It is our hope that this research is of benefit to Irish gifted students and their counterparts around the world.

1 Note that international student demographics are presented in Chapter 5.

Table 1.2
Sample Demographics by Year of Data Collection, 2012-2016

	2012	2012	2013a	2013a	2013b	2013b	2014	2014	2015	2015	2016	2016	Total 2012-2016	Total 2012-2016
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Gender														
Female	169	45.2%	141	47.8%	9	50%	81	49.7%	224	45.3%	159	43.7%	783	45.8%
Male	182	48.7%	138	46.8%	9	50%	82	50.3%	269	54.5%	184	50.5%	864	50.6%
Missing	23[2]	6.1%	16	5.4%			0	0.0%	1	0.2%	21	5.8%	61	3.6%
Year in School														
2nd Class	1	0.3%											1	0.1%
3rd Class	8	2.1%											8	0.5%
4th Class	16	4.3%			3	16.7%							19	1.1%
5th Class	15	4.0%			3	16.7%							18	1.1%
6th Class	14	3.7%			2	11.1%							16	0.9%
1st Year	10	2.7%	19	6.4%			7	4.3%	37	7.5%	15	4.1%	88	5.2%
2nd Year	57	15.2%	37	12.5%	4	22.2%	29	17.8%	75	15.2%	82	22.5%	284	16.6%
3rd Year	82	21.9%	68	23.1%			27	16.6%	115	23.3%	86	23.6%	378	22.1%
4th Year	72	19.3%	63	21.4%			36	22.1%	99	20.0%	74	20.3%	344	20.1%
5th Year	61	16.3%	71	24.1%	2	11.1%	44	27.0%	109	22.1%	73	20.1%	360	21.1%
6th Year	33	8.8%	14	4.7%	4	22.2%	20	12.3%	56	11.3%	30	8.2%	157	9.2%
Missing	5	1.3%	23	7.8%			0	0.0%	3	0.6%	4	1.1%	35	2.0%
Total	374	100.0%	295	100.0%	18	100.0%	163	100.0%	494	100.0%	364	100.0%	1708	100.0%

2 We suspect this high number of missing items was the result of the survey layout, which may have obscured the question.

Table 1.3
Sample Demographics by Year of Data Collection, 2018-2021

	2018	2018	2019	2019	2021a	2021a	2021b	2021b	Total 2012-2016	Total 2012-2016	Total 2012-2021	Total 2012-2021
	n	%	n	%	n	%	n	%	n	%	N	%
Gender												
Female	259	46.3%	6	50.0%	186	57.8%	14	82.3%	783	45.8%	1248	47.7%
Male	268	47.9%	6	50.0%	107	33.2%	2	17.6%	864	50.6%	1247	47.6%
Nonconforming	7	1.3%			11	3.4%					18	0.7%
Not listed	7	1.3%			3	0.9%					10	0.4%
Prefer not to say	6	1.1%			15	4.7%					21	0.8%
Missing	12	2.1%							61	3.6%	73	2.8%
Year in School												
2nd Class									1	0.1%	1	0.0%
3rd Class									8	0.5%	8	0.3%
4th Class									19	1.1%	19	0.7%
5th Class									18	1.1%	18	0.7%
6th Class									16	0.9%	16	0.6%
1st Year	31	5.5%			4	1.2%			88	5.2%	123	4.7%
2nd Year	99	17.7%	2	16.7%	68	21.1%	3	18.8%	284	16.6%	456	17.4%
3rd Year	137	24.5%	3	25.0%	78	24.2%	2	12.5%	378	22.1%	598	22.9%
4th Year	127	22.7%	3	25.0%	61	18.9%	4	25.0%	344	20.1%	539	20.6%
5th Year	107	19.1%	2	16.7%	79	24.5%	4	25.0%	360	21.1%	552	21.1%
6th Year	57	10.2%	2	16.7%	30	9.3%	2	12.5%	157	9.2%	248	9.5%
Missing	1	0.2%			2	0.6%	1	6.3%	35	2.0%	39	1.5%
Total	559	100.0%	12	100.0%	322	100.0%	16	100.0%	1708	100.0%	2617	100.0%

Figure 1.1
County Representation of CTYI (2015, 2021) and CAT (2016) Students

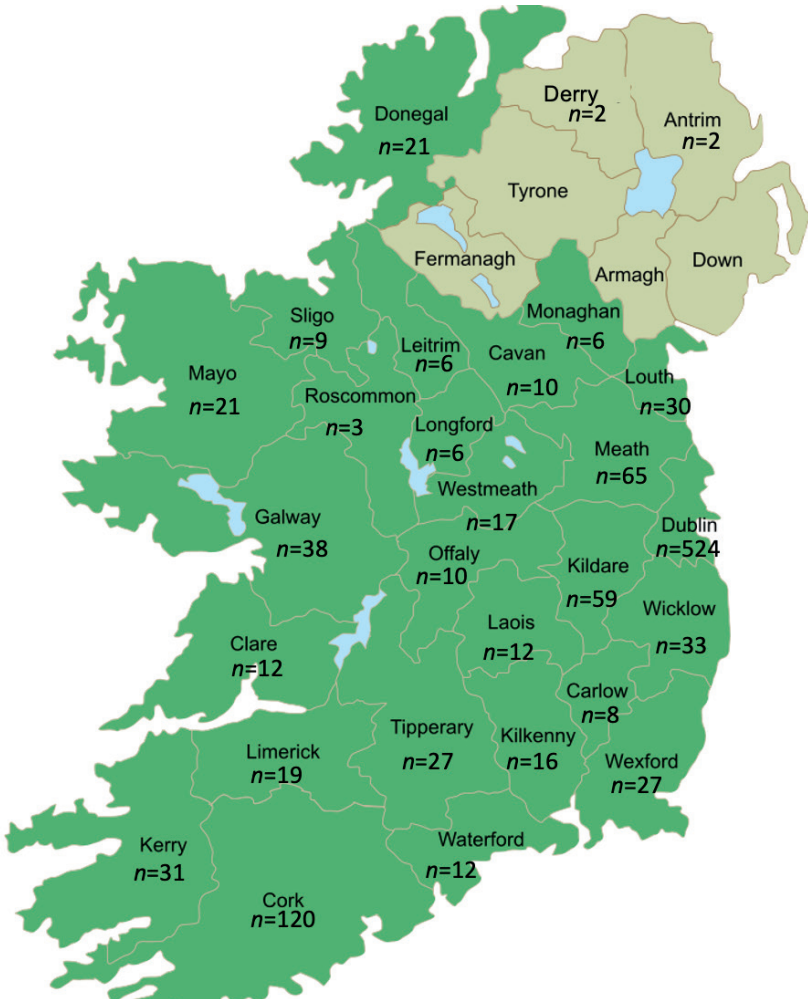


Table 1.4
CTYI (2105, 2021a) and CAT (2016) Student Counties

	2015	2015	2016	2016	2021a	2021a	Total	Total
	n	%	n	%	n	%	N	%
Antrim	0	0.0%	2	0.5%	0	0.0%	2	0.2%
Carlow	2	0.4%	3	0.8%	3	0.9%	8	0.7%
Cavan	6	1.2%	2	0.5%	2	0.6%	10	0.8%
Clare	4	0.8%	2	0.5%	6	1.9%	12	1.0%
Cork	46	9.3%	35	9.6%	39	12.1%	120	10.2%
Derry	1	0.2%	0	0.0%	1	0.3%	2	0.2%
Donegal	8	1.6%	10	2.7%	3	0.9%	21	1.8%
Drogheda	0	0.0%	1	0.3%	0	0.0%	1	0.1%
Dublin	226	45.7%	157	43.1%	141	43.8%	524	44.4%
Galway	15	3.0%	9	2.5%	14	4.3%	38	3.2%
Ireland	0	0.0%	3	0.8%	0	0.0%	3	0.3%
Kerry	11	2.2%	10	2.7%	10	3.1%	31	2.6%
Kildare	26	5.3%	17	4.7%	16	5.0%	59	5.0%
Kilkenny	6	1.2%	7	1.9%	3	0.9%	16	1.4%
Laois	5	1.0%	3	0.8%	4	1.2%	12	1.0%
Leitrim	3	0.6%	2	0.5%	1	0.3%	6	0.5%
Limerick	8	1.6%	7	1.9%	4	1.2%	19	1.6%
Longford	2	0.4%	3	0.8%	1	0.3%	6	0.5%
Louth	7	1.4%	17	4.7%	6	1.9%	30	2.5%
Mayo	9	1.8%	5	1.4%	7	2.2%	21	1.8%
Meath	36	7.3%	12	3.3%	17	5.3%	65	5.5%
Monaghan	1	0.2%	2	0.5%	3	0.9%	6	0.5%
Offaly	4	0.8%	4	1.1%	2	0.6%	10	0.8%
Roscommon	0	0.0%	2	0.5%	1	0.3%	3	0.3%
Sligo	3	0.6%	2	0.5%	4	1.2%	9	0.8%
Tipperary	11	2.2%	9	2.5%	7	2.2%	27	2.3%
Waterford	7	1.4%	3	0.8%	2	0.6%	12	1.0%
Westmeath	2	0.4%	4	1.1%	11	3.4%	17	1.4%
Wexford	9	1.8%	12	3.3%	6	1.9%	27	2.3%
Wicklow	16	3.2%	15	4.1%	2	0.6%	33	2.8%
Missing	20	4.0%	4	1.1%	6	1.9%	30	2.5%
Total	494	100.0%	364	100.0%	322	100.0%	1180	100.0%

Chapter 2:

The Psychology of Irish Gifted Students

One of the primary objectives of this research project has been to support the well-being of Irish gifted students. According to the dictionary of the American Psychological Association (APA), *well-being* is defined as "a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life" (APA, 2020). Well-being has rarely been studied among gifted students, but some studies have explored psychological constructs that lead to the opposite – high levels of distress – in this population (J. Cross & Cross, 2015). For example, there appears to be no difference in rates of depression among academically gifted students compared to their nongifted peers (Martin et al., 2010), although rates of depression have been found to be higher among creatively gifted individuals (Neihart & Olenchak, 2002). An analysis of four studies found levels of anxiety to be lower among gifted students than non-gifted peers (Martin et al., 2010). Studies of suicidal ideation (thinking about killing oneself) among gifted students find no difference from comparable samples in the general population (T. Cross & Cross, 2017). Depression, anxiety, suicidal ideation – these negative psychological conditions are linked in research in the general population with personality differences (Hakulinen et al., 2015; Lyon et al., 2021), self-concept (Matthews, 2014), perfectionism (Smith et al., 2016), self-efficacy (Bandura, 2001; Maddux, 1995), and even beliefs about the malleability of intelligence or personality (Schroder et al., 2015). To best support Irish gifted students' well-being, we need to have a picture of their psychological make-up.

In the quantitative studies listed in Table 1.1, we asked students to share their beliefs about- what they are like (self-concept [2012, 2013], personality [2015, 2016]); what they can do (self-efficacy [2013, 2014, 2015, 2016]); how perfect they need to be, for themselves or others (perfectionism [2015, 2016]); whether people can change their intelligence or personality (implicit theory [2013, 2015, 2016]); and what they believe about how resources should be distributed in society (social dominance orientation [2012]). This section will describe what we learned about the CTYI students who participated in these studies. We can infer from these data what steps may be best to take to support students who may be vulnerable to negative psychological outcomes.

The most important lesson from our psychological research with CTYI students is that they are not a monolith. There is not one profile of an Irish gifted student that fits them all. This may seem obvious, but much previous research has attempted to explain the essence of a gifted student. By aggregating data, we can come up with an average profile, but such an average can be quite misleading. In his book, *The End of Average*, author Todd Rose (2016) described the efforts of the U.S. air force to create a cockpit that fit all pilots by using the average measurements of 4,000 pilots on 10 dimensions, such as arm and leg length, chest circumference, and so forth. After identifying the average, they discovered that not a single pilot was exactly average and fewer than 3.5% matched on just three dimensions. Keeping this lesson in mind, where possible, we have attempted to explore the data from a person-centered perspective. We first apply analyses in the aggregate, but then go deeper to examine clusters or classes of students who fit various profiles.

- What are Irish Gifted Students Like?
- Personality

When we ask the question, "What is a person like?" there are many ways they can be described. We can describe their physical appearance, their abilities, their motivations, their patterns of behavior, or any number of other characteristics. Every individual is unique, but we often seek to find similarities that help us in making sense of others. Their personality, or their characteristic patterns of thoughts, feelings, and behaviors, are of particular importance to this sense-making. Personality research has evolved over the past century into a cohesive science that acknowledges and respects differences, while simultaneously exploring how people are alike (McAdams, 2019). Humans are extremely complex and develop in a complex world, but over time they will develop an "enduring configuration of characteristics and behavior that comprises an individual's unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities, and emotional patterns" (APA, 2020, "Personality"). Patterns of personality characteristics have been studied in various ways, from statistical analysis of descriptive words taken from the dictionary – a lexical approach (John et al., 1988) – to a synthesis of the findings from decades of psychological research (McAdams, 2019). Recently, personality research has consistently identified five dimensions: Openness to new experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN, the common mnemonic). These dimensions exist on a continuum, from open to closed to new experiences; from highly conscientious to disorganized and lacking in discipline; from outgoing (extravert) to reticent

(introvert); from agreeable to disagreeable; and from emotionally stable to unstable (neurotic). Individuals will differ from others by degree on each dimension.

Among gifted students, studies have found higher scores on openness and lower scores on neuroticism than average students (McCrae et al., 2002; Zeidner & Shani-Zinovich, 2011). Higher openness scores were found among creatively gifted adults than a nongifted comparison group (Vuyk et al., 2016). Sak (2004) found higher percentages of gifted students classified as introverts (49%) than nongifted students (35%) in a synthesis of 19 studies.

Researchers have identified three patterns of personality with this five-factor model that appear to be common (Asendorpf et al., 2001; Donellan & Robins, 2010; Rammstedt et al., 2004). In one pattern, termed *resilients*, people exhibit low Neuroticism and relatively high levels of the other traits. They receive this label because of their "tendency to respond flexibly rather than rigidly to changing situational demands, particularly stressful situations" (Asendorpf et al., 2001, p. 175). Resilients have the highest associations of the three patterns with positive outcomes: socially and cognitively well-adjusted. A second pattern has high Neuroticism and low Extraversion scores and were named the *overcontroller* group, because of their strong tendency to inhibit expression of their emotional and motivational impulses. This inhibition is associated with internalizing symptoms, such as depression and anxiety (Van Leeuwen et al., 2004). The third pattern of personality profile, the *undercontrollers*, is high in Extraversion and low in Agreeableness and Conscientiousness, so named because they are less likely to try to inhibit or control their impulses. These common patterns have been associated with strengths that help an individual be successful and vulnerabilities that may put them at risk.

In our quest to support Irish gifted students, a search to understand their personalities is an important first step.

In 2015 and 2016, we examined personality among secondary students attending CTYI and CAT programs, respectively, using the revised Big Five Inventory (John et al., 1991), a 44-item survey (see Table 2.1). Scoring is based on a 5-point Likert-type scale (1 = *disagree strongly*, 2 = *disagree a little*, 3 = *neither agree nor disagree*, 4 = *agree a little*, to 5 = *agree strongly*), with higher scores indicating greater agreement that the named trait (i.e., extraversion, agreeableness, etc.) describes them. The five subscales, representing five personality traits, are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. Table 2.2 presents mean scores for the two samples (2015 CTYI students [n = 480], 2016 CAT students [n = 359]) and a comparison sample of 13–17-year-olds around the world who have taken the same BFI Inventory (n = 255,986; Soto et al., 2011). CTYI and CAT students differ on Extraversion and Agreeableness, with CAT students higher in both (Table 2.2); more extraverted and more agreeable, with medium- to large effect sizes, suggesting a practical difference. Both CTYI and CAT students were less extraverted and more conscientious than the norm[3]. CAT students were also more agreeable and less neurotic than the norm. There are differences in personality by sex, as well (Table 2.3). CAT females were more agreeable than all other students, $F(3, 476) = 93.37$, $p < .001$. All females, both CAT and CTYI, were on average more neurotic (emotionally unstable) than all males, $F(3, 476) = 144.88$, $p < .001$.This is consistent with findings of male/female differences elsewhere (e.g., Zeidner & Shani-Zinovich, 2011).

3 Comparisons with international norms sample scores were made individually using a comparison of means calculator (https://www.medcalc.org/calc/comparison_of_means.php)

Table 2.1
Big Five Inventory Personality Subscale Reliability and Sample Items

Subscale	Reliability Cronbach's α 2015 CTYI	2016 CAT	Sample Items
Extraversion	.87	.87	I see myself as someone who is talkative
Agreeableness	.82	.79	I see myself as someone who is helpful and unselfish with others
Conscientiousness	.87	.84	I see myself as someone who perseveres until the task is finished
Neuroticism	.87	.85	I see myself as someone who is depressed, blue
Openness to Experience	.76	.71	I see myself as someone who values artistic, esthetic experiences

Table 2.2
Big Five Inventory Personality Subscale Means

	2015 CTYI (n = 480)		**2016 CAT (n = 359)**						**International Norm (n = 255,986)**	
	Mean	*SD*	*Mean*	*SD*	*t*	*df*	*p*	*Cohen's d*	*Mean*	*SD*
Extraversion	**3.11***	**0.82**	**3.25****	**0.83**	2.44	837	0.015	0.82	3.34	0.82
Agreeableness	**3.53**	**0.68**	**3.63****	**0.64**	2.16	837	0.031	0.66	3.54	0.70
Conscientiousness	3.28*	0.76	3.34*	0.72	1.10	837	0.272		3.16	0.70
Neuroticism	3.02	0.89	2.99*	0.87	-0.43	837	0.667		3.05	0.80
Openness to Experience	3.66	0.60	3.65	0.56	-0.23	837	0.816		3.68	0.62

Note: Bolded means are significantly different. Norm data from Soto et al., 2011. Range 1-5.
*Different from international norm, $p < .001$
** Different from international norm, $p < .05$

Table 2.3
Big Five Inventory Personality Subscale Means by Sex

	CTYI Female *n*=219		CTYI Male *n*=260		CTYI Missing *n*=1		CAT Female *n*=156		CAT Male *n*=182		CAT Missing *n*=21	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Extraversion	3.08	0.87	3.14	0.77	3.38	0.00	3.26	0.87	3.26	0.81	3.11	0.78
Agreeableness	3.58[a]	0.70	3.49[a]	0.66	2.89	0.00	3.77[b]	0.65	3.54[a]	0.60	3.37	0.76
Conscientiousness	3.31	0.76	3.26	0.76	2.56	0.00	3.38	0.77	3.31	0.68	3.32	0.63
Neuroticism	3.40[a]	0.84	2.70[b]	0.81	2.25	0.00	3.20[a]	0.85	2.81[b]	0.81	3.04	1.08
Openness to Experience	3.67	0.60	3.65	0.60	4.00	0.00	3.68	0.55	3.61	0.58	3.76	0.54

Note: Superscript letters indicate homogeneous subsets (missing not included).

To move beyond the aggregated average for a deeper understanding of the personalities of CTYI students, we conducted a person-centered analysis of the personality data. Latent Profile Analysis (LPA) is a recommended statistical technique for identifying the probability that each student has five-factor model BFI (personality) scores indicating their membership in an exclusive class (Mammadov et al., 2016). The size of the 2015 CTYI dataset (N = 480) made it possible to use this technique. Four classes were recommended by an examination of the fit indicators presented in Table 2.4 (see Mammadov et al., 2016 for an explanation). These four classes are similar to the findings of three common patterns (Donellan & Robins, 2010), but with differences that may be explained by our gifted sample. Figure 2.1 shows a comparison of the profiles. Table 2.5 presents class demographics and Table 2.6 contains BFI means and standard deviation by class.

Table 2.4
Five-Factor Model Personality Latent Profile Model Comparison

Fit statistic	*1 class*	*2 class*	*3 class*	*4 class*	*5 class*
Log-likelihood	-7897.920	-7818.212	-7775.801	-7744.292	-7721.454
AIC	15815.839	15678.424	15615.602	15574.584	15550.907
BIC	15857.577	15766.074	15749.163	15754.057	15776.292
ABIC	15825.838	15699.422	15647.598	15617.580	15604.901
LMR		157.102	83.592	62.103	52.431
LMR p-value		0.0017	0.1062	0.1389	0.1931
Entropy		0.608	0.654	0.666	0.679
Ns		1=325 2=155	1=132 2=74 3=274	1=252 2=116 3=46 4=66	1=85 2=63 3=85 4=244 5=3

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = Sample-size Adjusted BIC; LMR = Lo-Mendell-Rubin test; BLRT = Bootstrapped Likelihood Ratio Test. N = 480

Figure 2.1
Personality Profiles among CTYI Students (2015 data)

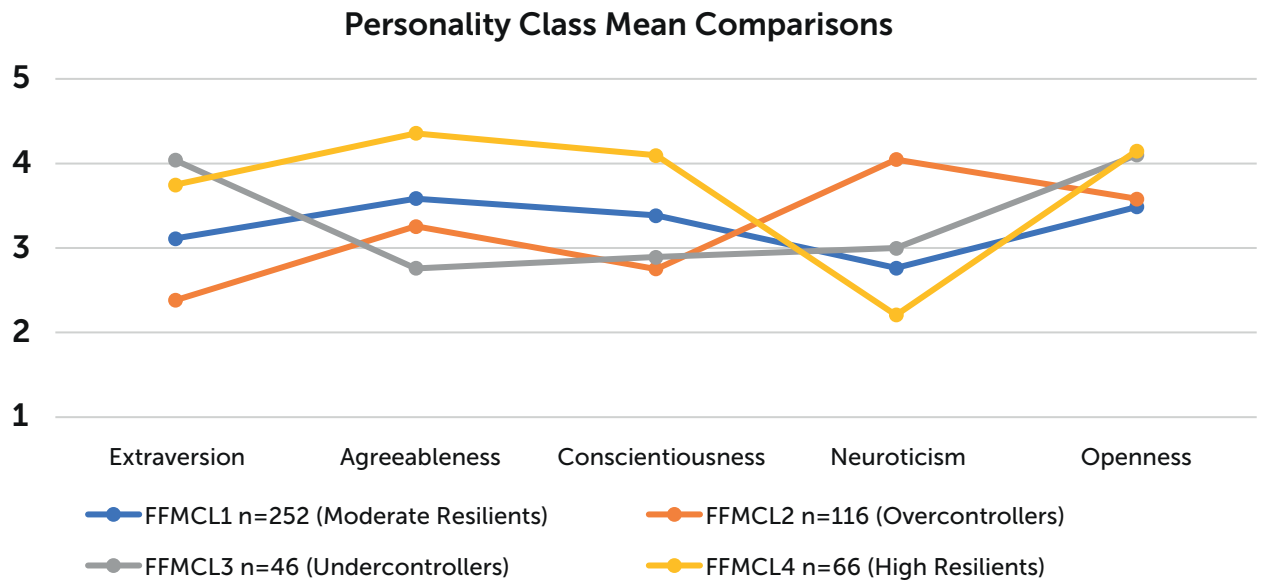


Table 2.5
Five-Factor Model Personality Class Demographics (2015 CTYI Students)

	FFMCL1 (Moderate Resilients)		FFMCL2 (Over-controllers)		FFMCL3 (Under-controllers)		FFMCL4 (High Resilients)		Total *N*	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Total	252	52.5	116	24.2	46	9.6	66	13.8	480	100.0
Sex										
Female	92	36.5	74	63.8	22	47.8	31	47.0	219	45.6
Male	160	63.5	42	36.2	24	52.2	35	53.0	261	54.4
Year in School										
1st	19	7.5	6	5.2	4	8.7	6	9.1	35	7.3
2nd	44	17.5	12	10.3	5	10.9	11	16.7	72	15
3rd	61	24.2	24	20.7	10	21.7	18	27.3	113	23.5
4th	46	18.3	24	20.7	13	28.3	12	18.2	95	19.8
5th	55	21.8	33	28.3	7	15.2	12	18.2	107	22.3
6th	26	10.3	16	13.8	6	13	7	10.6	55	11.5
Missing	1	0.4	1	0.9	1	2.2	0	0.0	3	0.6

Table 2.6
Five-Factor Model Personality Class Means and Standard Deviations (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) n = 252		FFMCL2 (Over-controllers) n = 116		FFMCL3 (Under-controllers) n = 46		FFMCL4 (High Resilients) n = 66		
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*ANOVA Results*
Extraversion	3.11[c]	0.62	2.38[d]	0.63	4.04[a]	0.52	3.75[b]	0.77	F(3, 476) = 104.47, $p < .001$
Agreeableness	3.58[b]	0.45	3.26[c]	0.65	2.76[d]	0.81	4.36[a]	0.37	F(3, 476) = 93.37, $p < .001$
Conscientiousness	3.39[b]	0.56	2.75[c]	0.64	2.89[c]	1.06	4.10[a]	0.45	F(3, 476) = 72.46, $p < .001$
Neuroticism	2.76[b]	0.58	4.05[a]	0.51	3.00[b]	1.09	2.21[c]	0.69	F(3, 476) = 144.88, $p < .001$
Openness to Experience	3.49[b]	0.50	3.58[b]	0.64	4.10[a]	0.60	4.15[a]	0.43	F(3, 476) = 37.62, $p < .001$

Note: Superscript letters indicate homogeneous subsets; Range 1-5

There were two levels of resilient profiles – a moderate (FFMCL1) and a high (FFMCL4). CTYI students in these classes have a positive (and very positive) profile – sociable, conscientious, open and emotionally stable. The majority of CTYI students (66%) were in these two classes. Students in FFMCL2 tend to be introverted and neurotic, in the overcontroller profile. They are likely to be inhibited in their behaviors, being quiet and nervous or worried. The undercontroller profile is somewhat different from that found in other research. Although the students in FFMCL3 were higher than the norm in Extraversion and lower than the norm sample in Agreeableness, their Conscientiousness scores had great variability (SD = 1.06), with 25% of FFMCL3 students having mean scores above 3.67. Although these students may look similar to others with the undercontroller characteristics, it may be difficult for unconscientious students to meet the requirements for entry into CTYI. The numerous negative conditions associated with the undercontroller profile, such as low popularity and antisocial behaviors (Asendorpf et al., 2001; Van Leeuwen et al., 2004), may not be relevant to CTYI students in this personality profile.

The majority of CTYI students could be categorized as resilients, with personality characteristics that indicate they will respond flexibly and adapt in many different situations. The largest group, making up 52.5% of the 2015 sample, was FFMCL1, the Moderate Resilients. These students agreed that they had extravert tendencies, were agreeable, conscientious, emotionally stable, and open to new experiences. There were more males (63.5%) than females (36.5%) in the Moderate Resilient cluster (Table 2.5; c^2 [3, N = 480] = 24.02, $p < .001$). FFMCL4 also fell into the Resilients category, but their scores were higher than all others on Agreeableness, Conscientiousness, and lowest on Neuroticism. These students are likely to be emotionally stable and socially and academically successful. The 24% of students in FFMCL2 were the most introverted and neurotic (emotionally unstable), reflecting the Overcontrollers profile. This is the group that may need special supports to avoid internalizing problems, such as depression and anxiety. The Overcontrollers were disproportionately female (63.8%; c^2 [3, N = 480] = 24.02, $p < .001$). Although the students in FFMCL3, the smallest group (9.6%), fit the undercontroller profile, their Conscientiousness scores suggest they may not be as at-risk as the research on this personality type finds in other samples (e.g., Asendorpf et al., 2001; Van Leeuwen et al., 2004). Their high extraversion but low agreeableness may make for interesting social experiences. Agreeableness is the personality characteristic most closely related to adolescent popularity (de Vries et al., 2020), although one may be very popular in the eyes of peers even when behaving quite disagreeably (Hartl et al., 2020; Parkhurst & Hopmeyer, 1998). Year in school was evenly distributed among the profiles, c^2 (15, N = 477) = 12.05, p = .68. CTYI students' personality types will be further explored where possible, as we examine other psychological constructs.

Self-Concept

An enormous amount of research has examined self-concept, one's perceptions of who they are, what they are like. One's beliefs about their own personality are a component of their self-concept, but research on self-concept is built on a different theoretical foundation. Self-concept has both global and more nuanced, domain-specific aspects (O'Mara et al., 2006; Shavelson et al., 1976). Self-concepts develop from one's interpretations of personal experiences and how they perceive others see them (Rayner, 2001), which means there is a social element to the development of one's self-concept. They include an evaluative and a descriptive component. The evaluative dimension of self-concept is often referred to as self-esteem, a term which Marsh et al. (2006) use interchangeably with global self-concept.

Table 2.7 has sample items for the subscales of the Self-Description Questionnaire I (SDQ-I) that was used in this study. The factors can be classified into two dimensions: Physical Appearance, Physical Abilities, Parent Relations and Peer Relations fall under *Nonacademic Self*; Reading, Math, and General School under *Academic Self*; and the combination of these two yields a *Total Self* score (Marsh, 1990). High scores on the SDQ-I indicate a positive concept of the self in the area being considered, such as physical ability or relationships with peers. Self-concept becomes more distinctive as children mature, and often declines from childhood to adolescence, presumably due to the increased frequency of opportunities to assess one's abilities or interests in various dimensions (Marsh & Ayotte, 2003). Self-concept in academics tends to be correlated with achievement (Rinn et al., 2010), hinting at a reciprocal effect. As students do well in school, they perceive that they are good at school and may also come to like it (Eccles et al., 1998). A high academic self-concept in a subject area was found to be associated with a preference for engaging in coursework in that subject (Marsh & Yeung, 1997). A positive self-concept is consistently associated with well-being (Locke, 2006). It is not uncommon for academic self-concept to be lower when one is in an environment with higher achieving peers. This drop in academic self-concept has been termed the big-fish-little-pond effect (BFLPE; Marsh et al., 1995) and there is some debate about how harmful this effect may be (Dai, 2004; Dai & Rinn, 2008; Marsh & Hau, 2003). Dai and Rinn (2008) proposed that a drop in academic self-concept may well be followed by a more realistic appraisal of one's abilities and, in many cases, increased motivation to achieve.

Table 2.7
Self-Description Questionnaire (SDQ-I) Sample Items and Subscale Reliabilities (2012 & 2013 data)

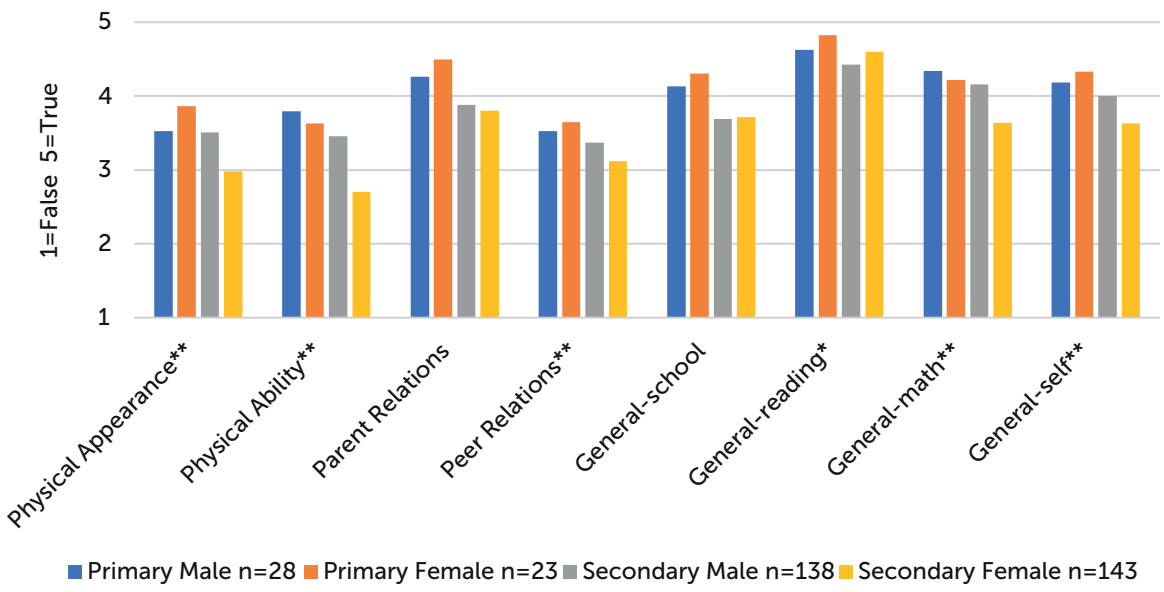
	Reliability Cronbach's α		
Subscale	**2012**	**2013**	**Sample Items**
Physical Appearance	.89	.91	I am good looking; I like the way I look
Physical Ability	.92	.92	I enjoy sports and games; I like to run and play hard
Parent Relations	.93	.93	My parents understand me; My parents like me
Peer Relations	.92	.93	I make friends easily; I get along with kids easily
General-school	.87	.88	I am good at all school subjects; I get good marks in all school subjects
Reading	.93	.92	Work in reading is easy for me; I learn things quickly in reading
Math	.96	.96	I learn things quickly in mathematics; I am interested in mathematics
General-self	.90	.92	I do lots of important things; In general, I like being the way I am

Note: Response options from *False* (1), *Mostly False* (2), *Sometimes False, Sometimes True* (3), *Mostly True* (4), to *True* (5)

In 2012, CTYI students completed the Self-Description Questionnaire-I (SDQ-I; Marsh, 1992), a 76-item survey with three dimensions represented by eight subscales: Academic Self-Concept (General School, Reading, Math); Non-Academic Self-Concept (Physical Appearance, Physical Ability, Parent Relations, Peer Relations); General Self-Concept. The SDQ-I is designed for children from ages 8 to 12. Response options were from 1 = *False*, 2 = *Mostly False*, 3 = *Sometimes False, Sometimes True*, 4 = *Mostly True*, to 5 = *True*.

Figure 2.2 illustrates the average self-concept scores of primary (1st Class – 6th Class) and secondary (1st Year – 6th year) CTYI students by gender (see also Table 2.8). Primary students' scores were statistically similar in all areas. The small number of primary students in the sample made statistical comparisons with secondary students inappropriate, but trends in the data can be seen in Figure 2.2. Significant differences in secondary students' mean scores are indicated in Figure 2.2. Secondary females had lower scores than secondary males in Physical Appearance, Physical Ability, Peer Relations, General Math, and General Self. They had higher scores than secondary males in General Reading.

Figure 2.2
Average Self-Concept Scores by Grade Level and Gender (2012 data)



Note: Primary and secondary student scores were not compared

**secondary males higher than secondary females, $p < .01$

*secondary females higher than secondary males, $p < .05$

Table 2.8
Self-Concept Means by Grade Level and Sex (2012 data)

	Primary Male (n = 28)		Primary Female (n = 23)		Secondary Male (n = 138)		Secondary Female (n = 143)		Primary Missing (n = 2)		Secondary Missing (n = 15)		Total (N = 349)	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Physical Appearance	3.52	0.68	3.86	0.80	3.51	0.63	2.98	0.82	4.22	0.79	3.37	0.96	3.31	0.80
Physical Ability	3.79	0.95	3.63	0.86	3.46	0.92	2.70	0.95	4.44	0.79	3.33	1.21	3.19	1.03
Parent Relations	4.26	0.74	4.49	0.58	3.88	0.81	3.81	0.95	4.83	0.24	3.87	1.11	3.93	0.89
Peer Relations	3.53	0.86	3.65	0.94	3.37	0.72	3.12	0.84	4.44	0.63	3.21	0.89	3.30	0.82
General-school	4.13	0.74	4.30	0.65	3.69	0.78	3.72	0.72	4.85	0.07	3.59	0.82	3.78	0.77
General-reading	4.63	0.51	4.83	0.43	4.42	0.74	4.60	0.62	4.77	0.33	4.15	0.76	4.53	0.67
General-math	4.34	0.83	4.22	0.73	4.16	0.94	3.64	1.19	4.85	0.07	3.64	0.99	3.94	1.07
General-self	4.19	0.64	4.33	0.60	4.00	0.57	3.63	0.84	4.75	0.35	3.70	0.91	3.88	0.75
Nonacademic Self-Concept	3.78	0.59	3.91	0.63	3.56	0.53	3.15	0.64	4.49	0.61	3.44	0.81	3.43	0.65
Academic Self-Concept	4.37	0.58	4.45	0.53	4.09	0.57	3.98	0.64	4.82	0.11	3.79	0.72	4.08	0.62
Total Self-Concept	4.11	0.52	4.23	0.49	3.88	0.43	3.59	0.59	4.69	0.36	3.65	0.74	3.80	0.57

Note: Range 1-5

Age was significantly correlated with all of the subscales (see Table 2.9). As students' age increased, their self-concept in all areas tended to decline, although not dramatically, with Pearson correlation coefficient *rs* from -.12 (reading) to -.27 (physical ability). This pattern was, however, primarily driven by the female students. When examined by gender, the age and self-concept correlations differed significantly. Self-concept did not change with increases in age among the male students, with the exception of their self-perception of physical ability, relationships with parents, and general school. Among males, self-concept in these dimensions decreased with age, whereas it did not change systematically in the other dimensions. The female students had significant decreases in all areas of self-concept as they matured, with the exception of their perception of their reading ability. When primary students were eliminated from the analysis, age and self-concept no longer significantly correlate, suggesting the inclusion of primary students in the 2012 data captures an important point in these children's lives. Considering the importance of a positive self-concept to achievement and well-being, this data highlights the need to examine factors that may be influencing the change in students' self-concepts.

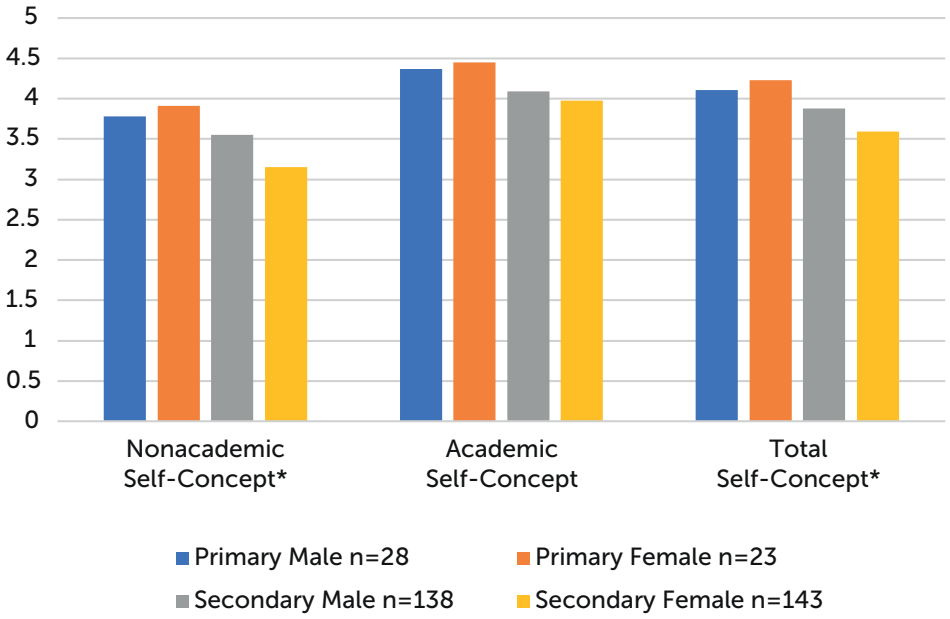
Table 2.9
Pearson Correlations of Age and Self-Concept by Sex (2012 data)

Self-Concept Subscale	Male *n*=167	Female *n*=166	Missing *n*=17	Total *n*=350
Physical Appearance	-0.002	-.330**	-0.325	-.204**
Physical Ability	-.172*	-.359**	-0.149	-.269**
Parent Relations	-.232**	-.277**	-0.158	-.249**
Peer Relations	-0.094	-.265**	-0.403	-.201**
General-school	-.259**	-.228**	-0.474	-.251**
General-reading	-0.099	-0.149	-0.283	-.121*
General-math	-0.137	-.178*	-0.089	-.171**
General-self	-0.116	-.304**	-0.312	-.237**
Nonacademic Self-Concept	-.191*	-.413**	-0.308	-.315**
Academic Self-Concept	-.229**	-.240**	-0.315	-.244**
Total Self-Concept	-.225**	-.374**	-0.338	-.315**
** Correlation is significant at the 0.01 level (2-tailed).				
* Correlation is significant at the 0.05 level (2-tailed).				

As can be seen in Figure 2.3, self-concept in the non-academic dimension was generally less positive among all students than self-concept in the academic dimension. CTYI students are selected for the program based on their exceptional academic abilities, so positive self-concept in the academic dimension makes sense.

In comparison with American students participating in an enrichment program for gifted students at the William & Mary Center for Gifted Education, young CTYI students (ages 8-14; n = 115) had lower self-concept scores for all subscales (J. Cross et al., 2015).

Figure 2.3
Average Self-Concept Dimension Scores by Grade Level and Sex (2012 data)



*secondary males higher than secondary females, $p < .01$

Self-Concept Patterns. Average scores do not represent all students equally well. To identify differences among students, a hierarchical cluster analysis of the self-concept subscales was conducted, using Ward's method and squared Euclidean distance measure. This classification technique was chosen rather than the latent profile analysis conducted with the 2015 CTYI personality data due to the smaller size of the 2012 sample (N = 349). Visual inspection of the resulting dendrogram and the agglomeration schedule indicated a four-cluster solution. Average self-concept scores for each cluster are displayed in Figure 2.4 and cluster composition is in Figure 2.5 and Table 2.10. Students in the first, largest cluster (SCCLU1; n = 156; GENHI) had the highest general self-concept scores and were highest in a number of subscales. These students had positive conceptions of their appearance, physical abilities, relationships with parents and peers and their academic abilities. The majority of this cluster was secondary males (53%) and most of the primary students (67% of them) were in SCCLU1, as well. The second, smallest cluster (SCCLU2; n = 43; ACADHI) included students who had quite high conceptions of themselves in general, but low perceptions of their physical abilities and moderate peer relations. More than a third (36%) of secondary females fell into the third cluster (SCCLU3; n = 69; SCLOW), which included students with low self-concept scores on all subscales, with the exception of reading. This was a disproportionate number of secondary females, c^2 (15, N = 349) = 63.92, p < .001. The fourth cluster (SCCLU4; n = 86; SCMOD) included 25% of the primary males, 13% of the primary females, 25% of the secondary males, and 25% of the secondary females. Scores in SCCLU4 were moderate, with self-perceptions of physical appearance, physical ability, parent and peer relations on the negative side of the midpoint of 3.5. All clusters differed on the Nonacademic dimension, F(3, 350) = 208.90, p < .001, and on Total Self-Concept , F(3, 350) = 214.03, p < .001. SCCLU3 (SCLOW) had the lowest Academic scores, SCCLU4 (SCMOD) had fairly high Academic scores, and SCCLU1 (GENHI) and SCCLU2 (ACADHI) were not significantly different in their highest Academic scores, F(3,350) = 61.93, p < .001. See Table 2.11 for self-concept dimension mean and standard deviations by cluster.

Figure 2.4
Cluster Self-Concept Subscale Scores (2012 data)

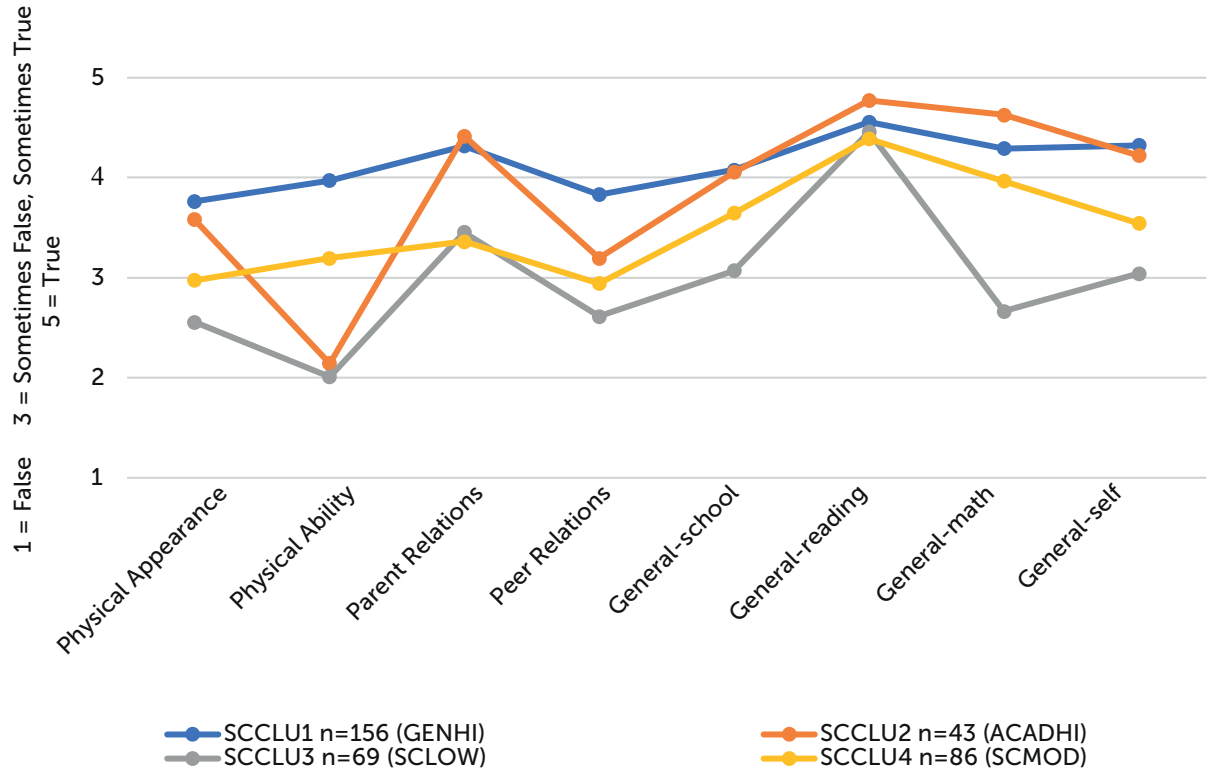


Figure 2.5

I can provide Excel charts that might be more clear.

Self-Concept Cluster Composition

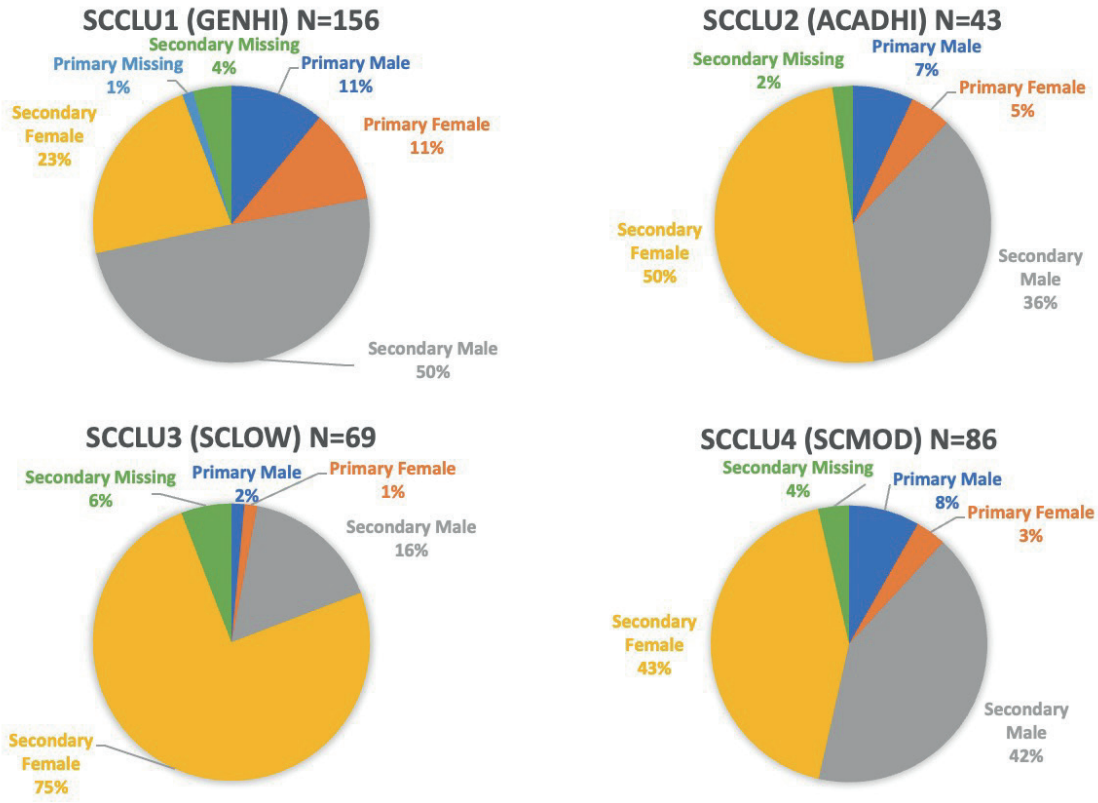


Table 2.10

Self-Concept Cluster Composition by Grade Level and Sex (2012 data)

	GENHI SCCLU1		ACADHI SCCLU2		SCLOW SCCLU3		SCMOD SCCLU4	
	n	%	*n*	%	*n*	%	*n*	%
Primary Male	17	10.9%	3	7.0%	1	1.5%	7	8.1%
Primary Female	17	10.9%	2	4.7%	1	1.5%	3	3.5%
Primary Missing	2	1.3%	0	0.0%	0	0.0%	0	0.0%
Primary Total	36	23.1%	5	11.7%	2	3.0%	10	11.6%
Secondary Male	77	49.4%	15	34.9%	11	16.2%	35	40.7%
Secondary Female	35	22.4%	21	48.8%	51	75.0%	36	41.9%
Secondary Missing	7	4.5%	1	2.3%	4	5.9%	3	3.5%
Secondary Total	119	76.3%	37	86.0%	66	97.1%	74	86.1%
Grade Missing	1	0.6%	1	2.3%	0	0.0%	2	2.3%
Total (% of total)	156	44.2%	43	12.2%	68	19.3%	86	24.4%

Table 2.11
Self-Concept Cluster Means, Standard Deviations, and Frequencies (2012 data)

	GENHI SCCLU1 n=156		ACADHI SCCLU2 n=43		SCLOW SCCLU3 n=69		SCMOD SCCLU4 n=86	
Subscale	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Physical Appearance	3.76[a]	0.60	3.58[a]	0.52	2.56[b]	0.75	2.98[c]	0.63
Physical Ability	3.97[a]	0.60	2.14[b]	0.45	2.01[b]	0.58	3.19[c]	0.75
Parent Relations	4.32[a]	0.63	4.42[a]	0.40	3.45[b]	1.10	3.36[b]	0.74
Peer Relations	3.83[a]	0.63	3.20[c]	0.64	2.61[b]	0.77	2.94[c]	0.58
General-school	4.08[a]	0.67	4.06[a]	0.59	3.07[b]	0.65	3.65[c]	0.70
General-reading	4.56[a,b]	0.72	4.77[a]	0.27	4.46[b]	0.73	4.39[b]	0.64
General-math	4.29[a,c]	0.87	4.63[a]	0.49	2.67[b]	1.09	3.97[c]	0.71
General-self	4.32[a]	0.43	4.22[a]	0.39	3.04[b]	0.86	3.54[c]	0.46
Nonacademic	3.97[a]	0.36	3.33[d]	0.28	2.66[b]	0.53	3.12[c]	0.37
Academic	4.31[a]	0.54	4.49[a]	0.31	3.40[b]	0.53	4.00[c]	0.50
Total Self-Concept	4.20[a]	0.34	4.01d	0.25	3.03[b]	0.45	3.55[c]	0.25

Note: Superscript letters indicate homogeneous subsets; Scores are significantly different, Pillai's Trace = 1.27, $F = 31.54$, $df = 24, 1035$), $p < .001$; Range 1-5

The cluster analysis clarifies differences among students with varying self-concepts. Some students have positive perceptions of their abilities in academic and non-academic domains, their relationships with others, and their physical selves (GENHI), while some have poor perceptions in all these areas (SCLOW), and these are primarily secondary level females. For those who may consider all SWGT to fit a stereotype, these clusters should stimulate a reconsideration. It is possible that some of the CTYI students with lower academic self-concepts were new to the program and experiencing the BFLPE, but our data does not allow such an examination.

Self-Concept Consistency. In an effort to better understand the self-concepts of CTYI students, a correlational analysis can clarify relationships among the different self-concept subscales. Although we cannot determine causation, we can see associations when there is a significant correlation. It is expected that primary students may not have developed as cohesive a self-concept as secondary students. Identity formation is the task of adolescence, and a cohering self-concept is representative of progress in that task. The clusters, formed by analysis of patterns in self-concept scores (see Figure 2.4, Table 2.11), indicate similarities in students' self-concepts. How might relationships among the different areas of self-concept differ among the clusters? We explore this question while respecting developmental differences between primary and secondary students through correlational analysis of the clusters, first with the primary students and then, with secondary students. Tables 2.12 and 2.13 present the significant correlations of each cluster with primary and secondary students, respectively.

Table 2.12
Correlation Coefficients of Self-Concept Subscales by Cluster among Primary Students

	Physical Appearance	Physical Ability	Parent Relations	Peer Relations	General-school	General-reading	General-math
Physical Ability							
Parent Relations							
Peer Relations	GENHI .43** ACADHI .91*						
General-school			GENHI .58**				
General-reading			GENHI .37*		GENHI .41* SCMOD .68*		
General-math			ACADHI .92*		GENHI .57** SCMOD .66*		
General-self	GENHI .65**		GENHI .50**	GENHI .44**	GENHI .63**		

Note: GENHI n=36, ACADHI n=5, SCMOD n=10 (SCCLU3 n=2 was not included)

Table 2.13
Significant Correlation Coefficients of Self-Concept Subscales by Cluster among Secondary Students

	Physical Appearance	Physical Ability	Parent Relations	Peer Relations	General-school	General-reading	General-math
Physical Ability	GENHI .22*						
		GENHI -.19*					
Parent Relations	ACADHI .41*	ACADHI -.35*					
		SCLOW .25*					
Peer Relations	GENHI .44**	SCMOD .32**	SCLOW .51**				
General-school	SCMOD -.37**		GENHI .29**	SCMOD -.35**			
					GENHI .38**		
					SCLOW .36**		
General-reading			GENHI .27**	SCMOD -.30*	SCMOD .46**		
		GENHI .18*			GENHI .49**		
General-math	SCLOW -.25*	ACADHI .34*		SCMOD -.29*	SCMOD .24*		
	GENHI .36**						
	ACADHI .47**					GENHI .31**	
	SCLOW .74**		GENHI .24**	GENHI .32**	GENHI .40**	ACADHI .44**	
General-self	SCMOD .434**		SCLOW .46**	SCLOW .47**	ACADHI .44**	SCLOW .29*	SCLOW -.26*

Note: GENHI *n*=119, ACADHI *n*=37, SCLOW *n*=66, SCMOD *n*=74

Among the primary students, there were relatively few significant correlations among subscales (see Table 2.12). We should interpret these results with some caution, considering the small sample size, which can sometimes lead to less stable results (Schönbrodt & Perugini, 2013). The first cluster, GENHI (primary *n* = 36), with the highest overall self-concept scores (see Table 2.11), also had the highest number of significant correlations (Table 2.12, suggesting the greatest consistency in the various subscales. Notably, beliefs about physical appearance among GENHI primary students were directly related to their beliefs about peer relations. As they felt more positively about their appearance, they had better peer relations. These GENHI primary students' relations with their parents were also positively associated with their feelings about school and their reading ability. General self-concept (e.g., "Overall I have a lot to be proud of") was directly associated with how students felt about their physical appearance, parent relations, peer relations, and school in general.

ACADHI primary students had only two significant correlations and these were very high. There was almost a 1:1 positive correlation between beliefs about their Physical Appearance and Peer Relations and between Parent Relations and ratings of their skills, ability, enjoyment and interest in mathematics. The five ACADHI primary students had almost equivalent ratings of their Peer Relations (popularity with peers, ease in making friends, and their desirability to others as a friend) and ratings of their Physical Appearance (physical attractiveness, their appearance compared with how others look, and how others think they look; *r* = .912). These students also had an almost perfect correlation between Parent Relations and General-Math self-concept (*r* = .922). How they felt about their mathematics abilities and their interest and enjoyment of mathematics was directly correlated to their relationship with parents. There were too few SCLOW primary students (*n* = 2) for an appropriate correlation analysis. Primary students in SCMOD had significantly correlated self-concepts only in the academic domain. Ratings of their abilities and liking of school in general was strongly associated with their self-perceptions of reading (*r* = .675) and math abilities (*r* = .663).

The much larger sample of secondary students gives us greater confidence that significant correlations represent stable relationships among the different areas of self-concept (Schönbrodt & Perugini, 2013). The many more frequent significant correlations in this older group suggests these students are confirming their identities through their more coherent self-concepts. The smaller size of these correlations compared to those of the primary students is consistent with prior research (Marsh & Shavelson, 1985). Secondary students in GENHI had the highest number of significant correlations. These students clustered together because of their similarly high self-concepts and now we also see modest correlations in both nonacademic and academic areas (See Table 2.13). One interesting aspect of significant correlations among the secondary student clusters is the direction of relationships. For example, negative correlations appear for SCLOW and SCMOD students between physical appearance and General-School and General Math. This means that as they feel more positively about their appearance, they feel less positive about school or mathematics. These are the two clusters with the lowest school and math self-concepts and SCLOW is made up of primarily female students. SCLOW students also had a negative correlation between their mathematics self-concept and their general self-concept, indicating an inverse relationship – more negative attitudes about math were associated with more positive general self-concept. Considering how low General-Math self-concept scores were among SCLOW students (see Figure 2.4), this relationship bears further exploration. Could conforming to the stereotype of having poor math abilities and interest make these students feel more positively about themselves in general?

GENHI and ACADHI had a significant negative correlation between Physical Ability and Parent Relations. As they felt more positively about their physical abilities, they felt less positive about their relationship with parents and vice versa – as they felt better about their relationship with parents, they felt worse about their physical abilities. Eccles et al. (1993) describe the developing adolescents' changes in attitudes as they mature, which may lead them to expect different, more symmetrical relationships with parents. We also see negative correlations among SCMOD secondary students, whose attitudes toward school and school subjects tended to be more negative as they felt more positively about their Peer Relations. Or, it could be that as they feel more positively about school, they feel more negatively about their peer relations. Considering the high school-related self-concepts and low Peer Relations of SCMOD (see Figure 2.4), this is a more reasonable interpretation. Causation can never be assumed from a significant correlation. We can only say there is something connected in these two areas of self-concept.

In some cases, we see positive relationships with Physical Appearance and Physical Abilities (See Table 2.13). As beliefs about these are more positive, relations with others or school-related self-concepts are also more positive. The strongest correlation among the self-concept subscales in the secondary student sample was a positive one between Physical Appearance and General-Self (*r* = .741). This was in SCLOW, the majority female cluster. Their thoughts about their physical appearance were very closely associated with their general self-concept. Parent relations had a fairly strong positive correlation with peer relations for SCLOW (*r* = .505), perhaps related to the cluster composition, which was 75% secondary

females. Females tend to have a more "communal" attitude and to be more focused on maintaining positive social relationships than males (Maccoby, 1990; Rose & Rudolph, 2006). Attitudes about school were positively related to abilities and interest in reading and math for three of the clusters, not including ACADHI. ACADHI students had quite negative beliefs about their physical abilities. It is interesting these are disproportionately 15 years old (45% of ACADHI is 15), c^2 (30, N = 350) = 47.83, $p < .05$. As their opinions about their physical abilities were more negative, their opinions about their relationships with parents were more positive (r = -.345).

SCMOD is unique in its numerous significant negative correlations among school-related self-concepts and Peer Relations (see Table 2.9). This cluster of students had relatively poor self-concepts in the non-academic dimension (see Figure 2.4) but trended positively in academic and General-Self domains, making for a moderate overall self-concept. Physical Appearance was negatively correlated with attitudes toward school among the secondary students in SCMOD (r = -.366). In combination with the negative correlations among peer relations and all school-related self-concepts, it seems students in this cluster have not found a positive balance between their academic and non-academic selves. SCMOD students may benefit from social skills training, which may mitigate concerns about their physical appearance.

Self-Concept Summary. Two trends are readily visible in Figure 2.2: primary students appear to have more positive self-concepts than secondary students and secondary male students have more positive self-concepts than secondary females in many areas. The patterns of cluster membership offer a more nuanced interpretation than these obvious trends. Students with a high self-concept profile tended to be in the first two clusters, whether primary or secondary. The third, primarily female cluster, contains 12 males (1 primary, 11 secondary), who share a generally low self-concept with their female peers. Students in each of these clusters will have different needs for support in school or special programs such as CTYI. All students have met the criteria to participate in this advanced program. If they are to persist in the academic domains in which they have shown potential (Marsh & Yeung, 1997), it may be helpful to identify ways to boost their self-concepts.

Self-Efficacy

This analysis of self-concept offers a window into how CTYI students think about themselves. Self-concept is one's perceptions of who they are, what they are interested in, and how they evaluate themselves: "Who am I?" "What do I like/dislike?" "Am I good/not good at?" We have seen that CTYI students vary in their perceptions of their physical selves, their relationships with others and their abilities and interest in academic domains. Such self-assessments will likely affect their future pursuits, a matter of importance to those who are concerned with the development of talent. What is missing from an examination of self-concept is an understanding of students' personal agency. A key component of Bandura's (1986) social cognitive theory, self-efficacy is one's perception of their capability to carry out an activity. Self-efficacy goes beyond an evaluation of one's abilities to include their belief that they *can* carry out that activity. Bong and Clark (1999) describe self-efficacy as an aspect of self-concept related to motivation. How likely one is to pursue an activity, how long they will persevere in the face of obstacles, how psychologically stressful setbacks will be, and how successful they will be; all these depend on one's self-efficacy for an activity (Bandura, 1977).

> While self-concept represents one's general perceptions of the self in given domains of functioning, self-efficacy represents individuals' expectations and convictions of what they can accomplish in given situations. For example, the expectation that one can high-jump 6 ft is an efficacy judgment (Bandura, 1986). It is not a judgment of whether one is competent in high-jumping in general but a judgment of how strongly a person believes that he or she can successfully jump that particular height under the given circumstances. (Bong & Skaalvik, 2003, p. 5)

According to Bandura (2001) there are three modes of agency, "direct personal agency, proxy agency that relies on others to act on one's behest to secure desired outcomes, and collective agency exercised through socially coordinative and interdependent effort" (p. 1). We determine our capability not only through our direct efforts, but also through what may be accomplished with the support or capabilities of others.

Self-efficacy develops through complex processes and has many influences. Having the ability to carry out components of an action, such as the various processes of driving a car (turning a key, pressing the gas pedal, looking in the rearview mirror, etc.), are insufficient to give one confidence that they can be effective in the task in the environment where driving occurs. Traffic, pedestrians, weather, and passengers are just a few of the environmental impacts one must be aware of when actually driving. Deciding if one is capable of this

complex and varying activity is a cognitive process that involves interpretations of previous experience and knowledge about the task. People develop self-efficacy for tasks through their direct experience, vicarious modeling (seeing others succeed or fail at the task), and verbal persuasion (Bandura, 1997). Each of these factors can have an influence in one's determination that they will be up to the task at hand. How likely a person is to engage in a task or to persist when they face setbacks will be affected by how capable they believe they are.

Contrasting Self-Efficacy and Self-Concept. In 2013 through 2016, we included Bandura's (1989) Multidimensional Scales of Perceived Self-Efficacy (MSPSE), a 57-item instrument that assesses belief in one's capabilities in a variety of areas. To be most predictive, Bandura (1997) recommended specificity in any analysis of self-efficacy. One develops a sense of efficacy for a specific task or in a specific domain. The MSPSE includes nine domains that access not only direct personal agency, but also proxy and collective agency: enlisting social resources, academic achievement, self-regulated learning, leisure-time skills and extracurricular activities, self-regulatory efficacy (to resist peer pressure for high-risk behaviors), self-efficacy to meet others' expectations, social self-efficacy, self-assertive efficacy, and enlisting parental and community support. The stem for each item is "How well can you…". Sample items for each domain are in Table 2.14. Response options for the MSPSE items were 1 = Not Well at All, 3= Not Too Well, 5 = Pretty Well, and 7 = Very Well. Response options 2, 4, and 6 were left blank according to administration instructions. The MSPSE exhibited strong reliability in the 2013 sample, Cronbach's α = .93. Subscale reliabilities are in Table 2.14.

Table 2.14
Multidimensional Scales of Perceived Self-Efficacy sample items and reliability

	Reliability Cronbach's α				
Self-Efficacy Domain	2013	2014	2015	2016	Sample Item "How well can you…"
Academic Achievement	.77	.78	.70	.64	…learn algebra/reading and writing language skills?
Self-Regulated Learning	.89	.91	.86	.88	…plan your school work?
Social Self-Efficacy	.77	.77	.74	.75	…make and keep friends of the opposite sex?
Resisting Peer Pressure	.89	.84	.77	.81	…resist peer pressure to do things in school that can get you into trouble?
Enlisting Social Resources	.73	.75	.69	.71	…get teachers/another student/etc. to help you when you get stuck on schoolwork?
Assertive	.82	.81	.82	.83	…stand up for yourself when you feel you are being treated unfairly?
Meeting Other's Expectations	.76	.78	.78	.77	…live up to what your parents/teachers/ peers/yourself expect of you?
Enlisting Parental and Community Support	.79	.80	.74	.76	…get your parent(s)/brothers and sisters/ etc. to help you with a problem?
Leisure-Time Skill and Extracurricular Activities	.74	.80	.74	.74	…learn sports/dance/music skills?

To compare the constructs of self-concept and self-efficacy, both were included in the 2013 study. The 2013 data collection included only secondary students (n = 295) participating in CTYI summer programs. Table 1.2 includes sample demographics. Self-efficacy scores for all areas (see Table 2.15) were similar across males, females, and those missing sex information, Pillai's Trace = .093, F = 1.54, df = (18, 570), p = .07, and across ages, Pillai's Trace = .093, F = 1.27, df = (45, 1425), p = .11. As with the secondary students of the 2012 sample, self-concept scores for males and females were different, with the exceptions of Parent Relations and General-Reading (Table 2.15). Despite the male/female differences in Non-Academic and Total self-concept (Table 2.15), confidence in their capability to be successful in a task did not differ between males and females (Table 2.15).

Table 2.15
Self-Concept Means of Secondary Students by Sex (2013 data)

	Male (n = 138)		Female (n = 141)		Missing (n=16)		Total (N = 279)	
Self-Concept Dimension	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Physical Appearance*	3.43	0.86	2.94	0.90	3.38	1.05	3.18	0.91
Physical Ability*	3.35	1.04	2.71	1.05	3.22	1.17	3.03	1.09
Parent Relations	3.74	0.96	3.72	0.92	3.46	0.71	3.73	0.94
Peer Relations*	3.48	0.83	3.03	0.93	3.56	0.98	3.25	0.91
General-school	3.81	0.70	3.60	0.78	3.56	0.95	3.70	0.75
General-reading	4.47	0.72	4.45	0.68	4.25	0.68	4.46	0.70
General-math	4.02	0.96	3.63	1.12	3.76	1.06	3.83	1.06
General-self*	4.00	0.71	3.55	0.91	3.75	0.87	3.77	0.84
Nonacademic*	3.50	0.67	3.10	0.71	3.41	0.75	3.30	0.72
Academic	4.10	0.61	3.90	0.64	3.86	0.72	4.00	0.63
Total Self-Concept*	3.87	0.55	3.52	0.64	3.67	0.68	3.69	0.62

*Males higher than females, $p < .05$

Self-efficacy and self-concept scores were positively correlated, although not perfectly (Table 2.17). The strongest correlations between these two constructs were between self-efficacy to meet others' expectations and general self-concept (r = .641), self-efficacy for enlisting the support of family and community members and self-concept beliefs about their relationship with parents (r = .635), and self-efficacy for making and keeping social relationships and self-concept beliefs about their peer relations (r = .623).

Table 2.16
Self-Efficacy Means and Standard Deviations (2013 data)

	Female		**Male**		**Missing**		**Total**	
	***n*=141**		***n*=138**		***n*=16**		***N* = 295**	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Total Self-Efficacy	4.97	0.77	4.88	0.74	4.81	1.03	4.92	0.77
SE Resist Peer Pressure	5.65	0.80	5.41	1.22	5.30	1.14	5.52	1.04
SE Academic Achievement	5.68	0.80	5.76	0.88	5.60	0.87	5.71	0.84
SE Social	5.17	1.09	5.37	1.18	5.02	1.18	5.26	1.14
SE Assertive	4.97	1.27	5.38	1.24	5.24	1.64	5.18	1.29
SE Meet Others Expectations	4.75	1.32	5.01	1.26	4.77	1.40	4.87	1.30
SE Self-Regulated Learning	4.68	1.14	4.80	1.14	4.68	1.37	4.73	1.15
SE Extracurriculars	4.35	1.15	4.45	1.06	4.46	1.16	4.40	1.10
SE Social Resources	4.48	1.21	4.59	1.25	4.16	1.59	4.51	1.25
SE Enlisting Support	4.22	1.28	3.93	1.54	4.07	1.65	4.07	1.43

Note: Range 1-7; Scores do not differ by gender, Pillai's Trace = .093, $F = 1.54$, $df = (18, 570)$, $p = .07$

Table 2.17

Self-Concept and Self-Efficacy Means and Correlations Among Secondary Students (N = 295)

		Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Physical Appearance	3.19	0.92																	
2	Physical Ability	3.04	1.09	.450**	--															
3	Parent Relations	3.72	0.93	.271**	.187**	--														
4	Peer Relations	3.27	0.92	.715**	.542**	.296**	--													
5	General-school	3.70	0.76	.335**	.281**	.325**	.404**	--												
6	General-reading	4.45	0.70	.196**	0	.251**	0.088	.385**	--											
7	General-math	3.82	1.06	.176**	.228**	.181**	.236**	.522**	.146*	--										
8	General-self	3.77	0.84	.730**	.433**	.494**	.713**	.543**	.296**	.342**	--									
9	SE Resist Peer Pressure	5.52	1.04	0.052	0.046	.386**	0.02	.273**	.306**	.188**	.272**	--								
10	SE Meet Others Expectations	4.87	1.30	.430**	.324**	.495**	.482**	.537**	.198**	.350**	.641**	.421**	--							
11	SE Social	5.26	1.14	.398**	.427**	.316**	**.623****	.291**	.164**	.135*	.468**	.253**	.494**	--						
12	SE Assertive	5.18	1.29	.424**	.352**	.243**	**.512****	.333**	.245**	.277**	**.550****	.223**	.457**	**.581****	--					
13	SE Enlisting Support	4.07	1.43	.247**	.216**	**.635****	.290**	.361**	.230**	.221**	.437**	.417**	.480**	.305**	.290**	--				
14	SE Social Resources	4.51	1.25	.327**	.257**	.407**	.402**	.345**	.121*	.139*	.425**	.247**	.472**	.335**	.282**	**.542****	--			
15	SE Academic Achievement	5.71	0.84	.196**	.141*	.180**	.202**	**.536****	.352**	**.530****	.335**	.243**	.376**	.265**	.350**	.273**	.254**	--		
16	SE Self-Regulated Learning	4.73	1.15	.170**	.168**	.332**	.210**	**.551****	.223**	.342**	.373**	.235**	.452**	.284**	.313**	.419**	.397**	.493**	--	
17	SE Extracurriculars	4.40	1.10	.284**	**.538****	.194**	.408**	.288**	0.088	.195**	.366**	0.085	.332**	.452**	.318**	.379**	.319**	.367**	.383**	--

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Note: Strongest correlations (> .5) are **bolded**.

Some of the weaker correlations are notable, as well. For example, positive parent relations self-concept is only weakly related to confidence in one's ability to achieve academically (r = .141) or to regulate their own behavior to complete academic tasks (r = .168). One's relationship with parents was more significantly related to general attitudes toward school (r = .325) than to beliefs that they can successfully achieve in school. This is an important distinction. We might think a positive self-concept for one's physical abilities would be correlated with confidence in their ability to resist peer pressure, but this was one of the few combinations that was not significantly correlated. Self-concept of their physical appearance and physical abilities correlated with confidence that they can stand up for themselves (SE Assertive; r = .424, r = .352, respectively) and that they can meet others' expectations (r = .430, r = .324, respectively). The correlational analysis confirms that the two constructs of self-concept and self-efficacy are accessing different cognitive structures.

Self-Efficacy Among CTYI Students. Self-efficacy was a vital component in the explorations of CTYI students' self-beliefs in the studies of 2013, 2014, and 2015 and among the CAT students in 2016. On average, both the CTYI (n = 936) and CAT (n=364) secondary students who completed Bandura's MSPSE (1989) had high confidence in their abilities, with an average omnibus self-efficacy score of "Pretty Well" (Table 2.18). In the full sample, some differences between CTYI males and females and CAT students appeared in a multivariate test, Pillai's Trace = .098, F = 4.71, df = (27, 3747), p < .001, although effect size is low (partial η^2 = .03), indicating a low practical significance. While the high self-efficacy scores are positive, further analysis may paint a different picture. Earlier analyses (e.g., J. Cross et al., 2015) suggested that the average scores may obscure students who have different profiles. In one study, the 2015 students (N = 477) were evaluated by their confidence in specific subject areas: general mathematics, algebra, biology, reading/writing, foreign language, and social studies (O'Reilly et al., 2018). While the majority of students had high self-efficacy in all subject areas (46%), one subset (35%) had high confidence in their mathematics abilities, but low confidence in the other humanities-related subjects. CTYI students in the smallest subset (19%) lacked confidence in math, but were quite confident in science and the humanities. Clearly, confidence among CTYI students is not the same across the board.

Table 2.18
Self-Efficacy Means and Standard Deviations (2013-2016 Data)

	CTYI Female *n*=441		CTYI Male *n*=478		CTYI Missing *n*=17		CAT Female *n*=158		CAT Male *n*=182		CAT Missing *n*=20		*CTYI Total *N* = 936		*CAT Total *N*=364	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Total Self-Efficacy	4.93[a]	0.78	5.03[a]	0.74	4.82	1.00	5.06[a]	0.78	5.00[a]	0.75	4.97[a]	0.86	4.98	0.77	5.03	0.76
SE Resist Peer Pressure	5.95[b]	0.95	6.01[b]	1.07	5.32	1.11	6.26[a]	0.91	6.17[a,b]	1.09	6.50	0.66	5.97	1.02	6.21	1.01
SE Academic Achievement	5.77[a]	0.78	5.78[a]	0.79	5.59	0.84	5.66[a,b]	0.70	5.55[b]	0.74	5.52	0.90	5.77	0.79	5.60	0.73
SE Social	5.08[b]	1.09	5.28[a,b]	1.13	5.06	1.16	5.35[a]	1.02	5.30[a,b]	1.20	5.37	0.86	5.18	1.12	5.32	1.12
SE Assertive	4.88[b]	1.29	5.28[a]	1.24	5.27	1.59	5.20[a]	1.36	5.39[a]	1.26	5.45	1.45	5.09	1.28	5.30	1.31
SE Meet Others Expectations	4.83[a]	1.26	5.09[a]	1.20	4.78	1.36	5.00[a]	1.27	5.09[a]	1.20	5.05	1.57	4.96	1.24	5.05	1.23
SE Self-Regulated Learning	4.72[a]	1.13	4.68[a]	1.11	4.67	1.33	4.84[a]	1.14	4.61	1.08	4.70	1.17	4.70	1.12	4.72	1.11
SE Extracurriculars	4.47[a]	1.19	4.42[a]	1.03	4.45	1.12	4.58[a]	1.13	4.52[a]	1.11	4.34	1.23	4.44	1.11	4.55	1.12
SE Social Resources	4.39[a]	1.28	4.54[a]	1.21	4.19	1.54	4.57[a]	1.22	4.38[a]	1.20	4.10	1.69	4.46	1.25	4.47	1.21
SE Enlisting Support	4.26[a]	1.33	4.17a	1.44	4.07	1.60	4.10a	1.37	3.98[a]	1.42	3.72	1.52	4.21	1.39	4.04	1.40

Note: Superscript letters indicate homogeneous subsets (missing not included), Pillai's Trace = .098, $F = 4.71$, $df = (27, 3747)$, $p < .001$

Note: *All CTYI and CAT Total scores are significantly different, Pillai's Trace = .052, $F = 7.90$, $df = (9, 1286)$, $p < .00$

Personality and Self-Efficacy. The five-factor model personality classes differed in self-efficacy, in most cases in the expected directions (Table 2.19). Overcontrollers were consistently lowest in total self-efficacy and subscales, and High Resilients were consistently highest in all. Undercontrollers and Moderate Resilients had remarkably similar self-efficacy, falling in the same homogeneous subset in all Tukey's posthoc comparisons. Considering the differences in the constructs of personality (Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and self-efficacy, the relationships between them are of interest.

To explore this diversity, we utilized a person-centered analysis to identify patterns of self-efficacy among the CTYI students (n = 936). With the large sample size of the 2013-2015 self-efficacy data, an LPA could be carried out to classify students by their self-efficacy scores (Mammadov et al., 2016). LPA is similar to cluster analysis, but a large sample size allows for more sophisticated statistical modeling. Based on the model fit indices (see Table 2.20), a six-class solution is indicated by the lowest values in the BIC, aBIC, and CIAC criterion and the highest approximate correct model probability (Nylund-Gibson, & Choi, 2018). A comparison of self-efficacy scores among the classes is in Figure 2.6, with demographics in Table 2.21 and mean scores in Table 2.22. Figure 2.7 indicates proportional differences among the classes. All subscales differed among the classes (see Tables 2.23 and 2.24 for nonparametric class comparisons).

Table 2.19
Self-Efficacy Means and Standard Deviations by Five-Factor Model Personality Class (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) n **= 245**		**FFMCL2 (Over-controllers)** n **= 115**		**FFMCL3 (Under-controllers)** n **= 43**		**FFMCL4 (High Resilients)** n **= 62**	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Self-Efficacy Range 1-7								
*Total Self-Efficacy	5.12[b]	0.52	4.32[c]	0.61	5.08[b]	0.75	5.71[a]	0.5
Academic Achievement	5.76[b,c]	0.68	5.60[c]	0.78	5.91[b]	0.70	6.22[a]	0.62
Self-Regulated Learning	4.78[b]	0.88	4.03[c]	1.05	4.56[b]	1.17	5.46[a]	0.90
Social Self-Efficacy	5.24[b]	0.84	4.40[c]	1.06	5.27[b]	1.28	6.00[a]	0.75
Resisting Peer Pressure	6.43[a]	0.75	5.94[b]	1.12	6.33[a]	0.86	6.65[a]	0.46
Enlisting Social Resources	4.51[a,b]	1.02	3.59[c]	1.10	4.17[b]	1.40	4.94[a]	1.30
Assertive	5.27[b]	1.05	4.13[c]	1.28	5.62[a,b]	1.28	5.91[a]	0.91
Meeting Other's Expectations	5.18[b]	0.97	4.00[c]	1.21	5.00[b]	1.35	5.84[a]	0.94
Enlisting Parental and Community Support	4.38[b]	1.19	3.41[c]	1.22	4.25[b]	1.45	5.08[a]	1.12
Leisure-Time Skill and Extracurricular Activities	4.52[b]	0.97	3.82[c]	1.02	4.60[b]	1.12	5.33a	0.88

Note: Superscript letters indicate homogeneous subsets; Pillai's Trace = .47, F = 9.28, df = (27, 1365), p < .001

* $F(3, 461) = 92.63$, $p < .001$

Table 2.20
Latent Profile Analysis Information Criteria (*N* = 936)

Model Fit Summary Table[1]

Classes	Par	*LL*	BIC	aBIC	CIAC	AWE	BLRT	VLMR	BF	*cmP_k*
1	18	–12,996	26,115	26,058	26,133	26,292	–	–	–	<.001
2	28	–12,209	24,610	24,521	24,638	24,886	<.001	<.001	>100	<.001
3	38	–11,926	24,111	23,991	24,149	24,485	<.001	<.001	>100	<.001
4	48	–11,810	23,948	23,795	23,996	24,420	<.001	0.06	>100	<.001
5	58	–11,757	23,912	23,727	23,970	24,482	<.001	0.35	>100	<.001
6	68	–11,711	23,888	23,672	23,956	24,557	<.001	0.33	>100	1.00

[1] *Note*. Par = parameters; *LL* = log likelihood; BIC = Bayesian information criterion; aBIC = sample size adjusted BIC; CAIC = consistent Akaike information criterion; AWE = approximate weight of evidence criterion; BLRT = bootstrapped likelihood ratio test p-value; VLMR = Vuong-Lo-Mendell-Rubin adjusted likelihood ratio test p-value; cmPk = approximate correct model probability.

Figure 2.6
Self-Efficacy Class Mean Comparisons

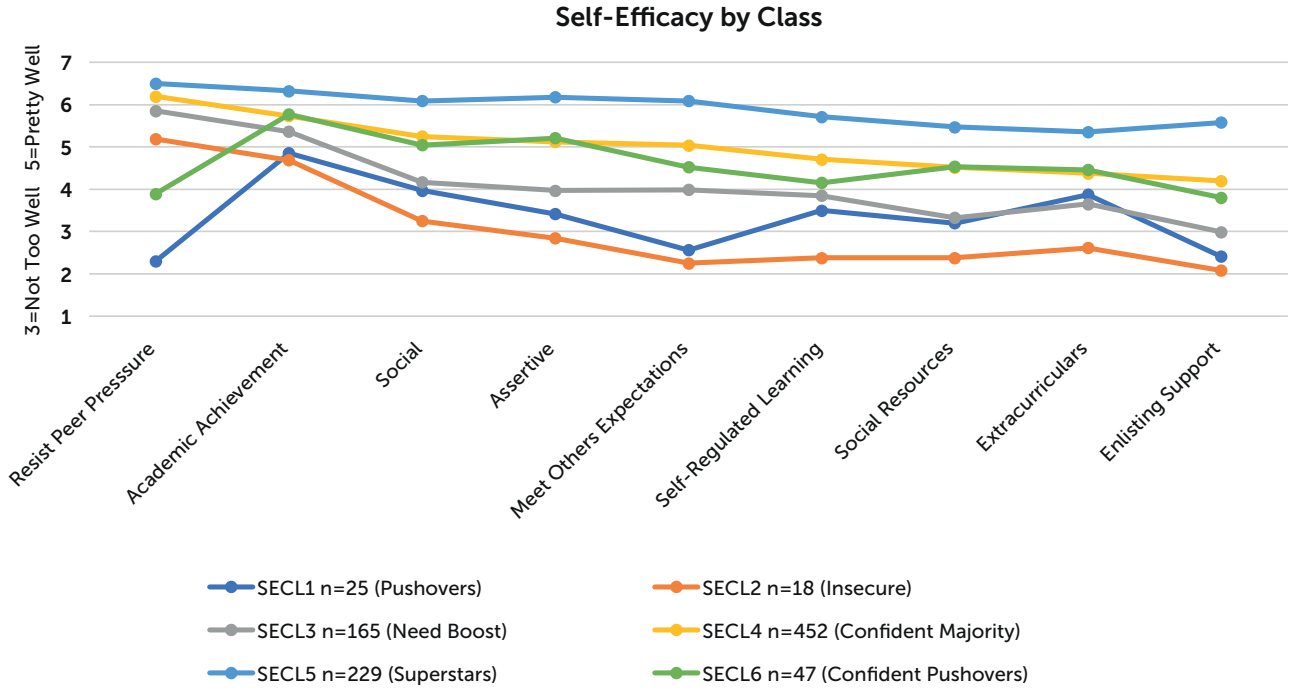


Table 2.21
Self-Efficacy Class Demographics

	Pushovers		Insecure		Need Boost		Confident Majority		Superstars		Confident Pushovers			
	SECL1		SECL2		SECL3		SECL4		SECL5		SECL6		Total *N*	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Total	25	2.7	18	1.9	165	17.6	452	48.3	229	24.5	47	5.0	936	100
Sex														
Male	14	56.0	7	38.9	70	42.4	238	52.7	121	52.8	28	59.6	478	51.1
Female	10	40.0	11	61.1	89	53.9	210	46.5	104	45.4	17	36.2	441	47.1
Missing Sex	1	4.0	0	0.0	6	3.6	4	0.9	4	1.7	2	4.3	17	1.8
Age														
12 yr	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	1	0.1
13 yr	1	4.0	0	0.0	8	4.8	60	13.3	44	19.2	5	10.6	118	12.6
14 yr	1	4.0	2	11.1	29	17.6	89	19.7	52	22.7	8	17.0	181	19.3
15 yr	10	40.0	9	50.0	40	24.2	113	25.0	59	25.8	12	25.5	243	26.0
16 yr	7	28.0	7	38.9	58	35.2	112	24.8	53	23.1	12	25.5	249	26.6
17 yr	4	16.0	0	0.0	22	13.3	74	16.4	18	7.9	8	17.0	126	13.5
Missing Age	2	8.0	0	0.0	7	4.2	4	0.9	3	1.3	2	4.3	18	1.9

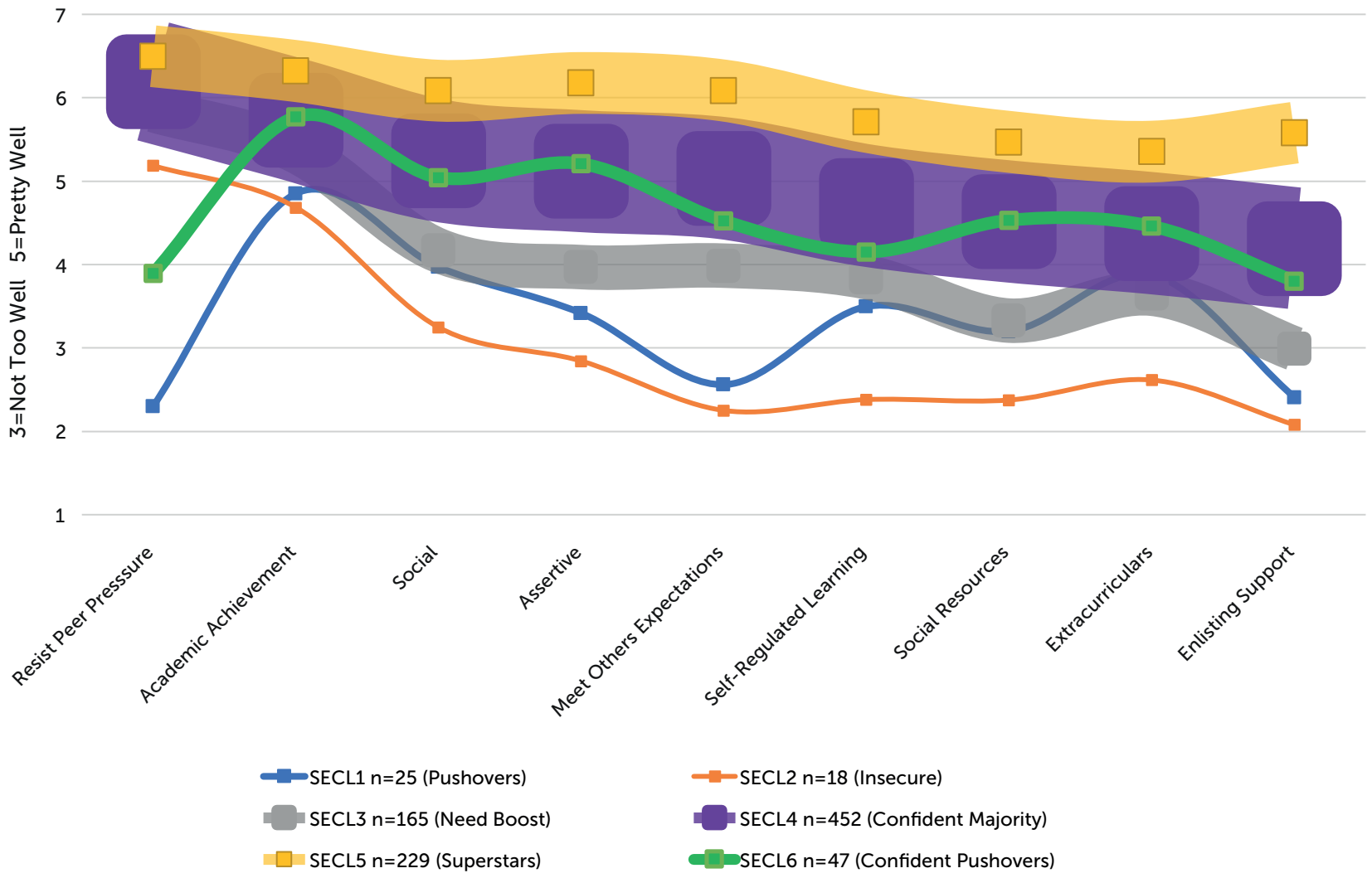
	Pushovers		Insecure		Need Boost		Confident Majority		Superstars		Confident Pushovers			
	SECL1		SECL2		SECL3		SECL4		SECL5		SECL6		Total *N*	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Year in School														
1st	0	0	0	0	6	3.6	32	7.1	20	8.7	2	4.3	60	6.4
2nd	0	0.0	1	5.6	15	9.1	66	14.6	50	21.8	7	14.9	139	14.9
3rd	6	24.0	5	27.8	40	24.2	95	21.0	55	24.0	8	17.0	209	22.3
4th	6	24.0	4	22.2	30	18.2	95	21.0	50	21.8	9	19.1	194	20.7
5th	5	20.0	7	38.9	48	29.1	106	23.5	37	16.2	17	36.2	220	23.5
6th	5	20.0	0	0.0	18	10.9	50	11.1	12	5.2	3	6.4	88	9.4
Missing Year in School	3	12.0	1	5.6	8	4.8	8	1.8	5	2.2	1	2.1	26	2.8
Cycle														
Junior Cycle	6	24.0	6	33.3	61	37.0	193	42.7	125	54.6	17	36.2	408	43.6
Senior Cycle	16	64.0	11	61.1	96	58.2	251	55.5	99	43.2	29	61.7	502	53.6

Table 2.22
Self-Efficacy Class Means and Standard Deviations (2013 – 2015 CTYI Students)

	Pushovers SECL1 n=25		Insecure SECL2 n=18		Need Boost SECL3 n=165		Confident Majority SECL4 n=452		Superstars SECL5 n=229		Confident Pushovers SECL6 n=47		Total n=936	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Self-Efficacy Total	3.34	0.56	3.07	0.25	4.13	0.28	5.01	0.28	5.92	0.31	4.60	0.42	4.98	0.77
Resist Peer Pressure	2.30	0.88	5.19	0.77	5.85	0.72	6.20	0.56	6.50	0.47	3.89	0.67	5.97	1.02
Academic Achievement	4.85	1.05	4.69	1.10	5.36	0.80	5.73	0.66	6.32	0.55	5.77	0.72	5.77	0.79
Social	3.97	1.39	3.25	1.08	4.17	0.97	5.25	0.81	6.09	0.77	5.04	1.07	5.18	1.12
Assertive	3.42	1.58	2.84	1.24	3.97	1.09	5.12	1.00	6.18	0.70	5.21	1.05	5.09	1.28
Meet Others Expectations	2.56	1.31	2.25	1.07	3.99	1.00	5.04	0.85	6.09	0.69	4.52	0.97	4.96	1.24
Self-Regulated Learning	3.50	1.40	2.38	0.71	3.85	0.80	4.71	0.86	5.71	0.73	4.15	1.13	4.70	1.12
Extracurriculars	3.88	1.18	2.61	0.68	3.65	0.94	4.38	0.91	5.35	0.86	4.46	1.13	4.44	1.11
Social Resources	3.20	1.25	2.38	0.78	3.33	0.94	4.52	0.96	5.47	0.99	4.53	1.19	4.46	1.25
Enlisting Support	2.41	1.21	2.08	0.92	2.99	1.09	4.20	1.02	5.58	0.90	3.80	1.08	4.21	1.39

Note: Range 1-7

Figure 2.7
Self-Efficacy Class Proportional Mean Comparisons



Note: Line width is proportional to the size of the class.

Table 2.23
Self-Efficacy Class Medians and Interquartile Ranges (2013 – 2016 data)

	Pushovers SECL1 n=25		Insecure SECL2 n=18		Need Boost SECL3 n=165		Confident Majority SECL4 n=452		Superstars SECL5 n=229		Confident Pushovers SECL6 n=47		Total n=936	
	Mdn	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*
Self-Efficacy Total	3.49[a]	0.58	3.10[a]	0.38	4.17[a]	0.43	5.02	0.42	5.85	0.47	4.56	0.52	5.02	1.01
Resist Peer Pressure	2.33[a]	1.40	5.22[a,b]	1.27	5.89[b]	1.00	6.22	0.80	6.60	0.78	4.00[a]	0.68	6.20	0.93
Academic Achievement	4.89[a]	1.44	5.06[a]	1.11	5.44[a,b]	1.11	5.78[c]	0.89	6.44	0.78	5.89[b,c]	1.17	5.89	1.11
Social	4.00[a]	1.00	3.38[a]	1.50	4.00[a]	1.25	5.25[b]	1.00	6.25	1.00	5.00[b]	1.72	5.25	1.50
Assertive	3.25[a]	2.25	2.63[a]	1.75	4.00[a]	1.50	5.25[b]	1.25	6.25	1.00	5.00[b]	1.38	5.25	1.75
Meet Others Expectations	2.25[a]	2.00	2.25[a]	1.50	4.00[a,b]	1.50	5.00[c]	1.00	6.25	0.75	4.75[b,c]	1.00	5.00	1.75
Self-Regulated Learning	3.36[a]	1.73	2.41[a,b]	1.09	3.82[b,c]	1.09	4.73[d]	1.09	5.73	1.00	4.18[c,d]	1.45	4.82	1.55
Extracurriculars	4.00[a,b]	1.27	2.66[a]	0.88	3.63[a]	1.38	4.50[b]	1.25	5.50	1.25	4.50[b]	1.81	4.50	1.63
Social Resources	3.00[a]	1.25	2.50[a]	1.00	3.48[a]	1.25	4.50[b]	1.25	5.50	1.50	4.50[b]	1.25	4.50	1.50
Enlisting Support	2.25[a]	2.25	1.75[a]	1.75	3.00[a]	1.50	4.25[b]	1.50	5.75	1.03	3.87[b]	1.38	4.25	2.00

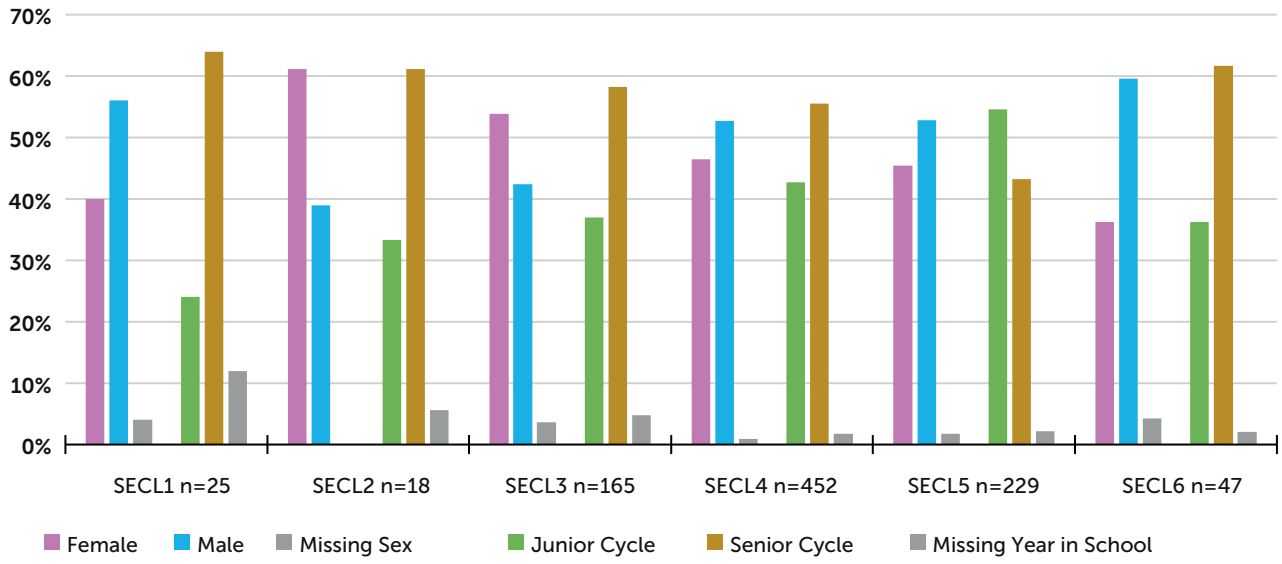
Note: Superscript letters indicate homogeneous subsets, all others differ; Range 1-7

Table 2.24
Self-Efficacy Subscales Class Comparison Significant Results

Scale	Kruskal-Wallis H Test
Self-Efficacy Total	$\chi^2[5] = 776.32$, $p < .001$
Resist Peer Pressure	$\chi^2[5] = 301.61$, $p < .001$
Academic Achievement	$\chi^2[5] = 212.61$, $p < .001$
Social	$\chi^2[5] = 367.25$, $p < .001$
Assertive	$\chi^2[5] = 376.72$, $p < .001$
Meet Others Expectations	$\chi^2[5] = 447.09$, $p < .001$
Self-Regulated Learning	$\chi^2[5] = 388.73$, $p < .001$
Extracurriculars	$\chi^2[5] = 289.98$, $p < .001$
Social Resources	$\chi^2[5] = 357.97$, $p < .001$
Enlisting Support	$\chi^2[5] = 436.18$, $p < .001$

Self-Efficacy Class Profiles. The six self-efficacy classes represent a spectrum of beliefs CTYI students hold about their abilities. Some students have high confidence in all areas (e.g., SECL5), while others have low confidence (e.g., SECL1, SECL2). Although there is some variation among the classes, all students have quite high beliefs in their academic abilities. All these students believed they can learn well in different subject areas. Students in all but one class (SECL1) had confidence that they can resist peer pressure to engage in inappropriate behaviors. Table 2.21 and Figure 2.8 describe the demographics of each class. Chi-square analyses of the distribution of males, females and different age groups is not possible, because there are too few students in a number of cells to satisfy chi-square assumptions. There was a majority of male students in SECL1 (56.0%) and SECL6 (59.6%) and a majority of female students in SECL2 (61.1%) and SECL3 (53.9%). Age appears to be disproportionately distributed across the clusters, with Senior Cycle students predominant in every class except SECL5 (43%). There were very few Junior Cycle students in SECL1 (24%) and these students make up approximately one third of members in SECL2, SECL3, SECL4, and SECL6.

Figure 2.8
Self-Efficacy Class Demographic Composition



Self-Efficacy Class 1: Pushovers. In this small class of 25 students (2.7% of the total sample), the majority of students are male (56%) and older (64% in Senior Cycle). SECL1 students, the *Pushovers*, have high confidence in their academic abilities, believing they can achieve "Pretty Well". They are less confident in their social skills, but still fairly confident. They are noticeably low in confidence in their ability to resist peer pressure to engage in inappropriate activities (hence, the name of the class) and to meet the expectations of parents, teachers, and peers. Students in the Pushover class "Sometimes" feel they are excluded or ignored by peers.

Self-Efficacy Class 2: Insecure. In this smallest class of 18 students, which makes up only 2% of the sample, there are more females (61.1%) and older students (61.1% Senior Cycle). This group has the lowest self-efficacy in all areas, with one exception – they are quite confident they can resist peer pressure to behave inappropriately. SECL2 students – labeled the *Rejected and Insecure* class – do not believe they can stand up for themselves, meet others' expectations, get support from others when they need it, or manage their own learning.

Self-Efficacy Class 3: Need a Boost. The 165 SECL3 students – the *Need a Boost* class – make up 17.6% of the sample, so this is one of the larger classes. There are slightly more female (53.9%) Need a Boost members than male (42.4%) and 58.2% are in Senior Cycle. Their self-efficacy is moderate, with a few low areas. They are confident in their academic abilities and their ability to resist peer pressure. They appear to have some concerns about their social skills, with a score falling directly between "Pretty Well" (5) and "Not Too Well" (3). They believe similarly about their ability to manage learning tasks and to succeed in extracurricular or leisure activities – maybe they will be successful. They do not believe they are successful at getting support from others when they need it.

Self-Efficacy Class 4: Confident Majority. By far the largest class, SECL4, the *Confident Majority* class, is made up of half the sample (*n* =446; 47.6%), with similar numbers of male (*n* = 238; 52.7%) and female (*n* = 210; 46.5%) and Junior (*n* =193; 42.7%) and Senior (*n* = 251; 55.5%) Cycle students. Highly confident in their academic and social skills, ability to be assertive and to meet others' expectations, their confidence only dips slightly in their ability to manage their learning, garner social support when needed, and be successful in extracurricular or leisure activities. Their overall self-efficacy is high.

Self-Efficacy Class 5: Superstars. The second-largest class, SECL5, includes a quarter of the sample (*n* = 229; 24.5%). This group contains a similar proportion of male (52.8%) and female (45.4%) students. The class has a slightly greater proportion of Junior Cycle students (54.6%). SECL5 students, the *Superstars* class, are very confident, believing they can do all the tasks in the MSPSE (Bandura, 1989) better than "Pretty Well."

Self-Efficacy Class 6: Confident Pushovers. SECL6 is one of the smaller classes. With only 47 students, they represent 5% of the full sample. The combination of high and low self-efficacy earns this group the label of *Confident Pushovers.* They are majority male (59.6%) and in Senior Cycle (61.7%). Their self-efficacy almost mirrors that of the Confident Majority students – very high – but they are differentiated by their lower confidence in their ability to resist peer pressure to behave inappropriately (e.g., get into trouble, skip school, use drugs, etc.). While most classes average "Pretty Well" ability to resist, only Pushovers class members score lower than the Confident Pushovers members, who still believe they can resist, but at a more moderate level.

Implications of Self-Efficacy Profiles. The purpose of a person-centered analysis like LPA is to ensure those who are not average do not get lost in the masses. In this analysis of CTYI students, we can see the value of identifying class profiles. While the majority of CTYI students are likely to have the confidence needed to tackle academic and non-academic challenges, some percentage of them will not believe they can be successful. Educators, parents, and counselors can be prepared to support students who do not fit the mold of the average CTYI student.

Based on decades of research evidence (Bandura, 1997; Zimmerman & Schunk, 2003), we can be fairly certain the students in the Confident Majority, the Superstars, and the Confident Pushovers classes are likely to be successful at the activities measured by the MSPSE. Without attention to their lack of confidence, however, the 22.2% of students in the Pushovers, the Insecure, and the Need a Boost classes may have a less rosy future. These students can benefit from interventions such as skill development, but with a special emphasis on how well they are practicing these skills. Bandura (1997) describes research that suggests merely teaching students skills and even strategies is not likely to be successful at raising one's self-efficacy. Schunk and Rice (1987) found that instruction and practice in cognitive strategies did not increase students' self-efficacy. Only through reminders that they were "exercising better control over academic tasks by using the strategies" (Bandura, 1997, p. 80) and pointing out their success at the task as evidence that they were applying the strategies well, was self-efficacy increased. "Dislodging a low sense of personal efficacy requires explicit, compelling feedback that forcefully disputes the preexisting disbelief in one's abilities" (Bandura, 1997, p. 82).

An effort to improve students' self-efficacy will require opportunities to develop their social and academic skills, but also confirmation that they know how to effectively apply the skills they have learned. Simply pointing out their successful accomplishments is not enough; focusing on their application of the skills and their effective use of strategies in applying them will be more convincing in raising their perceptions of self-efficacy. These students may have many years of getting good grades, but also of failure in making friends, or meeting others' expectations. Changing these beliefs will not be easy, despite these students' obvious academic talents.

Self-efficacy is not only a result of one's own success at a task. It also comes from a belief that others will be there for support when needed (Bandura, 2001). The two subscales that access Bandura's proxy and collective agency are "Enlisting Social Resources" and "Enlisting Parental and Community Support." These subscales have among the lowest scores for each of the self-efficacy classes (Figure 2.6; Table 2.22), but the two highest self-efficacy classes, Superstars and Confident Majority, are confident they can garner these supports from others. The other classes have less confidence, with scores closer to "Not Too Well." The Insecure and Pushover students had scores quite a bit below that. Helping the Pushovers, Insecure, Need a Boost, and Confident Pushover students recognize or find supportive resources, including human resources in their lives, and teaching them how to ask for help when needed will foster a more positive sense of proxy or collective agency. "Together, we can make this happen. Yes, we can!"

All CTYI students have provided evidence of high achievement potential. Keep in mind the sources of self-efficacy beliefs: enactive mastery (successfully doing the activity), vicarious modeling (seeing similar models be successful at the activity, especially when the models are instructive and if they have to *try*), and verbal persuasion (being told they can do it). Who suffers from low self-efficacy may not be evident. To address the issue, educational opportunities should include efficacy-building practices such as instructive feedback, modeling of effort, and positive messaging about students' process and not simply their achievements.

Self-Efficacy and Personality Profiles. All five factors of personality – Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism – have been found to be related to overall self-efficacy (Barańczuk, 2021), positively for all except Neuroticism, which has an inverse relationship with self-efficacy. Stajkovic et al. (2018) found only Conscientiousness and Neuroticism were significantly related to academic self-efficacy. There were differences in the five factors of personality among the self-efficacy classes, with the exception of Openness to Experience (see Table 2.25).

Table 2.25

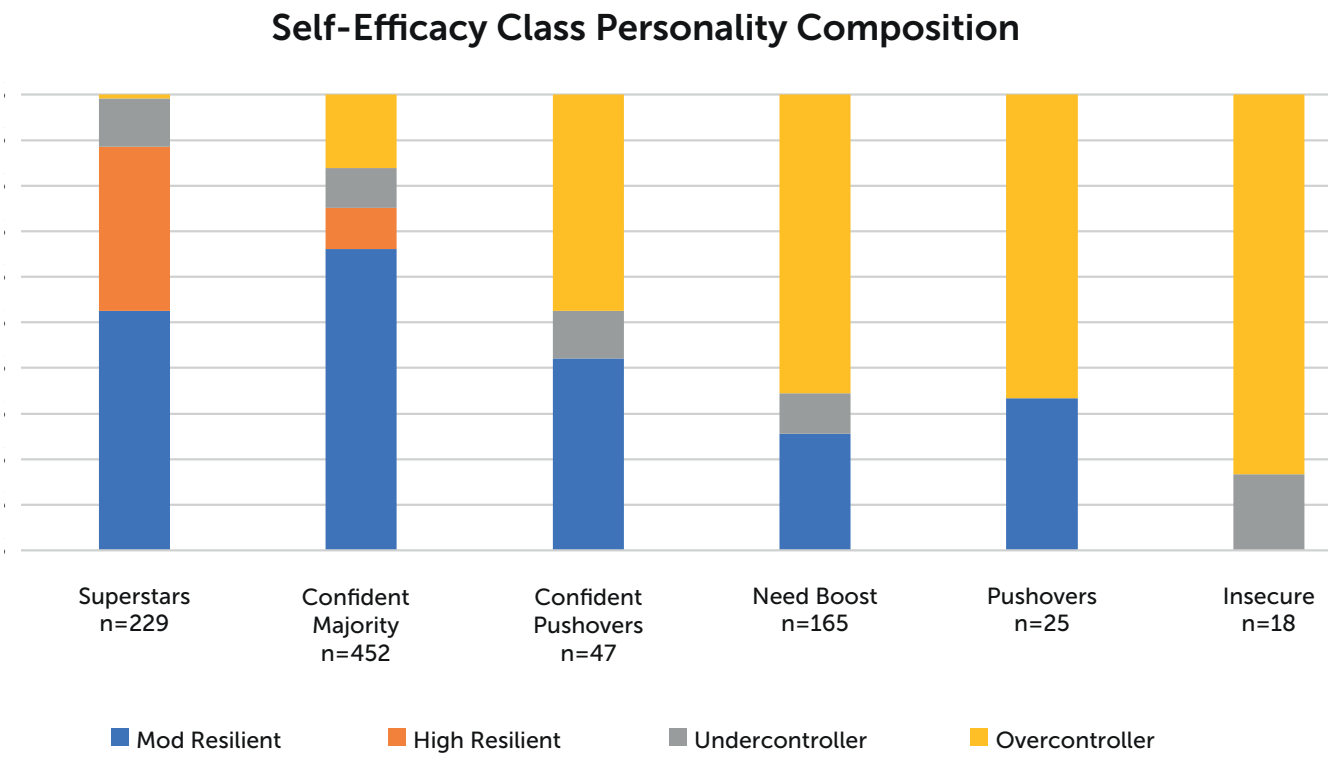
Five Factor Model Personality Mean Scores and Standard Deviations by Self-Efficacy Class

	Pushovers SECL1 n=25		**Insecure SECL2 n=18**		**Need Boost SECL3 n=165**		**Confident Majority SECL4 n=452**		**Superstars SECL5 n=229**		**Confident Pushovers SECL6 n=47**		
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*ANOVA Results*
Extraversion	3.34[c]	0.56	3.07[b,c]	0.25	4.13[b,c]	0.28	5.01[a,b]	0.28	5.92[a,b]	0.31	4.60[a]	0.42	$F(5, 459) = 28.148$, $p < .001$
Agreeable-ness	2.30[b]	0.88	5.19[a,b]	0.77	5.85[a,b]	0.72	6.20[a,b]	0.56	6.50[a,b]	0.47	3.89[b]	0.67	$F(5, 459) = 9.353$, $p < .001$
Conscient-iousness	4.85[c]	1.05	4.69[b]	1.10	5.36[b]	0.80	5.73[b]	0.66	6.32[b]	0.55	5.77[a]	0.72	$F(5, 459) = 31.021$, $p < .001$
Neuroticism	3.97[c]	1.39	3.25[c]	1.08	4.17[b,c]	0.97	5.25[a,b]	0.81	6.09[a]	0.77	5.04[a]	1.07	$F(5, 459) = 31.705$, $p < .001$
Openness to Experience	3.42[a]	1.58	2.84[a]	1.24	3.97a	1.09	5.12[a]	1.00	6.18[a]	0.70	5.21[a]	1.05	$F(5, 459) = 2.437$, $p = .034$

Note: Superscript letters indicate homogeneous subsets; Range 1-5

The strong research base on personality profiles – the Resilients, the Overcontrollers, and the Undercontrollers – has not been applied to their relationship with self-efficacy (c.f., Mammadov, 2020). By examining the personality types within each of the self-efficacy classes, we learn more about CTYI students. Students in the High Resilient personality type appear in only two self-efficacy classes – the Superstars and the Confident Majority (Figure 2.9). Students who are low in Neuroticism and high in the other personality factors respond flexibly to various situations, which likely results in opportunities to engage in and be successful at various tasks. Among the Superstars, those highest in self-efficacy across the board, there were only resilient personality types. The Confident Majority had only a few of Undercontrollers students, those who were high in Extraversion and low in Agreeableness and Conscientiousness. Undercontrollers also appear in fairly small proportions in the other self-efficacy classes, with the exception of the Insecure class. Lower self-efficacy classes had greater proportions of Overcontrollers students, those who were high in Neuroticism and likely to be inhibited in their responses to situations and vulnerable to internalizing problems such as depression or anxiety. This confirms earlier findings of an inverse relationship between Neuroticism and self-efficacy (Barańczuk, 2021; Stajkovic et al., 2018).

Figure 2.9
Self-Efficacy Class Personality Composition



Implicit Theory

Cognitive psychologists have long been aware that our memories affect our behaviors, whether we know it or not (Greenwald & Banaji, 1995, 2017; Wegner & Vallacher, 1977). These memories come from our direct experience or from our learning by other methods (e.g., observing, hearing, intuiting; Bandura, 1997). Explicit memories are those we can recall, but through clever psychological research, we have learned that many memories lie beneath the surface and we may never be actually aware of them. In tracing the history of research on these *implicit* memories, Greenwald and Banaji (2017) described early evidence from a Swiss neurologist of the early 1900's.

> Researchers' interest in memory abilities of amnesic patients was (distantly) presaged by Édouard Claparède's (1911/1951) report of an elderly female Korsakoff-syndrome amnesic patient. On one of Claparède's daily visits to his patient, as he was being reintroduced to her—something necessary each day because she had no recollection of his previous visits—Claparède surprised her by sticking her with a pin when he reached to shake her hand. The next day, when he again reached to greet her, she quickly withdrew her hand. When Claparède asked her why she withdrew, she was unable to link it to Claparède's behavior of the previous day. Claparède described his patient's hand withdrawal as the indicator of a memory that was separated from her conscious, psychological self. (p. 863)

Many of our attitudes and beliefs have been formed without our direct awareness, yet they may influence our behavior, as in the example of Claparède's patient. Memories such as these that shape our understanding of ourselves and the world around us have been labeled *implicit theories*.

Some motivation researchers have focused on implicit beliefs as they attempt to explain how and under what circumstances a person is motivated to act. One line of this research has involved *attributions* (e.g., Weiner, 1985) – to what do we attribute the cause of our behavior or its outcome and how do these beliefs affect our performance? Carol Dweck (Blackwell et al., 2007; Dweck, 1975, 2006; Dweck & Leggett, 1988) has had the most success in popularizing an applied approach to affecting achievement motivation through her research on specific beliefs about human characteristics as innate and unchangeable or fixed (*entity* theory) or are malleable and can be changed (*incremental* theory). People differ in these implicit theories, which Dweck calls their *growth mindset*.

Implicit theories can apply to any human characteristic. Dweck's (1999) instrument is called the "Implicit Person Theory" scale. It contains two dimensions, intelligence and personality. Changing adolescents' fixed beliefs about personality through an intervention program focusing on human malleability was associated with less aggression (Yeager et al., 2013) and reduced levels of depression (Miu & Yeager, 2015). Adolescents who learned that people can change exhibited less retaliatory, vengeful behavior against a fictional bully (Yeager et al., 2011).

Study after study has found that students with an incremental (growth) theory of intelligence have higher achievement than students with an entity (fixed) theory (e.g., Blackwell et al., 2007; Yeager et al., 2019; see Costa & Faria, 2018 for a systematic review). Dweck's success in spreading this knowledge has been so great, contemporary researchers have difficulty finding naïve control groups for comparison (Foliano et al., 2019). When a person believes their abilities are fixed, an unchangeable entity they possess, they are more likely to quit in the face of challenges (Dweck, 2006). Students like those who participate in CTYI programs may have come to believe that their intelligence is unrelated to the effort they put into their academics. This belief can work against their ultimate success and they should be disabused of their entity beliefs. In a study of implicit beliefs about intelligence and giftedness, Makel et al. (2015) found that gifted students at a summer program similar to CTYI, the Duke Talent Identification Program, had more incremental beliefs about intelligence than about giftedness. In other words, they considered giftedness to be an entity within them, whereas intelligence may be improved with effort. The long-term effects of such beliefs are unclear. Gifted adolescents' beliefs tend toward an incremental view of intelligence (Ablard & Mills, 1996; Makel et al., 2015; Ziegler et al., 2010).

CTYI Students and Implicit Theory. CTYI students in 2013 and 2015 (n = 792) and CAT students in 2016 (n = 334) took the Dweck (1999) Implicit Person Theory (IPT) scale, which includes six items related to intelligence (i.e., "You have a certain amount of intelligence, and you really can't do much to change it.") and six items related to personality (i.e., "Someone's personality is a part of them that they can't change very much."). Response options were from 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Mostly Disagree*, 4 = *Mostly Agree*, 5 = *Agree*, and 6 = *Strongly Agree*. Higher scores indicate a stronger belief in fixed intelligence or personality, with scores below 3.5 indicating a more incremental belief (growth mindset). Table 2.26 presents mean scores and standard deviations for CTYI and CAT students by sex. Note that 35 students who took the IPT did not provide their sex. These students were not included in the mean comparison.

Table 2.26
Implicit Beliefs Means and Standard Deviations by Program and Sex (2013, 2015 & 2016 data)

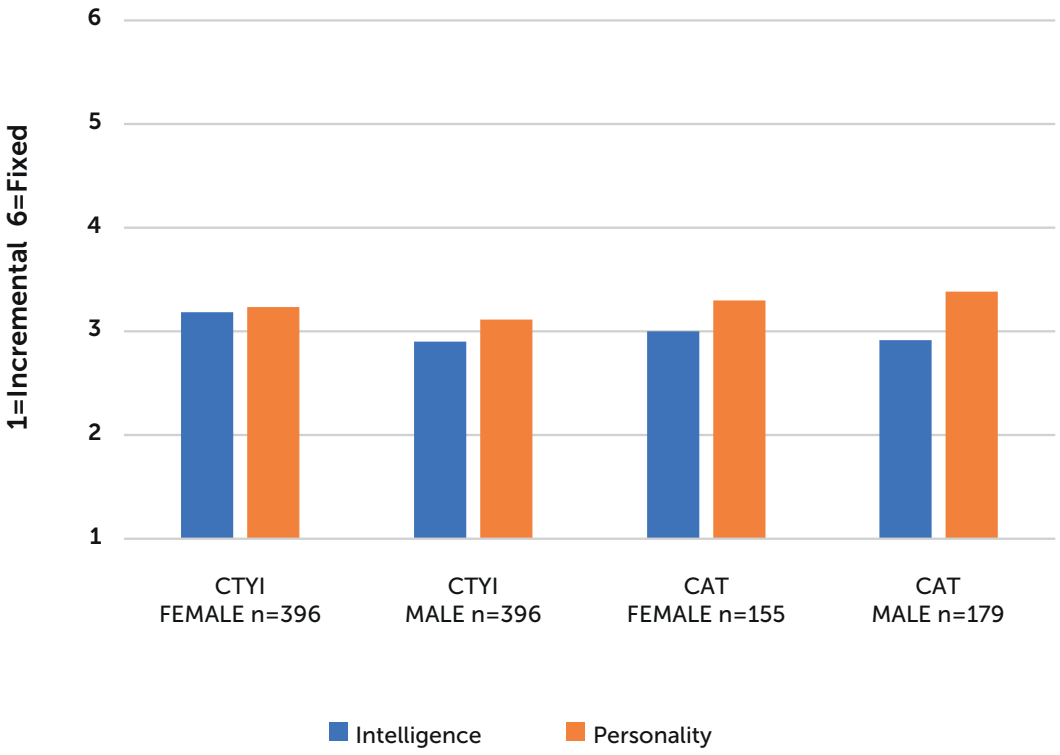
	CTYI Female *n*=356		**CTYI Male** *n*=396		**CAT Female** *n*=155		**CAT Male** *n*=179		**Missing Sex** *n* = 35		**Total** *N*=1121	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Implicit Theory	3.21	0.91	3.01	0.90	3.15	0.79	3.15	0.94	3.16	0.99	3.12	0.90
Implicit Theory of Intelligence	3.19[a]	1.12	2.90[b]	1.19	3.00[a,b]	1.00	2.91[b]	1.17	3.17	1.23	3.02	1.15
Implicit Theory of Personality	3.24[a,b]	1.00	3.12[a]	1.11	3.30[a,b]	0.94	3.38[b]	1.10	3.15	1.18	3.22	1.06

Note: Superscript letters indicate homogeneous subsets.

Range = 1-5

All total Implicit Theory scores were above 3, indicating these students were trending toward a fixed mindset (see Table 2.26), but not strongly. Males in both CTYI and CAT had the lowest Implicit Theory of Intelligence (ITI) scores (more malleable), which were significantly lower than CTYI females, but not CAT females, Pillai's Trace = .91, F = 5727.17, df = (2, 1081), p = .001 (Figure 2.10). All students had slightly stronger beliefs in the fixedness of personality, with the highest ITP scores (more fixed), with CAT male scores higher than CTYI male scores.

Figure 2.10
Implicit Beliefs by Program and Sex (2013, 2015 & 2016 data)



Among the 2015 CTYI students, the four personality classes did not differ in their implicit beliefs scores (Table 2.27), Pillai's Trace = .02, $F = 1.53$, $df = (6, 934)$, $p = .164$. The self-efficacy classes did, however, have associations with implicit beliefs. Overall IPT was statistically different among the self-efficacy classes, $F(5, 461) = 3.00$, $p < .05$, but once Tukey's post-hoc test was applied, any differences were eliminated. We do, however, see differences in ITI scores (see Table 2.28, Figure 2.11). Students in the Pushovers class had significantly more fixed beliefs about intelligence than students in the Insecure and Superstars classes. There were no significant differences among the classes in beliefs about the malleability of personality.

Table 2.27
Implicit Beliefs by Five-Factor Model Personality Class

	FFMCL1 (Moderate Resilients) *n* = 247		FFMCL2 (Over-controllers) *n* = 113		FFMCL3 (Under-controllers) *n* = 45		FFMCL4 (High Resilients) *n* = 66	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Implicit Total	3.10	0.86	3.23	0.97	3.21	1.24	2.84	0.99
Fixed Intelligence†	3.02	1.12	3.19	1.27	3.23	1.43	2.70	1.22
Fixed Personality†	3.19	0.99	3.27	1.15	3.19	1.47	2.99	1.00

Note: Range 1-6

†Pillai's Trace = .02, $F = 1.53$, $df = (6, 934)$, $p = 0.164$

Table 2.28
Implicit Beliefs by Self-Efficacy Class

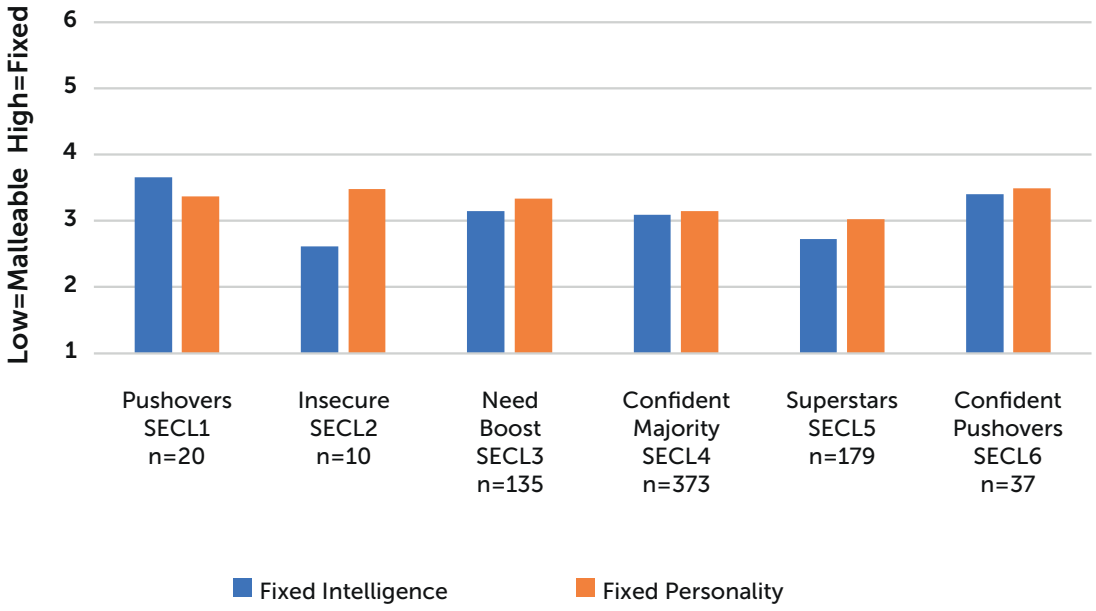
	Pushovers SECL1 n=6		Insecure SECL2 n=6		Need Boost SECL3 n=89		Confident Majority SECL4 n=233		Superstars SECL5 n=114		Confident Pushovers SECL6 n=19	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Implicit Total	3.72	1.53	2.78	1.15	3.28	1.02	3.14	0.88	2.90	0.96	3.49	0.72
Fixed Intelligence†	4.36[a]	1.62	2.31[b]	1.05	3.19[a,b]	1.27	3.11[a,b]	1.18	2.74[b]	1.12	3.27[a,b]	1.25
Fixed Personality†	3.08	1.70	3.25	1.44	3.37	1.21	3.16	1.02	3.07	1.03	3.71	0.75

Note: Superscript letters indicate homogeneous subsets; Range 1-6

†Pillai's Trace = .06, $F = 2.82$, $df = (10, 922)$, $p < .01$

The tendency for scores among both CTYI and CAT students to be above three suggests these students may benefit from an implicit theory intervention, with lessons in human malleability. Curricula throughout the program could include an emphasis on the ability to change – in either intelligence or personality – based on effort. Humanities and social science classes can particularly lend themselves to such a focus, but all teachers can point out how students have improved their performances or behavior through practice or with the right kind of instruction. Praise for students should emphasize their effort, rather than their intelligence or other characteristics (Dweck, 2006).

Figure 2.11
Implicit Theory by Self-Efficacy Class



Perfectionism

When a high-ability student avoids challenges, procrastinates on important assignments, or easily gives up at the slightest difficulty, it is easy to label them as "lazy," but psychologists who study motivation would likely disagree with this conclusion. Each of these behaviors could be motivated by fears of being found unacceptable (Greenspon, 2021), either to others or to their own high standards. Perfectionism, "the tendency to demand of others or of oneself an extremely high or even flawless level of performance" (APA, 2020, Perfectionism), among students with gifts and talents has been the focus of a great deal of research attention since the early 1990's (Fletcher & Speirs Neumeister, 2012). Early research identified two kinds of perfectionism: *adaptive and maladaptive* (Parker, 1997; Parker & Mills, 1996) or *normal* and *neurotic* (Schuler, 2000). Parker (1997) found associations of the maladaptive type with highly neurotic personality and more positive personality profiles with adaptive perfectionism (high extroversion, agreeableness, and conscientiousness). Hewitt and Flett (1991) proposed three types of perfectionism: self-oriented (having unrealistically high expectations of themselves); socially prescribed (perceiving others have unrealistically high expectations of them); and other-oriented (having unrealistically high expectations for others). Much recent research in perfectionism has explored these three types.

In the example above, perfectionism may be at the root of these unhelpful behaviors –work avoidance, procrastination, a lack of persistence – but it can also significantly affect psychological well-being. In fact, the APA dictionary definition cited above is partial. Here is the full definition: "the tendency to demand of others or of oneself an extremely high or even flawless level of performance, *in excess of what is required by the situation. It is associated with depression, anxiety, eating disorders, and other mental health problems*" (APA, 2020, Perfectionism). The APA emphasizes the harmful aspects of perfectionism, which can lead to such deleterious outcomes. Greenspon (2021), who specializes in counseling gifted individuals, embraces this definition of perfectionism. Its destructive correlates require psychological support. This outlook has made some professionals in gifted education somewhat uneasy, as they have seen the benefits of striving for excellence. Where is the line between a healthy desire for excellence and a destructive desire for perfection?

As this debate has taken shape, researchers have begun to clarify the healthy/unhealthy aspects of perfectionism (Speirs Neumeister, 2016). Based on research using various methods, two dimensions consistently emerge: *Positive Strivings* and *Evaluative Concerns*. Striving for perfection can be a healthy approach to demands, but

when one has concerns about their performance being evaluated, efforts to achieve perfection can be unhealthy or maladaptive. The research bears this out: Positive Strivings correlate with adaptive outcomes, such as positive mood and emotion (affect), conscientiousness, motivation to master a task, and a sense of personal agency (an internal locus of control). Evaluative concerns result in the opposite, with correlations to such negative outcomes as maladaptive motivational goals, negative affect, neuroticism, distress, eating disorders, and anxiety (Damian et al., 2017; Fletcher & Speirs Neumeister, 2012; Speirs Neumeister, 2016; Stoeber & Otto, 2006). In Hewitt and Flett's (1991) dimensions, positive strivings may be measured by self-oriented perfectionism and evaluative concerns by socially prescribed perfectionism.

A meta-analysis of 10 studies comparing gifted and non-gifted samples (Stricker et al., 2020) found no difference in measures of evaluative concerns. There was, however, a significant difference in positive striving, with gifted students exhibiting higher levels of this type of perfectionism. Not all gifted students will be high in positive striving (self-oriented perfectionism), nor will all be immune to worries about being negatively evaluated by others.

The five-factor model personality traits of Conscientiousness and Neuroticism have been associated with perfectionism in the expected directions. Conscientiousness is associated with self-oriented perfectionism or positive striving and Neuroticism is associated with socially prescribed perfectionism or evaluative concerns (Smith et al., 2019; Stoeber et al., 2009). These relationships found in the general population have not been tested among gifted students.

Adult behavior, particularly that of parents, has been implicated in the development of perfectionistic beliefs, both positive and negative. Children may learn to strive for perfection or to be concerned about being evaluated negatively by observing the model of significant others (Bandura, 1977) or through being rewarded for such striving or punished for not doing so (operant conditioning; Thorndike, 1898). They also learn through their own experience of striving for excellence, by thinking about what has occurred (Mayer, 2011). Parents have an important role in their child's development of these concerns. Their responsiveness to the child's needs is critical to developing positive attitudes about their efforts to achieve. Research has supported the most positive outcomes for children raised with a balance between parents' demandingness and responsiveness (Baumrind, 1971). An excess of demandingness in parenting may contribute to a maladaptive concern for others' evaluation (Greenspon, 2021). Responsive parents are willing to acquiesce to their child at times, aware that they may need autonomy and a sense of agency that will not be present if parents are constantly demanding. Table 2.29 describes the path parents set for their child through their modeling, responsiveness, and demandingness (Fletcher & Speirs Neumeister, 2017). It is important to note that all contributing factors highlighted in Table 2.29 are based on the perceptions of the child. An outsider may see a behavior as demanding or a model as positive or negative, but that has less impact than the child's perceptions of the behavior or model. Awareness and interpretation play a critical role in learning (Mayer, 2011).

Table 2.29

Paths to Perfectionistic Striving or Concerns

Positive Striving, Negative Concerns

Outcome: Striving	Outcome: Concerns
Parent expectations for high standards (**demandingness**)	Parent expectations for high standards (**demandingness**)
Parent **models** striving with positive attitudes toward failure / mistakes as part of learning	Parent **models** concerns with negative/ fearful attitudes toward failure / mistakes
Parent **encourages** high achievement via warm, positive messaging (**responsiveness**)	Parent **demands** high achievement via harsh, critical teaching (**demandingness**)
Parent is **accepting** of child's efforts	Parent is **rejecting** of child's efforts

Perfectionism among CTYI Students. In 2015 and 2016, CTYI and CAT students completed Hewitt and Flett's (1991) *Multidimensional Perfectionism Scale* (MPS). The MPS (Hewitt & Flett, 1991a) is a 45-item instrument that assesses three perfectionism dimensions: self-oriented perfectionism (SOP), other-oriented perfectionism (OOP), and socially prescribed perfectionism (SPP), which involves the perceived need to attain standards and expectations prescribed by significant others. Response options were on a 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). The subscales have strong reliability (see Table 2.30).

Table 2.30
Multidimensional Perfectionism Scale Reliability and Sample Items

Subscale	Reliability Cronbach's α 2015 CTYI	2016 CAT	Description
Self-Oriented (SOP)	.93	.88	Includes self-directed perfectionistic behaviors; e.g. "behaviors such as setting exacting standards for oneself and stringently evaluating and censuring one's own behavior" (Hewitt & Flett, 1991, p. 457)
Other-Oriented (OOP)	.79	.79	Same as self-oriented, but directed at others
Socially Prescribed (SPP)	.89	.85	"belief or perception that significant others have unrealistic standards for them, evaluate them stringently, and exert pressure on them to be perfect" (Hewitt & Flett, 1991, p. 457)

In total, CAT and CTYI students did not differ significantly on any of the MPS dimensions, Pillai's Trace = .013, F = 3.48, df = (3, 821), p = .016, post-hoc ps > .05 (see Table 2.31). Both CTYI and CAT females had higher SOP scores than CTYI and CAT males. Perfectionism of the five-factor model personality classes among the CTYI secondary students from 2015 are presented in Table 2.32. All FFM profiles have similar OOP scores. The High Resilient class has an adaptive personality profile, with quite high expectations for their own perfect performance (SOP) and low concerns that others have unrealistically high expectations for their performance (SPP) – a healthy combination. The Moderate Resilient class has a similar combination, but at a significantly lower level of SOP than the High class and a comparable level of SPP (Table 2.32). Undercontrollers have a high level of SOP and a high level of SPP. This profile suggests these students may have evaluative concerns that predispose them to some of the negative outcomes found in previous research. The undercontroller personality profile has been associated with externalizing problems (Donellan & Robins, 2010; Huey & Weisz, 1997). This combination of personality profile (high extravert, low agreeable, and low conscientiousness) and perfectionism (high self-expectations and high concern for others' expectations) may lead to challenging behaviors, but our data does not allow for any such analysis.

Table 2.31
Perfectionism Means and Standard Deviations by Program and Sex (2015 & 2016 data)

	CTYI Female		**CTYI Male**		**CTYI Total**		**CAT Female**		**CAT Male**		**CAT Total**		**Missing Sex**		**Total**	
	***n*=218**		***n*=258**		***n*=477**		***n*=157**		***n*=174**		***n*=350**		***n* = 20**		***N*=827**	
Range = 1-7	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
SOP	5.02[a]	1.18	4.45[b]	1.18	4.71	1.21	4.78[a]	1.07	4.41[b]	1.23	4.55	1.17	4.03	.97	4.64	1.19
OOP	3.38	0.83	3.41	0.74	3.40	0.78	3.41	0.74	3.56	0.82	3.48	.79	3.33	.75	3.43	0.79
SPP	4.15[a]	1.11	3.83[b]	0.92	3.97	1.02	3.95[a,b]	0.94	3.83[b]	0.88	3.87	.90	3.68	.82	3.93	0.97

Note: Superscript letters indicate homogeneous subsets (missing not included), Pillai's Trace = .079, $F = 7.21$, $df = (9, 2403)$, $p < .001$; SOP = Self-Oriented Perfectionism, OOP = Other-Oriented Perfectionism, SPP = Socially Prescribed Perfectionism; CTYI and CAT total scores do not differ, *ps* > .05

Table 2.32
Perfectionism Means and Standard Deviations by Personality Class (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) ***n* = 244**		**FFMCL2 (Over-controllers)** ***n* = 115**		**FFMCL3 (Under-controllers)** ***n* = 44**		**FFMCL4 (High Resilients)** ***n* = 65**	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
SOP	4.60[b]	1.12	4.79[a,b]	1.20	4.41[b]	1.64	5.25[a]	1.10
OOP	3.47	0.69	3.33	0.86	3.29	0.96	3.32	0.85
SPP	3.83[b,c]	0.84	4.52[a]	1.10	4.00[c]	1.28	3.55[b]	1.00

Note: Superscript letters indicate homogeneous subsets; Range 1-7; Pillai's Trace = .198, $F = 10.91$, $df = (9, 1386)$, $p < .001$; SOP = Self-Oriented Perfectionism, OOP = Other-Oriented Perfectionism, SPP = Socially Prescribed Perfectionism

The Overcontrollers class, high in Neuroticism and low in Extraversion, had the highest SPP scores of all the FFM personality classes and one of the highest SOP scores. Driven by their own high expectations, these students also have high evaluative concerns. These concerns have been associated in research with internalizing problems, such as depression or anxiety (Van Leeuwen et al., 2004), which is also related to the Overcontroller personality characteristics (Donellan & Robins, 2010). While this indicates a potential for special risk among this group, it also indicates multiple routes for intervention.

Because the 2015 sample has so few students in the Pushovers, Insecure, and Confident Pushovers classes, a nonparametric analysis was necessary to identify differences in perfectionism among the self-efficacy classes. The Kruskal-Wallis H test identified differences between classes in SPP ($\chi^2[5] = 67.41$, $p < .001$), but not SOP ($\chi^2[5] = 12.83$, $p = .025$, Bonferroni posthoc eliminated differences) and OOP, ($\chi^2[5] = 7.43$, $p = .191$). Figure 2.12 displays perfectionism profiles of the self-efficacy classes.

Table 2.33 contains median scores. The Superstars, those highest in all self-efficacy domains, had the lowest SPP of all classes – the least concern about being evaluated negatively for their performance. The Confident Majority, also high in self-efficacy, had less concern about being evaluated than the Insecure or Need a Boost classes. A belief in one's competence appears to be accompanied by a lack of concern about socially prescribed perfectionism. The Pushovers and Insecure students lack confidence in their abilities and have high concern that others expect them to be perfect, an unfavorable combination of beliefs. These are the two smallest classes, with only 12 students between them who completed the MPS. These few students may be in need of significant support, however, to improve their confidence and concerns about others' expectations. While confident in other domains, the Confident Pushovers did not believe they could resist peer pressure. Their high SPP suggests a fear that they will not be seen as perfect may be contributing to their beliefs about being able to resist.

Figure 2.12
Perfectionism Median Score Profiles Among Self-Efficacy Class

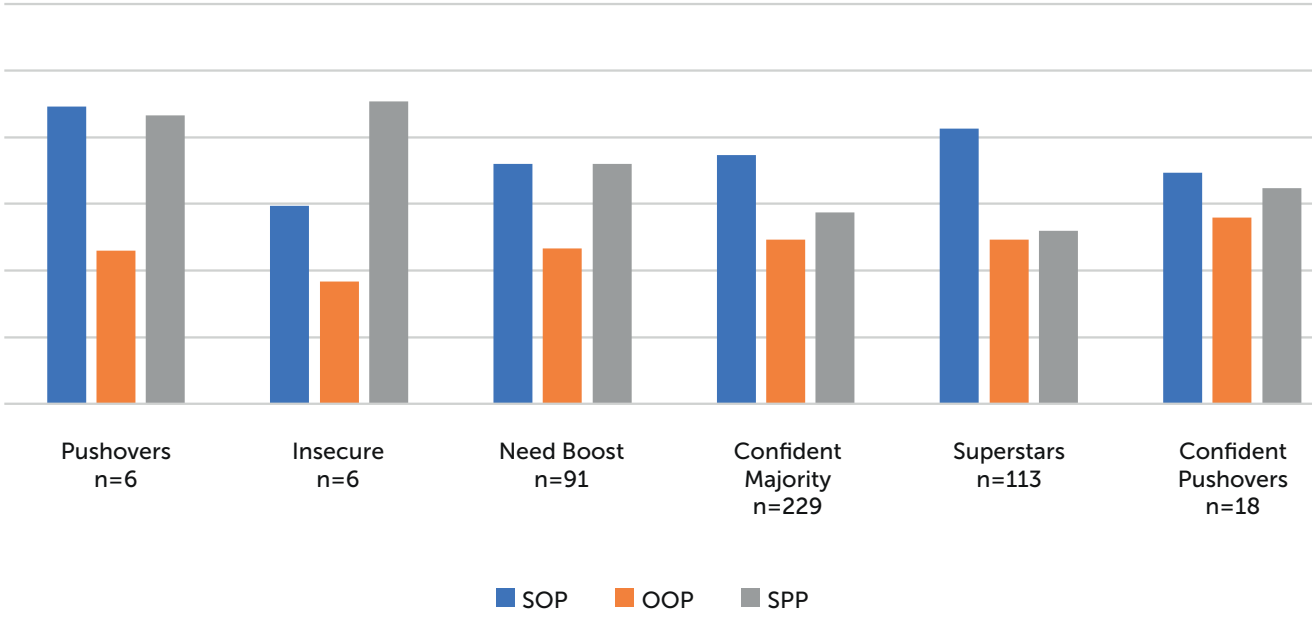


Table 2.33
Perfectionism Median Scores and Interquartile Range by Self-Efficacy Class (2015 CTYI Students)

	Pushovers SECL1 n=6		Insecure SECL2 n=6		Need Boost SECL3 n=91		Confident Majority SECL4 n=229		Superstars SECL5 n=113		Confident Pushovers SECL6 n=18	
	Mdn	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*
SOP	5.46	2.80	3.97	1.47	4.60	1.70	4.73	1.60	5.13	1.33	4.47	1.67
OOP	3.29	0.92	2.83	0.67	3.33	1.13	3.47	0.90	3.47	0.93	3.80	1.00
SPP	5.33	1.93	5.53	1.40	4.60	1.23	3.87	1.13	3.60	1.13	4.23	1.40

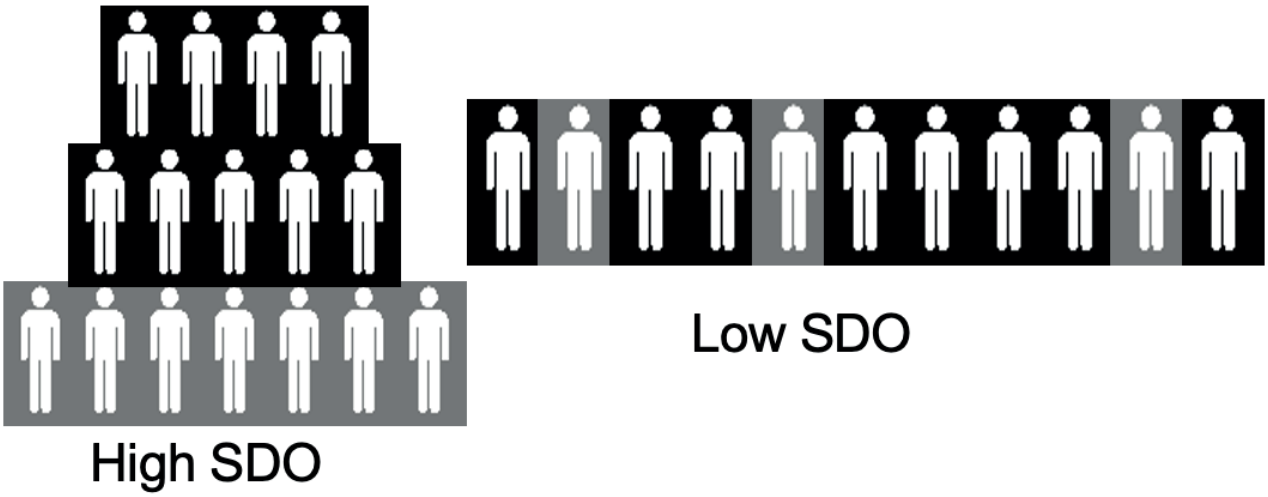
Note: **SOP** = Self-Oriented Perfectionism, **OOP** = Other-Oriented Perfectionism, **SPP** = Socially Prescribed Perfectionism; Range 1-7

Perfectionistic beliefs will not always have a negative effect on psychological well-being, as evidenced by the research cited above. High SOP is associated with positive, adaptive outcomes, except when it exists in combination with high SPP, as in the case of the Under- and Overcontrollers, who tend to be in the lower self-efficacy classes. The secondary students in the 2015 study have developed beliefs about their abilities and the need to achieve over a lifetime of rewards, punishments, models, and opportunities, or a lack of them. Many of the CTYI students have positive attitudes and beliefs, but some may need encouragement to challenge their evaluative concerns or to adjust their maladaptive responses to situations. It may also be helpful to encourage greater responsiveness or positive modeling among parents or other significant adults. Mofield and Chakraborti-Ghosh (2010) had success with a curriculum designed to address evaluative concerns.

Social Dominance Orientation

Another psychological construct of interest collected in the 2012 study was *social dominance orientation* (SDO; Sidanius & Pratto, 1999). SDO is one's preference for hierarchical or egalitarian intergroup relations. A high SDO is associated with beliefs that a dominant group should have disproportionate control over resources of positive social value, whereas a low SDO is associated with a preference for greater equality in the distribution of resources (see Figure 2.13). The resources are anything of positive social value, such as money, power, or attention. "Group" is also a broad term, as humans tend to see themselves and others as group members at the drop of a hat. Adolescents assigned randomly to a group as either over- or underestimators of the number of dots displayed in a prompt, showed an in-group bias, even when they had never met other members of their group (Tajfel, 1971). The groups had no meaning to the subjects, but simply being told they were a group member had an effect on their behavior. In one study of preschool children, Patterson and Bigler (2006) had students randomly assigned to wear red shirts or blue shirts. She found their choice of toys matched the preference of their assigned group – an ingroup bias – even if teachers made no comments about the shirts or distinguished between them in any way. The bias was higher if the teachers did make them aware of their group (i.e., "Good morning, Reds and Blues," red and blue labels on their cubbies, etc.). In adolescence, the *crowds* in schools (e.g., the jocks, skaters, freaks, goths, preppies, etc.) signal membership in a group based on appearance and behaviors (J. Cross, 2016). Any of these groups may have more or less control over resources of positive social value and their members each have a preference for this to be given disproportionately to the dominant group (high SDO) or distributed more equally (low SDO).

Figure 2.13
Graphic Representation of High and Low Social Dominance Orientation



SDO was originally proposed as a personality trait (Pratto et al., 1994) and recent research supports its stability over time (Bratt et al., 2022). Some studies have found that changing the group a person is thinking about (priming) can change how much they preferred equality or hierarchy (e.g., Huang & Liu, 2005). One's *relative* SDO did not change, however, even if there were variations in responses based on the situation (Bratt et al., 2022; Pratto et al., 2006; Sidanius et al., 2006). Research has found SDO to be predictive of various generalized prejudices: homosexual, racial, and ethnic (Duckitt, 2001; Ekehammar et al., 2004; Thomsen et al., 2008; Whitley, 1999). Wilson (2003) found that SDO was negatively associated with idealism, a belief that actions should never harm others, indicating that those high in SDO ruthlessly consider the "end justifying the means" (p. 556). SDO is associated with beliefs that show a lack of concern for others, including an acceptance of unkind behaviors towards those under one's supervision or enjoyment of hurtful practical jokes (Altemeyer, 1998), and a negative correlation with the agreeableness factor of the Big 5 personality construct (Heaven & Bucci, 2001; Lippa & Arad, 1999). Low SDO, on the other hand, is associated with a preference for more egalitarian policies, such as affirmative action, progressive taxation, and publicly funded healthcare (Ho et al., 2012). Adolescents who considered themselves part of the "normal" or academic ("Brain") crowds had lower SDO than high-status crowds (e.g., "Jocks", "Preps", and "Farmers"), as would be predicted by prior research on status of one's group.

Marques et al. (2022) found SDO was associated with a preference to see "Tall Poppies" fall, an unexpected outcome that is possibly significant for gifted students, the tall poppies of their classes. Those lower in SDO would prefer to see someone who had gained high status remain there. The majority of SDO research has been with adults, even though it is hypothesized to have its roots in childhood. Studying this construct among children can be difficult, as it is an abstract concept. Reliabilities are consistently low in studies of young children (e.g., Ruffman et al., 2020). There is evidence that parents transmit their attitudes about intergroup relations to their children (Ruffman et al., 2022). J. Cross and Fletcher (2010) found parents' responsiveness to their children's needs was negatively correlated with SDO. As parents were perceived to be more responsive, their child's SDO was lower.

The prejudice associated with a strong preference for group inequality (a high SDO) can be harmful in an increasingly global society. Even in the world of sports, we see the impact of a preference to maintain the social hierarchy. Does and Mentovich (2016) found higher SDO predicted support for dominant teams (top dogs) in FIFA World Cup and Olympics fans. Hierarchy preference extends to dominance over the planet, according to a study by Milfont et al. (2018). Higher SDO was associated with a lower likelihood of engaging in environmental activism or support for pro-environmental action. Changing attitudes toward gender fluidity will likely meet resistance from those high in SDO. In addition to

consistent findings of a relationship between higher SDO and prejudice toward LGBTQ+ (Poteat et al., 2017; Whitley, 1999), Puckett et al. (2020) found it to be related to gender minority stigma, "stigma directed at non-normative gender identities, experiences, and expressions, as well as gender minority communities" (Herek, 2016, p. 387). High SDO scores were associated with a stronger endorsement of the stigma. The security that comes from maintaining intergroup relations as they have been is threatened by egalitarianism. Felicia Pratto, one of the developers of social dominance theory, describes the acceptance of varied gender identities as deeply disturbing to those who have a strong preference for hierarchy among groups: "When you have a declaration of rights for particular people that formerly were not accorded any respect, were not accorded any consideration, not accorded any empathy, that is, I think, deeply disconcerting" (Taub, 2022, Hierarchy and Threat, para. 10).

SDO scores tend to be low, so a high SDO score is not necessarily numerically high. For example, Sidanius and Pratto (1999) described 39 studies with approximately 10,000 respondents. On the 7-point Likert-type scale, a score of 4 would indicate actual agreement with the dominance-oriented statement. The average means for these studies, however, were from 1.59 (a sample of 56 Los Angeles public defenders) to 3.83 (a sample of 59 Los Angeles police officers), with an overall average of the 39 studies being 2.6 (*SD* = .79). Researchers have found scores that appear to be low, in relation to the highest possible score of 7, may still be high relative to others and associated with measures of prejudice or support for hierarchy-enhancing policies (Sidanius & Pratto, 1999).

In previous studies, there is some indication that intelligence has a relationship with SDO, but there is too little research to say exactly what that relationship is. Adolescents in the academic (Brain) crowd in J. Cross and Fletcher's (2010) study tended to have lower SDO than members of other crowds. Heaven et al. (2011) found high SDO scores could be predicted by low verbal ability among 7th grade students in Australia. In a study of college students, those participating in an honors program had lower SDO scores than those of students in the general population (J. Cross & Fletcher, 2017).

Social Dominance Orientation Among CTYI Students. In the summer of 2012, CTYI students completed a modified version of the original SDO scale. The SDO for Children (SDO-C) was adapted from Jost and Thompson's (2000) 16-item counterbalanced survey. Rather than a 7-item response option, a mid-point of "No Opinion" was not included in the SDO-C. Options were from 1 = *Strongly Disagree* to 6 = *Strongly Agree*. High scores indicate a stronger preference for hierarchy in intergroup relations. Readability was improved, from a Flesch Reading Ease score for Jost and Thompson's instrument of 84.01 to 93.18 for the SDO-C. See Table 2.34 for a comparison. Jost and Thompson identified two factors, with eight items each (half reverse coded): Group-Based Dominance (GBD) and Opposition to Equality (OEQ). These factors have been found to have different relationships to prejudice and other psychological constructs (Ho et al., 2012). Scale reliability was good with this sample (Full scale Cronbach's α = .89; GBD α = .76; OEQ α = .86), although reliability of GBD was low among younger students (primary α = .54; secondary α = .78). OEQ reliability was similar in both age groups (primary α = .84; secondary α = .86).

Table 2.34
Social Dominance Orientation Scale Item Comparison

Factor	Item No.	Jost & Thompson (2000) item	SDO-C item	Reverse Code
Group-Based Dominance	01.	Inferior groups should stay in their place.	Groups that aren't as good as others should just accept it.	
	02.	Sometimes other groups must be kept in their place.	Groups that aren't as good as others must be kept that way.	
	03.	It's a real problem that certain groups are at the top and other groups are at the bottom.	It's troubling that some groups are on top and other groups are at the bottom.	(-)
	04.	If certain groups of people stayed in their place, we would have fewer problems.	If people from some groups stayed in their place, there would be fewer problems.	
	05.	No group of people is more worthy than any other.	No group of people is better than any other.	(-)
	06.	To get ahead in life, it is sometimes necessary to step on other groups.	No group of people should be given more than any other group.	(-)
	07.	Superior groups should not seek to dominate inferior groups.	Groups on top shouldn't try to keep other groups down.	(-)
	08.	In getting what your group wants, it should never be necessary to use force against other groups.	Groups should never have to fight other groups to get what they want.	(-)
Opposition to Equality	09.	We should do what we can to equalize conditions for different groups.	We should try hard to make things the same for all groups of people.	(-)
	10.	No one group should dominate in society.	No one group should keep other groups down.	(-)
	11.	Increased social equality would be a bad thing.	If all groups were treated the same, it would be a bad thing.	
	12.	Treating different groups more equally would create more problems than it would solve.	Treating different groups the same would make more problems than it would solve.	
	13.	It would be good if all groups could be equal.	It would be good if all groups could be treated equally.	(-)
	14.	All groups should have an equal chance.	All groups should have an equal chance.	(-)
	15.	There is no point in trying to make incomes more equal.	It's useless trying to make all groups equal.	
	16.	Group equality is not a worthwhile ideal.	It would not be good for all groups to be treated equally.	

SDO is consistently found to be higher among males than females, what Sidanius and Pratto (1999) called the *invariance hypothesis*. This was true among CTYI students (see Table 2.35; Figure 2.14). To compare the small group of primary students with the secondary students, a Kruskal-Wallis H test found significant differences for SDO (Table 2.36; $\chi^2[3] = 37.90$, $p < .001$), OEQ ($\chi^2[3] = 43.48$, $p < .001$), and GBD ($\chi^2[3] = 22.65$, $p < .001$). Secondary males had higher median scores than females in total SDO and both subscales. Primary males were similar to secondary males in total SDO, but were lower in both subscales. These differences indicate that sex and age may contribute differently to the variance in SDO scores.

Table 2.35
Social Dominance Orientation Means and Standard Deviations by Grade Level and Sex (2012 data)

	Primary Male (n = 24)		Primary Female (n = 21)		Secondary Male (n = 141)		Secondary Female (n = 139)		Primary Missing (n = 3)		Secondary Missing (n = 16)		Total (N = 344)	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
SDO Total	2.11	0.79	1.47	0.34	2.51	0.92	2.07	0.74	2.25	0.72	2.60	1.23	2.24	0.88
GBD	2.17	0.69	1.67	0.54	2.40	0.94	1.97	0.75	2.58	0.38	2.60	1.12	2.18	0.87
OEQ	2.05	1.07	1.27	0.33	2.63	1.04	2.16	0.86	1.92	1.48	2.60	1.42	2.31	1.02

Figure 2.14
Social Dominance Orientation Means by Grade Level and Sex (2012 data)

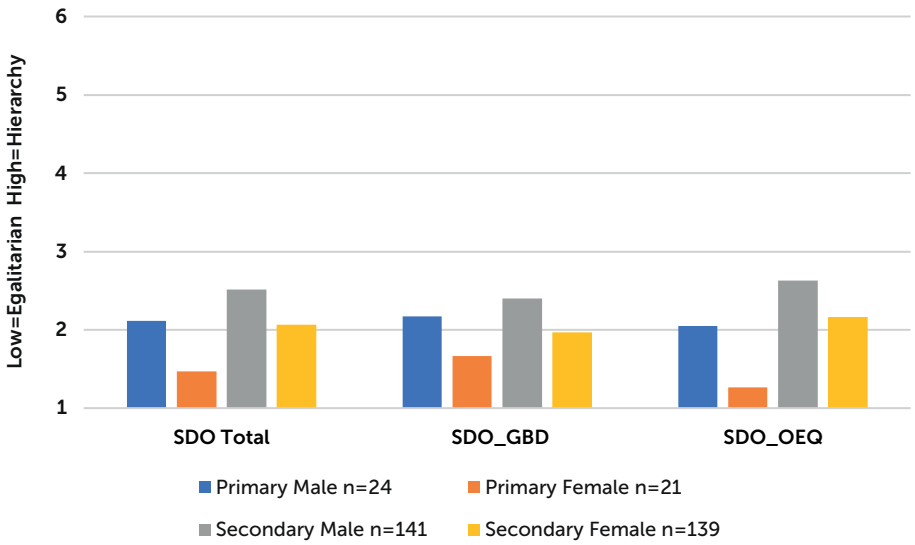


Table 2.36
Social Dominance Orientation Medians and Interquartile Ranges by Grade Level and Sex (2012 data)

	Primary Male (n = 24)		**Primary Female (n = 21)**		**Secondary Male (n = 141)**		**Secondary Female (n = 139)**		**Primary Missing (n = 3)**		**Secondary Missing (n = 16)**		**(N = 344)**
	Mdn	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*
SDO Total	2.00[a,b]	1.25	1.39[c]	0.38	2.44[a]	1.55	1.88[b]	0.87	2.00	0.69	2.38	2.03	2.06
GBD	2.25[b]	0.88	1.63[c]	0.63	2.38[a]	1.50	1.75[b,c]	1.13	2.50	0.38	2.31	1.84	2.00
OEQ	1.75[b]	1.81	1.13[c]	0.63	2.75[a]	1.75	2.13[b]	1.26	1.13	1.31	2.44	2.38	2.13

Note: Missing not included in comparisons

As in other studies, SDO scores were low among CTYI students, who mostly disagreed with statements about inequality. A subset of 60 students (16% of the sample), however, had average scores above 3.5 in GBD or OEQ, indicating an agreement with group-based dominance (n = 8), opposition to equality (n = 32), or both (n = 20). These students were proportionally distributed among primary and secondary grade level and by sex, χ^2 (4, N = 60) = 6.03, p = .20.

Social Dominance Orientation and Self-Concept. The 2012 data included self-concept, as measured by the SDQ-I (Marsh, 1990). The self-concept clusters (see Tables 2.10, 2.11) did not differ in either of the SDO subscales (Pillai's Trace = .029, F = 1.66, df = [6, 666], p < .05, but posthoc analyses eliminated statistical differences). To further explore connections between SDO, a belief about how others should be given resources, and self-concept, beliefs about one's individual characteristics, we carried out a stepwise hierarchical regression to predict first GBD and then OEQ, with sex and age as independent variables in the first step and the self-concept subscales in the second step (GBD ΔR^2 = .11; OEQ ΔR^2 = .07). In the prediction of GBD (Table 2.37), sex remained significant, once self-concept scores were entered, but age did not, F(8, 306) = 5.17, p < .001, R^2 = .16. General-school and Parent Relations self-concept had the strongest relationships to GBD, going down by .24 and .22, respectively, for each unit increase in GBD. As CTYI students had better relationships with parents and felt more positively about school, they were less likely to believe some groups should be dominated by others. Physical Appearance was positively associated with GBD in this model, increasing by .17 for each unit increase in GBD. The full model explained only 16% of variance in GBD scores, indicating other factors are likely to be much more important to its development.

Table 2.37
Stepwise Regression Coefficients Predicting SDO Group-Based Domination (GBD)

		Unstandardized Coefficients		Standardized Coefficients		
	Model	*B*	**Std. Error**	***β***	*t*	*p*
1	(Constant)	2.10	0.34		6.24	< .001
	Sex	-0.44	0.09	-0.26	-4.76	< .001
	Age	0.05	0.02	0.12	2.22	< .05
2	(Constant)	2.12	0.61		3.46	< .01
	Sex	**-0.24**	**0.10**	**-0.14**	**-2.45**	**< .05**
	Age	0.04	0.02	0.09	1.67	.096
	Physical Appearance	**0.18**	**0.08**	**0.17**	**2.19**	**< .05**
	Physical Ability	0.11	0.06	0.13	1.93	.055
	Parent Relations	**-0.22**	**0.06**	**-0.22**	**-3.50**	**< .01**
	Peer Relations	0.01	0.07	0.01	0.19	.852
	General-school	**-0.26**	**0.08**	**-0.24**	**-3.27**	**< .01**
	General-reading	0.04	0.08	0.03	0.48	.630
	General-math	0.06	0.05	0.07	1.08	.281
	General-self	0.08	0.11	0.07	0.78	.435

Both sex and age were significant in the prediction of OEQ (Table 2.38), when self-concept subscales were added to the model, $F(8, 306) = 3.41$, $p < .01$, $R^2 = .18$. In addition to sex and age, Parent Relations and General School were the only significant self-concept scores to predict OEQ, in the same direction and magnitude as with GBD: $\beta = -.19$ and $\beta = -.16$, respectively. Eighteen percent of the variance in OEQ was explained by the model.

Table 2.38
Stepwise Regression Coefficients Predicting SDO Opposition to Equality (OEQ)

		Unstandardized Coefficients		Standardized Coefficients		
	Model	*B*	**Std. Error**	***β***	*t*	*p*
1	(Constant)	1.29	0.38		3.37	< .01
	Sex	-0.55	0.11	-0.28	-5.24	< .001
	Age	0.13	0.03	0.27	5.08	< .001
2	(Constant)	2.36	0.71		3.31	< .01
	Sex	**-0.40**	**0.11**	**-0.20**	**-3.56**	**< .001**
	Age	**0.11**	**0.03**	**0.22**	**3.98**	**< .001**
	Physical Appearance	0.10	0.10	0.08	1.05	.294
	Physical Ability	0.11	0.06	0.11	1.70	.089
	Parent Relations	**-0.22**	**0.07**	**-0.19**	**-3.00**	**< .01**
	Peer Relations	-0.09	0.08	-0.07	-1.03	.305
	General-school	**-0.21**	**0.09**	**-0.16**	**-2.23**	**< .05**
	General-reading	-0.04	0.09	-0.03	-0.49	.627
	General-math	-0.02	0.06	-0.02	-0.26	.798
	General-self	0.14	0.12	0.10	1.12	.264

This analysis is informative in its findings:

- SDO is generally low among this gifted sample, although 16% of the sample had elevated scores.
- SDO is related positively with age – as children get older, SDO increases, especially among males. This relationship is driven primarily by beliefs about Opposition to Equality between groups.
- Group-Based Dominance was associated positively with Physical Appearance – as CTYI students felt more positively about their appearance, they felt more strongly about the appropriateness of dominance in intergroup relations.
- As CTYI students had better relationships with their parents and school, they had lower scores in both Group-Based Dominance and Opposition to Equality. SDO is clearly affected by these relationships.

This data supports the meager base of what is known about SDO and intelligence. Most CTYI students are likely to desire equality among groups in society and will shape an egalitarian future for the country, if allowed.

Summary of Psychological Explorations

The portrait of Irish gifted students painted by the studies conducted from 2012 to 2021 is of a large majority of well-adjusted, confident students, with coalescing identities and high standards for their performance. A minority of students have indicators of potential maladjustment, as in the case of Over- and Undercontroller personality classes or the Pushovers, Insecure, and Need a Boost self-efficacy classes, who make up a third and a quarter of the total sample in their respective classifications. Our studies included no measure of internalizing or externalizing problems, so speculations of potential problems cannot be confirmed. They are based on a significant amount of research, however, and can provide the impetus for, at a minimum, stimulating training for adults who work with these students.

In our own interpretations of the personality data, we should keep in mind the importance of viewing personality as something that can be changed (Miu & Yeager, 2015; Yeager et al., 2011; Yeager & Dweck., 2012). Some characteristics have deep roots and may not be easy to alter, such as introversion and neuroticism, which have at least some biological basis (Kandler, 2012; Rothbart, 2007; Stelmack, 1990). Psychological therapy may be helpful in developing adaptive strategies for students struggling to adjust. Conscientiousness could be improved through carefully designed instruction based on tried-and-true instructional strategies such as operant conditioning, social modeling, and cognitive approaches. Sometimes, what we think is an indelible attribute is simply a behavior that can be changed. Perfectionism is a learned construct and, as such, its unhealthy aspects can be unlearned.

While they generally preferred egalitarian intergroup relations at the societal level, relationships with others were an area of concern for a number of CTYI students. Some students did not believe they could get support when they needed it to solve a problem (e.g., Insecure, Pushovers, Need a Boost classes). Some worried about their social relationships (e.g., SCLOW, Insecure) and meeting others' expectations (e.g., Pushovers, Insecure, Under- and Overcontrollers). Psychosocial health depends on the ability to form positive social relationships – at least a few. A substantial amount of research has identified risk factors for gifted students. What could we learn about the social relationships of CTYI students? That is the topic of the next chapter.

Chapter 3:

The Social Experience of Irish Gifted Students

The ability to have positive, lasting significant relationships is a critical human need, foundational to much of human behavior (Baumeister & Leary, 1995; Deci & Ryan, 2000; Maslow, 1958). People of all ages are motivated by this need. They will eschew activities that come between them and people with whom they have (or wish to have) a connection and pursue activities that foster relationships. All people need at least one caring and trusted other in their lives. Early relationships are strongest in the family, but with development, children begin to branch out to develop relationships with others, especially peers. By adolescence, family relationships may be taken for granted, as more and more time is spent with peers (Larson & Richards, 1991). Exclusion from their peers has been identified as a contributing factor to increased aggression, anxiety, and depression (McDougall et al., 2001; Parker & Asher, 1987; Prinstein & La Greca, 2004; Sandstrom et al., 2003) Even the expectation of peer rejection can lead to social anxiety and withdrawal (London et al., 2007). Eisenberger et al. (2003) found the experience of pain associated with social rejection is similar to that of physical pain. In multiple studies, Carter-Sowell et al. (2010) found a strong negative reaction to being ostracized by peers, the impact of which was "immediate, strong, and robust" (p. 86). Among the students in the "brain" crowd of their study, Prinstein and LaGreca (2002) found an increase in internalizing distress as they transitioned from childhood to adolescence, suggesting these students faced uniquely difficult elements.

The ability to make social connections may be complicated for high-ability students (J. Cross, 2021), who are different on at least the one dimension of academic ability. Humans are like other creatures in their biological tendency to be attracted to similar others (*homophily*). This includes the tendency of people to be drawn together on the basis of their intelligence (Almack, 1922; Guo, 2006). CTYI students have intellectual abilities different from their peers, as evidenced by their exceptional scores on standardized tests. They may not have intellectual peers in the same classroom or even the same school, creating challenges to friendship formation (T. Cross & Cross, 2022). While some studies have found gifted students were popular at elementary age (e.g., Cohen et al., 1994; Farmer & Hollowell, 1994), this popularity seems to wane as they mature. The relationship between average grades and popularity was positive in elementary school, but negative in middle school (Bellmore, 2011) – grades and popularity rose or fell together in elementary, but in middle school, as grades went up, popularity fell and vice versa. As students are learning how to fit in to the social environment of their schools, they may be less interested in achievement than in social belonging (J. Cross, 2021; Hamm, 2000).

In the early 1980's, Coleman and Cross (1988, 1993; T. Cross et al., 1991; T. Cross & Coleman, 1992) spoke to hundreds of gifted students participating in the Tennessee Governor's Schools, which they were tasked to evaluate. Stemming from Coleman's (1985) Stigma of Giftedness Paradigm (SGP), their interviews sought to uncover the nature of their social experiences. From conversations with the students, Coleman and Cross (1988) proposed an Information Management Model, which described the conditions under which the child would decide to manage information about themselves by being highly visible, disidentifying from their giftedness (behaving in ways counter to how they perceive a gifted person would, such as rebelling), or becoming invisible. According to the SGP, gifted students want normal social interactions, but learn that when others become aware of their exceptional abilities, they will be treated differently. The Information Management Model describes how students maximize their ability to have normal social interactions. Coleman and Cross studied the SGP in a variety of ways (T. Cross et al., 1993, 1995; T. Cross et al., 1991), finding support for its tenets.

Swiatek (1995) proposed that gifted students' social coping strategies included denial of one's giftedness, using humor, engaging in many extracurricular activities, denying the impact of giftedness on one's acceptance by peers, conformity, helping others, and emphasizing the unimportance of one's popularity. These behavioral and psychological strategies have been tested in a variety of settings using Swiatek's instrument, the Social Coping Questionnaire (SCQ; Swiatek, 2012), including with CTYI students (J. Cross et al., 2015). In a cross-cultural study of the social experience of giftedness, however, only the strategies of hiding, conformity, and helping others were present in all countries (J. Cross et al., 2019). These studies provide evidence for the stigma of giftedness, which is likely to affect CTYI students. Their efforts to make friends may impact their achievement and an inability to connect with peers may affect their well-being.

We examined CTYI students' social relationships through their social self-concepts (2012, 2013), their social self-efficacy (2013, 2014, 2015, & 2016), and social experiences, including ostracism (2013, 2014, 2015, 2016, 2018). These self-reports reflect the students' perceptions of their own experiences and relationships with others. Where possible, we will explore how these relate to their psychological profiles.

Family Connections

The family plays an "integral role in gifted learners' development, experiences, and achievements" (Hermann & Lawrence, 2012, p. 393). Positive relationships with parents and siblings will buoy these students as they develop. CTYI students in the 2012 study of self-concept had positive perceptions of their relationship with parents (Figure 2.2, Table 2.8), especially the primary students. On average, they agreed that it was "Mostly True" that their parents understand them, they get along well, and that "If I have children of my own, I want to bring them up like my parents raised me." The SCLOW and SCMOD clusters, which tended to be lowest on the non-academic self-concept domains, considered these descriptors of their relationship with parents "Sometimes False, Sometimes True," indicating some variability in CTYI students' perceptions of their parent relations. The older sample of secondary students in the 2013 study had similarly positive perceptions of their parent relations (Table 2.15).

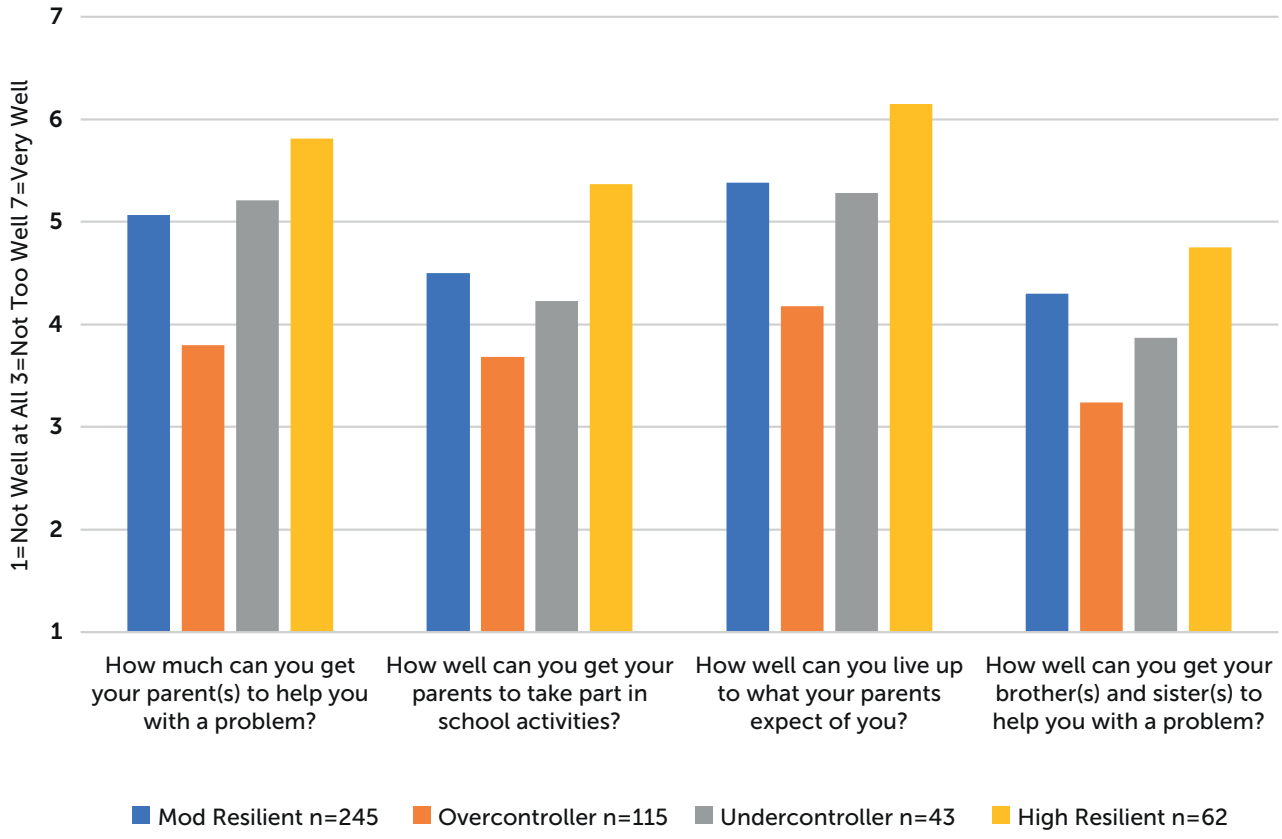
The MSPSE offers a different perspective on CTYI students' relationships with their parents – not just how well do they like them or feel understood, but how well can they get their support when they need it. The "Enlisting Parental and Community Support" subscale includes two questions about parents: "How much can you get your parent(s) to help you with a problem?" and "How well can you get your parents to take part in school activities?" Additionally, the "Meet Others' Expectations" subscale includes one parent question: "How well can you live up to what your parents expect of you?" On average, CTYI students in the 2015 dataset (n = 478) had high confidence on these items, M = 4.86, SD = 1.70; M = 4.41, SD = 1.78; and M = 5.17, SD = 1.64; respectively, where 5 = "Pretty Well" and 7 = "Very Well." Confidence differed among the five-factor model personality classes (Table 3.1, Figure 3.1), with the Overcontrollers (high Neuroticism, low Extraversion) consistently least confident and Resilients (both High and Moderate) consistently most confident. Undercontrollers (low Agreeableness and Conscientiousness and high Extraversion) were similar to the Moderate Resilients in their confidence that they can get support from parents. Siblings can also be a resource when needed, but students in all personality classes were less confident of their support (see Table 3.1, Figure 3.1).

Table 3.1
Self-Efficacy Family Item Means and Standard Deviations by Personality Class (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) *n* = **245**		**FFMCL2 (Over-controllers)** *n* = **115**		**FFMCL3 (Under-controllers)** *n* = **43**		**FFMCL4 (High Resilients)** *n* = **62**	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Self-Efficacy Items Range 1-7								
How well can you live up to what your parents expect of you?	5.38[b]	1.36	4.18[c]	1.82	5.28[b]	2.00	6.15[a]	1.05
How much can you get your parent(s) to help you with a problem?	5.07[b]	1.54	3.8[c]	1.67	5.21[a,b]	1.87	5.81[a]	1.32
How well can you get your parents to take part in school activities?	4.5[b]	1.67	3.68[c]	1.74	4.23[b,c]	2.07	5.37[a]	1.45
How well can you get your brother(s) and sister(s) to help you with a problem?	4.3[a,b]	1.78	3.24[c]	1.73	3.87[b,c]	2.12	4.75[a]	1.79

Note: Superscript letters indicate homogeneous subsets, Pillai's Trace = .213, $F = 11.73$, $df = (9, 1383)$, $p < .001$

Figure 3.1
Self-Efficacy Family Items by Personality Class (2015 CTYI Students)



An inability to get help from parents may be an indication of overly busy parents or, perhaps, of low responsiveness in an authoritarian or neglecting parenting style (Baumrind, 1971). In any case, when a child does not perceive support from parents there may be negative outcomes (Steinberg et al., 1994). Overcontroller personality types are associated with internalizing problems such as depression and anxiety (Donellan & Robins, 2010; Van Leeuwen et al., 2004), but our data does not allow an analysis of these conditions. Forty-three percent of Overcontrollers believed they could not get help from their parents when needed. To support these students, it may be important to provide a stable source of responsiveness. Social connections outside the family can also fulfill belonging needs.

There was high variability in the Undercontroller scores. A closer look exposes some of these gregarious, disagreeable students as highly confident in their family members' support, but others being much less confident. This was particularly true for sibling support: 37% of Undercontrollers reported they did not think they could get help from siblings when they needed it, while 16% believed they could do so "Very Well." Twenty percent of Undercontrollers did not believe they could get help from parents when needed. This is sharply contrasted with the majority of Undercontrollers, who were quite confident their parents would be responsive to their needs.

Peer Connections

The 2012 study of self-concept gives important insight into CTYI students' perceptions of their peer relations. The significant correlation of age and peer relations (r = -.201) tells us that students' beliefs about their ability to get along with peers and being likeable is more positive in the primary grades than in the secondary years (see Table 2.9). Peer relations self-concept is strongly correlated with physical appearance among those students generally high in self-concept (GENHI), in both primary (r = .43; Table 2.12) and secondary (r = .44; Table 2.13) school. Students who feel more positively about their physical appearance also have a more positive concept of their relationships with peers. Among the secondary students in the SCMOD clusters with more modest self-concept (SCMOD), there is a significant correlation between beliefs about peer relations and their physical ability (r = .32; being a good athlete, running fast, enjoying sports). As one rises, the other does, as well. The lowest overall self-concept cluster, SCLOW, has a similar relationship between peer relations and physical abilities (r = .25). The secondary students in this cluster have a high correlation (r = .51) between peer relations and parent relations. As students have a more positive concept of their relationship with parents, they are more likely to have a positive relationship with peers. This lowest overall self-concept cluster also had a high correlation between peer relations and their general self-concept. As they had more positive beliefs about themselves in general, they had more positive beliefs about their likeability and their ability to make friends. Their scores were still quite low in both general-self and peer relations, however (Table 2.11).

Secondary students in the SCMOD self-concept cluster (see Figure 2.4) had modest, negative correlations between peer relations and their general school (r = -.35), reading (r = -.30), and math (r = -.29) self-concepts (Table 2.13). It is possible that higher friendship beliefs come along with less positive beliefs about school, but it could also be that more positive beliefs about school abilities and liking come along with more negative beliefs about their relationships with peers (as they like school more, they are less comfortable with peers). In either case, students in the SCMOD cluster may benefit from a more balanced perspective on their school and social selves.

There are two subscales in the MSPSE that can help us better understand what secondary CTYI students think about their relationships with peers. The first, "Social Self-Efficacy" includes items about how well they can make and keep friends of the opposite or same sex, how well they can carry on conversations, and how well they can work in a group. The students most confident in their social abilities were, of course, in the Superstars cluster, who made up a fourth of the combined sample of secondary students (see Figure 2.6 & 2.7; Table 2.22). They believed they have quite good social skills. Almost all the students had a great deal of confidence in their social abilities, considering themselves to be able to make friends "Pretty Well". Only the 18 Insecure students did not think they could do these things well.

The second relevant subscale, "Resisting Peer Pressure," asks how well students believe they can resist peers' pressure to do things that could get them in trouble, such as skipping school, drinking alcohol, or using illegal drugs. Most students were extremely confident they could resist these pressures, but those in the Pushovers and Confident Pushovers self-efficacy classes were unsure of themselves in this regard (see Figure 2.6 & 2.7; Table 2.22). Even students who are quite sure of themselves may need to work on their abilities to resist peers' efforts to engage them in negative activities. Based on the self-efficacy class profiles, it may not be easy for parents, counselors, or educators to recognize the Confident Pushovers, who may be vulnerable to peer pressure.

A closely related subscale is "Assertive Self-Efficacy," which asks students how well they can "express your opinions when other classmates disagree with you," "deal with situations where others are annoying you or hurting your feelings," or "stand firm to someone who is asking you to do something unreasonable or inconvenient"? The same three classes high in self-efficacy – nearly 80% of the students – were high in assertiveness. The remaining three classes were not so confident, and the Insecure students did not believe they would be able to assert themselves with others. Assertiveness happens in social settings and is important to building positive relations with peers (J. Cross et al., 2016). In studies of popularity among adolescents, the most submissive students tended to be rejected (Francis et al., 2010; Gorman et al., 2002). Assertiveness training (e.g., Mio & Matsumuto, 2018; Thompson & Bundy,1996) may result in improved overall confidence for the students lowest in self-efficacy.

A few more items asked students about their peers. From the "Enlisting Social Resources" subscale are two items: How well can you get another student to help you when you get stuck on schoolwork?" and "How well can you get a friend to help you when you have social problems?" As a whole, CTYI secondary students were less confident they could get a classmate to help them with schoolwork (M = 3.93, SD = 1.74) than with their social problems (M = 4.87, SD = 1.65). Knowing you can resolve an issue, social or academic, with the help of a peer, will provide a sense of collective agency. From the "Meet Others' Expectations" is one item: "How well can you live up to what your peers expect of you?" An awareness of peers' expectations is assumed, but, in general, CTYI students believed they could meet them "Pretty Well."

Examining differences in these items by the five-factor model personality classes (Table 3.2, Figure 3.2), we see

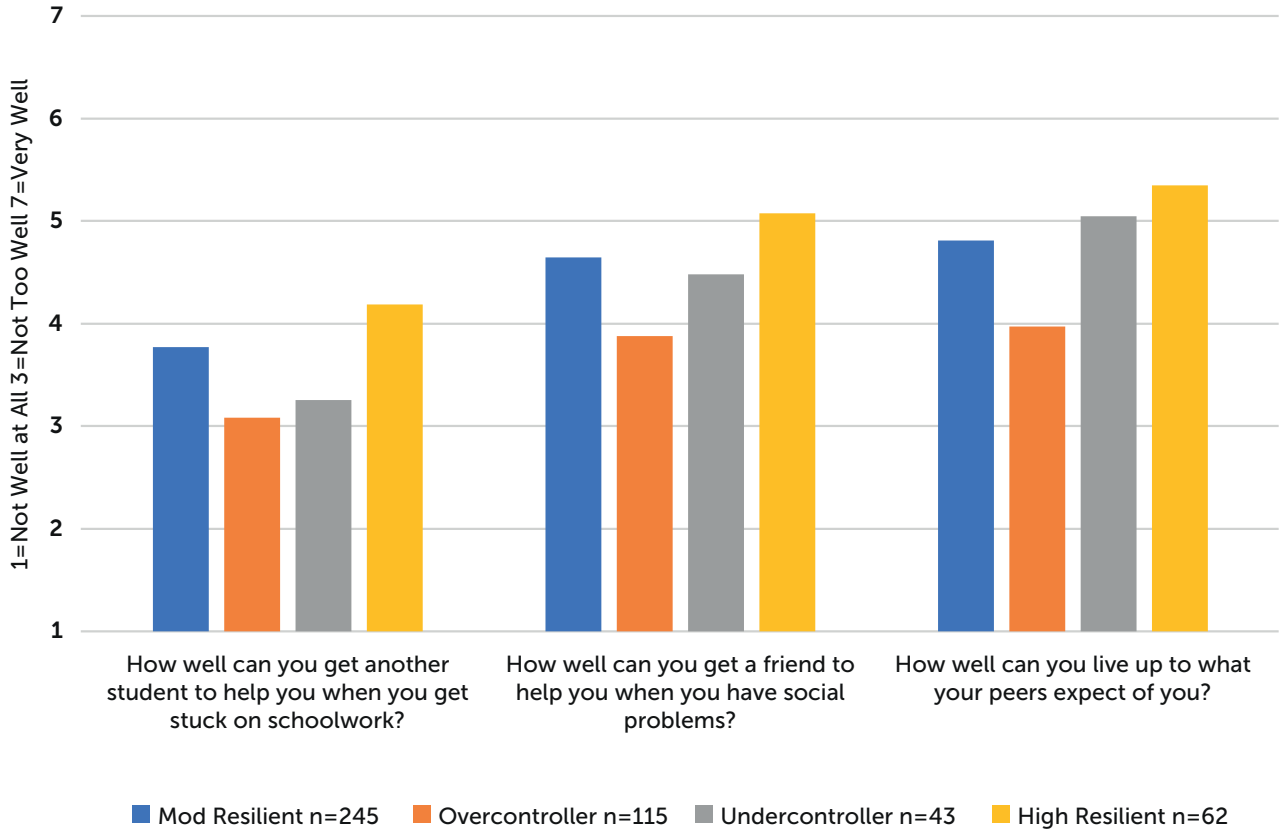
a similar pattern to the family items. Overcontrollers were less likely than students in the other classes to believe they could get help from another student, get a friend to help with social problems, and live up to peers' expectations, with one exception. Undercontrollers held similar beliefs to Overcontrollers about an inability to get help from a classmate on schoolwork. Undercontrollers and Resilients of both types were quite confident in their ability to get help from a friend with social problems and to live up to peers' expectations. It is not clear what may be the source of Undercontrollers' lower confidence in getting help on schoolwork.

Table 3.2
Self-Efficacy Peer Item Means and Standard Deviations by Personality Class (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) *n* = **245**		**FFMCL2 (Over-controllers)** *n* = **115**		**FFMCL3 (Under-controllers)** *n* = **43**		**FFMCL4 (High Resilients)** *n* = **62**	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
How well can you get another student to help you when you get stuck on schoolwork?	4.09[a,b]	1.60	3.32[c]	1.75	3.51[b,c]	2.10	4.55[a]	1.66
How well can you get a friend to help you when you have social problems?	5.06[a]	1.49	4.21[b]	1.68	4.88[a]	1.79	5.54[a]	1.61
How well can you live up to what your peers expect of you?	5.24[b]	1.18	4.31[c]	1.69	5.51[a,b]	1.56	5.84[a]	1.22

Note: Superscript letters indicate homogeneous subsets; Range 1-7; Pillai's Trace = .17, $F = 9.28$, $df = (9, 1383)$, $p < .001$

Figure 3.2
Self-Efficacy Peer Items by Personality Class (2015 CTYI Students)



CTYI Students' Cognitive Beliefs

One of the things Coleman and Cross (1988) learned from their many interviews with gifted students was that they feel different from their peers. As one student put it, "Being one of the smarties isn't easy. Actually, it is on the same wave-length to some people as a man with one leg, it's a social handicap and everyone stares" (p. 41). Coleman and Cross attempted to learn how this difference manifested in students' lives. They created an instrument that represented what they had heard in the interviews. In 2015 and 2016, CTYI and CAT secondary students completed a modified version of this instrument, the Social Cognitive Beliefs scale (SCB; see Figure 3.3)

Figure 3.3
Social Cognitive Beliefs Scale

Please **circle** the response that best describes you.

		exactly the same as	mostly the same as	somewhat the same as, somewhat different from	mostly different from	totally different from
01.	Students in my school see me as being _____other students.	1	2	3	4	5
02.	Teachers in my school see me as being _____other students.	1	2	3	4	5

		Strongly Disagree	Disagree	Somewhat agree, somewhat disagree	Agree	Strongly Agree
03.	I find that I get bored quicker with "small talk" than do other students.	1	2	3	4	5
04.	I prefer to work independently on school projects.	1	2	3	4	5
05.	I am more serious about learning than other students.	1	2	3	4	5
06.	The other students in my class get in the way of my learning.	1	2	3	4	5

Each item of the SCB warrants individual exploration (Table 3.4, Figure 3.4). All students believed other students and teachers see them as "Somewhat" the same or different. CTYI females had the strongest preference to work independently, but all students expressed a preference for independent work. CAT males had the lowest scores for the item, "I am more serious about learning than other students," but these were still above a 3, indicating they did at least "Somewhat" agree.

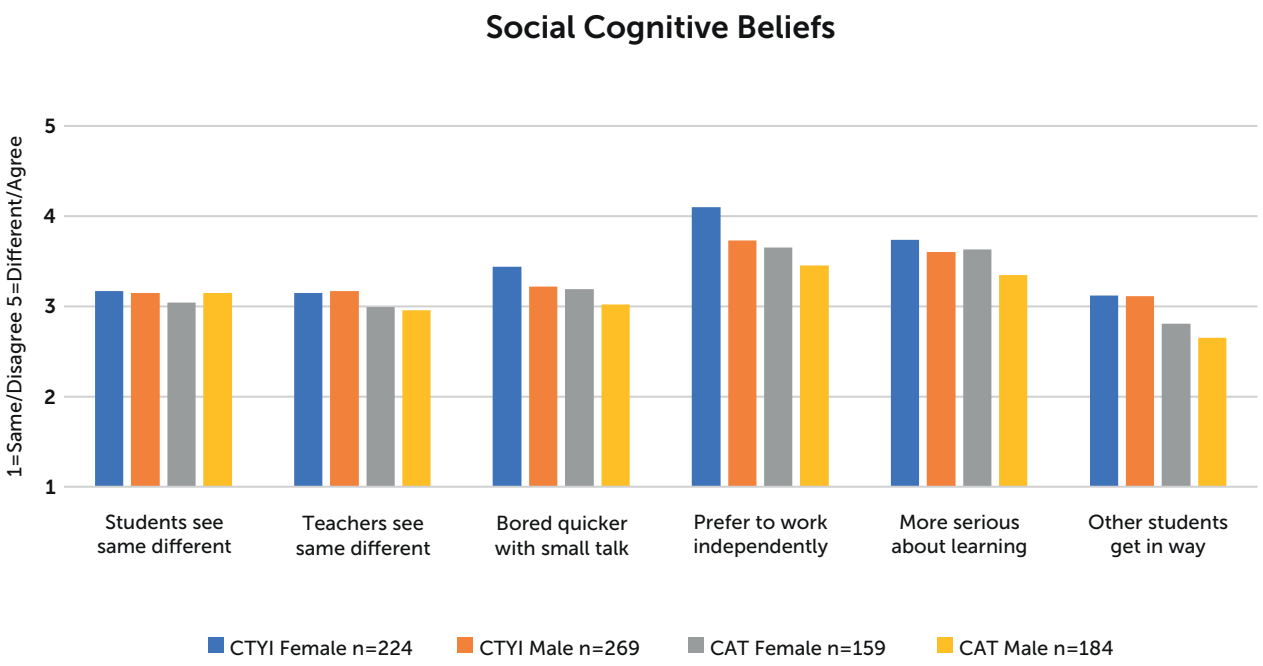
Table 3.4
Social Cognitive Beliefs Mean and Standard Deviations by Program and Sex (2015 & 2016 data)

	CTYI Female *n*=224		**CTYI Male** *n*=269		**CTYI Missing** *n*=1		**CAT Female** *n*=159		**CAT Male** *n*=184		**CAT Missing** *n*=21		**CTYI Total** *N*= 494		**CAT Total** *N*=364	
Social Cognitive Belief Items	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Students see same different	3.17[a]	0.97	3.15[a]	1.01	2.00	0.0	3.04[a]	1.00	3.15[a]	1.08	3.33	1.24	3.16	0.99	3.11	1.05
Teachers see same different	3.15[a]	1.06	3.17[a]	1.02	2.00	0.0	2.99[a]	1.02	2.96[a]	1.07	3.26	0.99	3.16*	1.04	2.99*	1.04
Bored quicker with small talk	3.44[a]	1.11	3.22[a,b]	1.21	2.00	0.0	3.19[a,b]	1.02	3.02[b]	1.12	2.94	1.21	3.32*	1.17	3.09*	1.08
Prefer to work independently	4.10[a]	0.98	3.73[b]	1.12	2.00	0.0	3.65[b,c]	1.13	3.45[c]	1.22	3.24	1.26	3.89*	1.08	3.53*	1.18
More serious about learning	3.74[a]	0.97	3.60[a]	1.09	3.00	0.0	3.63[a]	0.96	3.35[b]	1.10	3.50	1.00	3.66*	1.04	3.48*	1.04
Other students get in way	3.12[a,b]	1.10	3.11[a]	1.21	2.00	0.0	2.81[b,c]	1.08	2.65[c]	1.21	3.11	1.15	3.11*	1.16	2.75*	1.15

Note: Superscript letters indicate homogeneous subsets (missing not included); Pillai's Trace = .085, $F = 3.93$, $df = (18, 2427)$, $p < .001$; Range 1-5

* CTYI and CAT totals differ *ps* < .05

Figure 3.4
Social Cognitive Beliefs by Program and Sex (2015 & 2016 data)



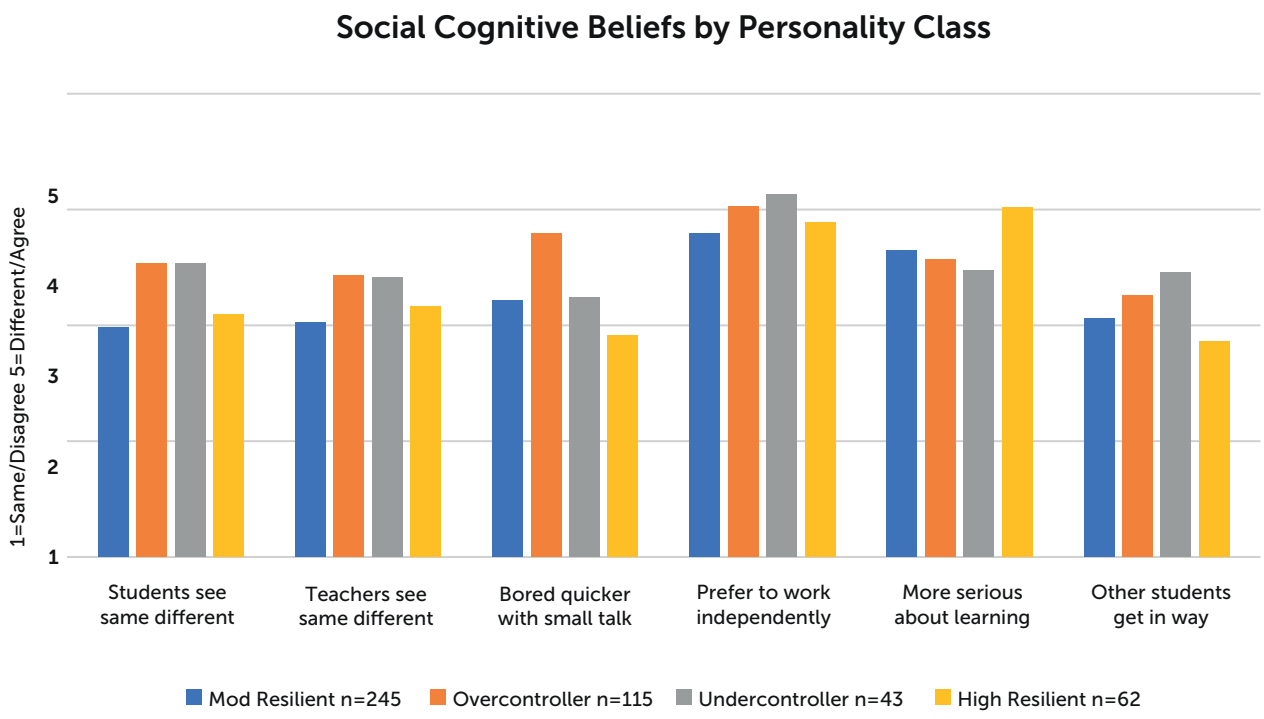
The personality types differ modestly in their beliefs about visibility and their differences from peers. The High and Moderate Resilients (low in Neuroticism, high in all other traits) were less likely than Over- and Undercontrollers to believe other students see them as different (see Table 3.5, Figure 3.5), but all students were similar in their beliefs that teachers "Somewhat" see them as different from peers. Students in the Overcontroller group (high in Neuroticism, low in Extraversion) agreed most strongly that they get bored more quickly with small talk than do their peers. All CTYI students agreed they prefer to work independently. The High Resilients had strong beliefs they are more serious about learning than peers, while Moderate Resilients, Over- and Undercontrollers mostly agree they are more serious. Undercontrollers (high Extraversion, low Agreeableness and Conscientiousness) were more likely to believe other students get in the way of their learning than High Resilients, which makes sense when we consider their low Agreeableness scores.

Table 3.5
Social Cognitive Beliefs Means and Standard Deviations by Personality Class (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) *n* **= 245**		**FFMCL2 (Over-controllers)** *n* **= 115**		**FFMCL3 (Under-controllers)** *n* **= 45**		**FFMCL4 (High Resilients)** *n* **= 63**	
Social Cognitive Beliefs Items	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Students see same different	2.98[b]	0.91	3.53[a]	0.91	3.54[a]	1.01	3.09[b]	1.11
Teachers see same different	3.03[a]	1.00	3.43[a]	0.97	3.41[a]	1.17	3.16[a]	1.04
Bored quicker with small talk	3.21[b]	1.12	3.79[a]	1.07	3.24[b]	1.39	2.91[b]	1.13
Prefer to work independently	3.80[a]	1.08	4.03[a]	1.03	4.13[a]	1.15	3.89[a]	0.96
More serious about learning	3.65[a,b]	0.97	3.57[b]	1.10	3.47[b]	1.24	4.02[a]	1.00
Other students get in way	3.06[b]	1.11	3.26[a,b]	1.07	3.46[a]	1.43	2.86[b]	1.19

Note: Superscript letters indicate homogeneous subsets (missing not included);
Pillai's Trace = .16, $F = 4.39$, $df = (18, 1383)$, $p < .001$; Range 1-5

Figure 3.5
Social Cognitive Beliefs by Personality Class (2015 CTYI students)



The analysis of subject-area self-efficacy (O'Reilly et al., 2018) allows another window into the CTYI students' individual social cognitive beliefs. Clusters of students confident in their science, mathematics or humanities subject areas differed in a few of the SCB items (Pillai's Trace = .091, $F = 3.67$, $df = (12, 920)$, $p < .001$; see Table 3.6, Figure 3.6). The students with high self-efficacy in all subject areas, the Well-Rounded cluster, had stronger beliefs that teachers see them as different from their peers and that they were more serious about learning than the Math Confident and Math Insecure students. They were also more likely than the Math Confident students to believe other students get in the way of their learning.

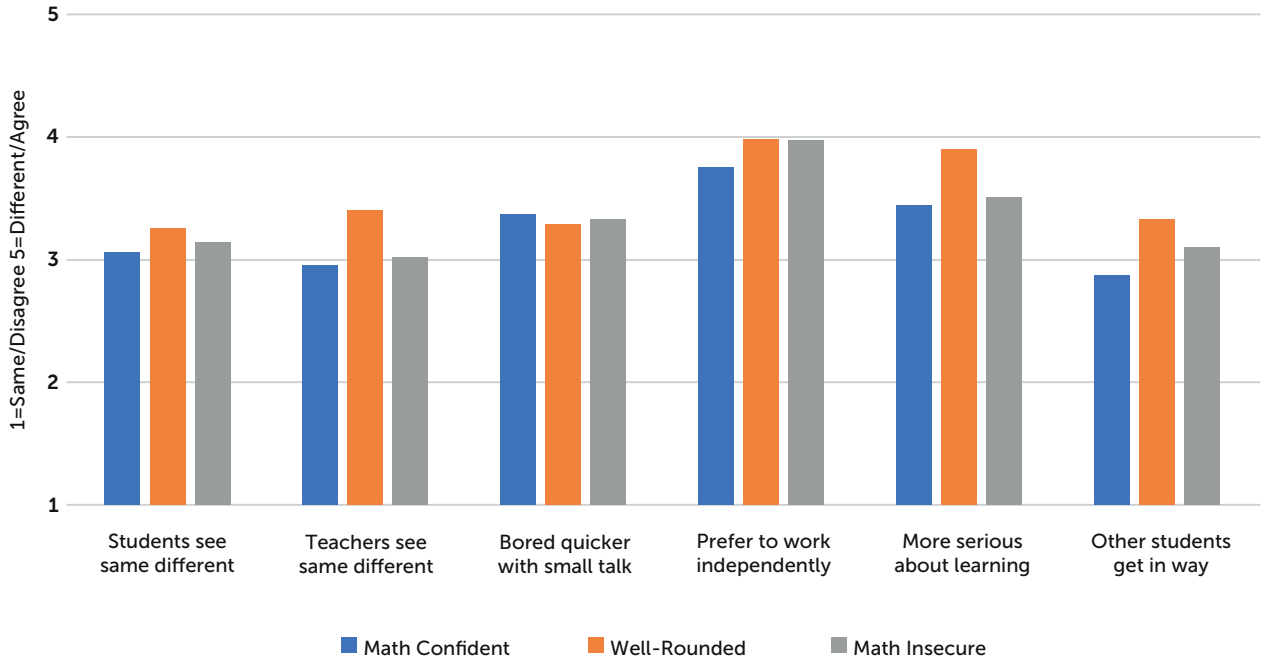
In general, CTYI students in the 2015 study believed their classmates and teachers see them as somewhat the same and somewhat different from other students. They somewhat agreed they get bored quicker with small talk and that other students get in the way of their learning. Their opinions were stronger about preferring to work independently (they do) and that they are more serious about learning than their peers. CAT students were similar, except when it comes to viewing other students as getting in the way. They did not generally agree. Personality differences were found among the CTYI students, with Resilient types – those who have more adaptable personalities – less likely to believe they are seen as different by classmates or teachers. They also had slightly more positive attitudes about engaging with peers than the other personality types, although they did consider themselves to be more serious about learning. Undercontrollers stood out in their strong preference to work independently and beliefs that peers get in the way of their learning. Overcontrollers were notably more in agreement than the other personality types that they get bored quickly with small talk and, like the Undercontrollers, prefer to work independently.

Table 3.6
Social Cognitive Beliefs Means and Standard Deviations by Subject Self-Efficacy Cluster (2015 CTYI Students)

	Math Confident *n* = **167**		**Well-Rounded** *n* = **219**		**Math Insecure** *n* = **91**	
Social Cognitive Beliefs Items	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Students see same different	3.06[a]	0.98	3.26[a]	0.96	3.14[a]	1.07
Teachers see same different	2.95[b]	0.97	3.40[a]	0.99	3.02[b]	1.12
Bored quicker with small talk	3.37[a]	1.17	3.29[a]	1.16	3.33a	1.17
Prefer to work independently	3.75[a]	1.12	3.98[a]	1.04	3.97[a]	1.06
More serious about learning	3.44[b]	1.05	3.90[a]	1.00	3.51[b]	1.03
Other students get in way	2.87[b]	1.12	3.33[a]	1.14	3.10[a,b]	1.12

Note: Superscript letters indicate homogeneous subsets; Pillai's Trace = .091, $F = 3.67$, $df = (12, 920)$, $p < .001$; Range 1-5

Figure 3.6
Social Cognitive Beliefs by Subject Self-Efficacy Cluster (2015 CTYI Students)



Coping with the Stigma of Giftedness

One of Coleman and Cross's findings from the many interviews with gifted students in the early 1980's was that the conditions under which the stigma had its effects differed. Some situations were more threatening to being "outed" as a gifted student than others. They tested this finding quantitatively with a series of scenarios, carefully crafted to elicit a response to these varying threats. The least threatening situation was to publicly show they know a discrete fact that other students did not. The scenario they created was of students complaining about not knowing the meaning of the word *onomatopoeia*. Asked how they would respond if they knew the meaning, students could choose options along a continuum of telling the truth to lying. The response options were developed from information given in student interviews. Students may deflect attention from their true beliefs (truth) by placating (agreeing with some aspect of the comment, without exposing true feelings), copping out (changing the subject), or covering up by using words that are related to the conversation, but do not reveal anything about the person's self, or by giving a false response (lying). Another threatening scenario described a situation when others were not interested in learning, but the gifted student wanted to learn. For this situation, a scenario describes a substitute teacher being taunted by peers. The most threatening exposure is in the Biology Exam scenario, where others are complaining about the difficulty of a test the gifted student found easy. T. Cross et al. (1991) found many students responded to the Onomatopoeia scenario by saying they would tell the truth. The majority of students indicated they would placate in response to the Substitute Teacher scenario. The Biology Exam elicited the broadest range of responses, with some students comfortable telling the truth, but more being likely to cop out or even lie. Scenarios from the 2015 and 2016 surveys are in Figure 3.7. Responses of students in the original 1980's study are displayed in Figure 3.8.

Figure 3.7
Survey Scenarios

Please read the following scenarios and answer the questions thinking about what you would do in this situation. **Circle the option** that best describes what you would say.

Scenario #1
Setting: In the cafeteria line, several people from your class are discussing the life science exam.
Taisce: Man! Wasn't that test impossible? I must have spent 10 minutes trying to think of examples of the major biomes.
Corey: I blew the whole thing, even though I studied really hard.
Devin: I probably failed it too.
Devin says to **Shannon**, "I bet you breezed through it and didn't even open the book to study." Actually, Shannon spent several hours studying and thought it wasn't a difficult test.
If you were Shannon, what would you be MOST inclined to say?
Please **circle** your choice.

A (Preface No Answer)	B (Lie)	C (Placate)	D (Truth)	E (Cop-Out)
"Tests can be hard sometimes."	"Yeah, that exam was a pain."	"I probably studied as hard as you did, but the test wasn't too hard."	"I thought it was kind of easy."	"How long did you study?"

***J*Setting:** A group of students is discussing a class lecture as they leave the classroom.
Brady: I think it's crazy that Mr. O'Reilly expects us to remember all of that material in Chapter 10 for the test in Literature!
Kieran: What does he think – that we have nothing better to do than memorize that stuff from the book?
Quinn: Some of those words are hard. I don't even understand what he means by "onomatopoeia," do you guys?
They all shake their heads, with the exception of **Jamie** (who has said nothing to this point). They turn to Jamie. Quinn says, "How about you, Jamie? Knowing you, you probably know it. Right?"
Jamie understands all of the terms and knows that onomatopoeia is nothing more than a word that describes a sound.
If you were Jamie, which would you be MOST inclined to say?
Please **circle** your choice.

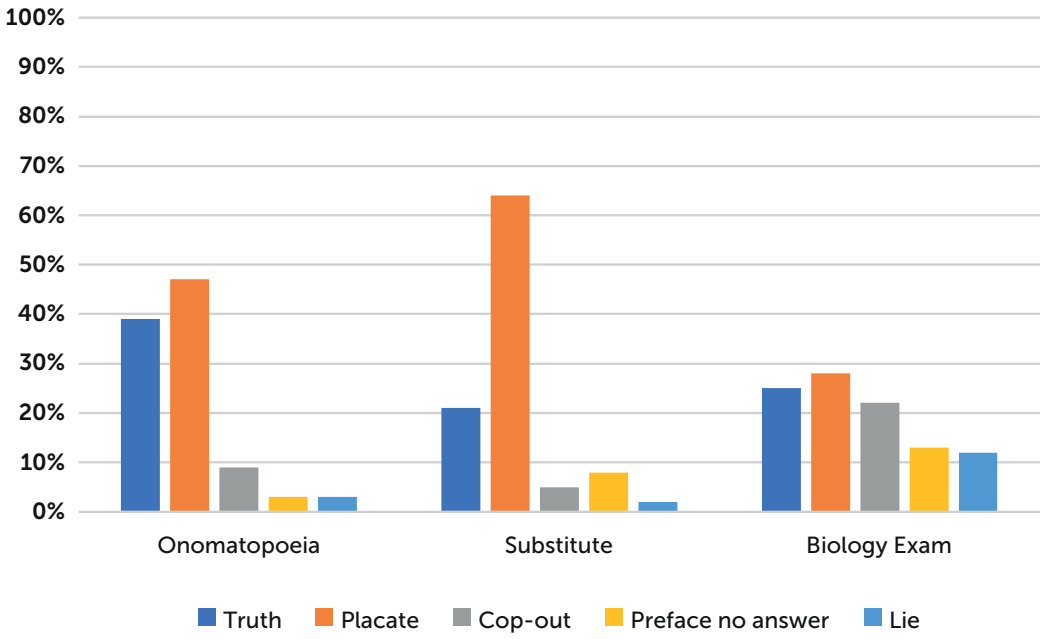
A (Truth)	B (Placate)	C (Cop-Out)	D (Preface No Answer)	E (Lie)
"It means a word that imitates a sound, like 'crash' or 'bang.'"	"It's hard to remember those words, but I think it means a word that describes a sound, like 'crash' or 'bang.'"	"I think you're right, Mr. O'Reilly is expecting too much."	"It's not easy to remember those terms, no one can keep them straight."	"I have no idea what those words mean, either."

Scenario #3
Setting: In the hallway, between classes:
Pat: Wasn't that substitute teacher for Mrs. Flannery awful? I couldn't figure out what she was trying to say about the Western Expansion. She really lost me.
Reagan: How about what Pete pulled on her, pretending he was sick and ready to throw up on her desk?
Aidan: She even believed it. I wish I had thought of that one! I would rather have spent the period in the clinic instead of sitting in that class.
Everyone but **Kelly** nodded their heads in agreement.
Reagan looked at Kelly and asked, "Didn't you think that was hysterical?" Kelly felt that the substitute had started an interesting topic, but Pete had made it impossible for her to teach. Kelly thought Pete had been unnecessarily rude.
If you were Kelly, which would you be MOST inclined to say?
Please **circle** your choice.

A (Cop-Out)	B (Placate)	C (Truth)	D (Preface No Answer)	E (Lie)
"I wonder when Mrs. Flannery is coming back."	"Some of it was funny, but Pete shouldn't have gone that far."	"I thought the class got out of control, Pete went too far."	"Pete can be funny sometimes."	"Pete was funny. The substitute was asking for it."

Note: Response options were recoded so 1=Truth, 2=Placate, 3=Cop-Out, 4=Preface No Answer, 5=Lie; Survey did not include the parenthetical option description.

Figure 3.8
Original Study Scenario Responses (T. Cross et al., 1991; $N = 1465$)

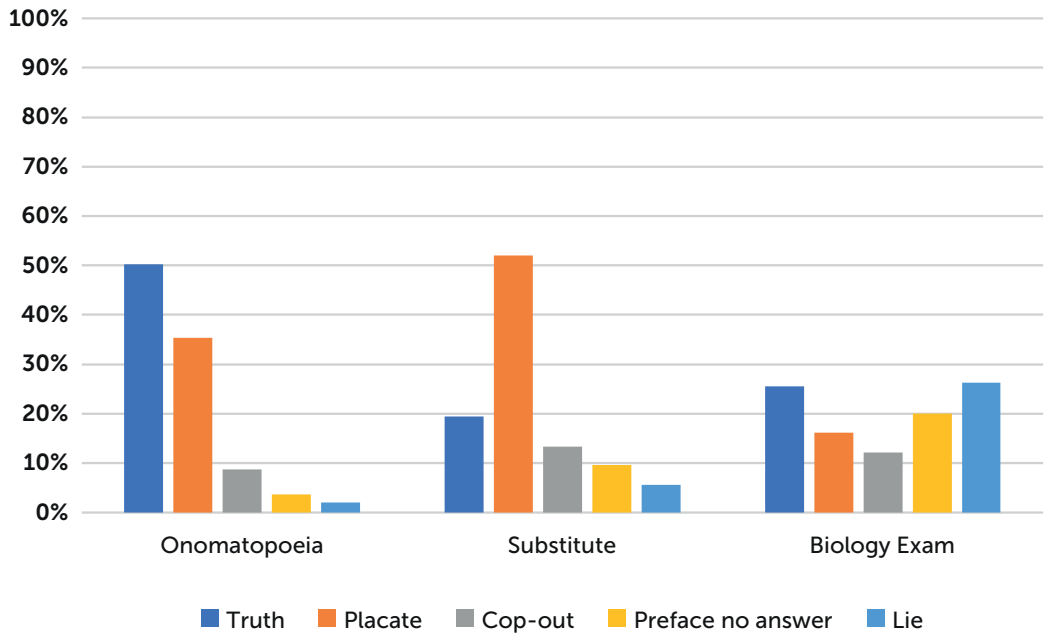


In a review of social science research, Exline and Lobel (1999) put the Cross et al. (1991) study into a new context, including it alongside other studies of social comparison. According to Festinger's (1954) social comparison theory, people are constantly comparing themselves with others on any number of dimensions. When a person stacks up favorably in comparison to a target (a *downward comparison*), it can boost their esteem and make them feel good. When they compare unfavorably, having performed more poorly than the target (an *upward comparison*), it is a hit to their esteem and negative feelings ensue. Exline and Lobel drew attention to the phenomenon of people who are the target of upward comparisons. Outperformance can be a threat to others and Exline and Lobel and colleagues (Zell et al., 2020) identified the conditions when the threat may be exacerbated, such as when the outperformance is public, and what strategies for minimizing the threat have been identified in the research.

The students in Cross et al.'s (1991) study of Tennessee Governor's Schools may be avoiding visibility in the biology exam scenario because of the discomfort that comes from outperforming others. In addition to worrying that they will be exposed with a stigmatizing condition – giftedness – students may also be concerned about the effects their successes have on others.

CTYI and CAT students responded similarly to the scenarios, $\chi^2 ps > .05$. They were more likely to tell the truth than placate in Onomatopoia (see Figure 3.9) and a higher percentage responded they would lie in the Biology Exam scenario. Twenty-six percent of the Irish students chose the "lie" option, versus 12% of US students in Cross et al.'s (1991) study. The implication is that there is a high social cost to have one's giftedness exposed to peers among CTYI and CAT students. Senior cycle students were more likely to choose the lie option than Junior cycle students (30.8% vs. 21.4%, respectively; $c^2(8, N = 852) = 16.27, p < .05$.

Figure 3.9
CTYI and CAT Scenario Responses (2015 & 2016 Data; N = 852)



The CTYI student personality profiles were similar in their responses to the Onomatopoeia and Biology Exam scenarios, but Undercontrollers were disproportionately overrepresented in the Substitute Teacher Lie response, χ^2 (12, N = 477) = 22.33, p < .05. There were interesting correlations between the scenario responses and other measures. A belief in the fixedness of intelligence was correlated positively with the Onomatopoeia scenario response options (r = .11, p < .01). As one believed more in fixed intelligence, they were more likely to choose an evasive response and not tell the truth. This correlation did not exist for the other scenarios, which were considered more threatening of exposure. SCB item scores were also correlated with students' choices of scenario response and these correlations differed among CTYI and CAT students. The more students believed they were seen as different from peers and were less like them, the less likely they were to respond evasively to scenarios (i.e., tell the truth; see Table 3.7).

Interestingly, this was most true in the Substitute Teacher scenario and CAT students had stronger correlations than CTYI students. The strongest relationships were in their preference to work independently (CTYI r = -.14; CAT r = -.26) and belief they were more serious than peers (CTYI r = -.18; CAT r = -.29). As they more strongly agreed with these items, they were more likely to choose more truthful options about Petey disrupting their learning. Conversely, as they preferred to work with peers or did not agree they were more serious than peers, they were more likely to hide their true feelings from peers and chose less truthful options.

Table 3.7
CTYI and CAT Pearson Correlations Among Social Cognitive Beliefs and Scenario Items

	SCB Item	Biology Exam	Onomatopeia	Substitute
CTYI	Students see same/different	-0.03	-.12*	-0.08
	Teachers see same/different	-0.07	-.12**	-0.03
	Bored quicker with small talk	-.10*	-0.01	-.09*
	Prefer to work independently	-0.01	-0.01	-.14**
	More serious about learning	-.11*	-.10*	-.18**
	Other students get in way	-0.07	-0.09	-.11*
CAT	Students see same/different	-0.08	-0.07	-.15**
	Teachers see same/different	-0.10	-0.06	-0.07
	Bored quicker with small talk	0.01	-0.04	-.17**
	Prefer to work independently	-0.01	-0.09	-.26**
	More serious about learning	-.12*	-.12*	-.29**
	Other students get in way	-0.06	-0.07	-0.07

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Perfectionism was also correlated with students' response choices, differently for CTYI and CAT students. In the low threat Onomatopoeia condition, negative correlations were significant for Self- and Other-Oriented perfectionism among CAT students (r = -.12 and r = -.17, respectively), but not CTYI. As CAT students had higher expectations of themselves and others, options trended more toward truth in the low threat condition (and vice versa). Socially Prescribed perfectionism was significantly positively correlated with Onomatopoeia responses for CTYI (r = .11), but not CAT students. As students were more concerned about others' expectations for their perfect performance, they were slightly more likely to choose the lie option in this low threat condition. The Substitute Teacher scenario was correlated negatively with Self-Oriented perfectionism for both CTYI (r = -.12) and CAT (r = -.18) students and with Other-Oriented perfectionism for CTYI (r = -.10) students.

In this moderate threat condition, high expectations for themselves were associated with more truth-oriented options in the scenario. For CTYI students, this was also the case when they had high expectations for others. The high threat Biology Exam scenario responses did not correlate significantly with perfectionism among CTYI students, but among CAT students, it correlated negatively with Other-Oriented (r = -.12) and positively with Socially Prescribed perfectionism (r = .11). As CAT students had higher expectations for others' perfection, their response to the Biology Exam scenario was more likely to be oriented towards truth. As they believed others expected them to be perfect, they were slightly more likely to choose an option on the "lie" end of the spectrum.

Social Coping Questionnaire

In the 2012 study, a modified version of Swiatek's (2001) Social Coping Questionnaire (SCQ) was included. It was modified for the Irish context by changing the term "gifted" to "high academic abilities." One question was retained to compare the terms: "I don't think that I am gifted" and "I don't think that I have high academic abilities." These had a high correlation of $r = .63$. J. Cross et al. (2015) was a thorough analysis of the SCQ among the younger students in this sample (3rd class – 2nd year) in comparison with a US sample. In that analysis, the Irish students had significantly higher scores in the "Deny giftedness" factor than the US students, indicating they were more likely to reject their high academic abilities. The use of social coping strategies differed among CTYI students high in self-concept and those with lower self-concept scores. Using humor, helping, and avoiding the appearance of having high abilities were more likely to be strategies used by the high self-concept CTYI students. Denying their high abilities and the impact they may have on acceptance by peers were the most common social coping strategies among students with low self-concept.

What does social coping look like among the older students of the 2012 study? We examine social coping among the secondary students in the 2012 data ($n = 312$). The factors of the SCQ (see Table 3.8) had relatively low reliability, as has often been the case with this instrument (J. Cross et al., 2015; Rudasill et al., 2007). Two items were dropped from the Activity factor to bring the reliability to a reasonable level. The factors in Table 3.9 are sorted by their total scores. The strategy students were most likely to agree with was "Helping others." They also reported engaging in many activities, which Swiatek (1999) proposed may be a strategy to "become known for a characteristic other than their academic ability" (p. 34). The factor Swiatek labeled "Focus on Popularity" is actually a strategy to dismiss the importance of popularity. On average, CTYI secondary students reported this was "Somewhat True" for them. Males and females had similar scores on most SCQ subscales (Table 3.8), with the exception of Denying High Academic Abilities and Peer Acceptance. Females were more likely to "Somewhat" deny their abilities than males. Although their scores were statistically higher than males' on the Peer Acceptance strategy, both were around the "Somewhat False" range.

Table 3.8
Social Coping Questionnaire (SCQ) Subscale Reliability and Sample Items

Subscale	Reliability Cronbach's α 2012 CTYI Secondary	Sample Items
Denying giftedness/ high academic abilities	.82	I do not have high academic abilities; I am just lucky in school
Using humor	.73	I tell a lot of jokes in school
Activity level	.67	I spend quite a bit of time on extracurricular activities
Peer acceptance	.72	I would fit in better at school if I did not have high academic abilities
Conformity	.58	I don't like to give the appearance of being studious
Helping others	.69	I explain course material to other students when they don't understand it
Focus on popularity	.66	I don't worry about whether or not I am popular

Note: Response options from 1 = *Strongly False,* 2 = *Moderately False,* 3 = *Somewhat False,* 4 = *Somewhat True,* 5 = *Moderately True,* to 6 = *Strongly True*.

Table 3.9
Social Coping Questionnaire Subscale Means by Sex (2012 CTYI Secondary)

	Male *n*=150		Female *n*=146		Missing *n*=16		Total *n*=312	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Helping others	4.31	1.10	4.50	1.09	4.17	1.13	4.39	1.10
Activity level	3.76	1.26	3.72	1.17	3.75	1.30	3.74	1.22
Focus on popularity	3.52	1.07	3.51	1.07	3.63	1.20	3.52	1.07
Using humor	3.48	1.01	3.32	1.10	3.04	0.55	3.38	1.04
Denying giftedness/ high academic abilities	2.74*	1.00	3.39*	1.02	3.01	0.94	3.06	1.05
Peer acceptance	2.84†	0.95	3.09†	1.10	2.88	1.00	2.96	1.03
Conformity	2.81	0.94	2.92	0.85	2.99	0.57	2.87	0.88

*$t(275) = -5.43$, $p < .001$
†$t(275) = -2.04$, $p < .05$
Note: Missing not included in comparisons

Several of the strategies are correlated with self-concept (Table 3.10). The Deny strategy is most strongly correlated, negatively, with General Self-concept. As one has a more positive self-concept, they are less likely to deny their high academic abilities. Other notable correlations are the strategy of using Humor and Peer Relations – as one has better peer relations, they are more likely to use humor and vice versa – and Activity Level with Physical Abilities – as one has more positive beliefs about their physical abilities, they agree they engage in more activities.

Table 3.10
SCQ and Self-Concept Significant Correlations (2012 CTYI Secondary)

	Deny	Humor	Activity	Peer Acceptance	Conformity	Help Others	Popularity
Physical Appearance	-.376**	.240**	.124*	-.227**	-.124*		
Physical Ability	-.206**		.429**	-.179**	.186**		
Parent Relations	-.278**		.210**	-.221**			
Peer Relations	-.201**	.508**	.251**	-.417**			
General-school	-.366**	-.124*	.355**			.306**	.117*
General-reading	-.212**				-.160**	.206**	.182**
General-math	-.303**		.190**			.175**	.136*
General-self	-.534**	.159**	.352**	-.295**		.180**	.210**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Given the poor psychometric properties of the SCQ, it is difficult to claim we actually know about students' social coping strategies. The strategies themselves do not appear to be conceptually similar, with some emphasizing behaviors and others emphasizing beliefs (J. Cross et al., 2015). Low reliabilities and strained interpretations suggest the SCQ may not be accurately representing the actual strategies students engage in in response to the stigma of giftedness. These questions, which were raised by the earlier study with younger CTYI students (J. Cross et al., 2015), led to a deeper exploration of the social experience of gifted students.

Studying the Social Experience of Gifted Students

In 2013, CTYI students participated in a cross-cultural qualitative study designed to answer questions about how students experience the stigma of giftedness and how they cope (J. Cross et al., 2019). Eighteen students in each of the five countries – the United States, Ireland, United Kingdom, France, and South Korea – a total of 90 students, participated in the study. They were selected to represent three age groups: elementary (ages 8–10[4]), middle (ages 11–14), and high school (ages 15–18) and evenly divided by gender, with three male and three female students in each age group. The students, who had been identified as gifted through their school systems or out-of-school programs, volunteered to participate.

The Irish students were participating in CTYI primary and secondary programs and were between the ages of 8 and 16. The identification code referenced in Tables 3.11-3.13 is made up of the country code, age group (E = elementary, M = middle, H = high), sex (F = Female, M = Male), and participant reference number (1–3). For example, IRHF1 is the first Irish high school-aged female participant.

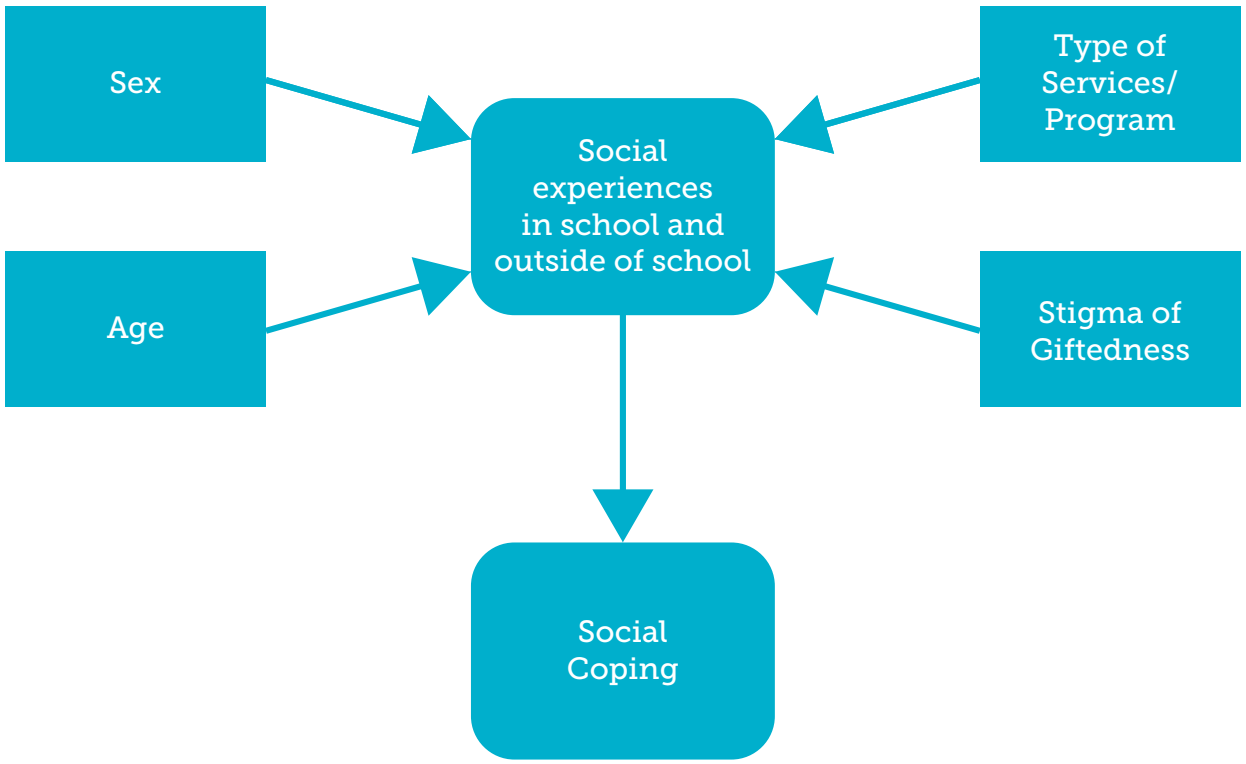
Based on the research related to the social experiences of gifted students, we proposed a model of the influences on social coping (see Figure 3.10). Interview questions were created to explore students' social experiences, attempting to identify how they were related to the stigma of giftedness and how they coped, if the stigma was present. In all countries and at all ages, there was evidence that students' giftedness had an impact on their experiences with peers, teachers, and family members. The themes that emerged from the interviews were present to some degree in all countries, with a few exceptions, noted below. The social experiences described fell into six themes:

- Awareness of Others' Expectations
- Pressure
- Concerned About Peers' Feelings
- Comfortable Among Gifted Peers
- Confused by Response of Peers
- Positive Competition

Positive Competition was only seen among UK and South Korean students, but the other themes described common experiences of all the students. Table 3.11 gives examples of the Irish students' comments in each social experience theme.

4 South Korean elementary students were older, due to the structure of South Korean school systems.

Figure 3.10
Hypothesized Influences on Social Coping



Many students described the expectations placed on them by others: to achieve, to always be right, to be successful at all times. These expectations became pressures, felt most acutely by the older students. The students' relationships with peers were impacted by their high abilities and they sometimes worried that peers' feelings would be hurt when they frequently performed better in school. Places like CTYI, where they could be among intellectual peers, provided sanctuary for many students who often felt misunderstood and confused by their peers' response to them and their academic interests.

Table 3.11
Social Experience Themes Example Comments

Theme	Participant ID	Comment
Awareness of Others' Expectations	IRMM2	Sometimes after football training my Dad would ask me a maths question and I might get it wrong because I'm tired. And he would be surprised about this and also in school my teacher would be very surprised if I get anything wrong which puts extra pressure on me and raises expectations.
	IRMF1	The teacher was disappointed in me which made me a bit annoyed and sad.
	IRMM1	People just expect me to do well all the time and if someone does better they go on about it, saying they're smarter. I don't mind it but they go on about it a lot.
	IREF1	I always finish top in that, because I have to be the best in that way, Because everyone thinks so high of me, if I go slow or if I don't do it properly, it's just very weird.
	IHRM3	Sometimes I feel they expect me to do well and that can be frustrating sometimes. Sometimes I feel that they're jealous and sometimes I feel they feel sorry for me because I'm not good at sports.
Pressure	IRHF1	It's a struggle with school where girls in my class will just comment on it. If they get above me in a test, it's a big thing for them and they really, they don't let it go. Constantly there's pressure there to do well just so you're not pointed out in class for not doing well.
	IRMF1	That's why I don't think it's good to be the best, even though I want to be, because everyone expects a lot and when you don't reach it, people are disappointed.
	IRMM1	I put a lot of pressure on myself because everyone just expects me, in my class, if I get a B, it's slagging. It's not mean but ...
	IRMM3	[Adults] expect me to act responsibly. Both my teachers and parents are always telling me that I should be more mature because of my ability. I find that a bit annoying.
Concerned About Peers' Feelings	IRHF3	Because others found it difficult and I wouldn't want them to feel bad because they clearly worked hard for it.
	IRMF1	If they asked me if I found it [an exam] easy, I'd say it wasn't that hard. I'd say I tried and I hope I do well but I wouldn't straight out say it was so easy and I can't believe you found it so hard because that's just mean. Q: Why is it mean if it's the truth? A: Even though you finding it easy made you feel good about yourself, if you put someone down for finding it hard. Finding it hard was stressful enough anyway so you're just adding to the badness. Q: You're worried about hurting people's feelings? A: I think it's because I was bullied for my intellectual abilities so I don't want to be mean to people because of theirs.

Theme	Participant ID	Comment
Comfortable Among Gifted Peers	IRHF1	I was really shocked. It was strange. My first class in Novel Writing we were discussing Ulysses and what was wrong with Twilight and it was crazy. Everyone had very similar interests to me and I fitted in very quickly.
Confused by Response of Peers	IRMM3	Sometimes they make a bit of fun of me because I always know the answer. It's not just me though, as they make fun of people who don't know any answers. It doesn't make sense really.
	IRHF2	I have a few friends who say that "2 weeks after DCU, you can talk about it but after that if you mention it I won't talk to you". I find that quite offensive because they have friends outside of school and they talk about them and I don't give out about that because people have other friends but they don't want to talk about CTYI because they don't want me to and I think it's a bit much.

Note: Participant ID is country code (IR=Ireland), age group (E = elementary, M = middle, H = high), sex (F = Female, M = Male), and subject reference number (1–3).

The stigma of giftedness was evident in all the countries of this study. Table 3.12 includes Irish students' comments related to the stigma. Students clearly wanted to have normal interactions, but were inhibited in some ways connected to their high abilities. CTYI students were keenly aware of their visibility as highly able and many reported being rejected by peers. Bragging, being "boasty," was viewed quite negatively by many of the students in the study. Concern for peers' feelings was often given as a reason for not drawing attention to one's performance, evidence of their sensitivity to being a target of threatening upward comparisons (STTUC; Exline & Lobel, 1999; Zell et al., 2020).

Table 3.12
Stigma Subthemes Example Comments

Subtheme	Participant ID	Comment
Awareness of Visibility	IRMF3	I'm proud of being a nerd. Overall it is a positive experience.
	IRHM1	Your reputation precedes you. When you get introduced to things and they'd say this person did X and Y and you're seen as that rather than who you are. You don't want that to be seen as what defines you. You want to be seen as who you are.
Rejection by Peers	IRMF1	If you're a bit nerdy and a boy, the popular guys would hammer you. The girls have it easier, I would say.
	IRHM3	Sometimes if I'm trying to be friends with someone and I'm smart, they might reject me a bit. They're more interested in being friends with someone who's good at sports or music.
	IREF2	My friend asks me for an answer and I tell her that I can't tell her because it's a test, sometimes, she like, doesn't play with me anymore
	IRHF2	In some sense this isolates you a bit, because people will view you as a little different
	IRHM2	I found last year especially, with TY, class wouldn't have been as important and I'd find that some people, if you started talking, they'd be all 'here we go again'.
Awareness of Jealousy	IREM2	I don't talk about it [my abilities], just like, in case there's people who might be jealous, so I just keep it to myself.
	IRMM3	some of my friends are not that happy about how well I do in tests. I wouldn't mind, it's mostly the ones who are smart themselves. They can get obsessed with doing better than me.
Few Close Friends	IRHF1	They just have me around for a laugh over a random fact. I don't have any close friends I could talk to. I'm almost comedic to them. They find me a bit of a laugh.
	IREM1	At school, I don't have many friends and that's probably because of my ability.
Avoid Bragging	IRHM3	I don't like to flaunt my results and make people feel bad.
	IRHF3	I think I'd feel like I was bragging because others found it difficult and I wouldn't want them to feel bad because they clearly worked hard.

Note: Participant ID is country code (IR=Ireland), age group (E = elementary, M = middle, H = high), sex (F = Female, M = Male), and subject reference number (1–3).

Table 3.13
Coping Strategies Example Comments

Theme	Participant ID	Comment
Hiding	IRHF1	My English teacher, because I'm good at essays, keeps pointing it out to the class and I've started not completing homework assignments because she always reads out mine.
	IRMM3	I'm trying to deflect attention away from myself. I can gauge their answer and fit mine in to what they tell me....It's easier not to draw attention to yourself.
Conformity	IREF3	I don't really think that I'm special and all. I just try and fit in.
	IREM2	Well, I...I just try and act like I'm just like everyone else.
Helping	IRMM1	I help people with stuff. They ask a lot of the time. If they're stuck on homework they might ask me.
	IREF1	Sometimes with the teacher in class, we go around and we help some people, but like, then people are always like "how come you're always chosen, it's just so unfair" and then I find I really don't know what to say.
	IRMF1	They slag me but I think they appreciate that I'm smart because I can help for tests and stuff and in class I can help them as well.
Self-focus	IRHF2	I'd rather feel under pressure from myself than other people because when it's from others, you can't fix it.
	IRHM2	You shouldn't let other people's opinions of how smart or enthusiastic you are affect how much you contribute.
	IRMF3	I'm really happy with myself. I take pride in my work. I'm not ashamed of doing well because of what people might think. Other people's opinions wouldn't stop me from doing well because there will always be people like me.

Note: Participant ID is country code (IR=Ireland), age group (E = elementary, M = middle, H = high), sex (F = Female, M = Male), and subject reference number (1–3).

Only a few of the numerous coping strategies Swiatek (1995) included in her SCQ were evident among the students in this study. No students denied their high abilities, although this may be due to the sample selected. All were chosen because of their gifted identification or high test performance. In the 90 interviews, no students mentioned using humor or engaging in many activities to avoid being seen as gifted. Not all students described an impact on their acceptance by peers that resulted from their high academic abilities, but many did. Denying an impact did not appear to be a way these students dealt with the stigma of giftedness.

Emphasizing the unimportance of one's popularity, one of Swiatek's (2001) social coping strategies, may be comparable to the self-focus strategy. Students in all countries except France described situations in which they found it helpful to focus on their own values and self-worth, rather than on others' expectations of their behavior and accomplishments. Hiding one's abilities was the most common coping strategy in this study. Conforming to appear similar to peers and helping peers were also commonly described.

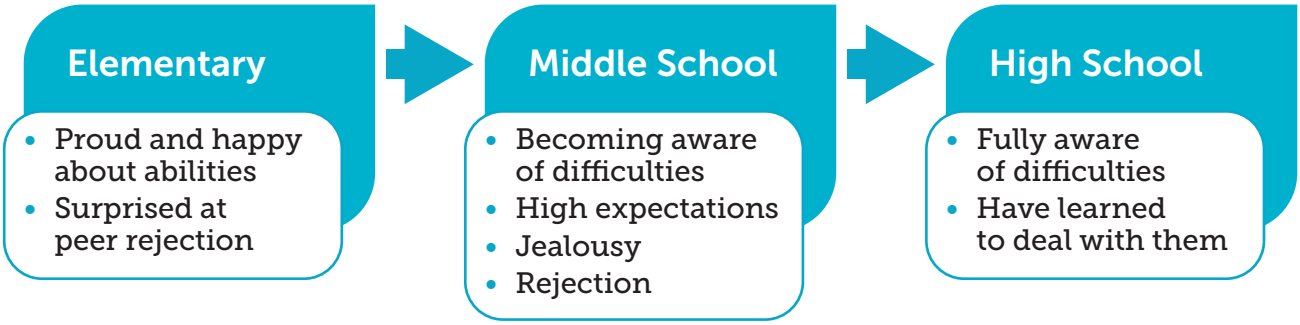
The different treatment of boys by peers was mentioned several times among the CTYI students in this study. Boys described being frequently "slagged" for having higher abilities or greater interest in academics than peers. They mentioned it as a fact of life: "I think there's so much slagging in an all-boys school, it's more to be expected but it's not really a big deal. Everyone gets it....I would say it's more difficult for boys [than girls]" (IRMM1). Girls were well aware of this difference:

> Even though you can get teased when you're young as a girl, it's no big deal in secondary but boys would still slag you. Girls don't focus so much on stuff like that but if you're a bit nerdy and a boy, the popular guys would hammer you. The girls have it easier I would say. (IRMF1)

Students from Ireland were much more likely to attend single-sex schools than students in the other countries. Four males attended all-boys schools and four females attended all-girls schools in Ireland, making up 44% of the Irish sample. Two South Korean students attended an all-boys school, but all other students in Korea, France, the UK, and the US were in mixed-sex schools.

An age-related pattern did emerge from the data (see Figure 3.11). Elementary-aged students were proud of the recognition their outstanding abilities received. They were happy when their parents or teachers were proud of their achievements. By middle school, students began to express an awareness of problems associated with their abilities. They were subjected to higher expectations than peers from parents, teachers, and even peers. They experienced peers' jealousy, rejection, and demands for help. By high-school age, these high-ability students had learned to accept these difficulties and developed coping strategies for dealing with them. Importantly, we noted, "As SWGT [students with gifts and talents] become increasingly impacted by the pressure of high expectations and the possibility of peer rejection, some are likely to avoid exposure of their abilities and would not be found in a gifted program. Our high school aged sample is almost certainly a much smaller segment of the SWGT population than our elementary aged sample" (J. Cross et al., 2019, p. 236). We have no way of knowing how many highly able students decide to "go underground" rather than suffer the challenges associated with their abilities.

Figure 3.11
Coping with the Social Experience of Giftedness Over Time



Hearing the students' own descriptions of their social experiences allowed for a different perspective on social coping. These students confirmed previous research on their lived experience (Coleman et al., 2015, 2021). One characteristic of qualitative research, however, is that it cannot be applied generally, even to others similar to the sample. With only 18 Irish students in this study, we can learn from their individual reports, but we cannot be certain this applies to other high-ability students in Ireland. This was an effort to explore the gaps in the social coping research (Swiatek, 2012; J. Cross et al., 2015), but further research using quantitative methods was needed to consider the applicability of our findings in the 2013 qualitative cross-cultural study.

Exploring Social Experience through Quantitative Methods

Ostracism

One approach to studying CTYI students' social experiences quantitatively was through a measure of *ostracism*. Gilman et al. (2013) define ostracism as "being ignored or excluded by others" (p. 319), which, when it occurs, "thwarts a fundamental need for social relationships, thereby striking at the core of optimal human development" (p. 319). Research described in this report identifies a lack of confidence in CTYI students' ability to have positive relationships with peers among the SCLOW self-concept cluster; the Overcontrollers personality class; and the three lowest self-efficacy classes, the Pushovers, Insecure, and Need a Boost. In interviews, CTYI students reported being rejected. In 2013, 2014, 2015, and 2016, we included a measure to identify whether these students perceived ostracism behaviors by peers, the Ostracism Experience Scale for Adolescents (OES-A; Gilman et al., 2013). The OES-A has two subscales, Ignored and Excluded (see Table 3.14).

Table 3.14
Ostracism Experience Scale for Adolescents sample items and reliability

	Reliability Cronbach's a				
	2013	**2014**	**2015**	**2016**	**Sample Item "In general, others..."**
Total Ostracism	.89	.90	.91	.91	
Ignored	.86	.94	.93	.92	...treat me as if I am invisible
Excluded	.89	.89	.90	.88	...invite me to join their club, organization, or association (reverse code)

The total Ostracism score does not differ between males and females or between CTYI and CAT students (Table 3.15, Figure 3.12). The Ignored and Excluded subscales do not differ between CTYI and CAT, but there are some differences by sex. CTYI females considered themselves more ignored that CTYI and CAT males and CTYI and CAT males considered themselves more excluded than CAT females. A stepwise hierarchical regression with Ostracism as the dependent variable and the independent demographic variables of program (CTY or CAT) and gender entered in the first step, personality factors added in the second step ($\Delta R^2 = .33$), and self-efficacy in the third step ($\Delta R^2 = .07$) was significant (see Table 3.16). Program (CTY or CAT) and Implicit Theory were found to be not significant and were dropped from the final model. Demographics initially did not contributed significantly to the prediction of Ostracism, $F(2, 978) = .14$, $p = .36$, $R^2 < .01$, but with the addition of personality in the second step, gender was a significant contributor, $p < .001$. In the final model, gender, junior/senior cycle, all personality variables, and self-efficacy combined significantly to predict 40% of the variance in Ostracism scores. The strongest contributor to Ostracism was Self-Efficacy. For every unit of Ostracism, Self-Efficacy decreased by .39. Extraversion was also negatively related. As CTYI or CAT students were more outgoing, their beliefs that they were ostracized decreased by .26. Neuroticism (emotional instability) and Openness were positively related to Ostracism, increasing by .15 and .13, respectively, for each unit of Ostracism. The significant relationship between personality and self-efficacy suggest we should further explore differences among the CTYI student personality and self-efficacy classes.

Table 3.15
Ostracism Experience Scale for Adolescents Means and Standard Deviations (2013-2016 data)

	CTYI Female *n*=440		CTYI Male *n*=480		CTYI Missing *n*=16		CAT Female *n*=159		CAT Male *n*=183		CAT Missing *n*=21		CTYI Total *N*= 936		CAT Total *N*=363	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Total Ostracism	2.55	0.77	2.54	0.73	2.16	0.64	2.42	0.77	2.53	0.76	2.70	0.92	2.54	0.75	2.49	0.78
Ignored	2.29a	0.78	2.04[b]	0.82	1.91	1.00	2.16[a,b]	0.80	2.06[b]	0.84	2.27	0.83	2.15	0.82	2.12	0.82
Excluded	2.76[a,b]	0.89	2.96[a]	0.89	2.38	0.66	2.64[b]	0.95	2.93[a]	0.89	3.06	1.13	2.86	0.89	2.81	0.94

Note: Superscript letters indicate homogeneous subsets (missing not included), Pillai's Trace = .068, $F = 14.65$, $df = (6, 2514)$, $p < .001$; other scores do not differ, *ps* > .05

Figure 3.12
Ostracism by Program and Sex

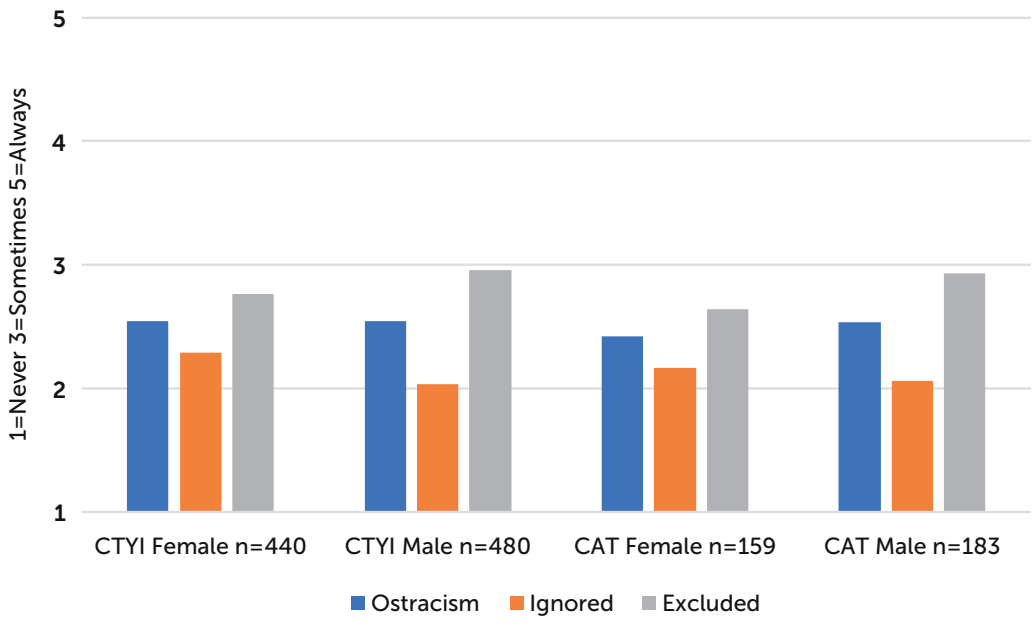


Table 3.16
Stepwise Regression Coefficients Predicting Ostracism (2013-2016 data)

Model	B	Unstandardized Coefficients		Standardized Coefficients	t	p
		Std. Error	ß			
1	(Constant)	2.48	0.10		24.59	< .001
	Gender	0.01	0.05	0.01	0.27	.790
	Jr/Sr Cycle	0.02	0.05	0.01	0.45	.652
2	(Constant)	3.08	0.26		11.93	< .001
	Gender	0.12	0.04	0.08	2.99	< .01
	Jr/Sr Cycle	-0.09	0.04	-0.06	-2.38	< .05
	Extraversion	-0.35	0.03	-0.38	-12.95	< .001
	Agreeable	-0.12	0.03	-0.11	-3.77	< .001
	Conscientious	-0.06	0.03	-0.06	-1.98	< .05
	Neurotic	0.22	0.03	0.25	7.79	< .001
	Open	0.13	0.04	0.10	3.71	< .01
3	(Constant)	4.28	0.27		15.95	< .001
	Gender	0.11	0.04	0.07	2.80	< .01
	Jr/Sr Cycle	-0.13	0.04	-0.09	-3.54	< .01
	Extraversion	-0.24	0.03	-0.26	-8.65	< .001
	Agreeable	-0.08	0.03	-0.07	-2.67	< .01
	Conscientious	0.09	0.03	0.08	2.76	< .01
	Neurotic	0.13	0.03	0.15	4.77	< .001
	Open	0.17	0.03	0.13	4.97	< .001
	Self-Efficacy	-0.39	0.04	-0.39	-10.78	< .001

For total Ostracism and its subscales, Ignored and Excluded, the same pattern of differences among the personality profiles emerged (Table 3.17, Figure 3.13). Students in the Overcontroller class had higher Ostracism, Ignored and Excluded scores than their peers and High Resilient students had the lowest scores.

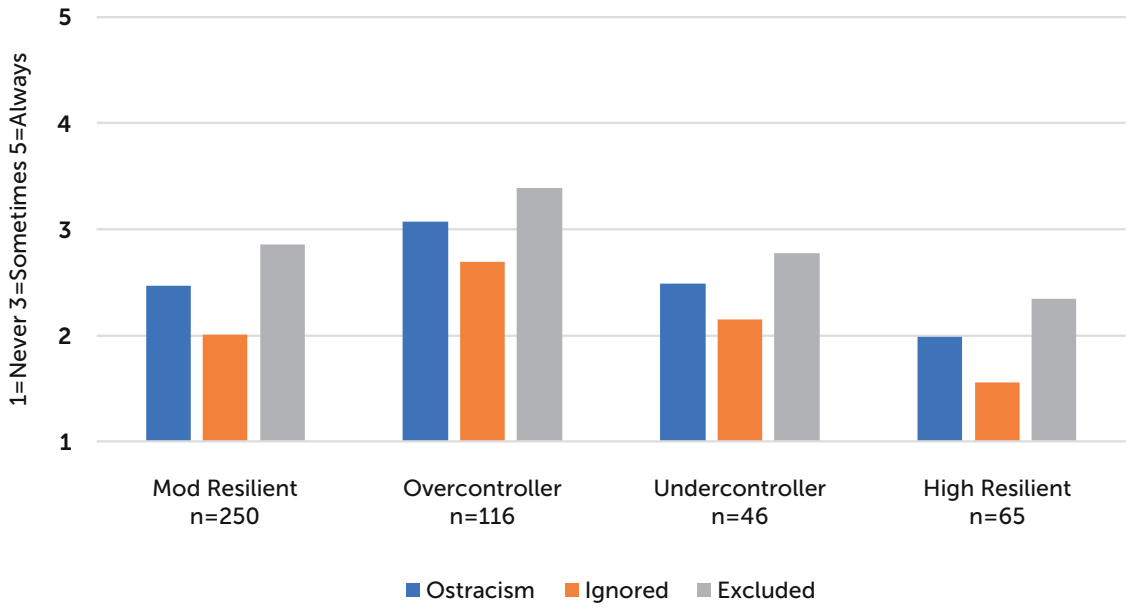
Overcontrollers were highest in Neuroticism and lowest in Extraversion, a combination that may predispose students to be ignored and excluded. High Resilients would be more likely to seek out and make friends, with their high Extraversion scores and Agreeableness.

Table 3.17
Ostracism Experience Scale for Adolescents Means and Standard Deviations by Five-Factor Model Personality Class (2015 CTYI Students)

	FFMCL1 (Moderate Resilients) *n* = 250		**FFMCL2 (Over-controllers) *n* = 116**		**FFMCL3 (Under-controllers) *n* = 46**		**FFMCL4 (High Resilients) *n* = 65**	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Total Ostracism*	2.47[b]	0.63	3.07[a]	0.74	2.49[b]	0.91	1.99[c]	0.68
Ignored†	2.00[b]	0.70	2.69[a]	0.83	2.15[b]	0.94	1.56[c]	0.63
Excluded†	2.85[b]	0.80	3.39[a]	0.89	2.78[b]	1.09	2.35[c]	0.87

Note: Superscript letters indicate homogeneous subsets; Range 1-5
* F (3, 473) = 36.77, $p < .001$
†Pillai's Trace = .211, F = 18.60, df = (6, 946), $p < .001$

Figure 3.13
Ostracism Mean Scores by Personality Class (2015 CTYI Students)



Due to the small number of students in the Pushovers, Insecure, and Confident Pushovers self-efficacy classes in the 2015 sample, the nonparametric Kruskal-Wallis H test was used to identify differences. There were significant differences between classes in Ostracism (χ2[5] = 227.21, p < .001), Ignored (χ2[5] = 183.35, p < .001) and Excluded (χ2[5] = 176.23, p < .001). This analysis uses median rather than mean scores, which are presented in Table 3.18 and Figure 3.14. The small Insecure class had the highest Ignored and Excluded scores and the Superstars were least likely to be ignored. Exclusion was also high among the Need a Boost students. The students lowest in self-efficacy were also those most likely to believe they were ostracized by peers.

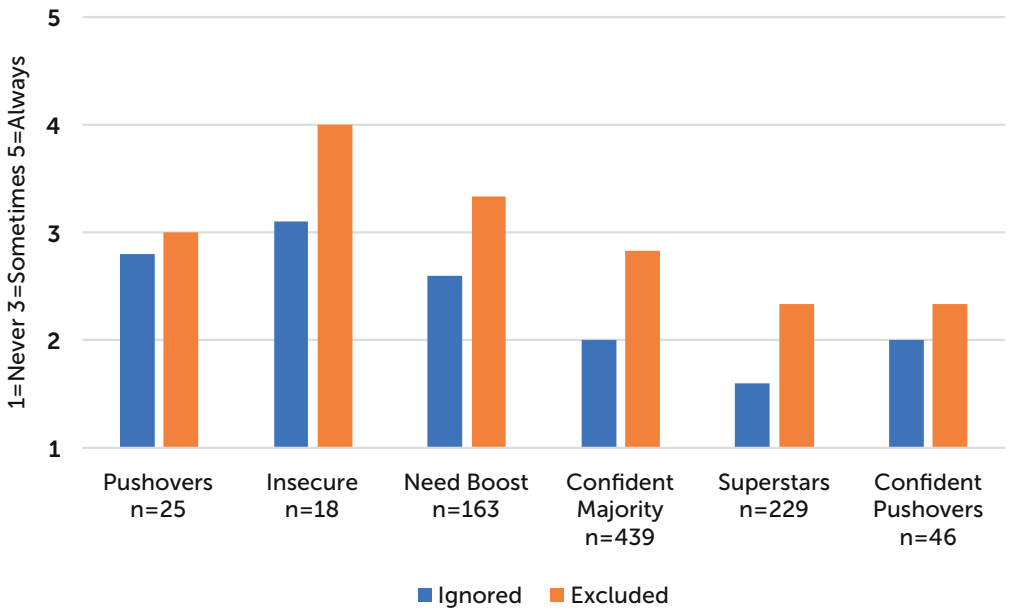
Table 3.18

Ostracism Medians and Interquartile Ranges by Self-Efficacy Class (2013 – 2015 CTYI students)

	Pushovers SECL1 *n*=25		**Insecure SECL2 *n*=18**		**Need Boost SECL3 *n*=163**		**Confident Majority SECL4 *n*=439**		**Superstars SECL5 n=229**		**Confident Pushovers SECL6 *n*=46**	
	Mdn	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*
Total Ostracism	2.91	1.18	3.77	0.84	3.00	1.00	2.45	0.82	2.00	0.82	2.27	0.95
Ignored	2.80	1.20	3.10	1.40	2.60	1.00	2.00	0.95	1.60	1.00	2.00	1.05
Excluded	3.00	1.92	4.00	0.75	3.33	1.17	2.83	1.00	2.33	1.08	2.33	1.04

Note: Range 1-5

Figure 3.14
Ostracism Median Scores by Self-Efficacy Class (2013-2015 CTYI Students)



Despite these mean and median differences in Ostracism scores, only 26.2% of CTYI students reported actually being ignored or excluded at a level above "Sometimes". Ostracized students were slightly overrepresented in the Junior cycle, $\chi^2(2, 936) = 7.53$, $p < .05$, but they were not more likely to be male or female, $\chi^2(1, 919) = 3.02$, $p > .05$. These students were overrepresented in the low-self-efficacy classes and underrepresented in the classes high in self-efficacy, $\chi^2(5, 936) = 142.54$, $p < .001$. Personality class also differed among the 2015 CTYI students, $\chi^2(3, 480) = 41.12$, $p < .001$. Ostracized students were much more likely than expected to be in the Overcontrollers class (29% expected vs 51% observed) and less likely than expected to be in the High Resilients class (29% expected vs 11% observed).

One lesson to be taken from this analysis of ostracism experiences is that a large majority of students do not report being ostracized by peers. Rejection by peers occurs, but not for every high-ability student. Those who have adaptive personality profiles and are confident in their abilities are less likely to perceive they are being ignored or excluded by peers. Boosting their self-efficacy and learning strategies for adapting in their environments may support students in building positive social relationships, reducing their rejection by peers (actual or perceived).

The Social Experience of Gifted Students Scale

In the interviews conducted during the 2013 cross-cultural study of the social experience of giftedness, students of all ages described their experiences in school, at home, and with friends. Hearing their stories introduced a new level of understanding of their experiences, but as mentioned previously, the study is not generalizable to the larger population of all gifted students. To test what had been learned, we needed a way of asking many gifted students if these were their experiences. We first made a list of the different types of experiences we had seen in the data. From these we came up with statements that would work as survey items. These were reviewed by colleagues and reduced to a set of 53 items. We wanted to know first, if the students had these experiences in the past and, if so, how frequently and how did it make them feel (good or bad)? The resulting instrument, called the Social Experience of Gifted Students Scale (SEGSS), was tested in 2018 with 559 CTYI students (see Table 1.3 for demographics). The format of the survey is in Figure 3.15.

Figure 3.15
Social Experience of Gifted Students Survey Format

*Please **circle the responses** that are right for you, first for the frequency of the experience, **and** then for how it made you feel, if it happened to you. In the case when you have had multiple such experiences, tell us how they <u>most often</u> made you feel.*

		*Thinking about this experience, how **FREQUENTLY** has it happened to you?*					*Thinking about this experience, <u>if it happened to you</u>, rate **how negative or how positive** it was, in terms of how it made you **FEEL**, in general.*				
		Never	*Once*	*A few times*	*Often*	*Regularly*	Made me feel very bad	Made me feel bad	Made me feel somewhat bad, somewhat good	Made me feel good	Made me feel very good
1	I did not want others to know about my academic abilities.	1	2	3	4	5	1	2	3	4	5

To reduce the responses into a manageable number, we conducted an Exploratory Factor Analysis (EFA) which identifies patterns in the data. We used only responses to the Frequency items (i.e., "How frequently has it happened to you?") because, when students responded that an experience had "Never" happened to them, no Feeling items were included. Therefore, more data existed for the Frequency items. The weighted least square mean and variance adjusted estimator of the statistical package Mplus 7 was appropriate for analyzing the ordinal values of 1 – 5 (Never – Always). The 7-factor model had the optimal fit with factors that were interpretable (Table 3.19). Five items that loaded below .30 or that significantly reduced reliability for the factor were dropped, resulting in 48 items. The factors had acceptable to good reliability (Cronbach's alphas from .66 to .89; see Table 3.20).

Table 3.19
SEGSS Exploratory Factor Analysis Model Fit Indices

	χ^2	*df*	CFI	TLI	RMSEA	90% CI for RMSEA	SRMR
4-Factor Model	4433.93	1172	0.859	0.834	0.071	.069, .073	0.063
5-Factor Model	3678.1	1123	0.89	0.87	0.064	.062, .066	0.052
6-Factor Model	343.7	1075	0.911	0.89	0.059	.057, .061	0.046
7-Factor Model	**2771.76**	**1028**	**0.925**	**0.899**	**0.055**	**.053, .058**	**0.041**
8-Factor Model	2386.71	982	0.939	0.915	0.051	.048, .053	0.036
9-Factor Model	2113.62	937	0.94	0.925	0.048	.045, .050	0.033
10-Factor Model	188.33	893	0.959	0.936	0.044	.041, .047	0.03

Note: CFI - Comparative Fit Index, TLI -Tucker–Lewis Index, RMSEA - Root Mean Square Error of Approximation, SRMR - Standardized Root Mean Square Residual

Table 3.20
Social Experience of Gifted Students Scale Factors, Loadings, and Reliability (2018 CTYI Students; N = 559)

Factor	Cronbach's α	Description	Item	Factor Loading
Top of the Class	.84	Things that happen when smart – perform better and other students know it.		
			I performed better than other students in schoolwork.	.812
			I got higher scores on schoolwork than other students.	.675
			I was together with students who have less academic ability than me.	.668
			Other students had expectations for how well I should do in school.	.523
			Other students expected me to always do well academically.	.518
			Other students expected me to get everything right.	.506
More Serious	.66	I don't get them because I'm more serious.		
			I was confused by other students trying to get out of schoolwork.	.698
			I was confused by other students trying to copy my schoolwork.	.611
			I was more serious about learning than other students.	.460
Peer Rejection	.87	I was rejected or made fun of.		
			I was unable to connect with other students, because I was too different.	.893
			I was rejected by other students.	.718
			I preferred to be alone than to be with other students.	.718
			I had few or no close friends.	.709
			I was unable to connect with other students, because they were not as serious about learning as I was.	.677
			I was confused by other students making fun of my academic abilities.	.579
			Other students made fun of my academic abilities.	.551

Hiding	.88	Hiding behaviors so as not to be seen as different.		
			I tried to hide my academic abilities, so others would not treat me differently.	.860
			I did not want others to know about my academic abilities.	.831
			I avoided using some words when talking with others, because I did not want them to know the size of my vocabulary.	.814
			I avoided using some words when talking with others, because they would not understand me.	.711
			I tried to hide my academic abilities, so as not to hurt other students' feelings.	.692
			I kept silent about my grades or scores.	.634
			I tried to act like other students, so I wouldn't stand out.	.588
			I worried about what others think of me.	.582
			I worried about what others think of my academic abilities.	.557
			I tried not to make others feel bad when I did better than them on schoolwork.	.531
			I pretended not to know something I did know.	.467
			I pretended to care about things others cared about when I actually didn't.	.452
Helping Expectations	.87	My abilities lead others to expect sharing/helping and is associated with their hurt feelings/envy.		
			Other students expected me to help them, because I knew more than they did.	.823
			I was pressured by other students to help them with their schoolwork.	.722
			I was pressured by my parents to help other students with their schoolwork.	.696
			I helped other students with their schoolwork when I knew more than they did.	.664
			I was pressured by my teacher to help other students with their schoolwork.	.653
			Other students liked me because I helped them with schoolwork.	.631
			Other students tried to copy my schoolwork.	.624
			It hurt other students' feelings when I did better than them on schoolwork.	.418
			Other students were paying attention to how I do academically.	.396
			Other students were jealous of my academic abilities.	.387
			Other students wanted to have my academic abilities.	.376

Pressure to Achieve	.89	Pressure to always do well and be right.		
			I felt pressure from others to always do well academically.	.567
			I felt pressure from others to get everything right.	.561
Adult Expectations	.83	Teachers and parents expect me to excel.		
			My parents expected me to get everything right.	.883
			My parents expected me to always do well academically.	.872
			My parents had expectations for how well I should do in school.	.750
			My teacher expected me to always do well academically.	.673
			My teacher expected me to get everything right.	.633
			My teachers had expectations for how well I should do in school.	.586
			My teachers treated me differently from the other students.	.328

Note: Analysis included only Frequency items. All loadings were significant, $p < .05$

The Big Five Inventory (John et al., 1991) five-factor model personality scale was included to assess validity of the SEGSS. The SEGSS frequency factors were correlated with personality in explicable directions (Table 3.20). Hiding, Peer Rejection, and Pressure to Achieve were correlated with Neuroticism, which is also sometimes termed "Emotional Instability." Greater neuroticism was accompanied by a greater frequency of hiding behaviors, being rejected by peers, and perceived pressure to always do well academically and always be right. Conscientiousness was moderately correlated with More Serious (r = .38). As one is more conscientious, they were more frequently confused by their peers' academic escape behaviors (e.g., copying work, trying to get out of schoolwork). Agreeableness and Extraversion were negatively correlated with Peer Rejection. As students were more agreeable and outgoing, they less frequently experienced rejection by their peers.

Table 3.21
Five-Factor Model and SEGSS Factor Significant Correlations

BFI Factor	SEGSS Factor	Pearson's r*
Neuroticism	Hiding	.42
	Peer Rejection	.37
	Pressure to Achieve	.36
Conscientious	More Serious	.38
Agreeable	Peer Rejection	-.29
Extraversion	Peer Rejection	-.27

* 2-tailed, $ps < .05$

Tables 3.22 and 3.23 present mean scores by sex sorted by the total means. Figure 3.16 displays means by sex category in graphical form for each SEGSS factor. Using the nonparametric Kruskal-Wallis H test to determine differences in the multiple sex categories, we found males and females had significantly different scores on the factors in both the Frequency and Feel categories. Females reported a higher frequency of all social experience factors. They also reported having worse feelings than the males when they have these experiences (Figure 3.17). Nonconforming students were less likely than female students to experience items in the More Serious factor. The most frequently reported social experience was Top of Class – the students "Often" performed better than peers and were aware of the visibility of their achievements. Top of Class felt "Somewhat Bad/ Somewhat Good" to most students. Notably low in frequency was Peer Rejection. Interviews and Ostracism scores suggest Peer Rejection occurs, but not among the majority of CTYI students. In this sample, 24.2% (n = 135) reported that it happened to them "A few times" or more often. Within that number, 15% (n = 86) of CTYI students reported that it happens "Often" or "Regularly." As one might expect, Peer Rejection rated lowest overall in how it made students feel. Notably, among females, Pressure to Achieve ranked even lower than Peer Rejection (felt worse), and among students in the Nonconforming/Not Listed/Prefer not to say category, Helping Expectations ranked as the worst feeling social experience. In the interviews of the 2013 cross-cultural study (J. Cross et al., 2019), younger students reported that helping others was a pleasure and a way of making friends, but older students expressed dismay at being expected to help, especially when they were expected to achieve at a high level on their own tasks. The majority of Nonconforming students (75%) were in the Senior Cycle, perhaps explaining their low ratings of being expected to help.

Table 3.22
Social Experiences Frequencies Ordered by Total Mean Scores (2018 Data)

Factor	Male *n*=268		Female *n*=259		Nonconforming/ Not Listed/ Prefer Not to Say *n* = 20		Missing Sex *n* = 12		Total *N* = 559	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Top of Class	3.63	1.11	4.16	0.79	3.75	0.80	3.28	1.66	3.88	1.01
Pressure to Achieve	2.85	1.64	3.73	1.35	3.25	1.70	2.46	2.05	3.26	1.59
Adult Expectations	3.15	1.13	3.39	1.05	2.94	1.01	2.80	1.54	3.24	1.11
Helping Expectations	2.30	1.09	2.82	0.84	2.54	1.02	1.96	1.23	2.54	1.02
Hiding	2.14	1.14	2.89	1.09	2.56	1.04	1.97	1.38	2.50	1.17
More Serious	1.91	1.31	2.31	1.29	1.48	1.30	1.81	1.23	2.08	1.32
Peer Rejection	1.76	1.38	1.93	1.33	2.25	1.31	1.80	1.40	1.86	1.36

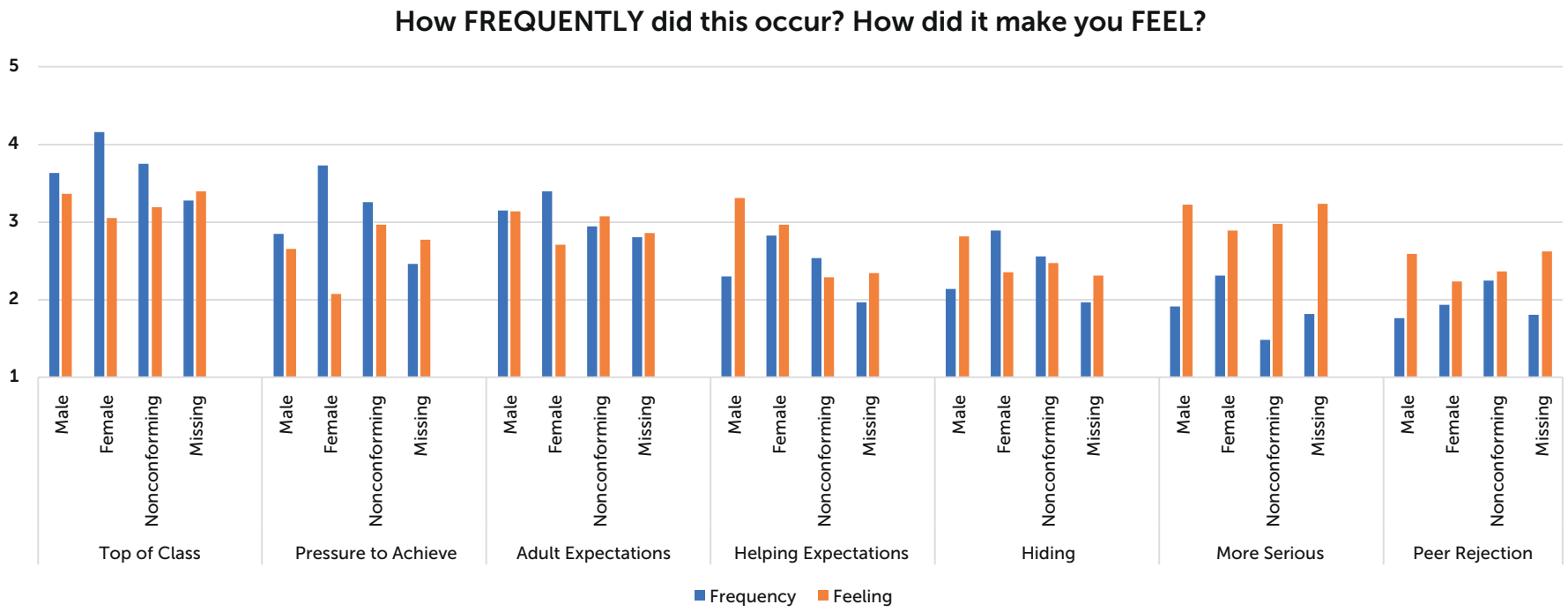
Note: Response options for Frequency: *1=Never, 2=Once, 3=A few times, 4=Often, 5=Regularly;* All male and female scores differ with Kruskal-Wallis H test, *ps* < .05; More Serious also differs between Nonconforming and Female, $p < .01$.

Table 3.23
Social Experiences Feelings Ordered by Total Mean Scores (2018 Data)

Factor	Male			Female			Nonconforming/ Not Listed/ Prefer Not to Say			Missing Sex			Total		
	Mean	*SD*	*n*	*Mean*	*SD*	*n*	*Mean*	*SD*	*n*	*Mean*	*SD*	*n*	*Mean*	*SD*	*N*
Top of Class	3.36	0.60	264	3.05	0.64	258	3.19	0.74	20	3.39	0.78	11	3.21	0.87	553
Helping Expectations	3.31	0.64	256	2.96	0.51	255	2.29	0.70	20	2.34	0.67	11	3.13	0.79	542
More Serious	3.22	0.80	228	2.89	0.71	241	2.98	0.60	15	3.23	0.75	11	3.05	0.58	495
Adult Expectations	3.14	0.74	262	2.71	0.77	257	3.07	0.88	20	2.86	0.64	10	2.92	0.58	549
Hiding	2.81	0.67	247	2.35	0.50	255	2.47	1.01	20	2.31	0.84	11	2.57	0.67	533
Peer Rejection	2.59	0.88	223	2.23	0.71	239	2.36	0.61	19	2.62	0.57	11	2.40	0.68	492
Pressure to Achieve	2.65	0.99	224	2.07	0.79	241	2.97	0.81	17	2.77	1.05	8	2.35	0.21	490

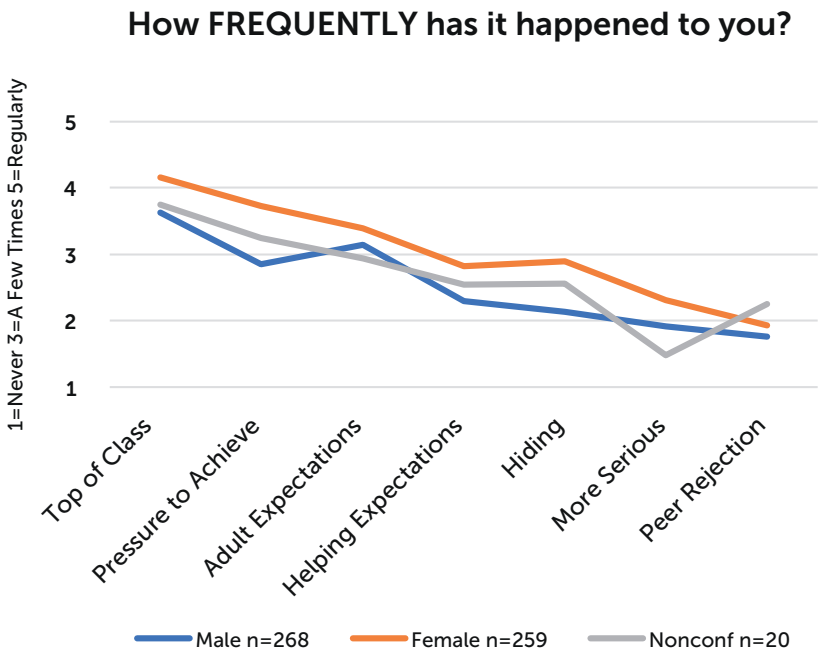
Note: "Never" Frequency is excluded from Feeling responses, therefore ns vary. Response options: *1=Made me feel very bad, 2=Made me feel bad, 3=Made me feel somewhat bad, somewhat good, 4=Made me feel good, 5=Made me feel very good*. All male and female scores differ with Kruskal-Wallis H test, *ps* < .001.

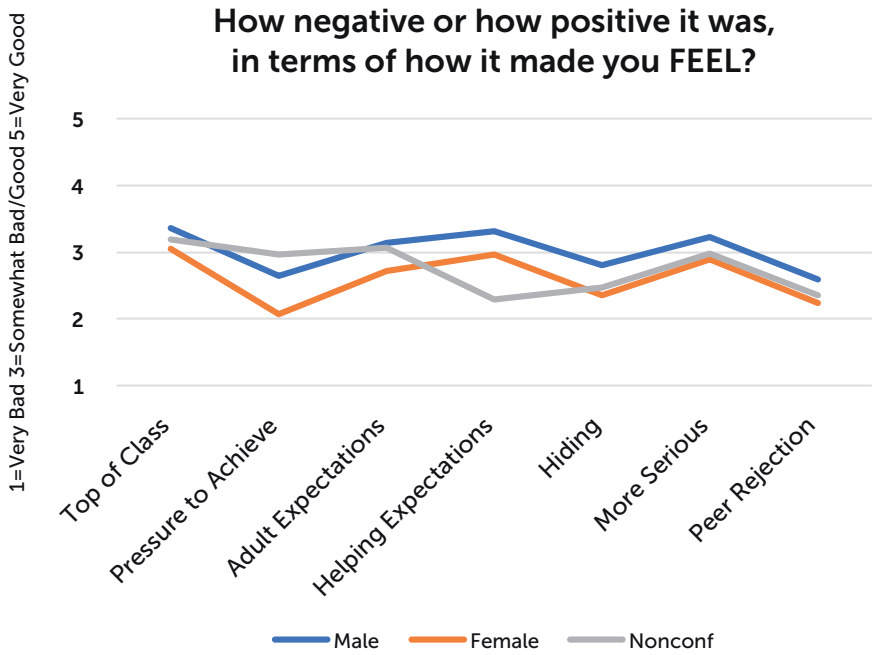
Figure 3.16
Social Experiences Frequency and Feeling Mean Factor Scores by Sex (2018 CTYI Students; N = 559)



Note: Frequency response options from 1=*Never* to 5=*Regularly;* Feeling response options from 1=*Very Bad* to 5=*Very Good*

Figure 3.17
Social Experiences Frequency and Feeling Mean Score Comparisons by Sex





The survey was very personal and some students expressed serious displeasure with being asked to answer questions that brought up deep emotions. Of the 559 students who responded, 222 (40%) left comments (Table 3.24). The majority, 83% of comments, were neutral or expressing their identification with some of the items (e.g., "Classmates expect a lot from me academically."). The remaining 17% of comments were negative, some quite negative, expressing anger about the intrusiveness of the survey or the stereotypes it seemed to accept (e.g., "Why is this all so stereotypical? My social interactions are fairly normal and uninteresting."). Most of the comments applied well to the factors found in the quantitative analysis of the SEGSS, even though students were not asked about them specifically. The comments section was open-ended, with the prompt to, "Please share below any comments about the experiences listed above or any other social experiences related to your high academic abilities." A review of their comments in Table 3.24 suggests these experiences definitely occur, although some students did not believe it:

> I think that a lot of these questions were very similar and strange. Most people praise me about my academic abilities. (10370, 3rd Year Female)

> I hate this quiz. You assumed so much. Just because I'm smart does not make me socially awkward. We're as normal as everyone else. (10445, 5th Year Male)

> We are not all depressed loners. Thanks. (10580, 1st Year Female)

The many comments about peer rejection indicate that, although it is an infrequent experience, the emotional response to it is profound and accessible to students as they completed the survey. Fewer students commented on adult expectations, presumably because they provoke a less troublesome emotional response. It is heartening that many students have positive social experiences in school (see the "All Good" section in Table 3.24), which can challenge the stereotype of the isolated, rejected "nerd". We know that a majority of students at CTYI are not likely to be socially awkward, based on the analysis of personality and self-efficacy in Chapter 2, but the experiences and emotions of those who do not have a resilient personality or high self-efficacy are important to understand.

While it is disturbing to think the survey caused distress for some of the CTYI students who took it, the confirmation of so many experiences described in the lived experience research literature (Coleman et al., 2015) was meaningful. Some CTYI students are experiencing rejection, excessive demands for performance or helping others, and attempting to hide their abilities. Many do feel more serious about learning than their peers and they are highly aware of the visibility of their abilities. In future studies using the SEGSS, we can evaluate the quality of experiences with other characteristics, looking for those that need to be more closely scrutinized for their impact on students. Which of these experiences occurs more frequently to students in different settings? Which are associated with negative outcomes, such as depression or underachievement? Only by asking the students themselves can we learn more. The SEGSS will continue to be refined through further study and has the potential to be an important contribution to the lives of high-ability students in Ireland and beyond.

Table 3.24
Student Responses to "Please share below any comments about the experiences listed above or any other social experiences related to your high academic abilities."

Factor		Year in School	Sex	Comment
Top of Class				
	10223	3	.	I was better than the majority of my class but there were two better than me and I was quite worried that I would measure up. I was also under pressure from my family to socialise more.
	10253	2	Female	I don't really like sharing my scores because I don't think it adds or subtracts from anything, from who I am, and I know others do care and I don't want to make them feel bad.
	10357	3	Female	I stand out. People, particularly my peers, expect me to never be wrong. It is a lot of pressure and can make me stressed or depressed.
	10110	3	Male	In some groups it's an annoyance to have to use simpler vocabulary and act
	10205	2	Female	I am often criticised for enjoying learning
	10532	3	Female	I don't like girls in my school constantly needing to know my grades because I feel bad if they don't do as well as me. Girls always expect me to get so high and roll their eyes at me if I meet their expectations. I'm scared people will think of me differently if I tell them my grades.
	10575	3	Female	Sometimes people treat me differently because I'm intelligent. They don't accept me in their circle.
	10022	1	Female	When I get a lower result than what my friends expected me to get, I felt really disappointed. Sometimes my friends would playfully say that like "you'll be fine you have probably been up late all night studying!" I know they are only playing but sometimes it's just a little frustrating
	10418	3	Male	I often compare myself to others and am very competitive with other people.
	10112	5	Male	certain other students become enraged at me become aggressive over envy of my academic ability
	10346	3	Male	I tried to get on well with everyone. I was upset when I failed to do well in class. I did not study hard for some subjects
	10442	4	Female	I used to be smart, but I became lazy in second year and my reputation represents a different, smarter me.
	10240	3	Female	Some people just won't like you if you're smart. It makes it easy to be self-deprecating to fit in.
	10543	2	Male	Everyone hated me lol
	10039	1	Male	Being so smart leads to power, and with power comes greed. Many of my classmates were jealous of my academic abilities and used to bully me quite a bit. Eventually they were used to it and didn't mind it.

Factor		Year in School	Sex	Comment
	10428	2	Female	Teachers & parents often put unnecessary pressure on us.
	10476	2	Female	Everyone hated me in school because I read books.
	10113	5	Male	I wouldn't try answering a question I was not certain of the answer as if I'm wrong I often feel like the class gets excited at the act I was wrong. Makes me feel awkward embarrassed and that this is unfair. I should feel comfortable suggesting an answer I was unsure of.
	10156	6	Female	I don't like feeling pressured or feeling like I'm under a microscope. Sometimes people do better in tests and they shove it in my face because I'm the smart kid. I can't get 100% all the time despite what people may think. But I love helping people and I don't like to share any results so no one feels bad. Sometimes I study for half an hour and I get a B and they study for days and get a B. It's not what either of us are worth, it's just a B
	10230	2	Female	I won a maths competition and everyone was talking about me badly and being jealous, until they heard the prize was only a maths book.
	10245	3	Female	Sometimes I'd be saying something and my friends would stop me and go "Ok. I don't understand." or "English, Please." I feel like I am known for being smart. "Of course you didn't find it hard", "Let me look at your homework/ Can you help me do this?/ What do I do?"``
	10260	5	Female	There were no classes for more advanced students. I am always forced into a class with people who are at a slower pace than me.
	10361	2	Female	I used to act like I didn't study because people would laugh at me for it.
	10514	4	Female	Q19-21 occurred but I was not necessarily confused by such events. *Schools do not accommodate well for people like me AT ALL* [19-I was confused by other students trying to get out of schoolwork. 20-I was confused by other students making fun of my academic abilities. 21-I was confused by other students trying to copy my schoolwork.]
	10026	2	Female	People copy homework A LOT. And they (immediately after we get tests results back) ask me what I got, and assume that I spend my life studying, when really I just retain information rather easily, and actually enjoy school/homework/learning. If I get an A, they judge. If I get a B, they also judge. It's like they can't handle me doing good nor bad. School is sometimes annoying because we have to go at a slow pace sometimes, and it gets boring having to repeat simple concepts. That's why CTYI is so good - learning is intense and work is challenging (a dream come true compared to real school! :))
	10076	4	.	There should be an I don't know box. I hate when my parents tell other people how smart i am.
	10247	3	Female	People make fun of me for using big words. I hate it. People expect me to do amazingly but I can't. People always ask to copy my work and I don't know how to say no.

Factor		Year in School	Sex	Comment
	10324	2	Male	Yes; outcast in school, focuses energy on dreams and wishes, most friends are close, few acquaints
	10326	3	Female	I went up a year in school and was bullied for it, but now I have lots of friends in school and am less bored. I found this very beneficial and I now enjoy school much more. I work hard and have so far gotten good grades.
	10419	4	Male	I don't like other people feeling bad because of me. I like feeling smart.
	10480	6	Female	Q46: I compared myself anyway. People can be horrifically bossy, demanding and demeaning when you stand up for yourself and refuse to help them do THEIR work. I love being smart, but it has so many downsides. I think it would be better not to be. It's a lot harder to fit in, in my opinion, and you'll get made fun of regardless. [46- I tried to focus on my own abilities, instead of comparing myself to others.]
Pressure to Achieve				
	10022	1	Female	When I get a lower result than what my friends expected me to get, I felt really disappointed. Sometimes my friends would playfully say that like "you'll be fine you have probably been up late all night studying!" I know they are only playing but sometimes it's just a little frustrating
	10030	2	Female	I do have quite a few friends but I do feel sometimes that people don't like me and I often feel pressured to do well in school
	10070	5	Female	Felt pressure to constantly succeed or like there was an expectation to always be the best academically but never got much praise or encouragement
	10096	3	Male	People put too much pressure on me to get things right
	10115	4	Female	I feel under a lot of pressure about exams and tests and I sometimes think it makes me do worse
	10353	3	Female	My teachers push me a lot, resulting in me sometimes breaking down.
	10357	3	Female	I stand out. People, particularly my peers, expect me to never be wrong. It is a lot of pressure and can make me stressed or depressed.
	10410	1	Male	Other students often expect that I get everything correct/high school/grade. I enjoy CTYI because it allows me to meet a lot of great minds and intellectuals.
	10428	2	Female	Teachers & parents often put unnecessary pressure on us.
	10431	3	Female	Everyone in school knows I'm smart but don't really care other than always expecting me to get everything right. It's annoying being in a school where everybody is fairly stupid. They don't care about their education and get in the way of my learning new topics.
	10506	5	Male	It stresses me out that I care more about doing well on tests & studying than my friends do. It really stresses me out when I perform below the high expectations that I have of myself.

Factor		Year in School	Sex	Comment
	10510	5	Female	People like me for me, mostly not my brain, though I felt great pressure to perform (esp. in JC)
	10532	3	Female	I don't like girls in my school constantly needing to know my grades because I feel bad if they don't do as well as me. Girls always expect me to get so high and roll their eyes at me if I meet their expectations. I'm scared people will think of me differently if I tell them my grades.
	10540	1	Female	I tend to worry an awful lot about what other people (even those that I don't really know) think about me, often in regards to my academic abilities. I overthink a lot of things which leads me to worry, especially about things like exams. I put immense pressure on myself to do well; none of my worries stem from things others have said to me.
	10559	4	Female	I don't have extremely high academic ability. I would not care about this so much, only everyone seems to overestimate my abilities. When my parents, teachers or peers mention how "smart" I am, I feel as though I'm letting them down. This has begun to bleed into other aspects of my life, and now I often find that I am critical of my abilities to do even the simplest of tasks.
	10562	2	Female	People copy my work, but I know it's because I will probably get the answers right. People assume that I will get high grades etc. and that makes me feel stressed.
	10569	3	Female	I often feel as though I am not fulfilling my potential academically in school, which is very frustrating.
	10223	3	.	I was better than the majority of my class but there were two better than me and I was quite worried that I would measure up. I was also under pressure from my family to socialise more.
	10237	3	Female	Classmates expect a lot from me academically.
	10247	3	Female	People make fun of me for using big words. I hate it. People expect me to do amazingly but I can't. People always ask to copy my work and I don't know how to say no.
	10163	1	Female	I get annoyed when people expect me to be perfect at everything
	10120	4	Female	A lot of things only happened in primary school. But I think that is because my secondary school has an academic scholarship programme so people in my school don't really care as much about if someone is gifted. They admire people's talents rather than get jealous and be hurtful. In relation to other people's academic talents I rarely measure others up to myself and how they do academically has no bearing on my feelings. I do however measure myself up to others and am often upset when I don't do as well as I think I should. My dad is an a******, he used to tell me 98% is too low.
	10511	4	Female	I'm just a private and quiet person. I don't talk much to my classmates unless they're good friends (about my achievements). I don't know if they're jealous. My biggest issue is that they sometimes view my level as something good to pass or overtake, like if I don't bother and I get a C, people are surprised and say, "Oh wow I did better."

Factor		Year in School	Sex	Comment
	10057	3	Male	Often I don't want to brag if I get good grades because I'm afraid the friends I do have will get annoyed so I often keep quiet. I feel like I'm holding myself back and I hate being isolated when I didn't want to be. That's why I love CTYI because there are so many likeminded people. I can openly be myself and have good conversations with everyone. I don't usually feel pressure from my parents or teachers but I often feel because I usually get good grades that my standards have raised so much I feel I'm disappointing people if I don't do well. People could often say I thought you were smart and it hurts my feelings.
	10156	6	Female	I don't like feeling pressured or feeling like I'm I don't like feeling pressured or feeling like I'm under a microscope. Sometimes people do better in tests and they shove it in my face because I'm the smart kid. I can't get 100% all the time despite what people may think. But I love helping people and I don't like to share any results so no one feels bad. Sometimes I study for half an hour and I get a B and they study for days and get a B. It's not what either of us are worth, it's just a B
	10554	2	Female	My friends often expect/predict that I would get high scores on tests.
Adult Expectations				
	10556	2	Female	When people (parents or teachers) expected me to do well it made me work harder and I felt happy that they had expectations of me.
	10450	5	Male	I enjoy helping. I never really care what people think. People have high expectations that I fail to meet often.
	10084	4	Female	I go to a quite academic school, and while others are praised for doing well, for me it is expected.
	10352	3	Female	People just expect you to do well sometimes idk
Helping Expectations				
	10027	3	Female	I like to feel challenged academically, I enjoy people having high standards of me and don't mind showing my academic ability as it is something I am proud of and embrace. I am happy to help classmates who struggle and do not mind them putting high expectations on me as it is a challenge I strive to meet. I never try to hide or feel embarrassed of my academic ability
	10552	6	Female	In many cases people would copy my work but at other times I would copy theirs. It's not always to do with ability but whoever has the work done. Many students copy from each other because we all want to avoid punishment.
	10562	2	Female	People copy my work, but I know it's because I will probably get the answers right. People assume that I will get high grades etc. and that makes me feel stressed.
	10578	1	Female	People expect me to give me their [them my?] homework. I often pretended to not have it to get out of helping them cheat.
	10048	2	Female	Some people in school hardly speak to me except to ask me for answers

Factor		Year in School	Sex	Comment
	10245	3	Female	Sometimes I'd be saying something and my friends would stop me and go "Ok. I don't understand." or "English, please." I feel like I am known for being smart. "Of course you didn't find it hard", "Let me look at your homework/ Can you help me do this?/ What do I do?"``
	10247	3	Female	People make fun of me for using big words. I hate it. People expect me to do amazingly but I can't. People always ask to copy my work and I don't know how to say no.
	10213	2	Female	I suffer from Asperger's so I've always found it hard to make friends and understand people's feelings. I have regularly been asked to let someone copy my homework. I feel different from groups at school but in CTYI everyone is friendly and understandable.
	10026	2	Female	People copy homework A LOT. And they (immediately after we get tests results back) ask me what I got, and assume that I spend my life studying, when really I just retain information rather easily, and actually enjoy school/homework/learning. If I get an A, they judge. If I get a B, they also judge. It's like they can't handle me doing good nor bad. School is sometimes annoying because we have to go at a slow pace sometimes, and it gets boring having to repeat simple concepts. That's why CTYI is so good - learning is intense and work is challenging (a dream come true compared to real school! :))
	10025	1	Female	I hate when people ask me what I get in tests, they look at me weirdly. I don't tell them because I don't want them to feel bad. I also hate when people ask to copy my homework.
	10215	3	Female	Many times people in my class have tried to copy my work. I never give them the answers. I try to help them through the work while allowing them to do it themselves. I then feel good because I have helped someone understand something
	10457	4	Female	I used to feel like the only reason people would come up and talk to me was because they wanted to copy my homework or ask me how to do something related to school work. I didn't think that they really liked me, or wanted to talk to me. It's alright now though.
	10480	6	Female	Q46: I compared myself anyway. People can be horrifically bossy, demanding and demeaning when you stand up for yourself and refuse to help them do THEIR work. I love being smart, but it has so many downsides. I think it would be better not to be. It's a lot harder to fit in, in my opinion, and you'll get made fun of regardless. [46- I tried to focus on my own abilities, instead of comparing myself to others.]
Hiding				
	10240	3	Female	Some people just won't like you if you're smart. It makes it easy to be self-deprecating to fit in.
	10110	3	Male	In some groups it's an annoyance to have to use simpler vocabulary and act
	10019	1	Female	I changed my answers to the wrong ones in a Drumcondra test to fit in with my friends (a long time ago)
	10111	3	Male	My academic performance has not been great but that is due to other reasons. I had dysphraxia but no learning resources. It makes me feel bad when I talk to others about something I'm good at because it feels like bragging. I do understand why other people wouldn't be academically inclined

Factor		Year in School	Sex	Comment
	10361	2	Female	I used to act like I didn't study because people would laugh at me for it.
	10427	2	Female	I try not to do too well in school so I don't offend/annoy people. I am not the only smart person in my class.
	10532	3	Female	I don't like girls in my school constantly needing to know my grades because I feel bad if they don't do as well as me. Girls always expect me to get so high and roll their eyes at me if I meet their expectations. I'm scared people will think of me differently if I tell them my grades.
	10227	2	Female	I tried to hide my academic abilities so others would not treat me differently. I moved schools in 4th class but before I moved the teacher and students always expected me to study all the time and love homework so I always got extra homework. When I moved school I tried hiding my abilities so I could be like everyone else
	10057	3	Male	Often I don't want to brag if I get good grades because I'm afraid the friends I do have will get annoyed so I often keep quiet. I feel like I'm holding myself back and I hate being isolated when I didn't want to be. That's why I love CTYI because there are so many likeminded people. I can openly be myself and have good conversations with everyone. I don't usually feel pressure from my parents or teachers but I often feel because I usually get good grades that my standards have raised so much I feel I'm disappointing people if I don't do well. People could often say I thought you were smart and it hurts my feelings.
	10519	2	Female	I tend to avoid competition so as to not being comparing myself to others. As well as this, I simultaneously try to hide myself and show myself off (in school, academically) so as to receive more challenge, but privately, with us ~competition~ from others (e.g., spelling bee) is not a "fun" challenge.
	10577	2	Female	I feel like a 'misfit' at school and I have a few friends, and when I talk to them, I have to 'dumb down.' Whenever I get good scores I try to hide them, but the other students find out anyway. I am envied for this but I feel horrible as I am treated very differently, like an outsider.
	10164	3	Female	I basically suppressed my abilities from 3rd class until 2nd year
More Serious				
	10095	3	Female	I feel like my experiences were very different to a good few of the questions as my grades aren't the best, I'm just mature and a lot of the time I get annoyed at all the stupid drama school friends were creating but that's the extent of it.
	10300	4	Male	I have never cared about anyone's feelings or opinions of me regarding my ability academically or physically because those people lack any trait I value and are essentially useless
	10381	4	Male	Though introverted, I prefer to be with people. That being said, I'm happy to be alone in school as my schoolmates are all twats.
	10431	3	Female	Everyone in school knows I'm smart but don't really care other than always expecting me to get everything right. It's annoying being in a school where everybody is fairly stupid. They don't care about their education and get in the way of my learning new topics.

Factor		Year in School	Sex	Comment
	10030	2	Female	I do have quite a few friends but I do feel sometimes that people don't like me and I often feel pressured to do well in school
	10448	4	Male	I've never been good at socializing but I'm getting better. I generally don't care what others think about me, they all have relationships and go to discos, but I don't do that stuff.
	10268	5	Female	Although I have had experiences with jealous students since primary school, as a whole, I have had good experiences with the vast majority of students. I have struggled with jealous students all my life. I'd be much harder on myself and my grades than any of my teachers or my parents.
	10025	1	Female	I hate when people ask me what I get in tests, they look at me weirdly. I don't tell them because I don't want them to feel bad. I also hate when people ask to copy my homework.
	10026	2	Female	People copy homework A LOT. And they (immediately after we get tests results back) ask me what I got, and assume that I spend my life studying, when really I just retain information rather easily, and actually enjoy school/homework/learning. If I get an A, they judge. If I get a B, they also judge. It's like they can't handle me doing good nor bad. School is sometimes annoying because we have to go at a slow pace sometimes, and it gets boring having to repeat simple concepts. That's why CTYI is so good - learning is intense and work is challenging (a dream come true compared to real school! :))
Peer Rejection				
	10253	2	Female	I don't really like sharing my scores because I don't think it adds or subtracts from anything, from who I am, and I know others do care and I don't want to make them feel bad
	10326	3	Female	I went up a year in school and was bullied for it, but now I have lots of friends in school and am less bored. I found this very beneficial and I now enjoy school much more. I work hard and have so far gotten good grades.
	10241	3	Female	I think my year are very judgemental, rude, and inconsiderate. It is a terrible place for people like my friend with social anxiety. My year are s***heads.
	10077	6	Male	Lack of interests in common leads to social isolation
	10048	2	Female	Some people in school hardly speak to me except to ask me for answers
	10575	3	Female	Sometimes people treat me differently because I'm intelligent. They don't accept me in their circle.
	10112	5	Male	Certain other students become enraged at me, become aggressive over envy of my academic ability
	10019	1	Female	I changed my answers to the wrong ones in a Drumcondra test to fit in with my friends (a long time ago)
	10106	3	Male	Being sporty I was able to be more socially in tune than others of my academic ability
	10229	3	Male	Other people treat you like you are different and make fun of you.

Factor		Year in School	Sex	Comment
	10514	4	Female	Q19-21 occurred but I was not necessarily confused by such events. *Schools do not accommodate well for people like me AT ALL* [19-I was confused by other students trying to get out of schoolwork. 20-I was confused by other students making fun of my academic abilities. 21-I was confused by other students trying to copy my schoolwork.]
	10030	2	Female	I do have quite a few friends but I do feel sometimes that people don't like me and I often feel pressured to do well in school
	10324	2	Male	Yes; outcast in school, focuses energy on dreams and wishes, most friends are close, few acquaints
	10230	2	Female	I won a maths competition and everyone was talking about me badly and being jealous, until they heard the prize was only a maths book.
	10361	2	Female	I used to act like I didn't study because people would laugh at me for it.
	10102	3	Male	I went to a very small primary school where I was bullied a lot and had no friends but my social skills have been getting better
	10566	2	Male	In some Questions 48, 52, I also refer to my siblings. I didn't have many friends from 1st-4 class but from 5th above, I had plenty of friends. When in 1st-4th class, I was incredibly shy, moody, and tantrum prone, then I told myself that I had to change and 3 years later I'm incredibly (probably too much) outgoing. [48- I worried about what others think of my academic abilities. 52- I avoided using some words when talking with others, because they would not understand me.]
	10287	6	Male	School is depressing and lonely. 5th year was a totally exhausting experience.
	10245	3	Female	Sometimes I'd be saying something and my friends would stop me and go "Ok. I don't understand." or "English, please." I feel like I am known for being smart. "Of course you didn't find it hard", "Let me look at your homework/ Can you help me do this?/ What do I do?"``
	10480	6	Female	Q46: I compared myself anyway. People can be horrifically bossy, demanding and demeaning when you stand up for yourself and refuse to help them do THEIR work. I love being smart, but it has so many downsides. I think it would be better not to be. It's a lot harder to fit in, in my opinion, and you'll get made fun of regardless. [46- I tried to focus on my own abilities, instead of comparing myself to others.]
	10205	2	Female	I am often criticised for enjoying learning

Factor		Year in School	Sex	Comment
	10240	3	Female	Some people just won't like you if you're smart. It makes it easy to be self-deprecating to fit in.
	10057	3	Male	Often I don't want to brag if I get good grades because I'm afraid the friends I do have will get annoyed so I often keep quiet. I feel like I'm holding myself back and I hate being isolated when I didn't want to be. That's why I love CTYI because there are so many likeminded people. I can openly be myself and have good conversations with everyone. I don't usually feel pressure from my parents or teachers but I often feel because I usually get good grades that my standards have raised so much I feel I'm disappointing people if I don't do well. People could often say I thought you were smart and it hurts my feelings.
	10409	3	Male	The Centre for Talented Youth, Ireland has relieved a lot of the worries pertaining to the social aspects. It allowed me to connect with other intellectuals of the same age. Ergo, I have a lot more likeminded individuals in my proverbial phonebook.
	10577	2	Female	I feel like a 'misfit' at school and I have a few friends, and when I talk to them, I have to 'dumb down.' Whenever I get good scores I try to hide them, but the other students find out anyway. I am envied for this but I feel horrible as I am treated very differently, like an outsider.
	10543	2	Male	Everyone hated me lol
	10058	2	Male	It socially isolates you to be better at something no one cares about
	10381	4	Male	Though introverted, I prefer to be with people. That being said, I'm happy to be alone in school as my schoolmates are all twats.
	10438	6	Female	You assumed I didn't have many friends (which I don't) but this deeply offended me.
	10519	2	Female	I tend to avoid competition so as to not being comparing myself to others. As well as this, I simultaneously try to hide myself and show myself off (in school, academically) so as to receive more challenge, but privately, with us ~competition~ from others (e.g., spelling bee) is not a "fun" challenge.
	10059	5	Male	if you want to fit in you have to be not too smart or too stupid - not in ctyi
	10476	2	Female	Everyone hated me in school because I read books.
All Good				
	10027	3	Female	I like to feel challenged academically, I enjoy people having high standards of me and don't mind showing my academic ability as it is something I am proud of and embrace. I am happy to help classmates who struggle and do not mind them putting high expectations on me as it is a challenge I strive to meet. I never try to hide or feel embarrassed of my academic ability
	10097	3	Male	In school I am not ignored for my intelligence nor am I crowded by other students with questions. I am treated like everyone else and am happy with that.

Factor		Year in School	Sex	Comment
	10211	4	Female	Like it's grand. Most things happen that may be good or sad but like so, it's fine.
	10254	2	Female	No one cares about grades in my school and no one gets upset about them.
	10261	5	Female	I usually don't care what other people think about my abilities and so I don't know what they think. Most of my friends are just as smart as me.
	10288	5	Female	Why is this all so stereotypical. My social interactions are fairly normal and uninteresting.
	10441	3	Female	Yes, I do have friends.
	10505	4	Male	So, none of these events taking place alter my mental state in any way. I've accepted them as a part of everyday life. It would be asinine to allow so many variables to make me feel any different, as then I would have to want to make others feel and act differently towards me, which is a fruitless endeavor.
	10405	3	Male	For most of these I list three in my feelings because I'm just violently indifferent, I don't really care because I didn't really focus on school. I didn't do well but I didn't mind because I can do well in what I like.
	10419	4	Male	I don't like other people feeling bad because of me. I like feeling smart.
	10556	2	Female	When people (parents or teachers) expected me to do well it made me work harder and I felt happy that they had expectations of me.
	10246	2	Female	School is fun most of the time.
	10080	5	Male	Nobody really cared, like either about your work or study or you don't care. I go to a school with very little emphasis on academics. There's great teachers and high results, but about a third of students do LCA
	10411	3	Male	I watch Rich and Morty.
	10388	5	Male	I don't care bro, got 'em.
	10496	3	Female	I am fine in school and I have a normal experience there. It is nice to come to CTYI to be around people like me.

Social Experiences During the COVID-19 Pandemic

Decades of research on the social experience of high-ability of students has led to greater knowledge of the impact of their abilities on interactions with those around them. The studies described here shine a light on CTYI students' feelings of differentness, beliefs about their social skills, perceptions of ostracism, and strategies to maintain social latitude. And then came the COVID-19 pandemic, turning the world upside-down. What kind of social experiences were gifted students having when school was fully remote? Would students be rejected by peers, avoid groupwork, and feel the same pressures to achieve? Could they even help their peers when school was online? So many questions were raised about the social experience of students during the pandemic, we conducted a study in the summer of 2021 to learn about them.

Sixteen Irish students participated in interviews designed to explore the social experience of online learning during the pandemic. With 88% of the interviewees being female, we primarily learned about the female CTYI social experience. When school was totally online, these students had very little interaction with peers. During school, many peers kept their video off, so students could often not see one another in class. Social interactions were not normal, as this student describes:

> So you can't really like make small talk as you usually do. Like if you're sitting next to someone usually you'd be like, "Oh, do you have a pen" or "Oh, I'm so tired" or "I don't really like this class" or "Oh my god, I didn't do the homework." "What is this about?" Well, but then for zoom, it was kind of just sitting there, answering the questions and then kind of staying quiet for the rest of the time. (3rd Year Female, #2110).

The experience of online classes overall was different, "I think when you're in person you'll tend to like ask questions. When you have to go through the trouble of like turning your mic on and like putting your hand up, people just wouldn't, so the classes were very like silent. Some classes had like a different atmosphere to them" (6th Year Female, #2111). Some students saw only the teacher during the time their classes were online. When asked if classmates were more or less friendly in online school, one student responded, "They were mute in online school" (5th Year Male, #2113).

Even teacher interactions were impacted by the online platform. Whereas a student might stay after class to talk with the teacher about a grade or missed understanding, this wasn't always possible when working remotely: "You can't really privately talk to the teacher afterwards because they normally like to log off with the rest of the class" (2nd Year Female, #2112). Students rarely reported trouble getting help when they needed it, however. One student explained it was easier for her to email the teacher than to ask the teacher for help in person: "In a school setting I found, if I was a subject I don't enjoy, I wouldn't put my hand up, I wouldn't talk to the teacher I wouldn't engage, but like just popping them an email was a lot easier" (6th Year Female, #2106).

Whereas some students lacked confidence to speak out in their online classes (4th Year Female, #2101), others felt more comfortable online. One student described the ease of speaking out: "I don't really like to talk much but in online class I found it easier. I don't know, I guess, I suppose I wasn't in the presence of other students" (5th Year Female, #2109). An awareness of those around her in in-person classes was intimidating, so cameras off allowed her to be more engaged with the teacher. Other students had a heightened awareness of their peers behind the dark squares on their screens:

> Sometimes when you don't have like a big question, you're just trying to like verify something you wouldn't...I wouldn't say anything because like would have stopped the whole class and like everyone would be listening to me for what I thought was kind of unimportant point. (4th Year Female, #2110)

A few students were able to be with peers in breakout rooms. For some, the online social interactions improved over time: "[Breakout rooms were] definitely a lot quieter. Because most of the time in breakout rooms everybody just did their own thing and nobody would talk to each other, but over time, people started talking and it got a bit more fun" (2nd Year Male, #2105). Some students made opportunities to engage with peers outside of class, through texting (4th Year Female, #2101) or their own online rooms:

> I set up my own Google classroom with just my friends so it was a different email completely separate and I invited all my friends and we used to do just live classes together. Nothing to do at school, and we would do like a mini study group, we have our cameras on we would just be studying, and if we needed help, we just chat to each other. (6th Year Female, #2106)

One student described an active social life during the pandemic:

> There were a lot of Zoom meetings. We did like Zoom baking. For like once a week I'll join the Zoom call and again because there's so many of us, if you could join great if you couldn't that was fine, and like some girls naturally gravitate towards the edge of the front group anyway, so they wouldn't but they join sometimes and you know, it was very like relaxed, easy. (5th Year Female, #2103)

Although new friends were made during the pandemic, it was more of a challenge. The opportunities were limited, "Because when you're online, you're kind of staying within your class" (3rd Year Female, 2115). The personality profiles of Chapter 2 come to mind here. It is likely some of these students were more extraverted and some less so.

Most students reported helping their peers. For some, it was the same as pre-pandemic: "I would always have helped. Anyone who asked me to help them out. So regardless of whether it was online or in school" (2nd Year Female, #2114). But for other students helping their peers was more limited.

> It's way harder for me to, like, I didn't have contact with my friends at that point. I had my phone but I could only talk to one of my friends from another class. So it was way harder for me to like help other people online like sometimes there's someone put up a question on Google Classroom. I'd like to try to help them out if I noticed it. But if it was in class. Me and my friends, if they had some confusion they'd come to me sometimes and I helped them out. And then, in the same way if I had something I was confused about I'd ask them. (2nd Year Male, #2105)

In in-person school, body language could be a clue to whether a classmate needed help, but this clue was not accessible when school was online.

> To be honest, you couldn't tell. I mean, like I said, some people weren't even on their computers and if their camera is off you really couldn't tell. And even if their cameras are on everybody has this like mutual blank expression where they just like stare off into the middle distance. That could be going in one ear and out the other or they could be understanding everything, or they could be understanding nothing because the breakout rooms were kind of few and far between a little bit scattered. Group work, you could help each other out a little bit, but not too much, like there wasn't the same support that you would have at school obviously in person. (5th Year Female, #2103)

Hiding was not a needed coping strategy during remote instruction. Students were, for the most part, unaware of how their peers were doing in online classes, and peers were unaware of how they were doing.

The stigma of giftedness and the social comparisons that underpin some of the threatening interactions students responded to with coping strategies simply did not happen in online school. Cameras and microphones off and few personal interactions, made for a comparatively sterile social environment. The teacher was the focal point of the school day, the one person with the camera on.

The CTYI students we interviewed were mixed on whether the year of online school during the pandemic was a lonely one. Ten of the sixteen said it was not. They maintained connections to friends ("I was able to talk with my friends. I found the ground." [5th Year Female, #2109]) or stayed active with extracurriculars:

> To be honest, I had like loads of things to keep me occupied. Because, like I have a book buying addiction and I need to finish the books that I've already bought, and like, I already have like lots of things on my to do list anyway. It was like oh, learn how to skateboard and learn how to do anatomy or paint. (3rd Year Female, #2115)

Another student started CTYI's Early University Entrance program (3rd Year Female, #2104), a new activity to help her feel more connected. Families also kept students from being lonely, "I would not say it was lonely because we have a big house - 6 people. So, no it wouldn't be lonely. So one of my sisters is real close in age and we get along very well. So definitely no, it wouldn't be lonely" (5th Year Female, #2102). Other students felt very lonely, even those who had made friends.

> I would say that the last year has been extremely lonely year. In spite of kind of making new friends, those friendships were in a very baby stage and it's not like ... despite of many friends I am not sure how many people I could, like, depend on in a crisis situation. (5th Year Female, #2103)

The total focus on academics, with no social component, was overwhelming to some students:

> In school you do like hockey or drama, like you'd have like extracurricular-like groups, they didn't meet on zoom on anything, it was just like all academics. (2nd Year Female, #2112)

> It's hard to stay social, it's very hard to, you know, keep up and, you know text your friends every other day, when you're also doing schoolwork and schoolwork would push out for a lot of people past school hours and, you know, they probably found it extremely hard, and then they couldn't do the things... like we've grown up in an environment where we're very social. We're doing school, people are doing extracurricular activities, people doing everything, they are constantly seeing people, and then it was all just taken away from them so fast. (4th Year Female, #2108)

The dramatic shift from an active social life to online school was a lonely experience.

> I mean like I still I talked to people I wasn't like you know, getting shut off from the world, but yeah it was lonely. I didn't like see everyone, like I usually would every day. Like even the teachers like you didn't see your teachers, you know, like there wasn't as much interaction with people outside of your family, like

> it was just a lot of, yeah, a lot of phone calls and texts and WeCalls. It wasn't like, you know, you used to be talking to people all day, every day but then it was just like, now we sit in silence in this class. (4th Year Female, #2116)
>
> I suppose the whole like distancing of like a friendship and stuff can take a bit of a toll on you and then, you know, you're not seeing people every day either. And so you're very much just working on your own every day. (6th Year Female, #2111)

One positive outcome of this social isolation was that not a single student reported evidence of bullying while students were attending school remotely. There was no opportunity for this kind of negative interaction while schools dealt with the early stages of the COVID-19 pandemic. How these unusual experiences may affect the lives of high-ability students in the future remains to be seen.

Summary of Social Experiences

Positive social connections to others are critical to healthy development (Baumeister & Leary, 1995; Deci & Ryan, 2000). The studies described here suggest that many CTYI students have such positive relationships with family and peers. Others, however, may need attention to the beliefs they hold about their fitness for friendship or the likelihood of rejection. The students lowest in self-efficacy – the Pushovers, Insecure, and Need a Boost classes – were also likely to have the most concern about others' expectations of perfection. Overcontrollers had the highest Ostracism scores, indicating a complex relationship between high levels of Neuroticism and beliefs about (or experiences of) being ignored or excluded.

Recognizing the variability among CTYI students can help parents, teachers, and counselors adapt to the students' needs. Being responsive to their different personalities and the beliefs they have developed over time, along with a sensitive demand that they achieve to their potential (Baumrind, 1971) will lead to positive outcomes. In some cases, the beliefs they have developed must be challenged.

Putting these results in context, Ostracism scores are similar to those found in other studies with the OES-A (R. Gilman, personal communication, December 12, 2016). But the 26.2% of students who experienced peer rejection (rejected, made fun of, unable to connect) is higher than the estimated 11% – 16% of rejected students found in the majority of studies of sociometric status (Duffy et al., 2019; Newcomb et al., 1993). These studies differ in their methods, however. Whereas we measured peer rejection by students' responses to survey items about being made fun of, being unable to connect, or being rejected, the majority of studies of sociometric status use peer nominations and the rejected students are the ones named by their peers as "not liked." It is possible the perceptions of students in those studies would be similar, but the studies were not looking for the same thing as in our research.

Zimmer-Gembeck et al. (2021) describe the negative outcomes associated with rejection sensitivity, a tendency to believe that one is about to be rejected by others in any social situation. This biased thinking can lead to social anxiety, which may lead to avoidance of social interactions. Aguilar et al. (2016) found nonconscious strategies that work well for making friends among interaction partners who are not high in rejection sensitivity, such as mimicking their body language, are not as likely to work when one of the partners is high in rejection sensitivity (i.e., believes they are about to be rejected). These beliefs are part of a cycle that can be broken through training. Crick and Dodge's (1994) Social Information Processing model describes points of intervention for students who have been unsuccessful in building positive social relationships.

In their review of research on social comparison, Zell et al. (2020) found a number of strategies that people used to minimize the impact of their outperformance of others (Table 3.25). Many CTYI students know already how to lower themselves (see Table 3.24) and helping is a commonly referred-to strategy, but we have little empirical information about their use of the strategies of elevating the outperformed person or strengthening one's relationship with them. Despite this lack of research, these are common sense approaches that can be taught and encouraged for all students. It is likely that those students confident in their social abilities already do many of these things. Students with less confidence can learn how to enact these behaviors, as well. Over- and Undercontrollers may also benefit from practicing these strategies.

Table 3.25
Strategies for Maintaining a Relationship with an Outperformed Other

Strategy Type	Behavior	Strategies found among Gifted Students
Lowering Oneself		
	Suppressing pride displays	Avoid Bragging (J. Cross et al., 2019)
	Downplaying their success	Placating, Cop-out, Lying (T. Cross et al., 1991)
	Concealing their superior performance	Hiding (J. Cross et al., 2019) Lying (T. Cross et al., 1991)
	Underperforming	Underachievement (Hébert, 2001)
Elevating the Outperformed Person		
	Complimenting	
	Encouraging	
	Pointing out the other person's strengths	
	Giving advice	
	Offering help	Helping (J. Cross et al., 2019; Swiatek, 2012)
Strengthening One's Relationship with the Outperformed Person		
	Being nice, friendly, and likable	
	Doing favors, giving gifts	
	Helping	Helping (J. Cross et al., 2019; Swiatek, 2012)

Source: Adapted from Zell et al., 2020

From the findings of the cross-cultural social experience study (J. Cross et al., 2019), we proposed that students may benefit from learning about the effects of the stigma of giftedness, but with a caution:

> There is a danger in focusing on a child's situational identification as "gifted." As children are developing an identity, what is the effect of fostering the belief that they are different, when they may be similar to their age peers in, for example, physical development, interests, and personality? The balance between helping them fit in with peers and fostering a belief that they are the "other" is a precarious one. (p. 236)

Teaching these positive strategies may be helpful in avoiding the danger of focusing on their differentness. Prosocial behavior is likely to be welcome in nearly all social situations, serving all CTYI students well.

Chapter 4:

Irish Gifted Students in School

In their description of the lived experience or the inner life of gifted students, Coleman et al. (2015) opened the section headed "Ready Child, Unprepared School" thus:

> Gifted children typically arrive at school eager to learn—some even consumed with the notion (Coleman, 1985; Tomlinson, 1999)—and meet an environment that has chronologically based expectations for behavior and is not organized for advanced learning. (p. 366)

Schools around the world are designed to deliver instruction to the average student and this design is not always a good fit for high ability students. According to the Ireland Department of Education (2021), there were nearly a million primary and secondary students in Irish schools in 2020, attending just under 4,000 schools across the country. The abilities of highly capable students are not the primary concern of most schools, when so many more students learn at an average level or need support to achieve the average level.

In some cases, a school is designed specifically for high-ability students. These are often private schools with a mission to support exceptional students. A Google search for "gifted schools Ireland" has one result that fits: Centre for Talented Youth-Ireland. As effective as CTYI is in providing for gifted students, it is not a school to meet students' year-round needs. Many schools that have attempted to cater for gifted students have special programs. Adams (2021) describes effective programs as having "the following clearly articulated elements: a philosophy, goals, a definition, an identification plan, a coherent curriculum, a scope and sequence, a professional development plan, and an evaluation plan" (p. 128). With appropriate administrative support and resources, such a program can provide the advanced curriculum needed for many gifted students. A new movement in the field of gifted education proposes an emphasis on *talent development* (Subotnik et al., 2011), a focus on developing talents in a specific domain, rather than creating general programs to serve all students at an advanced level. In their School-Based Conception of Giftedness and Talent Development, T. Cross and Cross (2021) go beyond programs to recommend a whole-school focus on the development of talent among all students, not only those identified as gifted. In this conception, all students receive opportunities to learn at an advanced level. Those who are successful and interested in the subject area are given the supports and resources they need to continue developing in that area, resulting in a motivated student who can learn at their own pace. The nascent stage of gifted education in Ireland suggests this may be a time when adopting a talent development model is possible.

The type of instruction that is most effective for gifted learners is not entirely different from what is effective for all students. What is known to be effective for all students is also known to be effective with gifted students, but there are critical differences. Tomlinson (2005) describes the logic of these differences (emphasis added):

> Given the cognitive capacity of students who are highly able, it is likely that they will—at least at some times and in some contexts—require curriculum and instruction that is **more challenging** than we would expect of less advanced learners, at least if we expect the advanced learners to continue to grow. The logic is fairly simple. Children who learn more rapidly than others will likely find curriculum and instruction a better fit if it allows them to move **at a pace suited to their rate of learning**. A reader who is advanced beyond age expectations often needs to read **advanced materials**. A student who grasps abstractions more readily than some other classmates will likely be more satisfied when he or she can grapple with more **abstract content and tasks** than those appropriate for many age peers. A student who hungers to explore a topic in greater depth or breadth than is of interest to some other students needs a chance to learn **more broadly and deeply**, and support in doing so. (p. 162)

Some teachers intuitively apply these concepts of challenge, rapid pacing, advanced materials, abstract content and tasks, allowing for deep and broad learning among their students who are able to benefit most from them. Callahan et al. (2017) found that, among the 1566 school districts across the United States participating in their study, the most frequently reported area of staff development was in curricular differentiation. When differentiation is the framework for providing gifted education, teachers learn what their students already know through pre-assessments, then offer instruction at an appropriate level to groups or individual students in the same classroom. In a differentiated classroom, all students may be learning the same subject, but

> [s]ome students may be working independently, some may work in small groups, and others receive direct instruction from the teacher. Some students

> are grouped by ability, and some by interest or learning profile. A crucial factor in implementing differentiation is time. Time is needed to preassess students, determine appropriate content and activities based on that assessment, and modify the materials in depth, pace, and complexity. Without the time and effort to carry out these vital tasks, the chances that the learning needs of the gifted students will be met in the regular classroom are slim. (Adams, 2021, pp. 130-131).

Administrator support is critical to the success of differentiation in a school, as they indicate their valuing of the time and resources required to effectively differentiate the curriculum (Gadzikowski, 2016). Without strong support for teacher training, time for planning, and materials or assistance needed to teach a variety of lessons, differentiation will not be successful as a means of serving high-ability students (Hertberg-Davis, 2009).

Another effective method of providing the advanced instruction gifted students need is through acceleration. Grade-skipping is the form of acceleration that is best known, but there are actually many forms. Southern and Jones (2015) describe 20 different types, including grade-skipping, but also subject-matter acceleration, curriculum compacting, and concurrent/dual enrollment, for example. All these practices, including grade-skipping, have been found to be very effective. Although grade-skipping is often avoided for fears of causing social and emotional harm to the accelerated student, research evidence supports the opposite: gains for students both academically and in the social/emotional realm (Rogers, 2015).

Gifted Education in Irish Schools

In a 2014 study of more than 800 Irish teachers, school leaders, and other staff from across the country (J. Cross et al., 2014), the most frequently reported (73.4% of respondents) acceleration policy was "Classroom teachers are encouraged to provide higher level or enriched content material in their classrooms, but are not permitted to accelerate students into the next level or academic grade" (p. 59). Support for grade acceleration was low among teachers and school leaders, alike. Based on this evidence, it is unlikely that many gifted students are able to skip a grade, even if they could benefit from that option.

In the same study, 42% of classroom teachers reported they did not have adequate time and resources to effectively differentiate instruction, but only 28% of principals thought this was the case (J. Cross et al., 2014). When asked about their practice, 85% of teachers indicated they were differentiating their instruction for high-ability students, which they described as doing through asking higher level questions, offering more challenging tasks and individual projects, and grouping students by ability level. When describing the frequencies of their behaviors in class, however, their curricular modification and provision of challenge and choice was happening only a few times per week. A closer analysis of the teachers' reported practices (Hinch et al., 2018) focused on only those that were likely to be exclusively beneficial to students with high ability:

- assigning reading of more advanced level work,
- eliminating curricular material that students have mastered,
- and substituting different assignments for students who have mastered regular classroom work.

The number of teachers who reported regularly engaging in all three of these practices with gifted students, but not average students – actual differentiation – was only 3% of the total number of teachers. When teachers do not assign advanced level work, eliminate mastered material, and substitute different assignments when the work has been mastered, their gifted students will be receiving inadequate instruction. The schools are not ready for these students, who are prepared to learn (Coleman et al., 2015).

In a study of parents of CTYI students, 1,440 parents completed a survey about the experiences of 1,914 children who had attended CTYI (J. Cross et al., 2019). Many parents reported their children were happy in school (63.2%) and liked it (56.1%), but a majority (72.1%) were dissatisfied with their child's educational experiences. They did not believe their CTYI-attending children were being challenged in school. They reported more than half of the children (54.5%) were not receiving assignments targeting their ability level. This was especially true for secondary students. Parents of 71% of the secondary students reported they never received more challenging or complex assignments than their classmates. Although 85% of teachers reported they were differentiating the curriculum for their

high-ability learners (J. Cross et al., 2014), this study of parents suggests that figure was not representative of the experience of high-ability students across Ireland.

The studies of CTYI students explored their school experiences from different perspectives. Their academic self-concept and self-efficacy were included in studies in 2012, 2013, 2014, 2015, and 2016. In 2015 and 2016, questions were included about the frequency of differentiated practices they received. In 2019, 12 students were interviewed about their academic experiences and in 2021 we explored students' academic experiences with online learning during the COVID-19 pandemic.

Beliefs about Academic Abilities

In general, CTYI students in these studies were confident in their academic abilities. Primary students, in particular, saw themselves as good at reading and mathematics (2012 data; see Table 2.8, Figure 2.2). All students had high self-concepts in reading abilities. A majority of students believed they had strong math abilities, but the SCLOW cluster, which was predominantly female, did not consider themselves quick learners in mathematics or to have an interest in mathematics (see Table 2.11). Students in the GENHI and ACADHI clusters had high General-school self-concepts, believing they were good at all school subjects and that they get good marks in all school subjects, but students in the SCMOD and ACADHI did not believe this to be true. It is likely this is related to their lower mathematics interest and beliefs they were not quick at learning in this subject area. The secondary students in the 2013 study had similarly strong beliefs in their academic abilities, with slightly lower scores in their mathematics ability (Table 2.15).

Self-concept was not perfectly correlated with self-efficacy, which adds the component of agency to one's self-beliefs (2013 data; see Table 2.17. General-school self-concept was moderately correlated with self-efficacy for Academic Achievement ($r = .54$, $p < .01$) and Self-Regulated Learning ($r = .55$, $p < .01$). General-Math self-concept was similarly related to Academic Achievement ($r = .53$, $p < .01$), but there were lower correlations between General-Reading beliefs and academic self-efficacy (Academic Achievement: $r = .35$, $p < .01$; Self-Regulated Learning: $r = .22$, $p < .01$).

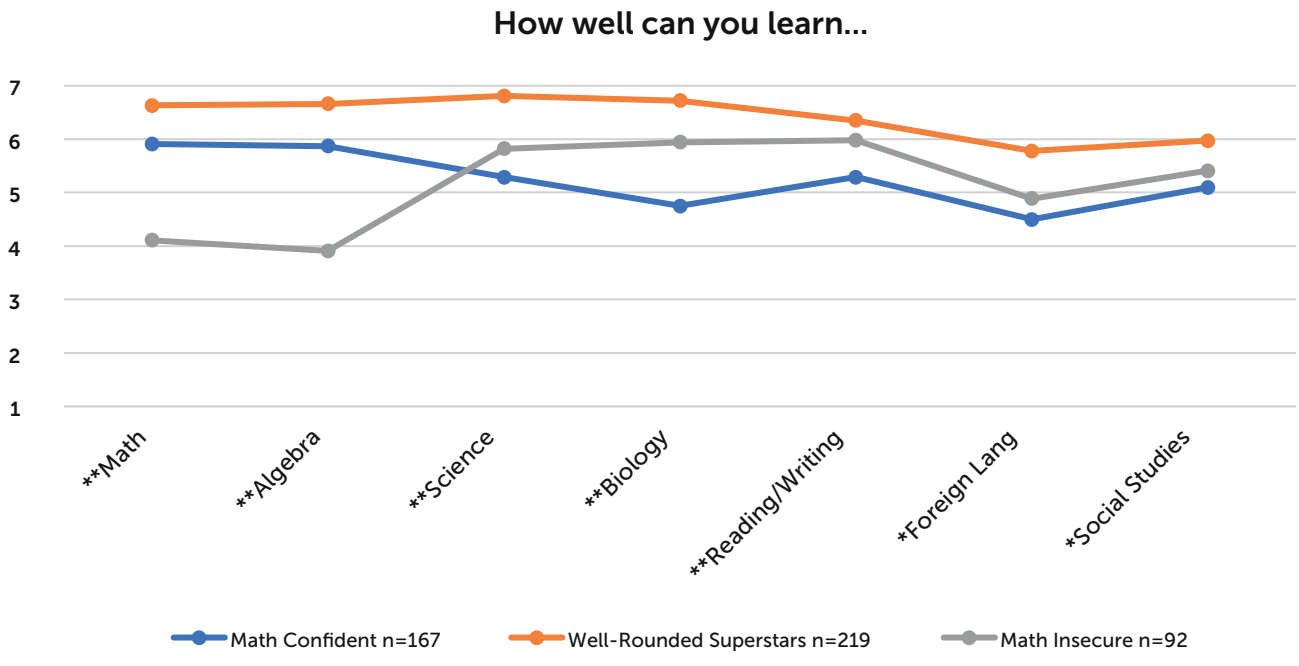
Academic Achievement self-efficacy was relatively high even among the lower self-efficacy classes described in Chapter 2, the Pushovers and the Insecure (see Figures 2.6 & 2.7, Table 2.22). It was lower in those classes than the others, $F(5, 930) = 59.41$, $p < .001$, but students in the lowest self-efficacy classes believed they could learn "pretty well." An analysis of the 2015 CTYI student data identified more in-depth patterns in students' academic efficacy by exploring the items that compose the Academic Achievement subscale (see Table 4.1; O'Reilly et al., 2018).

The three clusters identified by subject area (O'Reilly et al., 2018) were labeled Math Confident (high in Math subjects, less confident in other subjects; $n = 167$), Well-Rounded (high confidence in all subjects; $n = 219$), and Math Insecure (low confidence in math, high in other subjects; $n = 92$). Table 4.1 and Figure 4.1 display mean scores by cluster. Females were disproportionately more likely to be in the Math Insecure cluster and males more likely to be in the Math Confident cluster, $\chi^2(2, 477) = 7.87$, $p < .05$ (Figure 4.2). Personality types were disproportionately distributed among the clusters, as well, $\chi^2(6,464) = 24.98$, $p < .001$, with Overcontrollers more likely than expected to be in the Math Insecure cluster and High Resilients overrepresented in the Well-Rounded cluster (see Figure 4.3). What these subject area self-efficacy clusters tell us is that, despite an average high confidence level, not all CTYI students will be confident in all subject areas.

Table 4.1
Subject Area Self-Efficacy Clusters Means and Standard Deviations (2015 CTYI Students)

	Math Confident *n*=167		Well-Rounded *n*=219		Math Insecure *n*=91		Total *N*=477	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
How well can you learn general mathematics?	5.91	1.07	6.63	0.61	4.10	1.44	5.90	1.35
How well can you learn algebra?	5.87	1.12	6.66	0.59	3.91	1.36	5.86	1.40
How well can you learn science?	5.29	1.21	6.81	0.42	5.82	1.33	6.09	1.19
How well can you learn biology?	4.75	1.17	6.72	0.51	5.94	1.28	5.88	1.29
How well can you learn reading and writing language skills?	5.29	1.44	6.35	0.93	5.98	1.28	5.91	1.29
How well can you learn to use computers?	5.64	1.31	5.84	1.48	5.56	1.40	5.72	1.41
How well can you learn a foreign language?	4.50	1.69	5.78	1.14	4.90	1.71	5.16	1.58
How well can you learn social studies?	5.10	1.43	5.97	1.14	5.42	1.27	5.56	1.33

Figure 4.1
Subject Area Self-Efficacy Cluster Means (2015 CTYI Students)



Note: Pillai's Trace = 1.15, $F = 90.64$, $df = (14, 938)$, $p < .001$
* Well-Rounded higher than Math clusters
**Well-Rounded, Math Confident and Math Insecure all differ from each other.

Figure 4.2
Subject Area Self-Efficacy Cluster Composition (2015 CTYI Students)

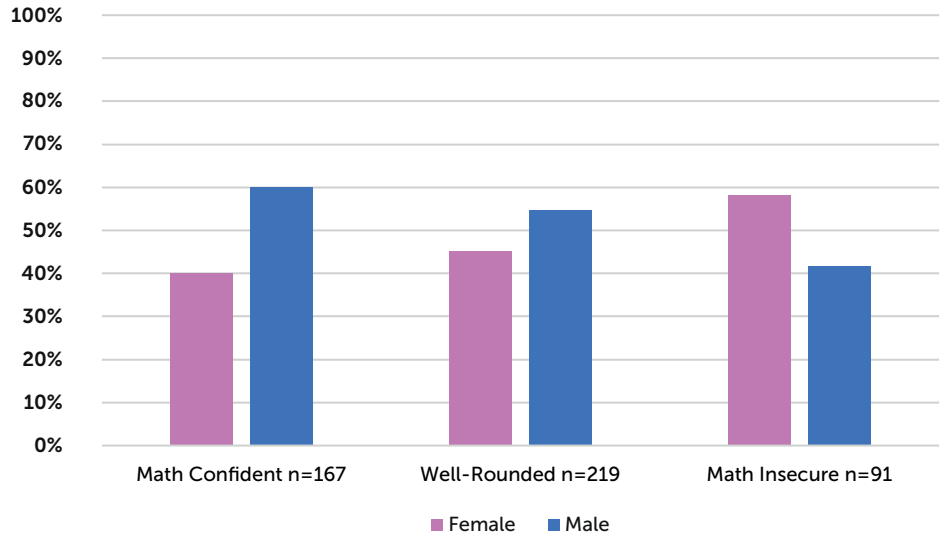
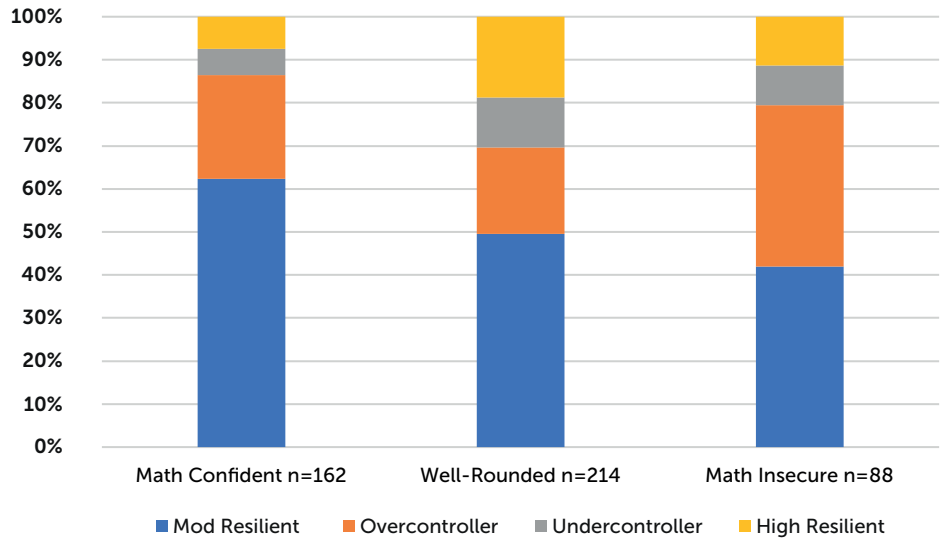


Figure 4.3
Subject Area Self-Efficacy Cluster Composition
by Five-Factor Model Personality Class (2015 CTYI Students)



CTYI Students' Experience of Differentiation

In several studies, one focus of our research questions was on the school experiences of students at CTYI. Were they receiving differentiated lessons? Were they able to go in-depth on lessons when they wanted to? Were they bored in class because they already knew the lessons? How well do they see themselves fitting in at school? We asked these questions in the studies of 2015, 2016, and 2019.

Differentiation, Challenge, and Boredom in the Classroom

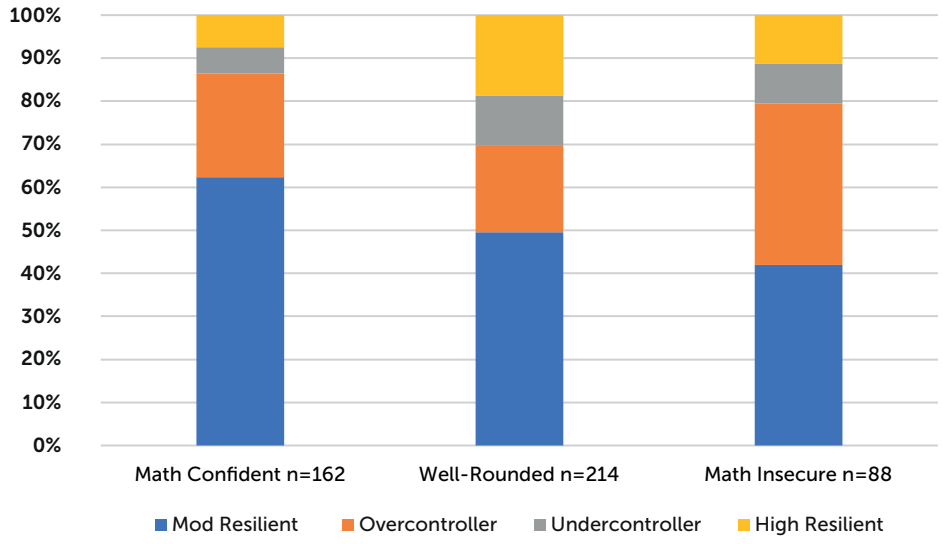
There is great variation among high-ability students, from those "whose personal and economic support system has ensured every opportunity to develop the learner's capacity, [to those] students with equal potential but who, in the absence of a support system, have barely begun to develop or even recognize their possibilities" (Tomlinson, 2005, p. 160). In all cases, high-ability students will languish in a classroom where their readiness to learn takes a back seat to a curriculum designed for the average student. Gifted students "have a right to learn something new every day" (Siegle, 2007). Waiting for others to learn material they already know is a common experience (Peine & Coleman, 2010) that can lead to boredom, frustration, underachievement, or even dropping out of school altogether (Kanevsky & Keighley, 2003). Curricular differentiation eliminates waiting by addressing students' different needs for pacing, complexity, and challenge.

CTYI students reported infrequently being given differentiated lessons – lessons more challenging or more complex than the assignments of their peers (see Figure 4.4, Table 4.2). More than 70% of CTYI students reported "Rarely" or "Never" receiving differentiated lessons in their science, Irish, history, geography, English, and foreign language classes. This percentage was lower in math classes, where 65.4% of CTYI students reported "Rarely" or "Never" receiving assignments that were more challenging or complex than the other students. CAT students appear to be receiving differentiated assignments slightly more frequently than CTYI students in all subjects (all χ^2 *ps* < .05), except for math. Even so, more than 60% of CAT students reported "Rarely" or "Never" receiving differentiated assignments. There were not differences among the personality classes in the frequency of differentiation (χ^2 *ps* > .05).

It is possible that teachers provide differentiated assignments in a manner that is not obvious to students, but it would be difficult for them to not be aware so much of the time. Considering that nearly 85% of Irish secondary teachers reported they differentiate lessons for their high ability students (J. Cross et al., 2014), there appears to be a significant disconnect.

Figure 4.4
Percent of CTYI and CAT Students Reporting "Rarely" or "Never" Receiving Differentiated Assignments

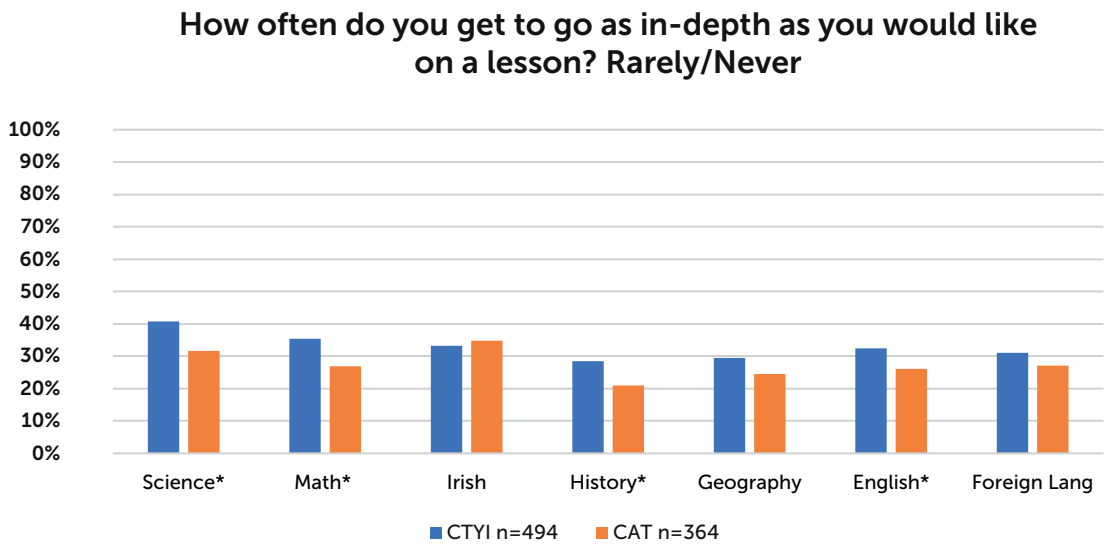
Incorrect chart



*CTYI and CAT differ, p < .05

There is greater variability in the frequency with which CTYI students report they are able to go as in-depth as they would like on a lesson (Figure 4.5, Table 4.3). In science, for example, 40.7% of CTYI students and 31.6% of CAT students reported "Rarely" or "Never" being able to go in-depth as often as they would like. These numbers are flipped in some subjects, however, when students report being able to go as in-depth as they would like "Every Day" or a "Few Times/Week" in their math (CTYI 39.8%; CAT 50.3%), Irish (CTYI 38.1%; CAT 35.4%), and English (CTYI 41.3%; CAT 47.5%) classes. In English only, there were differences in the personality classes, χ^2 (15, N = 473) = 33.01, p < .01. Students in the Overcontroller class were more likely than Moderate Resilients to report being able to go in-depth as often as they would like a "Few Times/Month" and this was more than expected. Undercontroller students were more likely than Moderate Resilients to report "Rarely" being able to go in-depth as often as they would like.

Figure 4.5
Percent of CTYI and CAT Students Reporting "Rarely" or "Never" Being Able to Go In-Depth

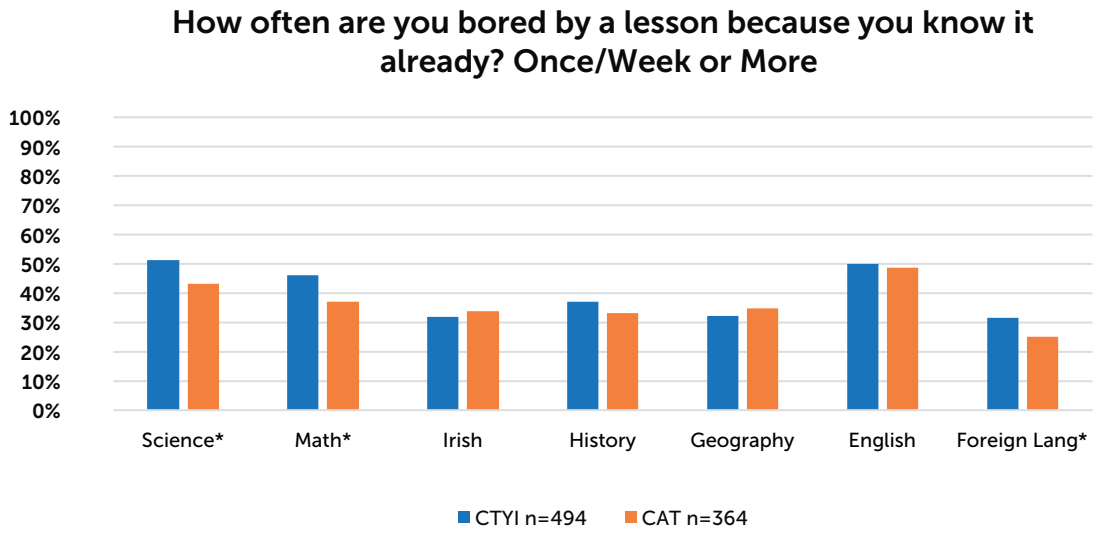


*CTYI and CAT differ, p < .05

A regular concern among educators in gifted education is that their exceptionally able students will be bored by repetitive lessons aimed at their more average ability peers (Adams, 2021). According to students in Kanevsky and Keighley's (2003) study of gifted high school dropouts, "(1) learning is the opposite of boredom, and (2) learning is the antidote to boredom" (p. 20). Among approximately half of CTYI students, boredom is most likely to occur "Every Day," "A Few Times a Week," or "About Once a Week" in their science (51.2%), math (46.2%), or English (49.8%) classes (see Figure 4.6, Table 4.4). CAT students reported less frequent boredom in science (43.1%) and math (37.1%) classes, but similar frequency of boredom in English (48.6%). Half of students reported being bored "Rarely" or "Never" in Irish (CTYI 46%; CAT 48.9%) and foreign language (CTYI 48.8%; CAT 56.6%) classes. These frequencies align with parents' reports of children being frequently unchallenged in school, a major source of dissatisfaction with their children's education (J. Cross et al., 2019). It should be noted that a majority of parents, even those dissatisfied with their children's education, simultaneously reported their children were happy in school. The picture painted in the 2015 and 2016 studies of CTYI and CAT students is of infrequent differentiation, with quite a bit of redundancy in lessons, but the possibility to delve deeply into some of their subjects.

There were personality class differences in boredom in only a few subjects: science, geography, and English. The trend was for Undercontrollers to be more frequently bored than expected in science, χ^2 (15, N = 455) = 30.87, $p < .01$, geography, χ^2 (15, N = 390) = 29.17, $p < .05$, and English, χ^2 (15, N = 475) = 47.40, $p < .001$. In English, the trend was for Moderate Resilients, the largest personality class with 52.5% of CTYI students, being less likely than expected to be bored frequently. This may be due to their ability to adapt in diverse environments.

Figure 4.6
Percent of CTYI and CAT Students Reporting Once/Week or More Frequently Being Bored Because They Know Lesson



*CTYI and CAT differ, $p < .05$

Table 4.2
Response Frequencies for Question "How often are you given an assignment that is more challenging or more complex than the assignments other students in class are doing?"

		CTYI	CTYI	CAT	CAT	Total	Total
		n	% of CTYI	*n*	% of CAT	*N*	% of Total
	Total	494	100.00	364	100.00	858	100.00
Science							
	Every day	5	1.01%	8	2.20%	13	1.52%
	A few times a week	14	2.83%	23	6.32%	37	4.31%
	About once a week	14	2.83%	31	8.52%	45	5.24%
	A few times a month	28	5.67%	21	5.77%	49	5.71%
	Rarely	104	21.05%	87	23.90%	191	22.26%
	Never	282	57.09%	161	44.23%	443	51.63%
		CTYI	CTYI	CAT	CAT	Total	Total
		n	% of CTYI	*n*	% of CAT	*N*	% of Total
	Total	494	100.00	364	100.00	858	100.00
Math							
	A few times a month	58	11.74%	42	11.54%	100	11.66%
	Rarely	93	18.83%	81	22.25%	174	20.28%
	Never	230	46.56%	145	39.84%	375	43.71%
Irish							
	Every day	8	1.62%	25	6.87%	33	3.85%
	A few times a week	22	4.45%	22	6.04%	44	5.13%
	About once a week	12	2.43%	13	3.57%	25	2.91%
	A few times a month	19	3.85%	21	5.77%	40	4.66%
	Rarely	73	14.78%	65	17.86%	138	16.08%
	Never	303	61.34%	174	47.80%	477	55.59%
History							
	Every day	3	0.61%	5	1.37%	8	0.93%
	A few times a week	13	2.63%	24	6.59%	37	4.31%
	About once a week	11	2.23%	22	6.04%	33	3.85%
	A few times a month	24	4.86%	32	8.79%	56	6.53%
	Rarely	75	15.18%	67	18.41%	142	16.55%
	Never	284	57.49%	159	43.68%	443	51.63%
Geography							
	Every day	4	0.81%	5	1.37%	9	1.05%
	A few times a week	11	2.23%	33	9.07%	44	5.13%
	About once a week	10	2.02%	11	3.02%	21	2.45%
	A few times a month	14	2.83%	24	6.59%	38	4.43%
	Rarely	69	13.97%	72	19.78%	141	16.43%
	Never	295	59.72%	162	44.51%	457	53.26%
English							
	Every day	20	4.05%	19	5.22%	39	4.55%

	A few times a week	16	3.24%	30	8.24%	46	5.36%
	About once a week	22	4.45%	25	6.87%	47	5.48%
	A few times a month	36	7.29%	37	10.16%	73	8.51%
	Rarely	101	20.45%	67	18.41%	168	19.58%
	Never	271	54.86%	162	44.51%	433	50.47%
Foreign Language							
	Every day	18	3.64%	15	4.12%	33	3.85%
	A few times a week	20	4.05%	33	9.07%	53	6.18%
	About once a week	18	3.64%	21	5.77%	39	4.55%
	A few times a month	31	6.28%	28	7.69%	59	6.88%
	Rarely	87	17.61%	73	20.05%	160	18.65%
	Never	275	55.67%	161	44.23%	436	50.82%

Table 4.3

Response Frequencies for Question "How often do you get to go as in-depth as you would like on a lesson?"

		CTYI *n*	CTYI % of CTYI	CAT *n*	CAT % of CAT	Total *N*	Total % of Total
	Total	494	100.00	364	100.00	858	100.00
Science							
	Every day	52	10.53%	51	14.01%	103	12.00%
	A few times a week	73	14.78%	82	22.53%	155	18.07%
	About once a week	63	12.75%	51	14.01%	114	13.29%
	A few times a month	81	16.40%	51	14.01%	132	15.38%
	Rarely	138	27.94%	82	22.53%	220	25.64%
	Never	63	12.75%	33	9.07%	96	11.19%
Math							
	Every day	99	20.04%	102	28.02%	201	23.43%
	A few times a week	98	19.84%	81	22.25%	179	20.86%
	About once a week	57	11.54%	38	10.44%	95	11.07%
	A few times a month	55	11.13%	36	9.89%	91	10.61%
	Rarely	125	25.30%	65	17.86%	190	22.14%
	Never	50	10.12%	33	9.07%	83	9.67%
Irish							
	Every day	113	22.87%	71	19.51%	184	21.45%
	A few times a week	75	15.18%	58	15.93%	133	15.50%
	About once a week	52	10.53%	41	11.26%	93	10.84%
	A few times a month	37	7.49%	39	10.71%	76	8.86%
	Rarely	91	18.42%	78	21.43%	169	19.70%
	Never	73	14.78%	49	13.46%	122	14.22%
History							
	Every day	86	17.41%	91	25.00%	177	20.63%
	A few times a week	74	14.98%	64	17.58%	138	16.08%
	About once a week	56	11.34%	46	12.64%	102	11.89%
	A few times a month	64	12.96%	42	11.54%	106	12.35%
	Rarely	101	20.45%	51	14.01%	152	17.72%
	Never	40	8.10%	25	6.87%	65	7.58%
		CTYI *n*	**CTYI % of CTYI**	**CAT** *n*	**CAT % of CAT**	**Total** *N*	**Total % of Total**
	Total	494	100.00	364	100.00	858	100.00
Geography							
	A few times a month	58	11.74%	54	14.84%	112	13.05%
	Rarely	93	18.83%	63	17.31%	156	18.18%
	Never	52	10.53%	26	7.14%	78	9.09%
English							
	Every day	106	21.46%	81	22.25%	187	21.79%
	A few times a week	98	19.84%	92	25.27%	190	22.14%

	About once a week	57	11.54%	62	17.03%	119	13.87%
	A few times a month	66	13.36%	30	8.24%	96	11.19%
	Rarely	101	20.45%	69	18.96%	170	19.81%
	Never	59	11.94%	26	7.14%	85	9.91%
Foreign Language							
	Every day	95	19.23%	76	20.88%	171	19.93%
	A few times a week	89	18.02%	72	19.78%	161	18.76%
	About once a week	64	12.96%	48	13.19%	112	13.05%
	A few times a month	57	11.54%	47	12.91%	104	12.12%
	Rarely	91	18.42%	62	17.03%	153	17.83%
	Never	62	12.55%	37	10.16%	99	11.54%

Table 4.4
Response Frequencies for Question "How often are you bored by a lesson because you know it already?"

		CTYI *n*	CTYI % of CTYI	CAT *n*	CAT % of CAT	Total *N*	Total % of Total
	Total	494	100.00%	363	100.00	858	100.00
Science							
	Every day	48	9.72%	29	7.97%	77	8.97%
	A few times a week	132	26.72%	79	21.70%	211	24.59%
	About once a week	73	14.78%	49	13.46%	122	14.22%
	A few times a month	94	19.03%	77	21.15%	171	19.93%
	Rarely	101	20.45%	81	22.25%	182	21.21%
	Never	21	4.25%	38	10.44%	59	6.88%
Math							
	Every day	50	10.12%	31	8.52%	81	9.44%
	A few times a week	103	20.85%	60	16.48%	163	19.00%
	About once a week	75	15.18%	44	12.09%	119	13.87%
	A few times a month	77	15.59%	72	19.78%	149	17.37%
	Rarely	122	24.70%	92	25.27%	214	24.94%
	Never	61	12.35%	60	16.48%	121	14.10%
Irish							
	Every day	45	9.11%	43	11.81%	88	10.26%
	A few times a week	52	10.53%	41	11.26%	93	10.84%
	About once a week	60	12.15%	39	10.71%	99	11.54%
	A few times a month	70	14.17%	43	11.81%	113	13.17%
	Rarely	122	24.70%	90	24.73%	212	24.71%
	Never	105	21.26%	88	24.18%	193	22.49%
History							
	Every day	35	7.09%	20	5.49%	55	6.41%
	A few times a week	70	14.17%	51	14.01%	121	14.10%
	About once a week	78	15.79%	50	13.74%	128	14.92%
	A few times a month	92	18.62%	64	17.58%	156	18.18%
	Rarely	102	20.65%	88	24.18%	190	22.14%
	Never	41	8.30%	47	12.91%	88	10.26%
		CTYI *n*	CTYI % of CTYI	CAT *n*	CAT % of CAT	Total *N*	Total % of Total
	Total	494	100.00%	363	100.00	858	100.00
Geography							
	A few times a month	88	17.81%	58	15.93%	146	17.02%
	Rarely	122	24.70%	90	24.73%	212	24.71%
	Never	34	6.88%	46	12.64%	80	9.32%
English							
	Every day	75	15.18%	51	14.01%	126	14.69%
	A few times a week	101	20.45%	65	17.86%	166	19.35%
	About once a week	70	14.17%	61	16.76%	131	15.27%

	A few times a month	76	15.38%	63	17.31%	139	16.20%
	Rarely	120	24.29%	79	21.70%	199	23.19%
	Never	47	9.51%	39	10.71%	86	10.02%
Foreign Language							
	Every day	39	7.89%	24	6.59%	63	7.34%
	A few times a week	56	11.34%	39	10.71%	95	11.07%
	About once a week	61	12.35%	28	7.69%	89	10.37%
	A few times a month	67	13.56%	49	13.46%	116	13.52%
	Rarely	140	28.34%	124	34.07%	264	30.77%
	Never	101	20.45%	82	22.53%	183	21.33%

CTYI Students Speak About Their Education

In the summer of 2019, twelve CTYI students (50% female) were interviewed about their experiences of school. To begin the interview, the students completed a brief survey that included items about school from the 2015 and 2016 surveys. Their responses are displayed in Table 4.5. The interview was structured to elicit students' perceptions of their learning, their teachers, and the climate in their schools (see protocol Figure 4.7). In general, the interviews confirmed the findings of the 2015 and 2016 studies: Students rarely receive differentiated lessons and are often bored in school. Several students gave examples of differentiation, of excellent teachers, and of a positive academic experience. Nearly all students, however, described being bored, having poor teachers or an unstimulating curriculum. Peers were an important feature of their school lives. Friends were frequently named first when asked what they think about when they think of school. As we saw in their survey responses, sometimes peers do get in the way of their learning. CTYI students have varied reactions to their peers' slower learning, but in this study, they primarily viewed a deficient education as a result of curricular, teaching, or logistical breakdowns.

Learning vs Learning it off

Most students interviewed could give examples of positive learning experiences. Sometimes these experiences were related to a favorite subject. Learning new things, especially in a favorite subject, was stimulating.

> I love science. I think we were learning about atomic structure and I was learning about the different subatomic particles, how everything interacts with each other, how different bonds form. And I found that very interesting.... I love language class as well. We were learning about, I think German in general. I find it very interesting. I'm rarely bored in German. There's always something new to learn. New prepositions, sentence structure. (F5)

> I really enjoyed science at Junior Cert. I actually enjoyed the class. I wasn't wishing it was over, just sitting there wishing it was. (F2)

Positive learning experiences were often associated with the challenge they presented:

> I'd say probably when my French teacher would give me extra things to do, because I took French in primary school. I knew most of the stuff when I went in. A lot of people were still learning verbs and things that I already knew. When she'd give me things to do, like Leaving Cert questions, I found that quite fun. It was actually challenging, for once. (F1)

> Well in maths, when we were doing, it was some, it was algebraic fractions. I kind of at the start I didn't really understand them that much, so I felt it kind of challenging and I kind of liked that, because usually in maths I find it quite easy, and I kind of grasp it immediately. But then this time, I just couldn't seem to grasp it straight off the bat. So I kind of liked doing that because I felt that it was more of a challenge and I got to work more and I wasn't just bored of doing stuff. (F4)

> In school, there's been plenty of times I've enjoyed learning. I guess, history is one just because it's interesting. You're learning stories, I guess, a lot of the time, so it's not just writing stuff down and having to memorize boring stuff. It's all interesting." (M2)

Table 4.5
2019 Interviewee Survey Responses

			How often are you given an assignment that is more challenging or more complex than the assignments other students in class are doing?		**How often do you get to go as in-depth as you would like on a lesson?**		**How often are you bored by a lesson because you know it already?**	
Identifier	Year in School	How do you feel about school in general?	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
F1	3	I like it very much (1)	5.00	0.82	3.71	1.50	3.43	1.13
F2	6	I like it a bit (3)	5.00	0.00	3.60	0.55	4.40	0.55
F3	5	I like it very much (1)	6.00	0.00	3.86	1.35	2.71	1.60
F4	2	I like it a bit (3)	4.71	1.60	3.71	1.25	4.14	0.90
F5	3	I like it quite a bit (2)	4.71	0.76	4.43	0.98	2.29	0.76
F6	4	I don't like it very much (4)	6.00	0.00	4.14	1.35	3.43	1.27
M1	4	I like it a bit (3)	4.57	1.81	2.71	1.70	4.29	1.11
M2	4	I like it a bit (3)	3.43	1.13	2.29	0.95	4.43	1.27
M3	2	I like it quite a bit (2)	5.86	0.38	2.00	0.82	1.86	0.69
M4	5	I like it a bit (3)	5.17	0.98	4.33	1.37	3.50	1.05
M5	4	I don't like it very much (4)	4.86	0.90	3.71	0.76	4.14	1.07
M6	3	I like it a bit (3)	4.57	0.53	4.29	1.80	2.71	1.38
		Total	4.99	0.72	3.57	0.81	3.44	0.88

Note: Frequency questions response options 1 = Every day, 2 = A few times a week, 3 = About once a week, 4 = A few times a month, 5 = Rarely, 6 = Never; Subject (e.g., Science, Math, etc.) responses averaged

Figure 4.8
2019 Interview Protocol

1. **Learning –**

    a. **Think about a time when you enjoyed learning in school**
        i. Tell me about that - what was it like?
        ii. How often does it happen?
        iii. Can you think of another time you enjoyed learning in school?

    b. **Think about a time when you did not believe you were learning in a class**
        i. Tell me about that - what was it like?
        ii. How often does it happen?
        iii. Tell me about another time when you believed you were not learning in school
        iv. What was that like?

    c. **Tell me about your experience of challenge in school.**
        i. How do you define "challenge" in the context of school?
        ii. Are you usually challenged by your lessons?
            1. Why/why not?

    d. **Are you able to go as in-depth in your lessons as you would like?**

    e. **Are you ever bored because you already know the lesson?**
        i. Tell me about that

2. **Teachers**

    f. **Think of a good teacher you have had in school**
        i. How would you define "good" when thinking about a good teacher?
        ii. What class was that good teacher in?
        iii. What did s/he do that made him/her a good teacher?
        iv. How did that make you feel?

    g. **Think of a teacher you had who you did not think was a good teacher**
        i. What class was that?
        ii. What did s/he do that made him/her not a good teacher?
        iii. How did that make you feel?

    h. **How often do you have a good teacher? from Sometimes to Often**

3. **Climate**

    i. **Tell me what it feels like to be <u>you</u> in your school.**
        i. When you think about your home school, what comes to mind?
            1. Can you think of a time that is a good example of that [what came to mind]? Please describe it to me.
            2. Another?
        ii. What comes to mind when you think about the other students in your school?
            1. Can you think of a time that is a good example of that [what came to mind]? Please describe it to me.
            2. Another?

    j. **What word best describes your feelings about school? Can you explain why?**

Often, the teacher played an important role.

> But it wouldn't be the class so much as it would be the teacher. It'd be how the teacher engages with the students. That would make it enjoyable. (M4)

> I really loved my science classes in second and third year. Because my teacher obviously really loved what she was doing. (F3)

> There's an English class where we were discussing different characters of Romeo and Juliet. And we were talking about how each character sort of operates or how they approach conflict. And I find that kind of interesting because I could... I was allowed to sort of give my own opinion about it.... I thought I was given a lot of freedom by the teacher. Because we were put into groups, so I was allowed to talk as much as I wanted to. And I really enjoyed that. That would probably be a moment that I actually did enjoy learning. (M6)

Transition year offered unique opportunities for learning.

> I did do a coding module this year for transition year and I quite enjoyed that. (M5)

> Well, I think TY is actually a pretty good example because there wasn't much traditional classroom setting. So, there was an opportunity to actually leave school and attend other programs, and I did do that, and I worked with Concern for about a week, the charity, just learning what they do there, and that was really good. That was a really enjoyable learning experience. (F6)

Not Learning

All students could give examples of situations where they did not feel they were learning in school. Some felt it was the norm: "So it'd be very rare to actually have a moment where I feel like I'm learning something." (M4) Prior knowledge of a subject meant a student was not learning.

> I guess sometimes I may have to revise things, but if I kind of know them inside already, obviously I wouldn't be learning too much there. And in Irish as well actually. I've been in a Gaelscoil since like...I went to an Irish primary school, so a lot of the stuff that we touch on in Irish is like the back of my hand kind of a thing. (M5)

Quite frequently, the teacher receives the blame for students' experience of not learning.

> I'd say that'd be Irish class. Yeah. My teacher, she's not a very good teacher. A lot of people would need to go over things five or six times. We did it once in first year, and she didn't teach it properly, so we'd need to go over it about five or six times. I learned it the first time, so I don't need to do it five or six more times. That just felt very mundane. (F1)

> A lot of the time in Irish. Yeah, and also in English our teacher kind of drags on. She will read one thing and then and then go on a big rant about it. I'm just sitting there like, "We don't need to know this." And she takes ages doing something so you get bored in what you're doing. We took months to read a book and you got bored of it, you know? When the teacher drags stuff out or it's just always talking, you have to listen and listen. (F2)

> My Spanish teacher isn't great. [I am not learning] Maybe every few classes, whatever. It's just not very interesting material. Then she's not doing a great job covering it. (M1)

Inappropriate pacing was frustrating for these students.

> Sometimes, particularly in science and business, my teachers, they kind of like go very slow through what we're doing on. It kind of gets quite boring because they kind of need to repeat everything multiple times and maybe we'd even, I can remember we were doing the circulatory system, and we took, like it was a short enough chapter, and then we took like, I think it was three or four weeks to get it all done. And it just felt kind of boring because it was very repetitive, and it was basically the same thing that they were saying all the time. (F4)

> I think that most of the time I am learning stuff in school but not as much as I would like. (F2)

Sometimes it is the other students and not the teacher who are considered responsible for not learning.

> There are also times where there are other people in the class who just aren't paying attention, and it's forcing us to, say on maybe a second or third day, go over a certain topic again and again. I find that incredibly boring. (M3)

One student whose school had high suspension rates explained,

> With the way it works, some class we only have like twice a week, and one whole day of that week will be given to trying to get the students from that lower level to catch up with the rest of the class, and suddenly half of your week's worth of this class is out the window and [you've] just sat there and done nothing. (M4)

Irish classes were frequently called out as problematic, because the students already know the material or they do not like how it is taught.

> It's just really repetitive, I guess. She has a lot of students, and she's not exactly a great teacher, so not everybody really understands it. Most people hate Irish, anyway. I've an iPad in school, though, so I just read a book or something, pass the time. (F1)

> On the Irish because again, it's the same thing where you just learn, you memorize a letter that you're to write in the exam and your whole class learns the same one and just spit it back out on the exam paper. It's just so boring. It's so boring. I'm like, "This is the same essay I've been using for three years." (F3)

> Our primary school covered a lot of Irish, way more Irish than most primary schools that my friends have been to. I don't find Irish particularly interesting, but I learn it because I have to. But a lot of the times in Irish class or in math class, I find myself doing nothing, kind of doodling in my sketch book. (F5)

> I just don't like the subject as much. It makes me not want to learn the subject which is annoying because I do like speaking Irish, but I hate the Irish class. It might just be because of the curriculum. I don't like how Irish is taught, because it's like you have five stories, you've five poems, you have to learn all the summary, background, techniques, everything for each Irish poem and every Irish story.

A notable exception was when the student attended an all-Irish Gaelscoil.

> Irish, I enjoy. Well mostly because I went to a Gaelscoil, an Irish private school. (M1)

> I think my Irish teacher is quite good. His approach might be a bit unusual, but I find that everyone's learning Irish. So I go to a full Irish school, so that's a plus. (M3)

Challenge

Elements of effort, novelty, and difficulty were present in students' descriptions of challenge. Challenge is "something you actually have to think about" (F6), "... It causes me to have to stop and think for a second" (F1), "I suppose if I have to actually think about something and work my way through it as opposed to just rote learning or this kind of copy and paste or just waffling. If I have to actually apply myself and use my brain." (F3), or it "requires learning something new to actually do it" (M1). Challenge may include an element of difficulty, "something that I don't really get as quickly and that's a bit more difficult." (F4). One student defined challenge as "anything that you personally find difficult" (M3), which may explain why some students enjoy the experience of being challenged, but others not as much: "Trying to understand things, but at the same time I want to be able to understand it straight away, so I'm not sure if I'd like to have challenge at school." (F2) One student includes an autonomous component in her definition of challenge. It is

> ...something new that I need to go out and learn by myself. Most of those challenges end up being that I have to recite it to the rest of the class and explain it to them, which in turn kind of helps me understand it better. Well, there's quite a few of those assignments. Or a challenge where I'm stepping outside of my boundaries. (F5).

Challenge is more than just working hard. A component of skill must be involved for something to be truly challenging.

> I suppose challenge, I would say, well, I don't want to say anything that you have to work hard for because like.... I know that if I just knuckle down for anything really in school, I can do quite well. That was the attitude I had to my junior search and that went well. But I suppose I don't really see it as a challenge as much as I do like just something that I would have to work hard for. If you get me.... Challenge is something I would associate with skill more so than anything. (M5)

Some subjects were more challenging than others.

> A lot of science is just learn it off, that's it. There isn't really a lot of thinking, whereas in subjects like maths, you have to actually stop and think for a sec. (F1)

> Some things would be hard to learn but they wouldn't be really challenging. (F2)

Some students did experience challenge.

> In some subjects I'd only be challenged quite very rarely. And then other subjects it'd be like really very often. (F4)

> I think it's not like super rare, I think, to get challenged in school, especially in a lot of subjects when you're going through something that's either bulky or complex, I think. Almost every subject will present some sort of challenge, some more than others, like math and English, I think, will present bigger challenges, and geography, at least for the junior cert course, is always been easy. (M1)

> If a teacher is giving you something challenging, it would be something that actually requires you to be thinking of both the regular level that you'll do in class. Like I said, a lot of classes you can just sort of breeze through just because you basically know everything that's already being said. Whereas I know, for example, that my English teacher near the end of the year there

> he gave me some book and he was like, "Read through this. Take what you learned from this and apply it to what we're doing in class." So he'd give me like an extra piece of work that the rest of the class wasn't getting to try and make what I was doing better. (M4)

> I'd say certain assignments can be very challenging.... Yeah, assignments such as essays when you have to really plan what you're going to write about, when you have to think about what you're doing and analyze everything and then sort of write things down. That can be quite challenging. Especially when you have like a couple of days to think about it. You're not given, a restricted hour to just write and keep writing. You can actually plan out something that you can enjoy. And also that feels quite rewarding as well because you're able to sort of peak. (M6)

One student felt challenged when he could not understand the course material in his business class, "There was a lot of different accounts I couldn't really wrap my head around" (M5). Other students did not believe school offered much challenge.

> It's a lot of just rote learning and regurgitating. (F3)

> I'd say half and half as some subjects... Yeah, a lot of the subjects that are science lessons, the actual classes themselves, I don't feel very challenged in them. The history classes, I don't ever feel the challenge. I enjoy them because it's something that I'm interested in. But I don't feel challenged in them necessarily. (M6)

Going In-Depth

Going in-depth in a lesson serves multiple purposes. It satisfies their curiosity to learn more about a subject and it can help with their learning. Teachers are unable to go in-depth in a topic for a variety of reasons, from the students' perspectives. The lack of time, the need to cover specific material, and sometimes, logistics of the school day. Some students attempt to do their own in-depth learning at home. They especially appreciate the opportunity to study subjects deeply in their CTYI classes.

> [Are you able to go in-depth in lessons?] No. No. I don't... No, never. None of the classes, I don't think I'd go... I wouldn't be able to go in as in depth into them as I'd like to. Yeah. If I try to... The main reason why is because teachers have a certain, I think... This is my opinion why I can't. It is because teachers have certain things that they have to, certain boxes they have to tick and if you're trying to learn about something and it's going past what they need to cover in the curriculum, they don't really see a necessity to cover that. And so they'll try and reel you back. Or sometimes in classes they'll just completely ignore you. Like some classes I've had my hand up for 20 minutes, maybe, maybe half the class. Actually there was one class I had my hand up for the entire class and they just don't answer your questions. Which I can understand why, it's they need to get certain things done. Sometimes they might not have the time to be answering questions that's any further. (M6)

> It's very class dependent. I find the big issue ... was the timetable with the way the classes were scheduled, and some days we just wouldn't have enough time.... Chemistry I'd have twice a week, but they were long classes where we'd get to go over a lot of stuff. Whereas some classes because you have to have five of this option class a week, whereas other ones could be spaced out over like four days, but because your class is only a half hour then you just are given the work, and then they're like, "Yeah, we don't have time to actually talk about this much."(M4)

> If the class is interested in something in particular, teachers do tend to make every effort to kind of emphasize that and to try and make the lessons as enjoyable as possible. But, ultimately, there's a curriculum that has to be covered, and that is their job, and I understand that. (F6)

> I find science, I absolutely love it, but the teacher doesn't go as fast or as in-depth as I would like her to. So, a lot of science I find myself staring blankly at the board or doodling while the teacher's explaining something to the rest of the class and I've already got it down. I already understand it. Sometimes when I go home I would research more about it to learn more because if I find, especially the atomic structure, I will research more and learn more because I want to learn more. (F5)

Going in depth helps with learning.

> I think I like going in depth things, in depth with things, particularly in subjects like history, or geography, or science, or business. I mean because you kind of... it kind of feels easier to understand why it's happening. Like, say in science, for example, like reactions or something. Like if you just go over the very basics, you're like, "Why is that happening?" But then when they go much more in depth it's kind of easier to understand it. (F4)

> History and English. I like the whole analysis aspect of English. I think some people get annoyed at English teachers because they go so in-depth trying to find meaning in everything, but I like that. And history as well. I think it's to do with the teacher because she really likes her job, too. She was more than happy to answer questions even if they're dumb questions. Someone once asked if cheese was a vegetable. (F3)

> Sometimes I wish they'd explain things more. In, let's say maths, explain why you were doing things more or I try to give examples. But in certain subjects I wish they could explain what we're doing, explain it more so it's not just, "Oh, this means this." We learned that. It's just that we don't understand why it is. Most of the time, I'd say it was okay, but sometimes I do wish they would go more into that kind of like, "Oh, why it's like this," and explain it. (F2)

The lack of depth is disheartening to some students. They want to know more.

> No. No. Especially, I think, in science, they don't go nearly as in-depth because what they've done is, now we've junior cert and junior cycle, because the courses changed. They didn't change it all at once, so some subjects have changed and some haven't. Science, for me, I was the first year of the new junior cycle, so they completely changed the course. One thing, what they've done is they've dumbed it down, basically, because a lot of people were struggling with science. They decided let's make it really, really, really simple. You'll have to learn loads of different topics, but you'll only need to know this much, just scratch the surface. Whereas, I'd rather do core topics that you need to know but go in-depth with them. If you read our science book, you'd probably cry. It's horrible. They only teach you about three or four organelles in a plant cell, when coming to CTY, you know that there's way more. They won't tell you that. (F1)

The opportunity to go in-depth does not always happen as often as the students like, as their surveys show (Table 4.5). When asked if they were able to go in-depth as often as they would like, responses varied, from "No, never" (M6) to "I'd would say half of the time, maybe even a little bit more than half probably" (M2). CTYI offers a powerful contrast with the depth of instruction. One student explains the consequences of choosing breadth instead of depth in a subject area:

> I think a lot of people who are doing the junior cycle are going to get a massive shock going into the leaving cert. If you miss cycle science paper, anyone with common sense could have answered the questions, because they're not going in-depth. No one has to actually try. If you go in-depth, you can't … You can't just make it up. With science, you have to learn it. (F1)

Government-led changes to the curriculum worried this student:

> They're even thinking about making history optional, which I think, especially for Irish people, is a bit ridiculous because we've such a … Especially with the English, we've a long history. If kids don't learn about that, they'll never understand anything about how we're going to move forward. You think about the Irish border. I don't remember the Troubles. I wasn't alive. If I didn't learn about it in history class, I would have no idea. The people who were alive then, especially with the IRA, and things like that, they could take advantage of that, and chaos would break out again. Yeah. [Brexit's] brought it all back up again. If they didn't teach us about it, we wouldn't know. We'd say, "Oh, sure. Just put a border up." And they'd get away with hell again. (F1)

Good Teachers

The students generally agreed that a good teacher is enthusiastic, knows their subject area well, and has effective strategies for working with students. They also respect the students and want them to learn, earning the students' mutual respect and inspiring them to learn more. Good teaching was described as having personal connections, high expectations, and accommodation for different learners. Sometimes personal connections were as simple as "if they're a nice person and they're able to get along with their students and not just shout at you and give out to you all the time (F2)." A teacher who "knew all the students very well individually (F3)" was seen as a good teacher. Personable qualities outside of teaching were associated with good teachers: "Also, to have a sense of humor. All my good teachers, I don't know, not directly tied, but all my good teachers would have a good sense of humor and still be good at teaching the subject, obviously to be very knowledgeable on it as well (M2)." Students found high expectations of behavior and academics to be important in a good teacher. "I think one really important thing is they command respect, that they don't have to be a certain way in order for you to listen to them and to follow the rules, how they want you to act, and to be liked at the same time. I think that's really important when they have to teach you something (M3)." One student described the expectations of her teacher, even in disappointment, as a plus: "She does actually want you to learn and if you don't do well, she does get a bit disappointed in you. I've always got on well with her and I've always had her as a maths teacher so I've liked her as a teacher (F3)." Students found that teachers who were willing to accommodate for different learning styles were good teachers. "They should also make an effort to get to know the students and their needs and their learning styles, and take their opinion on board if they have something to say or suggestions, to not just brush it off (F4)." They also valued teachers who were always willing to help or expand on a subject: "I'm not really in these classes much, but if I talk to them they will help me with whatever, or show me something else (M3)."

A teacher that values the efforts you put into their class and a teacher that values enthusiasm as well as knowledge. Also a teacher that can be open with people. Yeah, and a teacher that doesn't try and hold you back or a teacher that doesn't try and restrain your learning. (M6)

I think that they're really able to meet the needs of the students, because every person learns differently. ... Especially in public schools, they have large class sizes, so 30 kids. If each of them learns a different way, it's really hard for a teacher to meet that. I think a teacher that's able to entice the students to actually want to learn, and then after that, be actually able to teach through their learning style. That makes them a good teacher, because if they can make you like the subject, even though before you hated it, then they've completely transformed your world view.... And then, also, facilitating curiosity. (F1)

I suppose I'd define a good teacher as a teacher who can teach the lesson effectively and keep the class engaged, you know? If teacher is boring, then it's their fault if the kids don't listen. They have to hold them. (M5)

I think a good teacher is a teacher that can do their job and that isn't really annoying to students in doing it. (M3)

I think one really important thing is they command respect, that they don't have to be a certain way in order for you to listen to them and to follow the rules, how they want you to act, and to be liked at the same time. I think that's really important when they have to teach you something. Also, to have a sense of humor. All my good teachers, I don't know, not directly tied, but all my good teachers would have a good sense of humor and still be good at teaching the subject, obviously to be very knowledgeable on it as well. (M2)

I guess a good teacher is one that actually genuinely respects the students and genuinely likes to teach. There are some teachers I've had who have said right out in class that they do not like their job. So, when a teacher enjoys their job, it's very evident, and it really does come across. They try to make it more enjoyable for the students, and that's really important. (F6)

This teacher, she's my geography teacher. I had her recently because my other one went on maternity leave. She's amazing. She was strict. She definitely was strict, but she knew how to teach. She would explain things to us, go over them, she would quiz us, she would make sure that every single person in the class knew what she was talking about. I don't have a lot of teachers that do that. I find that that's a really good teacher. She explains things in terms, breaks everything down. She goes quite in-depth, as well. I like her. She jokes quite a bit and she jumps around quite a bit. (F5)

Well probably like someone that they kind of say, "Oh." That they kind of understand that some... They'd understand that everyone works at different paces and they'd be able to facilitate both people who would be slower at grasping concepts and those who would be quicker. (F4)

Enthusiastic. They have to care about their job and the subject they're teaching. They should also make an effort to get to know the students and their needs and their learning styles, and take their opinion on board if they have something to say or suggestions, to not just brush it off and be like, "No, we're not going to do that." [Interviewer: Have you had a teacher like that?] I haven't myself. I've heard stories. (F3)

[I enjoy it if I] like the way they teach it or if they're actually enthusiastic about the class. (F2)

Students offered a few examples of successful differentiation (e.g., M4, whose English teacher gave him an exciting extra challenge), but more examples of not receiving appropriately targeted assignments. In this example, M3 was allowed to work ahead, but there was no plan for what would happen next, resulting in a loss of learning potential.

It's when I finished the work on the previous topic and as homework, where everyone else was finishing up that work. I was told to move on a page and start working on the next one. And then when I come in the next day, it's quite boring, because I've already covered the topic and done some questions on it. And then it's the [inaudible 00:03:43] in that I had to do everything just, in my opinion, takes forever. And I'm just sitting there going, I done this work yesterday, and it's a bit boring. (M3)

Bad Teaching

Bad teachers were generally described as lacking passion and having a style that was repetitive and rote. Students often had issues with pacing, "And she takes ages doing something so you get bored in what's you're doing. We took months to read a book and you got bored of it, you know? When the teacher drags stuff out or it's just always talking, you have to listen and listen (F2)." Rote learning was a frequent complaint "The actual system of the whole rote learning and regurgitation is ridiculous... Yeah. It needs to go. People have been saying it for years and nothing is being done. It's just getting really tiresome I guess (F6)."

The students had their share of poor teaching. "There's teachers who you might feel are in it just for the summer holidays" (M4). Competence was critical to

good teaching, "my history teacher, I remember he told us a few things that were just kind of wrong. Like, I remember I'd look in the history book and just be … You want one who knows the right answer." (M5). When there is a teacher who is not good, "A lot of classes I kind of suffer, well, not suffer through them, I kind of just endure it." (F5). The teachers' experience level made a difference in their ability to teach effectively:

> My current Irish teacher [is] young and she gets really annoyed at our class very easily, like really easily. I had a different teacher for Junior Cert and she gave us out notes and she had her notes and everything, she had her own ones that she made out for us and I learned stuff with her. I still have phrases I can repeat out to you that I know that I know what they mean. Whereas with my current one she kind of gives you notes here and notes there and in the book and everywhere and it's not organized. And she doesn't understand the language as well as my other teacher and I don't enjoy the class much now because I don't feel like she's teaching me anything. (F2)

Poor teaching had far-reaching effects on learning, "When the teacher wasn't good, there was less incentive to really do well in that class" (F6). Teaching strategies were noticeably inadequate among students' descriptions of their poor teachers.

> They went off topic a lot and they started talking about things that didn't really matter that much. That didn't really relate to what we were doing. And they were incredibly slow going through their curriculum. Like they went over things so much, and then even then they still left out a lot, and it was just like we weren't really prepared for the test at the end of the year. And also, classes are just very boring and they weren't, they didn't try to make the subject fun, they kind of just read from the book. (F4)

> She couldn't teach. She really couldn't. She wouldn't explain anything, at all. She would read things out of a book, tell us to highlight them, write it down and then move on. She wouldn't explain anything to us. I have this massive gap in my knowledge of geography because of that, because I couldn't remember what she taught us. (F5)

> She doesn't explain things as well as much as she should. She is very adamant about her particular style of learning, and tries to push that onto the class, which tends to be write out of many pages of notes. Read, write again. (M1)

> One of my teachers, his main approach is generally to just give us a whole lot of notes, tell us to read through them, and think of his questions on them, which I don't particularly like. First of all, if you want to do it quickly, then just read the questions and find his notes and you learn pretty much nothing. And the other thing is, it's quite boring to do. It can put people off. Also, it's just unenjoyable. … I also don't like when he will just go off topic into topics where nobody's learning anything. And it's just a waste of time, because time is a valuable resource. I find sometimes people just throw it away for nothing. (M3)

> This year, like higher level history, I think we watched like seven or eight movies all year, but that would be considered education. He'd be like, "So today we're moving on to teaching of about 1960, and here's a Michael Collins documentary, or here's a Michael Collins movie," whereas no one's going to be able to sit down and watch a movie and take in the facts. They have to be taught, I would say anyway. So that style of teaching is just not viable. (M4)

Although these descriptions are disappointing, professional development is a solution for many of these negative practices. When teachers know a variety of instructional strategies, they are less likely to fall back on such ineffective behaviors in the classroom. J. Cross et al. (2014) found that support from school leaders to differentiate instruction and access to specialists was correlated with Irish teachers' sense of efficacy in managing the classroom and implementing instructional strategies. A combination of professional development, school leaders' support for the time and resources needed for differentiation, and ready access to specialists may be effective in addressing poor teaching.

Boredom

We asked students "Are you ever bored because you already know the lesson?" They described many such instances: "Yes, definitely." (F1) "Yeah. A lot." (F3) "Yes, sometimes when they go over things multiple times, I kind of get bored in the lesson." (F4) "I often find in school that I'm learning about things I already know or that a teacher dwells too long on a certain subject and I'm bored because I already understand it and the other students don't." (F5) "Sometimes, but particularly in Irish, because I've already covered all of that several years ago." (M1) "In maths, yes quite a bit. In other subjects, not so much, no." (M3) "In a few classes, yeah" (M4) "Yeah, I suppose it depends on the subject. With Irish, like I've said, that can happen quite a bit, because I have been doing Irish for a long time, you know." (M5) "Yeah, science, history, English. French sometimes. Maths. They'd be subjects where, yeah… Especially in science and history, I can get quite bored in subjects and I will say to myself… Like sometimes when I'm in science I get so bored I will get in trouble for simply talking to my friend or for doing something like that. But I just don't see the appeal in learning about the respiratory system for the seventh time in the last term. …There's a good few subjects I would feel bored in because we've covered it before." (M6). Sometimes

boredom was due to the students' own accelerated learning and outpacing the class: "But then there are also times where there are other people in the class who are just aren't paying attention, and it's forcing us to, say on maybe a second or third day, go over a certain topic again and again. I find that incredibly boring (M4)."

Boredom also occurs for other reasons besides already knowing the topic. It could be due to *not* knowing the topic: "Yeah, but I mean [being bored because I know it is] not super common. I'm bored in school when I don't know the lesson either a lot of the time." (M2). Or, a student may be bored by the teacher's approach: "It's more so bored because of the delivery of the lesson, not more because I know it already." (F2)

Climate

Students summarized their experience of school in response to our question "What does it feel like to be you in your school?" Their feelings about school ranged from negative to positive, with much variation between. The academic and social environments each play a role in CTYI students' feelings about school.

> I think of people being loud and obnoxious. I suppose I read a lot in school, as well. (M5)

> I find the whole environment of my school is not something I particularly want to be a part of. It was the school nearest to me, so I'm going there. Like I said, with the teachers, you don't particularly feel included and with a lot of student life. It can be quite difficult because there's just a lot of people who aren't particularly focused on school, we'll say. (M4)

> Other people just don't want ... They're not that academically focused. They're not really aiming as high as I am. I know for junior cert, it doesn't seem that way. My parents have always taught me work as hard as you can. A lot of people, they didn't get that training, I guess you could call it, from their parents. Their parents said do their best, and I do my best, but they know that my best is very high. If I came home with a C, they'd be like, "We know you didn't work as hard as you could have." I guess when other people in school see that, they think I'm a bit nuts. If I can get the top grades, what's stopping me? (F1)

> Nothing particularly special. It's just like me. There's nothing particularly special about it. (M3)

> Well sometimes I kind of dread going in to school, because I just find it kind of boring. But then sometimes if I know I have a good teacher and stuff, I'll enjoy going to their classes and I'll look forward to that. But then, say if like it's a day where I have a lot of the subjects that I don't really like I'm not, maybe the teachers aren't that good, or I just feel like I'm not enjoying it, then I'll kind of not want to come to school and I'll kind of dread it. (F4)

> I don't like their rules on hair and piercings.... It's mixed girls and boys which I do like. I like that it's mixed. I would not want to go to an all-girls school. I like the option of subjects. (F2)

> Sometimes it's a mixture of different things. Some days do feel like a roller coaster. Because, people... Sometimes you feel a bit ignored. Like one minute you can be hanging out with your friends and it'd be great and they'll be all really nice. But there's also some people who just are angry with you for putting your hand up to answer a question. They'll groan and they'll give out to you after class. ... some days school can just ruin your week. It can be a really harsh environment sometimes. (M6)

> Academically, it's not difficult to be me in school. I don't think it's difficult from a social standpoint, either, or an entertainment standpoint.... It's good as far as not just academically.... good compared to other schools in Ireland, but also in an extracurricular level, and like engaging with the students outside of academia. (M2)

> Pretty good, yeah. I don't know. There's not much I can really elaborate on. (F6)

> I think most of the time the education part of school just kind of goes by in a blur, and it's only really the socializing that I remember. Because socializing, I mean every day it's something new. Learning, not all the time. (F5)

> I like the social aspect of school and then some classes as well. Not all of them. Generally positive like... There's just a friendly atmosphere. (F3)

One Word for School

We gave the students a challenge by asking them what one word could describe their feelings about school. Not all students could think of one word, but those who could offered insight into the experience of CTYI students in school.

> **Clashing** because at one point I don't want to go to school because I'm bored in some classes and everything drags on. But other points in other ways I want to learn, I want to do well in my Uni Certs and go to college and I want to see my friends. But then you also don't want to go to school because some of the classes I just don't want to go to so it's kind of clashing, my feelings toward school. (F2)

> **Repetitive** (F4)

> Education-wise, I'd say **mediocre**. Socialization, I'd say

interesting. (F5)

Rote learning (F6)

Adequate (M1)

Neutral. I mean, the best way to describe just parts I don't like, parts I like. (M2)

I'm just going to go with a nice, simple **good**. I feel like most of my opinions around school are just that's good, that's good, that's good. I think if I had to sum it up with one word, it would be good. (M3)

Outdated ... I just think the school systems haven't changed and they're a form of punishment. (M6)

CTYI Students' Assessment of School

Some of the CTYI students interviewed described school situations where they felt comfortable. They may have had a poor teacher now and again or been bored in a class, but their social networks were welcoming and the general atmosphere was a good one. The majority of students, however, had more uneven or "mixed" (F2, M6) experiences. Good teachers stood out in their experiences, in some cases, because they had so few in their years in school. Heterogeneous classes presented a problem for these students, who spent time waiting for other students to learn. This is one of the most common experiences of gifted students in school. In their analysis of waiting among young gifted students (Grades 1-8), Peine and Coleman (2010) found, even though they did often have to wait while others learned what they already knew, they believed that "sometimes, waiting is fair" (p. 238). This attitude was expressed among some of the CTYI students, as well: "Well I don't really mind, I understand that everyone works, learns at different paces and some people find more things difficult, so I don't really mind it. It's just, it's kind of, it gets kind of annoying when you have nothing else to do" (F4). One student proposed a potential solution to the waiting problem, but discarded it for its potential unfairness:

> I think school's like democracy. It's not perfect, but it's better than the other option. I would say try and keep the people who will be brighter in a different class so that they can really expand and reach their potential. But I don't think that's plausible and I think it is discriminating against the other people. (M6)

CTYI students have thoughts about how they could change schools, if it was possible. Courses would change: "Jesus. I'd change the Irish course. How it's taught so it's not just sitting down listening all the time" (F2). Students of different ability levels would be grouped together:

> [In] some of the subjects you're split into like higher and ordinary level, so that they are better because you're in classes with people who get it quicker. But I think there should be classes that were like for all subjects that you'd be split into different levels. And then you'd be able to, for people who are able to grasp the concepts faster, you'd be able to go into those classes. And they're much more fast paced and there'd be much more information in that and you'd go more in depth with everything. (F4)

Some students see a need for bigger changes:

> [The] Education system. The entire thing. I don't like the way it's done. I would change the material in it. The material, I don't think it's interesting enough. I would like more interesting things. Also the way certain subjects are taught. (F5)

> I would probably just abolish exams because I don't believe that they actually serve any purpose. There's all different types of learning styles, and not everybody does well in exams. There's a whole diverse group of intelligences, and those have to be accommodated for. I think I would remove things like hierarchy, as well, I guess. I think have teachers and students be more on the same par. I think that would help everyone to get on a bit better. What I would actually change about my school is the bathrooms because they're disgusting. I would also take away uniforms because I think that they suppress individuality. I would remove religion from us. I think that's it, yeah. (F6)

Other students were satisfied with their schools,

> For now I don't really have that much to change. I enjoy school. (M1)

> Nothing outside of the curriculum itself, which I guess just kind of ties into the whole of Irish education. (M2)

> I would say just make it bigger. So my school has quite a long waiting list. But I think the best change for it would just be to make it a bit bigger so that more people who want to get in can get in. Because, in terms of it's one of the better schools, in my opinion. And it's also all-Irish and quite a lot of people want that, but can't get it. And even people who come from English schools or say go to an all-Irish second school, they'll generally be reasonably good at Irish because they speak it every day. Yeah, I think the best change for my school would just be to make it a bit bigger. (M3)

There is pressure on students to achieve in schools, which presents challenges to a fair system. One student recommended hiring more teachers, because of the heterogeneity currently in higher level courses.

> Yeah, there's a whole thing at the moment, with a lot of kids doing higher level maths, and nobody wants

> to move down to lower level, because whoever moves down to the lower level gets eviscerated by words. And so there's a whole thing where there's too many higher-level classes and not enough higher-level teachers. ... a lot of people in higher maths aren't really able for it. They just know that if they go down, people will pick on them. (M5)

Feelings about CTYI

Students distinguished CTYI from their regular schooling in both academic and social regards. There was a sense of authentic learning at CTYI, often defined by a student's agency in their own learning: "It's something that you actually want to choose and you enjoy learning and you can ask questions about things. And it's not your everyday thing that you always have to learn. It's different (F1)." Students noted the creative aspects that often made it feel like it wasn't an academic experience: "It's not rote learning as much. It's more I'm doing script screens so it's not really very academic. It's been very creative. We've been doing script or screen writing and filming short movies and learning to edit. It's been very interactive and immersive (F2)." Students felt like they were learning and understanding, rather than simply memorizing: "CTYI is a far less disciplined place, less strict atmosphere, but you still feel like you learn more, and that it's more welcoming to, I guess, education and that you really get something out of the subject. You understand it rather than just learning stuff off (M2)."

Students noted the feelings of acceptance and relationships they formed at CTYI. Some noted that they had a lasting impact, "Yeah, just a lot of bonds I made here in friendships, and I cherish for quite a while (M3)" or that they were the main reason to attend, "[I come to CTYI] Mostly for the social aspect. I have lots of friends here and I do enjoy it just starting new things. It's very different to what I learn normally (M1)." This was often something very different from their regular school experience: "They're more open. When you're at CTYI, you can talk to anybody. People just talk to the wall. They're just so open. Whereas, you know in regular school, there's all the cliques and the groups, and there's all that part. When you come here no one really seems to care, which I think is really great (F4)"

In true high-ability student form, one student offered this brilliant metaphor for CTYI and school:

> Sometimes it feels like when you're in school it's... Compared to here, when I'm here it feels like I'm swimming in an ocean and you get this really hard wave coming at you and you have to really challenge yourself to get through it. But once you get through it, you've got the sort of nice atmospheric like relaxation where it's swaying, you can smell the seaweed and the salt. You can taste it in your mouth. It's a really nice moment. Where the education system is like a swimming pool. It's just easy the entire way through. No challenge, but then there's the stench of chlorine and almost as though nothing's... It doesn't feel very... It feels almost surreal or, yeah, it doesn't feel natural. (M6)

He extended the metaphor later in the interview, when discussing the collision of instruction and exams in school:

> It's just the fact that it's just like you're swimming through this light thing and each stroke is as repetitive as the last stroke. You don't need to really concentrate on what you're doing. But then all of a sudden they say, "Okay, test time," and they chuck the entire pool in your face. (M6)

Academic Experiences During the COVID-19 Pandemic

In the previous studies of CTYI students, we learned about their beliefs about their academic abilities and their perceptions of differentiated instruction, and their thoughts about teachers and school. A dramatic shift in their experience of school occurred in the spring of 2020. The emergence of the COVID-19 virus led to the shuttering of businesses, travel, and schools. During the pandemic, most education across Ireland and the world moved to a virtual platform, at least for some period of time. School was likely to be very different for CTYI students, not just socially, as described in Chapter 3, but also academically. In the summer of 2021, CTYI was fully in session, with all courses offered virtually. Students had been in virtual school early in the pandemic, but most students had moved to in-person school by this time. We took this opportunity to ask CTYI students about their pandemic-era educational experiences. What were their experiences like in online school, in in-person classes, and how was that different from their experiences of CTYI's online courses?

More than 300 secondary students attending CTYI in the summer of 2021 responded to the survey. Table 1.3 contains demographics of the sample (Study 2021a). The majority of students were in 2nd through 5th year, but a few 1st and 6th year students participated, as well. Junior cycle students made up 46.6% of the sample (*n* = 150) and Senior cycle students made up 53.4% (*n* = 172). The sample was predominantly female (57.8%; male 33.2%). A number of students reported being non-conforming, preferred not to say how they identified, or did not find their sex listed (9% of the 2021a sample). This was the first study to include ethnicity. The majority of participants were White (86.6%; see Table 4.6)

Table 4.6
Participant Ethnicity/Cultural Background (2021 CTYI Students)

Ethnicity/Cultural Background	*n*	%
White: Irish	244	75.8%
White: Any other White background	35	10.9%
Black or Black Irish: African	4	1.2%
Black or Black Irish: Any other Black background	1	0.3%
Asian or Asian Irish: Chinese	5	1.6%
Asian or Asian Irish: Any other Asian background	23	7.1%
Other, including mixed background	10	3.1%
Total	322	100.0%

Only two students reported having been online for the full school year. The remaining participants reported a combination of online and in-person options. Many began the school year in person, changed to online with the January 2021 lockdown, then returned to in-person. All participants had some experience with online school. Most students did not engage in in-person classes outside of school during the 2020-2021 school year, but 17.1% (*n* = 55) reported they took music and foreign language lessons or played sports in person. A third of students (33.9%; *n* = 109) took online CTYI courses during the 2020-2021 school year. Most (78.5%; *n* = 84) took one or two classes through CTYI, but a few (2.8%; *n* = 9) took four or more. These were primarily divided between STEM and Humanities courses or a combination. At the time of the survey in the summer of 2021, 40.7% (*n* = 131) of students were taking CTYI humanities courses; 44.7% (*n* = 144) STEM courses; 5.6% (*n* = 18) a combination of these; and 7.8% (*n* = 25) were taking another type of course at CTYI (e.g., psychology, criminology).

Comparing Perceptions of Online Learning

The survey contained parallel questions for online (32 items), in-person (35 items), and CTYI's online courses (32 items). For each item, participants were asked to describe the frequency with which that event occurred on a 5-point Likert-type scale, with 1= "Never," 2 = "Rarely," 3 = "Sometimes," 4 = "Most of the time," and 5 = "Always." The items were positively worded, such that a frequent occurrence would indicate a better experience (e.g., "My parents helped me stay on schedule with online classes"). A high score indicates a more positive experience. Items not relevant for in-person school were eliminated for that platform (e.g., "I was able to find a suitable place to attend online classes in my home or elsewhere" was not included among the in-person items; "I felt safe from COVID-19 when I was back in school" was not included among online items).

An exploratory factor analysis was executed using only the online items to determine the pattern of item responses. The weighted least square mean and variance adjusted estimator of the statistical package Mplus 7 was appropriate for analyzing the ordinal values of 1 – 5 (Never – Always). A five-factor model was determined to have optimal fit, based on the model fit criteria (Table 4.7), which indicated reduced improvement in fit indices (RMSEA, CFI and TLI) when adding a sixth factor. One factor did not reach an acceptable level of reliability, so was dropped from the analysis. Several other items were dropped when they did not load on any factor or significantly reduced reliability. In total, eight items were removed from the analysis. Table 4.8 displays the factor loadings of the remaining items and the reliability scores for each factor.

Table 4.7
Online Exploratory Factor Analysis Fit Indices (2021a data)

	χ^2	*df*	CFI	TLI	RMSEA	D RMSEA	90% CI for RMSEA	SRMR
3-Factor Model	1101.62	403	0.945	0.933	0.073		.068, .079	0.069
4-Factor Model	860.76	374	0.962	0.949	0.064	0.009	.058, .069	0.055
5-Factor Model	**670.57**	**346**	**0.975**	**0.963**	**0.054**	**0.010**	**.048, .060**	**0.046**
6-Factor Model	551.92	319	0.982	0.972	0.048	0.006	.041, .054	0.040
7-Factor Model	449.47	293	0.988	0.979	0.041	0.007	.033, .048	0.034
8-Factor Model	374.37	268	0.992	0.985	0.035	0.006	.026, .043	0.030

Note: CFI - Comparative Fit Index, TLI -Tucker–Lewis Index, RMSEA - Root Mean Square Error of Approximation, SRMR - Standardized Root Mean Square Residual

Table 4.8
Online Factors, Loadings, and Reliability (2021 CTYI Students; N = 322)

Factor	Cronbach's a	Description	Item	Factor Loading
Teacher Support	.96	Teachers were available to students.		
			My teachers made time for my questions during online classes	.538
			My teachers made time for other students' questions during online classes	.403
My Learning	.84	Self-sufficiency and self-regulation during online learning.		
			When school was online, I learned just as well as I did before the pandemic	.743
			I was able to work at a higher level when classes were online	.708
			I was motivated for learning when school was online	.632
			I kept up in my learning with other students at the same ability level as me when classes were online	.624
			I was good at managing my time to get work done for my online courses	.613
			I worked just as hard at my online classes as I did before the pandemic	.605
			My learning in online classes kept up with my pre-pandemic pace	.602
			I enjoyed the online learning	.537
			If I had difficulty in an online class, I was able to figure it out for myself	.361
Resource Access	.69	Adequacy of resources for online learning		
			My computer was able to do everything I needed for my online classes	.795
			I was able to get access to a computer when I needed it for online classes	.770
			I was able to find a suitable place to attend online classes in my home or elsewhere	.672
			Internet access was reliable when I needed it for online classes	.552
Motivation Support	.82	Supports or behaviors that fostered motivation during online learning		
			My teachers knew how to motivate me in online classes	.661

My online classes were interesting to me	.633
My teachers could tell when I needed help in an online class	.572
My online classes were challenging	.572
My teachers used a variety of online teaching tools	.525
My teachers knew a lot about teaching online	.525
My teachers were good at organizing the online classes	.514
My parents helped me stay on schedule with online classes	.455
My teachers made the online learning fun	.323

Note: All loadings significant, $p < .05$

Parallel factors were created using the appropriate items for in-person and CTYI learning (see Table 4.9). Teacher support – teachers being available to the student or classmates – was strongly correlated with motivation support in both online (r = .525) and in-person (r = .497) platforms (Table 4.10). As teachers were more available, students perceived other motivating behaviors from them. The highest correlation was between the two online Resource Access factors, for school and CTYI (r = .679). The next highest correlations were between online and in-person motivation support (r = .656) and in-person motivation support and in-person "My Learning," a factor related to self-regulation and self-sufficiency (r = .546). As students perceived more support from the teacher and their environment to be motivated for academic behavior, their self-motivated academic behaviors, such as managing their time or working hard, increased.

Table 4.9
Parallel Online, In-Person, CTYI Items

	Online	In-Person	CTYI
Teacher Support	My teachers made time for my questions during online classes	My teachers made time for my questions during in-person classes	My CTYI teachers made time for my questions during online classes
	My teachers made time for other students' questions during online classes	My teachers made time for other students' questions during in-person classes	My CTYI teachers made time for other students' questions during online classes
My Learning	When school was online, I learned just as well as I did before the pandemic	When school re-opened, I learned just as well as I did before the pandemic	When CTYI was online, I learned just as well as I did before the pandemic
	I was able to work at a higher level when classes were online	I was able to work at a higher level when classes were in-person than when they were online	I was able to work at a higher level when CTYI classes were online
	I was motivated for learning when school was online	I was motivated for learning when school was in person	
	I kept up in my learning with other students at the same ability level as me when classes were online	I kept up in my learning with other students at the same ability level as me when classes were in-person	I kept up in my learning with other students at the same ability level as me when CTYI classes were online
	I was good at managing my time to get work done for my online courses	I was good at managing my time to get work done for my in-person courses	I was good at managing my time to get work done for my online CTYI courses
	I worked just as hard at my online classes as I did before the pandemic	I worked just as hard at my in-person classes as I did before the pandemic	I worked just as hard at my online CTYI classes as I did before the pandemic
	My learning in online classes kept up with my pre-pandemic pace	My learning in in-person classes kept up with my pre-pandemic pace	
	I enjoyed the online learning	I enjoyed the in-person learning	I enjoyed the online learning in CTYI classes
	If I had difficulty in an online class, I was able to figure it out for myself	If I had difficulty in an in-person class, I was able to figure it out for myself	If I had difficulty in an online CTYI class, I was able to figure it out for myself

	Online	In-Person	CTYI
Resource Access	My computer was able to do everything I needed for my online classes		My computer was able to do everything I needed for my CTYI classes
	I was able to get access to a computer when I needed it for online classes	I was able to get access to a computer when I needed it for in-person classes	I was able to get access to a computer when I needed it for for my online CTYI classes
	I was able to find a suitable place to attend online classes in my home or elsewhere		I was able to find a suitable place to attend online CTYI classes in my home or elsewhere.
	Internet access was reliable when I needed it for online classes	Internet access was reliable when I needed it for in-person classes	My internet access was reliable during my online CTYI classes
Motivation Support	My teachers knew how to motivate me in online classes	My teachers knew how to motivate me in in-person classes	My CTYI teachers knew how to motivate me in online classes
	My online classes were interesting to me	My in-person classes were interesting to me	My CTYI online classes were interesting to me
	My teachers could tell when I needed help in an online class	My teachers could tell when I needed help in an in-person class	My CTYI teachers could tell when I needed help in an online class
	My online classes were challenging	My in-person classes were challenging	My CTYI online classes were challenging
	My teachers used a variety of online teaching tools	My teachers used a variety of teaching tools in in-person classes	My CTYI teachers used a variety of online teaching tools
	My teachers knew a lot about teaching online	My teachers knew a lot about teaching in-person classes	My CTYI teachers knew a lot about teaching online
	My teachers were good at organizing the online classes	My teachers were good at organizing in-person classes	My CTYI teachers were good at organizing the online classes
	My parents helped me stay on schedule with online classes	My parents helped me stay on schedule with in-person classes	My parents helped me stay on schedule with online CTYI classes
	My teachers made the online learning fun	My teachers made the in-person learning fun	My CTYI teachers made the online learning fun

Table 4.10
Significant Correlations Among Online, In-Person, and CTYI Factors

		Online				In-Person				CTYI		
		Teacher Support	My Learning	Resource Access	Moti-vation Support	Teacher Support	My Learning	Resource Access	Moti-vation Support	Teacher Support	My Learning	Resource Access
Online	My Learning	.337**	--									
	Resource Access	.183**	.191**	--								
	Motivation Support	.525**	.497**	.156**	--							
In-Person	Teacher Support	.486**	.152**		.338**	--						
	My Learning	.361**	.238**		.296**	.510**	--					
	Resource Access	.296**		.222**	.278**	.344**	.353**	--				
	Motivation Support	.457**	.212**		.656**	.546**	.611**	.336**	--			
CTYI	Teacher Support	.303**	.175**	.150**	.178**	.202**	.212**	.151**	.180**	--		
	My Learning	.222**	.459**		.180**	.207**	.309**	.160**	.195**	.389**	--	
	Resource Access	.174**		.679**		.176**		.304**		.273**	.279**	--
	Motivation Support	.273**	.254**		.434**	.241**	.241**	.238**	.420**	.417**	.551**	.190**

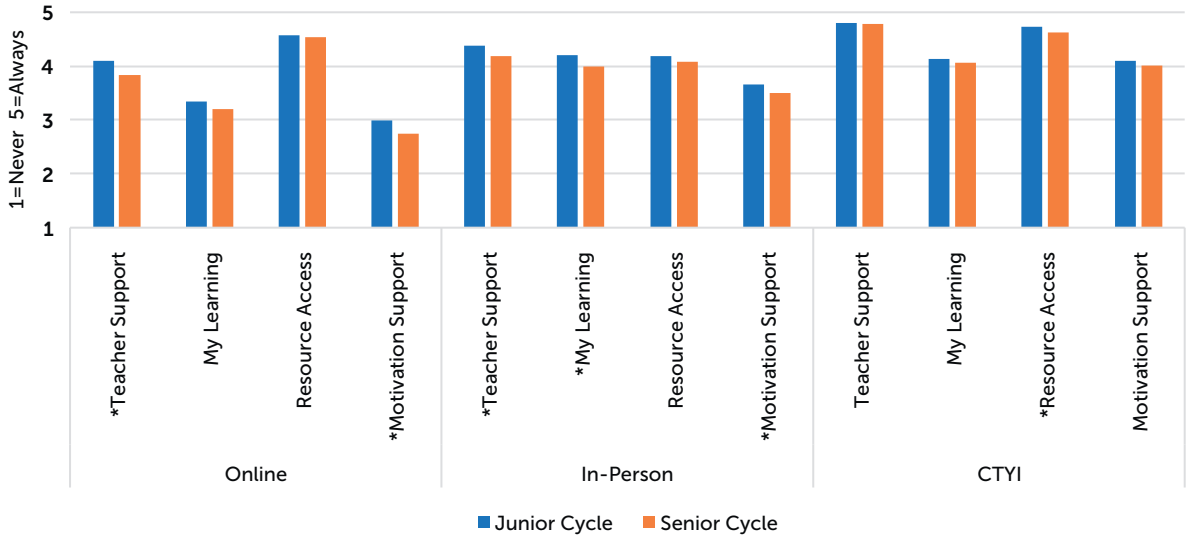
** Correlation is significant at the 0.01 level (2-tailed).

Junior and Senior cycle students differed in their perceptions of teacher support and Motivation Support in both their online and in-person learning (Table 4.11, Figure 4.8). Junior cycle students had slightly more positive perceptions of how available their teachers were to them and their classmates in online school, $t(320) = 2.59$, $p < .05$, Cohen's $d = .29$, and of the support they had to maintain their motivation, $t(320) = 3.48$, $p < .01$, Cohen's $d = .39$. Junior cycle students also perceived more frequent teacher support in their in-person classes than did Senior cycle students, $t(315) = 2.29$, $p < .05$, Cohen's $d = .26$. They also more frequently were self-sufficient in in-person classes than the Senior cycle students, $t(315) = 3.16$, $p < .01$, Cohen's $d = .36$. In-person classes were more frequently motivating to the Junior cycle students, $t(309) = 2.21$, $p < .01$, Cohen's $d = .25$. The only difference between Junior and Senior cycle students in their CTYI classes was in their resource access, $t(313) = 2.52$, $p < .05$, Cohen's $d = .29$. It should be noted that none of these differences were great. In fact, the effect sizes are all small, suggesting there may be statistical differences, but practically they are not likely to be meaningful.

Table 4.11
Online, In-Person, and CTYI Mean Factor Scores by Junior and Senior Cycle (2021a CTYI Students)

		Junior cycle		Senior cycle		Total	
Platform		***Mean***	***SD***	***Mean***	***SD***	***Mean***	***SD***
Online	*Teacher Support	4.09	0.86	3.84	0.89	3.95	0.88
	My Learning	3.35	0.68	3.20	0.77	3.27	0.73
	Resource Access	4.58	0.42	4.53	0.45	4.55	0.44
	*Motivation Support	2.98	0.64	2.74	0.63	2.85	0.64
In Person	*Teacher Support	4.38	0.63	4.18	0.85	4.27	0.76
	*My Learning	4.21	0.47	4.00	0.67	4.10	0.59
	Resource Access	4.18	0.87	4.09	0.93	4.13	0.90
	*Motivation Support	3.65	0.55	3.50	0.63	3.57	0.60
CTYI	Teacher Support	4.80	0.45	4.78	0.53	4.79	0.49
	My Learning	4.14	0.53	4.07	0.53	4.10	0.53
	*Resource Access	4.73	0.31	4.63	0.41	4.68	0.37
	Motivation Support	4.10	0.48	4.01	0.50	4.05	0.49

Figure 4.8
Online, In-Person, and CTYI Mean Factor Scores by Junior and Senior Cycle (2021a CTYI Students)



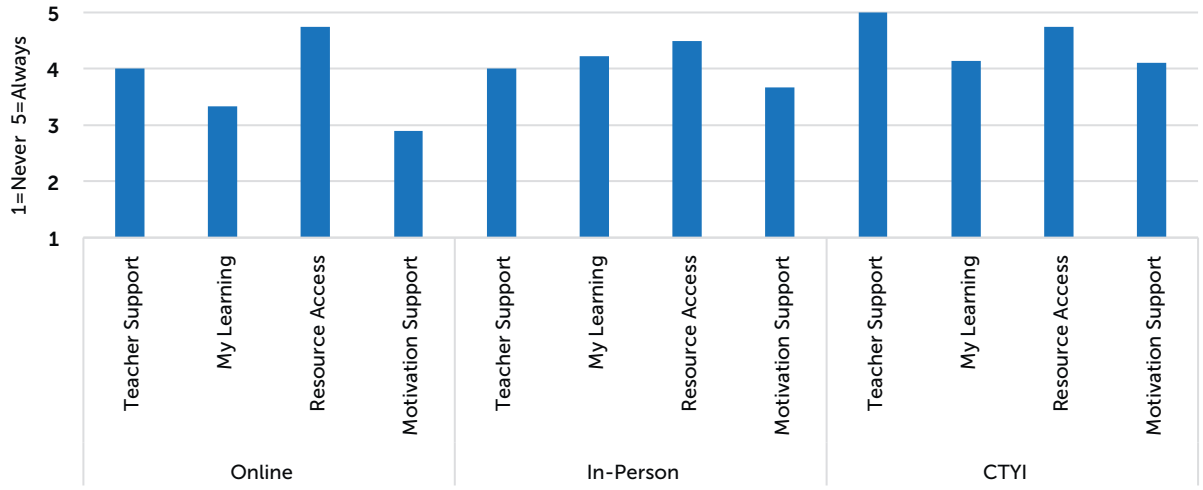
To accurately compare males and females with the small number of nonbinary and other sex categories, a Kruskal-Wallis H test was conducted. This analysis utilizes the median scores for comparison (see Table 4.12, Figure 4.9). Only one comparison was statistically significantly different when comparing the different categories. For the In-Person My Learning factor, the median score in the Prefer Not to Say category (*Mdn* = 3.56, *IQR* = 1.25) was lower than (χ^2[4] = 20.00, $p < .001$) both male (*Mdn* = 4.22, *IQR* = 0.67) and female (*Mdn* = 4.22, *IQR* = 0.78) scores. The Prefer Not to Say students considered themselves less frequently self-sufficient and motivated to work as hard in in-person school than the males and females in the sample. An independent samples *t*-test comparison of only males and females finds a significant difference in the mean scores of both online Resource Access (male *M* = 4.63, *SD* = .38, female *M* = 4.51, *SD* = .47), *t*(291) = 2.15, $p < .05$, and CTYI Resource Access (male *M* = 4.74, *SD* = .32, female *M* = 4.63, *SD* = .40), *t*(284) = 2.38, $p < .05$.

In a comparison of median scores by ethnicity, the same factor, the In-Person My Learning factor had one significant difference. The White: Irish category (*Mdn* = 4.22, *IQR* = 0.67) had a higher median score than the White: Any other White background category (*Mdn* = 3.89, *IQR* = 0.89), χ^2[6] = 23.53, $p = .001$. The White: Irish students considered themselves to be more frequently able to work at a higher level in person and were more frequently able to regulate their academic behaviors than the students in the White: Any other White background category.

Table 4.12
Online, In-Person, and CTYI Factor Median Scores (2021a CTYI Students)

Platform	Factor	Mdn	IQR	N
Online	Teacher Support	4.00	2.00	322
	My Learning	3.33	1.11	322
	Resource Access	4.75	0.31	322
	Motivation Support	2.89	0.89	322
In Person	Teacher Support	4.00	1.00	317
	My Learning	4.22	0.78	317
	Resource Access	4.50	1.50	317
	Motivation Support	3.67	0.78	311
CTYI	Teacher Support	5.00	0.00	312
	My Learning	4.14	0.71	298
	Resource Access	4.75	0.50	315
	Motivation Support	4.11	0.56	312

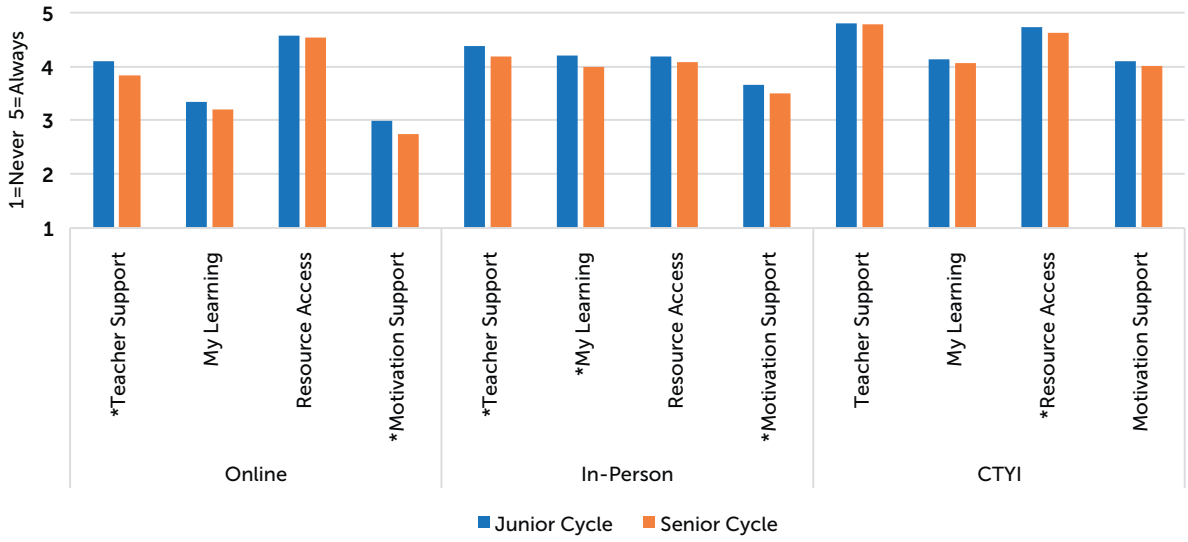
Figure 4.9
Online, In-Person, and CTYI Median Factor Scores (2021a CTYI Students)



Comparing Online to In-Person Learning

To identify different attitudes about their online and in-person academic experiences, a paired samples t-test was conducted with the factors of the two platforms (see Figure 4.10). CTYI students had more positive attitudes about in-person learning, with the exception access to resources. There were only two items in the Resource Access factor for in-person instruction: "I was able to get access to a computer when I needed it for in-person classes" and "Internet access was reliable when I needed it for in-person classes." Apparently, this is less regularly the case in in-person classes than online, $t(316) = 8.16$, $p < .001$, Cohen's $d = .46$. Teachers more frequently made time for students' questions in in-person classes than online, $t(316) = -6.67$, $p < .001$, Cohen's $d = -.38$. Students more regularly believed they could work at a higher level and keep up with their learning, or manage their time (the My Learning factor) when in-person than online, $t(316) = -17.99$, $p < .001$, Cohen's $d = .-1.01$. Teachers more frequently motivated their students and classes were more interesting, challenging, and fun (the Motivation Support factor) in in-person classes than in online classes, $t(310) = -24.91$, $p < .001$, Cohen's $d = .-1.41$. These effect sizes are quite large, indicating meaningful differences. CTYI students perceive a better learning environment in their in-person classes, with the possible exception of computer access in school.

Figure 4.10
Online and In-Person Factor Mean Score Differences (2021a CTYI Students)



Note: All are different, $p < .001$

Comparing Online School to CTYI Online

CTYI offers an exceptional learning environment in enriching subjects. During the pandemic, they pivoted quickly to offer classes in progress in a virtual format. Over the next year, CTYI expanded their virtual offerings and provided academic enrichment to highly able students. A comparison of CTYI's online courses and the students' online school reflects favorably on CTYI (Figure 4.11). Students found their CTYI teachers more readily available to answer questions, $t(311) = -16.98$, $p < .001$, Cohen's $d = -.96$, and could more frequently regulate their own academic behaviors, $t(297) = -21.11$, $p < .001$, Cohen's $d = -1.22$, in CTYI courses than in their online school. The need to access technology would have been the same for CTYI and online courses. For whatever reason, students had more frequent access to what they needed for online learning in their CTYI courses than in their online school, $t(314) = -6.84$, $p < .001$, Cohen's $d = -.39$. The supports for students' motivation, such as interesting classes, technically informed teachers, and parents helping them stay on schedule, were significantly more frequent at CTYI than school, $t(311) = -34.33$, $p < .001$, Cohen's $d = -1.94$. The large effect sizes indicate real, meaningful differences. CTYI students who participated in this study are likely to remember their pandemic year with a more favorable opinion of their CTYI courses than their regular school in its online format.

Two additional questions offer insight into the challenge and opportunity provided by CTYI online courses. More than half (56%) of students found their CTYI courses "Always" or "Most of the time" were more challenging than online classes in their regular school (Figure 4.12). Nearly all (91%) of the students taking this survey in the summer of 2021, when CTYI courses were online only, reported they were able to take the courses they wanted to take through CTYI (Figure 4.13). According to the participants in this study, CTYI was meeting the demand for challenging online offerings.

Figure 4.11
Online School and CTYI Online Factor Differences (2021a CTYI Students)

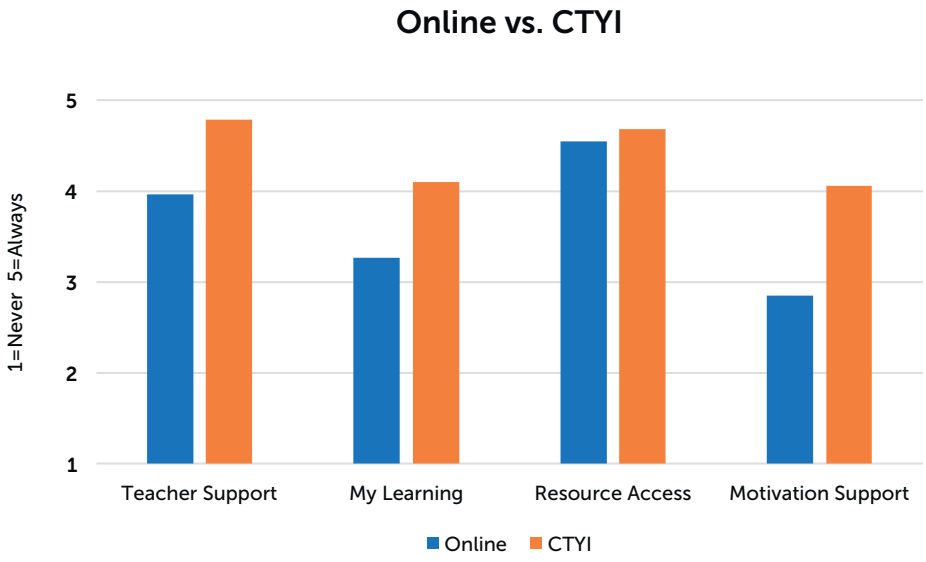


Figure 4.12
Responses to item "I found online CTYI classes to be more challenging than online classes in my regular school" (N = 322)

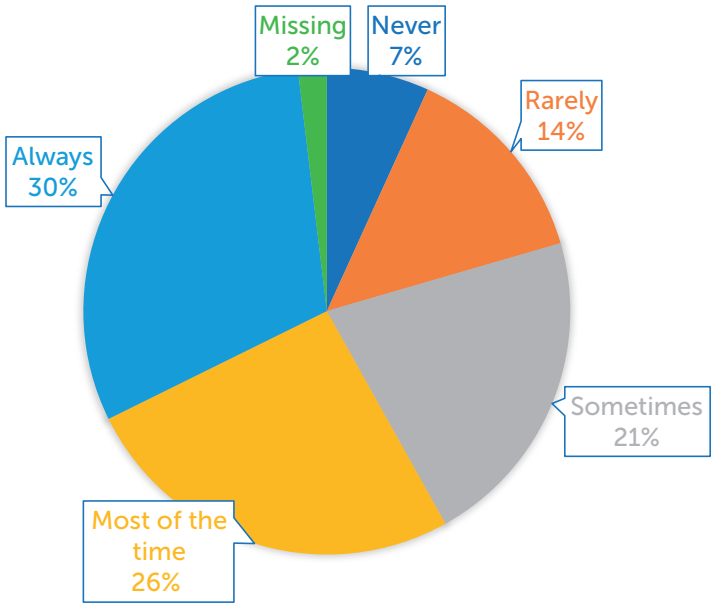
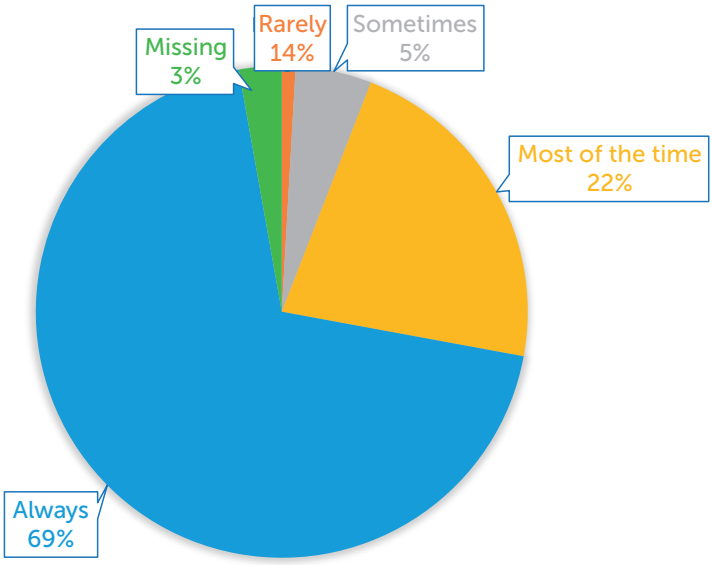


Figure 4.13
Responses to item "I was able to take the classes I wanted to take when CTYI classes were online" (N = 322)



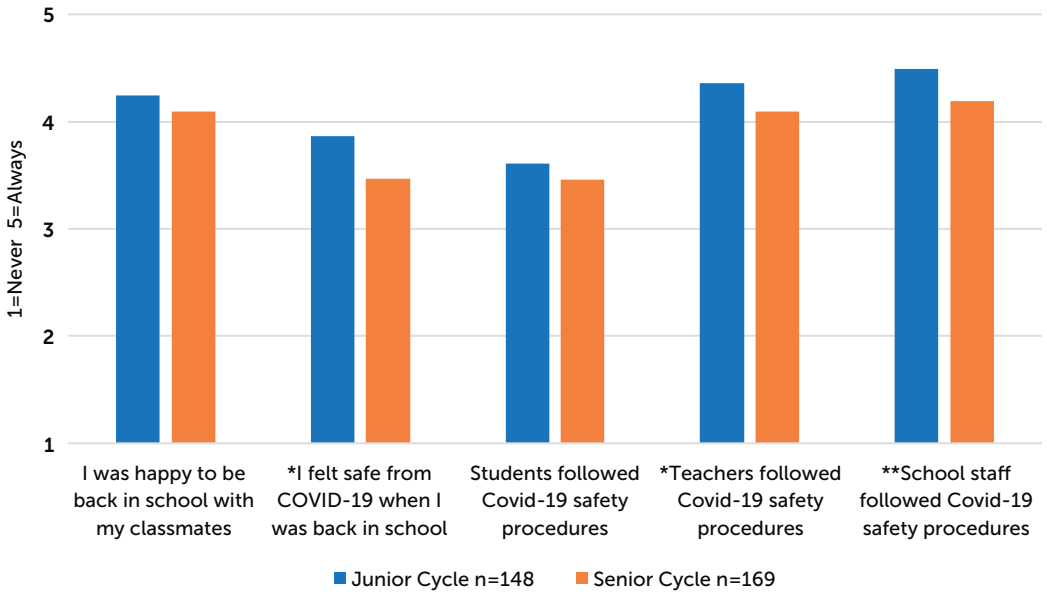
Returning to School with COVID-19

The majority of Irish students returned to school in person in the spring of 2021. The CTYI students in this study were "Most of the time" happy to be back in school with their classmates (see Table 4.13). They "Most of the time" felt safe from COVID-19 when they were back in school. Junior cycle students felt safe a little more frequently than their Senior cycle peers (Table 4.13, Figure 4.14). Both Junior and Senior cycle students reported students only a little more frequently than "Sometimes" followed COVID-19 safety procedures. Teachers and school staff "Most of the time" did so, but Junior cycle students reported it happened more regularly than Senior cycle students' reports. The effect sizes (Table 4.13) indicate these differences were not great, so may not have much practical significance.

Table 4.13
COVID-19 Items by Cycle

	Junior Cycle n = 148		Senior Cycle n = 169		
	Mean	*SD*	*Mean*	*SD*	Significant t-test Results
I was happy to be back in school with my classmates	4.24	0.91	4.09	1.07	
I felt safe from COVID-19 when I was back in school	3.86	1.02	3.47	1.12	$t(315) = 3.30$, $p < .01$, Cohen's $d = .37$
Students followed Covid-19 safety procedures	3.61	0.73	3.46	0.94	
Teachers followed Covid-19 safety procedures	4.36	0.65	4.09	0.73	$t(315) = 1.54$, $p < .01$, Cohen's $d = .39$
School staff followed Covid-19 safety procedures	4.49	0.59	4.19	0.76	$t(315) = 3.95$, $p < .001$, Cohen's $d = .45$

Figure 4.14
Junior and Senior Cycle COVID-19 Items



* $p < .01$
** $p < .001$

Summary of School

School makes up a large portion of a student's waking hours. In most cases, schools are designed to serve average ability students. The high-ability students who attend CTYI are not regularly receiving an appropriate education, with assignments targeted to their level of ability.

It is highly likely that *every* student spends some time being bored in school. Those who do not engage academically may be bored most of the time (Finn & Zimmer, 2012), regardless of their ability level. CTYI students enter the program through a high test score. All of them have academic potential, based on this indicator. Receiving an education targeted at a lower level is a wasted opportunity for the individual and for society. CTYI is available to the select few who are able to take advantage of their offerings; those who can attend courses in Dublin or at their outreach programs across the country, and those who can afford to attend. It is a valuable program for those who can participate, but Irish schools have a responsibility to provide an appropriate education, one where students are infrequently bored because they already know the material and where they are regularly receiving lessons targeted at their ability level.

The Coronavirus pandemic of 2020 and 2021 caused an upheaval in the education system. A generation ago – perhaps even a decade ago – online schooling would not have been an option. Yet schools across Ireland were able to offer students something during a time when public health concerns made it impossible to be in the regular classroom. CTYI students were less motivated to learn in an online setting than when they were actually in their schools. They did have the resources they needed, however, and found their teachers supportive. Perhaps the crisis will be the stimulus for much needed change in education (Freitag, 2020). It will be important to high-ability students for gifted education advocates to be vocal in all discussions about the future of Irish schools.

Chapter 5:

International Comparisons

In 2017, partners in two countries were interested in collaborating on the research being conducted at CTYI – the Center for Talented Youth-Greece (CTYG), at Anatolia College in Thessalonika, and the Jagadis Bose National Science Talent Search (JBNS) in Kolkata. CTYG employs a definition similar to CTYI, accepting students scoring in the 95th percentile on a standardized ability test. JBNS participants were attending the Talent Search and Innovation in Science Pursuit for Inspired Research (INSPIRE) programs. Admission to the programs requires a top 1% score on the national board examinations or through aptitude testing and interviews. The survey used in the 2015 study was modified for the Greek and Indian contexts and data was collected in 2017 and 2018.

The CTYG survey included the Multidimensional Scales of Perceived Self-Efficacy (MSPSE; Bandura, 1989) scale, the Implicit Person Theory scale (Dweck, 1999), the Social Cognitive Beliefs scale (adapted from Coleman & Cross, 1988 and T. Cross et al., 1991), and the Ostracism Experience Scale for Adolescents (OES-A; Gilman et al., 2013). The JBNS survey included these scales and the Big Five Inventory (John et al., 1991) personality scale. Both surveys included questions about the frequency of students' differentiated assignments, their ability to go in-depth in a class, and their boredom in school. Surveys were completed online while students attended the CTYG summer program and by paper-and-pencil while students were attending the JBNS and INSPIRE programs.

Sample demographics are presented in Table 5.1. The majority of students in the CTYG sample were female (50.7%) and male in the JBNS sample (63.5%). Students in the JBNS sample were almost exclusively in the grade equivalent of 5th Year, whereas CTYG students were nearly all 1st through 3rd year. The comparison CTYI and CAT samples were more evenly distributed among males and females and by Junior and Senior cycle (see Table 1.2).

Table 5.1
CTYG (Greece) and JBNS (India) Sample Demographics

	CTYG		JBNS	
	n	%	n	%
Gender				
Female	74	50.7%	165	36.1%
Male	72	49.3%	290	63.5%
Missing	0	0.0%	2	0.4%
Year in School				
1st Year	32	21.9%	0	0.0%
2nd Year	49	33.6%	0	0.0%
3rd Year	56	38.4%	0	0.0%
4th Year	8	5.5%	53	11.6%
5th Year	1	0.7%	402	88.0%
6th Year	0		2	0.4%
Total	146	100.0%	457	100.0%

Cross-Cultural Psychology Differences

To identify differences among the four programs – CTYI, CAT, CTYG, and JBNS – which had notably different sample sizes, a nonparametric analysis was appropriate. Based on the Kruskal-Wallis H test results (Table 5.2), there were some differences in all self-efficacy subscales. Figure 5.1 displays median self-efficacy scores by program. CTYG students' self-efficacy scores were consistently higher than the Irish students' scores, with the exception of self-efficacy to Resist Peer Pressure. JBNS students tended to have lower self-efficacy scores than CTYI and CAT students, but they were similar to CAT students in their Social and Self-Regulated Learning self-efficacy.

Implicit Person Theory was similar among the four groups. All had median scores bordering on a fixed mindset (Dweck, 1999), hovering around a 3 (Table 5.3, Figure 5.2). They "Mostly Disagree" that a person's intelligence and personality cannot be changed. All scores remain closer to an incremental mindset than a fixed one.

JBNS students could be compared with Irish students on the Big Five Inventory (John et al., 1991) personality measure. The three samples – CTYI, CAT, and JBNS – were similar enough in size to execute a univariate analysis of variance (ANOVA) with the personality subscales. Mean scores and standard deviations for the three groups are in Table 5.4. The groups were similar in Conscientiousness, Neuroticism, and Openness. JBNS students were more extraverted and more agreeable than CTYI students (see Figure 5.3).

Table 5.2
Self-Efficacy Median Scores and Interquartile Range by Program

	CTYI n=478		CAT n=350		CTYG n=141		JBNS n=457		Total N=1426	
	Mdn	IQR	Mdn	IQR	Mdn	IQR	Mdn	IQR	Mdn	Kruskal-Wallis H
Total Self-Efficacy	5.04c	0.00	5.03c	0.00	5.74a	0.00	4.84b	0.00	5.04	$\chi2[3] = 100.22$, $p < .001$
SE Resist Peer Pressure	6.60a	1.00	6.60a	1.20	6.40a,c	0.80	6.00b	1.00	6.40	$\chi2[3] = 137.94$, $p < .001$
SE Academic Achievement	5.89a,c	1.00	5.67c	1.00	6.11a	1.00	5.11b	1.00	5.56	$\chi2[3] = 196.92$, $p < .001$
SE Social	5.25b	1.50	5.50c	1.25	6.25a	1.25	5.25b,c	1.50	5.50	$\chi2[3] = 64.23$, $p < .001$
SE Assertive	5.25c	1.75	5.50d	1.75	6.25a	1.50	4.75b	1.75	5.25	$\chi2[3] = 96.76$, $p < .001$
SE Meet Others Expectations	5.00c	1.50	5.25c	1.75	6.25a	1.50	4.75b	1.50	5.00	$\chi2[3] = 100.72$, $p < .001$
SE Self-Regulated Learning	4.73b,c	1.41	4.73b,c	1.45	5.45a	1.64	4.85c	1.36	4.82	$\chi2[3] = 43.10$, $p < .001$
SE Extracurriculars	4.50c	1.47	4.63c	1.50	5.25a	1.50	3.88b	1.38	4.38	$\chi2[3] = 156.93$, $p < .001$
SE Social Resources	4.25b	1.69	4.50b	1.75	5.25a	1.75	5.00a	1.50	4.50	$\chi2[3] = 67.67$, $p < .001$
SE Enlisting Support	4.25c	2.00	4.00b	2.00	5.47a	2.25	4.50d	2.00	4.50	$\chi2[3] = 81.93$, $p < .001$

Note: Superscript letters indicate homogeneous subsets

Figure 5.1
Self-Efficacy Median Scores by Program

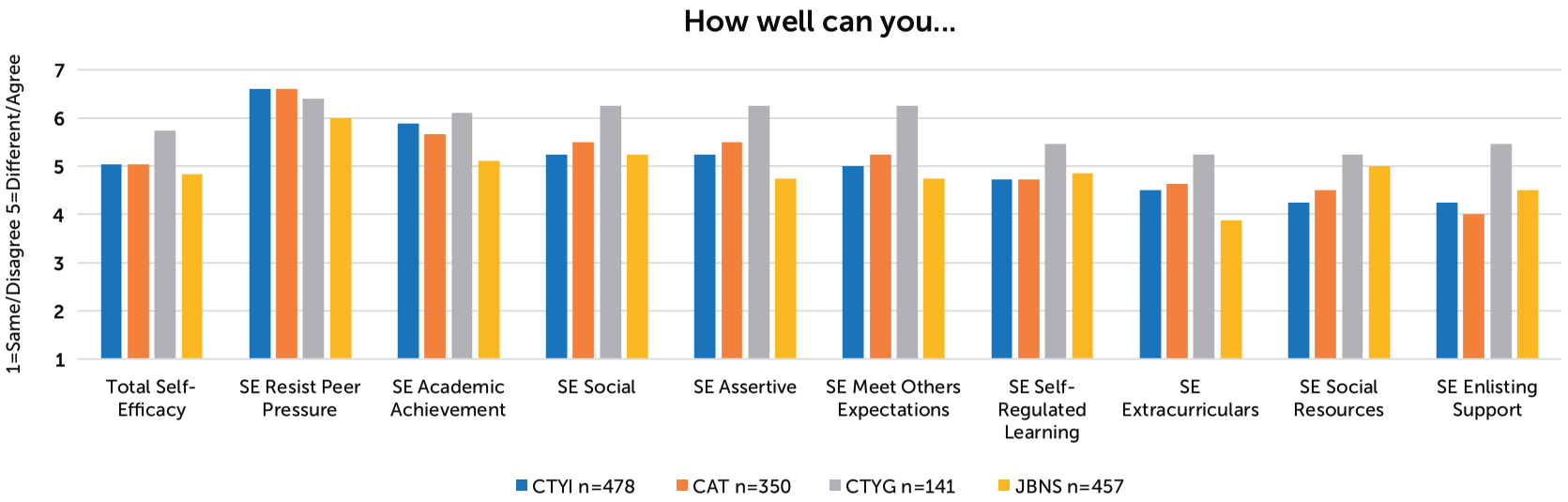


Table 5.3
Implicit Person Theory Median Scores and Interquartile Range by Program

Implicit Theory	CTYI *n*=481		CAT *n*=353		CTYG *n*=135		JBNS *n*=442		Total *N*=1411	
Range 1-6	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	Kruskal-Wallis H
Implicit Total	3.17	1.17	3.15	1.08	3.25	0.96	3.08	1.08	3.17	$\chi^2[3] = .40$, $p = .941$
Fixed Intelligence	3.00	1.83	3.00	1.50	3.17	1.50	2.83	1.50	3.00	$\chi^2[3] = 7.43$, $p = .059$
Fixed Personality*	3.17	1.33	3.33	1.33	3.17	1.42	3.33	1.33	3.33	*$\chi^2[3] = 8.86$, $p < .05$

*Adjusted significance $p > .05$

Figure 5.2
Implicit Person Theory Median Scores by Program

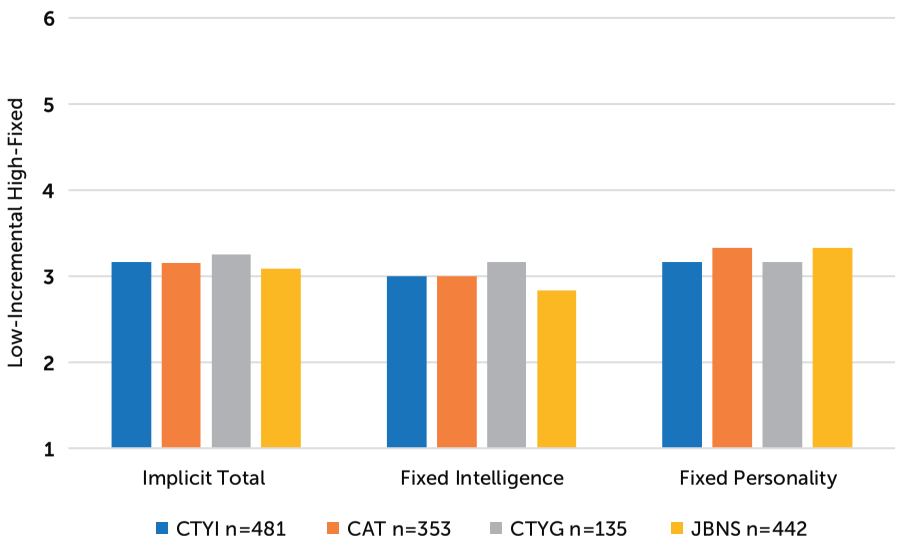
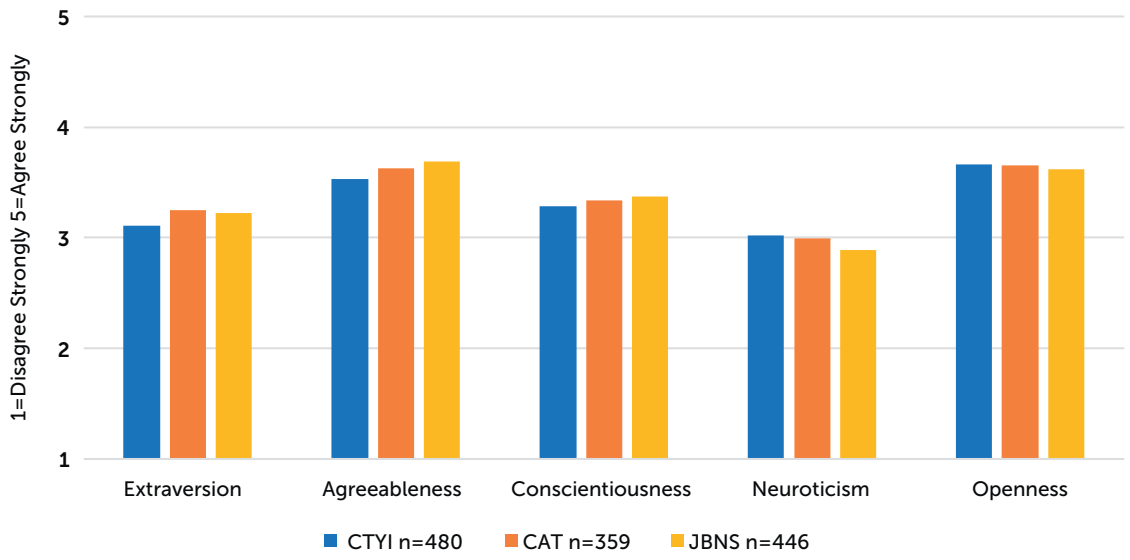


Table 5.4
Five-Factor Model Personality Mean Scores and Standard Deviations by Program

	CTYI *n*=480		CAT *n*=359		India *n*=446		Total *N*=1285		
Factor	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*ANOVA*
Extraversion	3.11[b]	0.82	3.25[a]	0.83	3.22[a,b]	0.62	3.19	0.76	$F(2, 1281) = 4.15$, $p < .05$
Agreeableness	3.53[b]	0.68	3.63[a,b]	0.64	3.69[a]	0.53	3.61	0.62	$F(2, 1271) = 7.37$, $p < .01$
Conscientiousness	3.28	0.76	3.34	0.72	3.37	0.59	3.33	0.69	$F(2, 1281) = 2.00$, $p > .05$
Neuroticism	3.02	0.89	2.99	0.87	2.89	0.71	2.97	0.83	*$F(2, 1282) = 3.10$, $p < .05$
Openness	3.66	0.60	3.65	0.56	3.62	0.48	3.64	0.55	$F(2, 1279) = 0.71$, $p > .05$

Note: Superscript letters indicate homogeneous subsets
* Tukey's post hoc comparison was not significant.

Figure 5.3
Five-Factor Model Personality Mean Scores by Program



Cross-Cultural Social Differences

The SCB scores indicate how students perceive others see them in comparison to their peers – the same as or different from – and how they compare themselves (more serious) and think positively or negatively about working with their peers (see Figure 3.3). SCB scores were significantly different for each of the items using the Kruskal-Wallis H test. However, there was too little variation in the median scores to make a visual comparison. Therefore, Figure 5.4 includes mean scores. CTYI students had a notably high preference for working independently and higher agreement that other students get in the way of their learning. CTYG and JBNS students were less likely to agree they get more quickly bored with small talk than peers or that other students get in the way of their learning. All students agree at least somewhat that they are more serious about learning and prefer to work independently.

The variability of responses to the scenarios, which carried different threats of exposure of their giftedness (see Chapter 3), followed the same pattern in all four programs (Figure 5.5). There was more truth-telling and placating in the two scenarios with lower threat, Onomatopoeia and Substitute Teacher. As in other studies of the scenarios (T. Cross et al., 1991), there was a greater spread of responses along the spectrum for the Biology Exam scenario (Table 5.5). In the Onomatopoeia scenario, nearly half of JBNS and CTYG students chose the Placate response, but only about one third of Irish students chose Placate. JBNS students disproportionately chose the Lie option for this, presumably, low threat scenario. In the Substitute Teacher scenario, a higher number of CTYI students and lower number of JBNS students than expected chose the Cop-Out option. In the high-threat Biology Exam scenario, fewer JBNS students than expected chose the Truth, Placate, and Cop-out options, and more than expected chose the Preface no answer option. JBNS students were less likely to choose Lie than CTYI and CAT students (13.7% vs 28.4% and 23.5%, respectively). Very few of the CTYG students (5.5%) chose the Lie option in the Biology Exam scenario.

There may be cultural reasons for these differences, but development may also play a role. The younger CTYG students may not yet have faced situations where more truthful answers negatively affect their social latitude. The higher agreeableness among JBNS students may explain their preference for avoiding the truth, which may be hurtful for their peers to hear.

Ostracism scores were similar among CTYI, CAT, and JBNS students, but CTYG students reported being less ostracized (Table 5.6, Figure 5.6). CTYG students felt less ignored and excluded from their peers than did the students in the other countries. This pattern held true even when comparing the younger sample of CTYG students with the same-aged students in the CTYI and CAT programs.

Figure 5.4
Social Cognitive Beliefs Item Mean Scores by Program

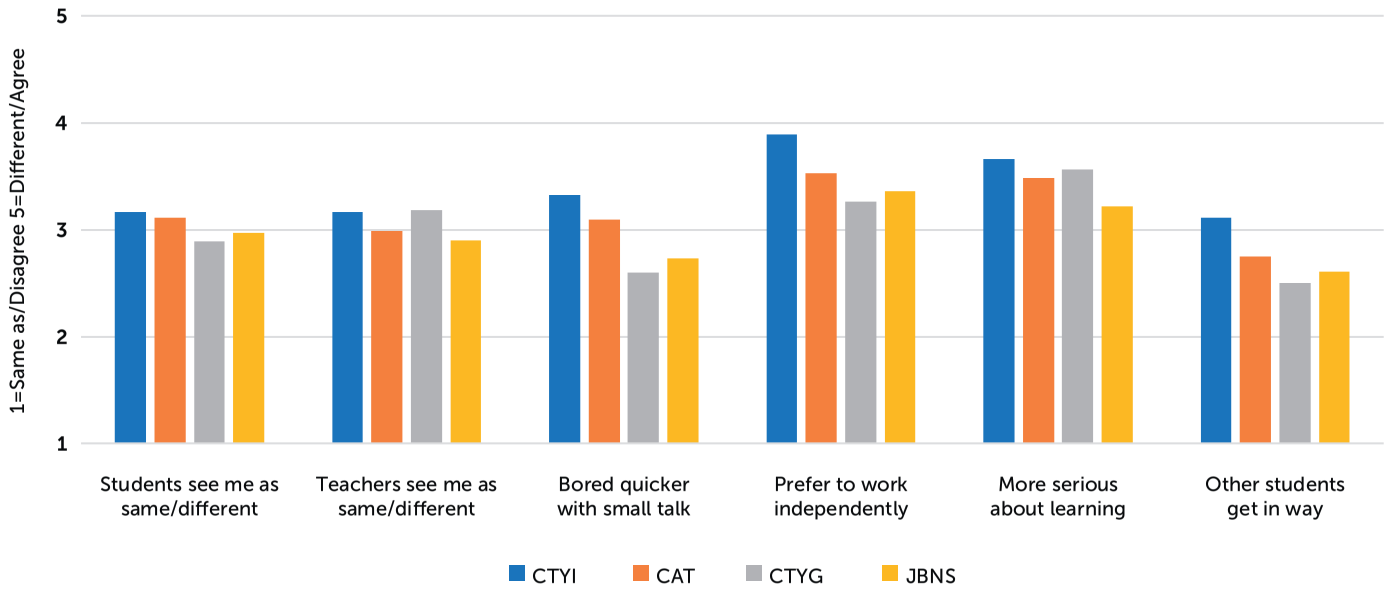


Figure 5.5
Scenario Responses by Program

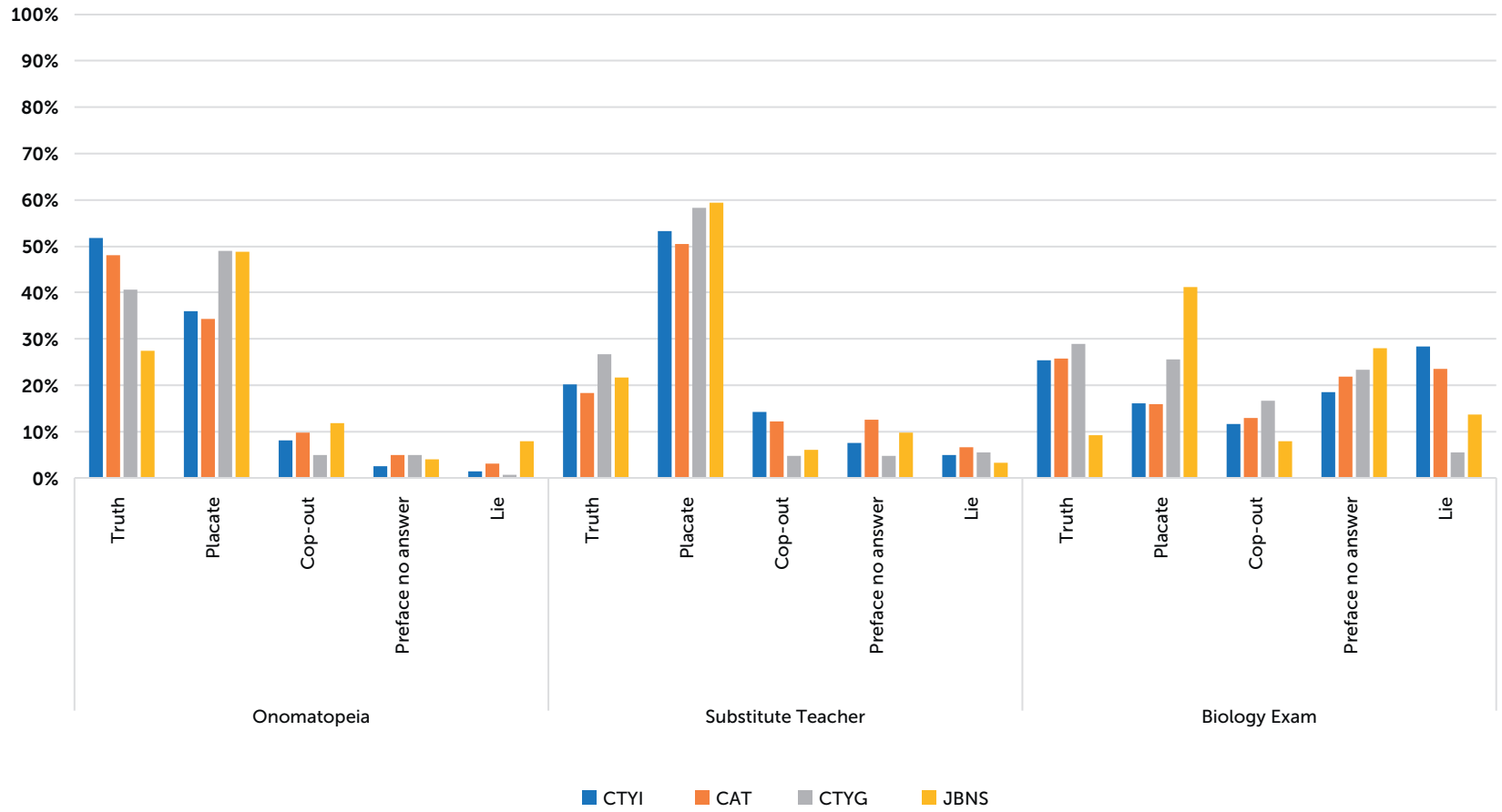


Table 5.5
Chi-Square Analysis of Distribution Scenario Responses by Program

Scenario	Response Option		CTYI	CAT	CTYG	JBNS	Total
Onomatopeia	Truth	Count	254a	174a	58a	123b	609
c2 (12, N = 1445) = 95.41, $p < .001$		Expected Count	206.9	152.6	60.3	189.2	609
		% within Program	51.7%	48.1%	40.6%	27.4%	42.1%
	Placate	Count	177a	124a	70b	219b	590
		Expected Count	200.5	147.8	58.4	183.3	590
		% within Program	36.0%	34.3%	49.0%	48.8%	40.8%
	Cop-out	Count	40a	35a	7a	53a	135
		Expected Count	45.9	33.8	13.4	41.9	135
		% within Program	8.1%	9.7%	4.9%	11.8%	9.3%
	Preface no answer	Count	13a	18a	7a	18a	56
		Expected Count	19	14	5.5	17.4	56
		% within Program	2.6%	5.0%	4.9%	4.0%	3.9%
	Lie	Count	7a	11a	1a	36b	55
		Expected Count	18.7	13.8	5.4	17.1	55
		% within Program	1.4%	3.0%	0.7%	8.0%	3.8%
Substitute Teacher	Truth	Count	99a	66a	39a	96a	300
c2(12, $N = 1441$) = 42.01, $p < .001$		Expected Count	102.2	75.2	30.4	92.2	300
		% within Program	20.2%	18.3%	26.7%	21.7%	20.8%
	Placate	Count	261a	182a	85a	263a	791
		Expected Count	269.5	198.2	80.1	243.2	791
		% within Program	53.2%	50.4%	58.2%	59.4%	54.9%
	Cop-out	Count	70a	44a, b	7b, c	27c	148
		Expected Count	50.4	37.1	15	45.5	148
		% within Program	14.3%	12.2%	4.8%	6.1%	10.3%

Scenario	Response Option		CTYI	CAT	CTYG	JBNS	Total
	Preface no answer	Count	37a	45a	7a	43a	132
		Expected Count	45	33.1	13.4	40.6	132
		% within Program	7.5%	12.5%	4.8%	9.7%	9.2%
	Lie	Count	24a	24a	8a	14a	70
		Expected Count	23.9	17.5	7.1	21.5	70
		% within Program	4.9%	6.6%	5.5%	3.2%	4.9%
Biology Exam	Truth	Count	124a	93a	42a	42b	301
c2(12, *N* = 1450)= 178.37, *p* <.001		Expected Count	101.7	75.1	30.1	94	301
		% within Program	25.3%	25.7%	29.0%	9.3%	20.8%
	Placate	Count	79a	58a	37a	186b	360
		Expected Count	121.7	89.9	36	112.5	360
		% within Program	16.1%	16.0%	25.5%	41.1%	24.8%
	Cop-out	Count	57a, b	47a, b	24b	36a	164
		Expected Count	55.4	40.9	16.4	51.2	164
		% within Program	11.6%	13.0%	16.6%	7.9%	11.3%
	Preface no answer	Count	91a	79a, b	34a, b	127b	331
		Expected Count	111.9	82.6	33.1	103.4	331
		% within Program	18.6%	21.8%	23.4%	28.0%	22.8%
	Lie	Count	139a	85a	8b	62c	294
		Expected Count	99.4	73.4	29.4	91.8	294
		% within Program	28.4%	23.5%	5.5%	13.7%	20.3%
Total		Count	491	361	146	443	1441
		% within Program	100.0%	100.0%	100.0%	100.0%	100.0%

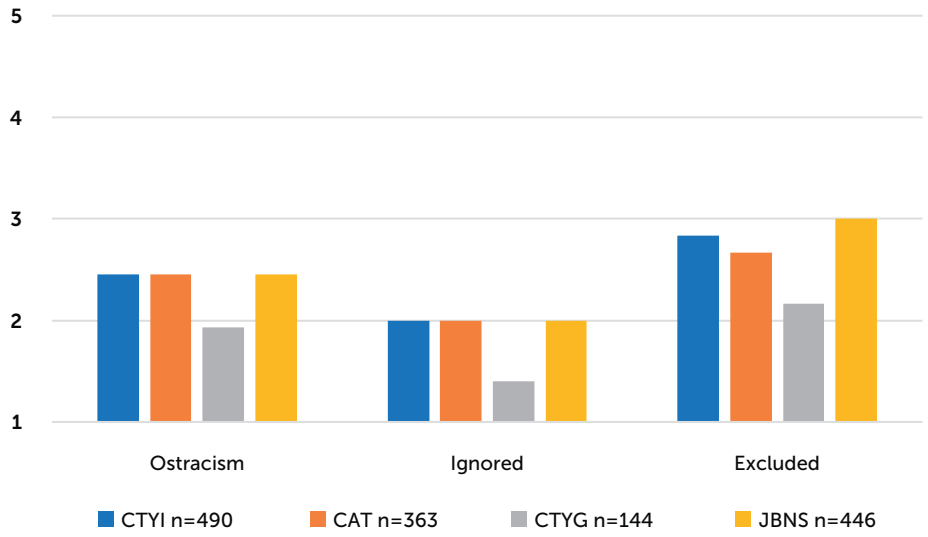
Note: Each subscript letter denotes a subset of Program categories whose column proportions do not differ significantly from each other at the .05 level.

Table 5.6
Ostracism Median Scores and Interquartile Range by Program

Ostracism	CTYI n=481		CAT n=353		CTYG n=135		JBNS n=442		Total N=1411	
Range 1-5	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	*IQR*	*Mdn*	Kruskal-Wallis H
Ostracism Total	2.45[a]	1.00	2.45[a]	1.05	1.93[b]	1.00	2.45[a]	0.82	2.45	$\chi^2[3] = 59.28$, $p < .001$
Ignored	2.00[a]	1.20	2.00[a]	1.20	1.40[b]	1.20	2.00[a]	1.00	2.00	$\chi^2[3] = 36.37$, $p < .001$
Excluded	2.83[a,b]	1.33	2.67[b]	1.33	2.17[c]	1.25	3.00[a]	1.00	2.83	$\chi^2[3] = 65.54$, $p < .001$

Note: Superscript letters indicate homogeneous subsets

Figure 5.6
Ostracism Median Scores by Program



Cross-Cultural Differences in School Experiences

Students in Ireland were more likely than students in the other two countries to report that their assignments were rarely or never differentiated to target their ability level, with χ^2 analyses *ps* < .05 (Figure 5.7). JBNS students indicated they more regularly received differentiated assignments. In science and math, Irish students were more frequently unable to go as in depth as they would like (Figure 5.8), but rates were similar in history and geography classes, when about 20% of students in all programs reported rarely or never being able to go as in depth as they would like. In English classes, more CTYI students (32.4%) than JBNS students (21.2%) rarely or never were able to go as in-depth as they wanted, χ^2 (3, N = 1461) = 15.21, p < .01.

Figure 5.7
Percent of Students Reporting "Rarely" or "Never" Receiving Differentiated Assignments by Program

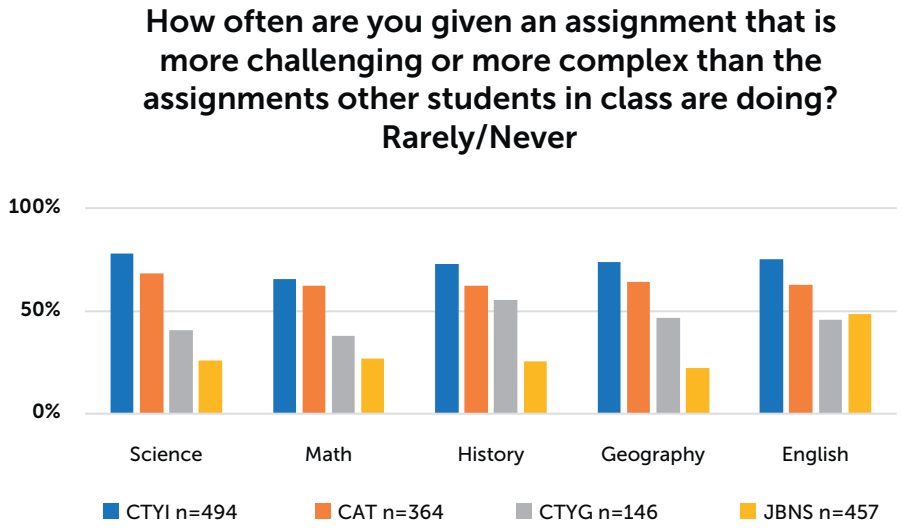
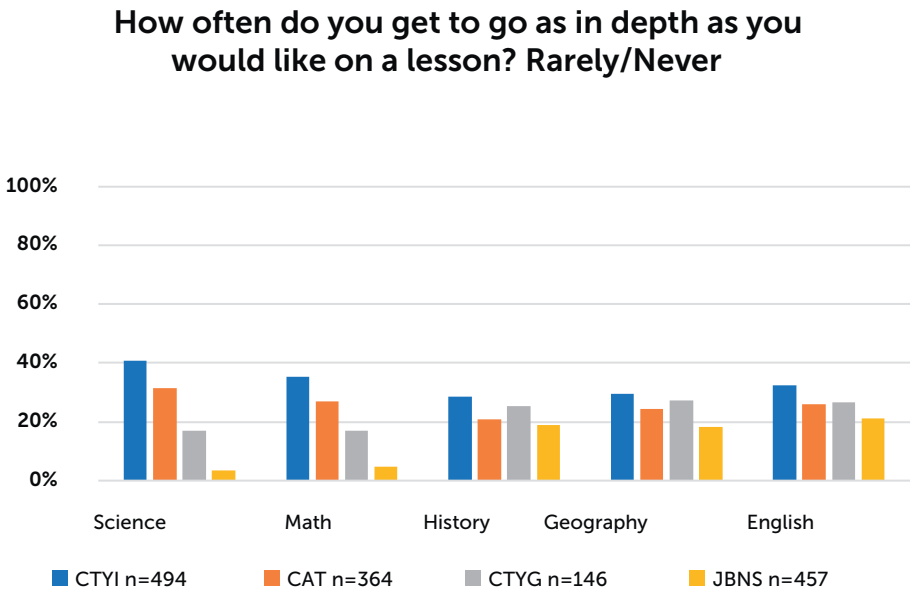
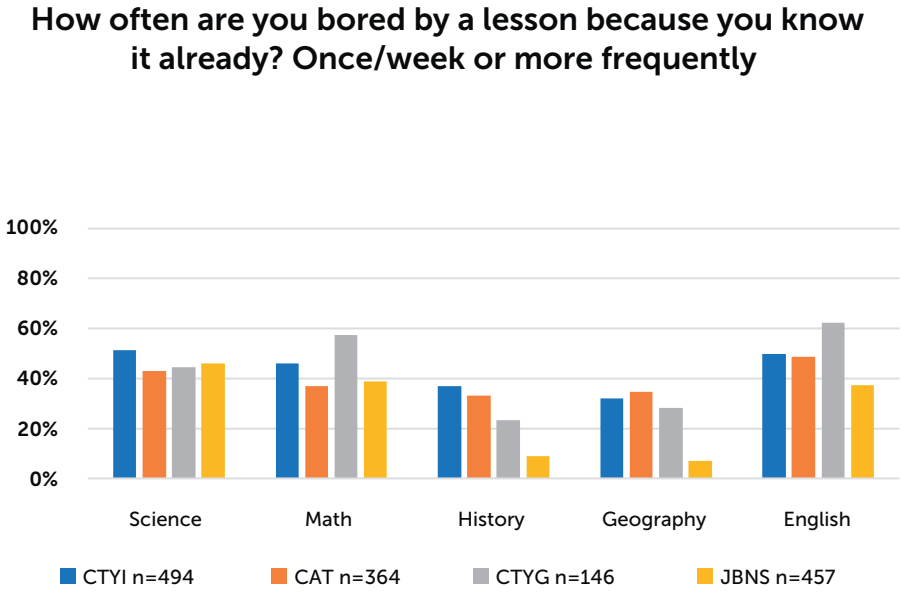


Figure 5.8
Percent of Students Reporting "Rarely" or "Never" Being Able to Go In-Depth by Program



Students in all programs reported being bored once a week or more often in their science classes (Figure 5.9). CTYG students were more frequently bored in their math and English classes than students in the other programs, χ^2 *ps* < .01. JBNS students were unlikely to report being frequently bored in history or geography lessons.

Figure 5.9
Percent of Students Reporting Once/Week or More Frequently Being Bored Because They Know Lesson by Program



Chapter 6:

Recommendations and Conclusion

The research described in this report has the potential to affect Irish gifted students' well-being and improve the opportunities for the maximization of their potential. Better understanding their psychology and their social and academic experiences creates an opportunity to strengthen their foundations of support at home and in school. It is of paramount importance that others do not view them as monolithic, fitting a stereotype developed from media portrayals or experience with a few outliers recognizable for their intellectual talents. There is great diversity in this population, but their exceptional abilities may elicit similar experiences in their environments. Attention to their internal differences and the effects these may have on their lived experiences can help adults fashion supportive environments.

Supporting CTYI Students Psychologically

The personality types identified among CTYI students are similar to those found in the general population, although the finding of a High Resilient group is a significant difference, as is the higher conscientiousness among students in the Undercontroller class. Personality is considered stable, but it is not impervious to change. In fact, studies have found less stability among adolescents, with truly stable personality occurring only in one's 40's (Kandler, 2012). The CTYI students in our study may have a different personality profile as they mature. The majority Moderate and High Resilient students will be able to adapt to most settings. Gifted adolescents in general tend to be less extraverted than their typical peers (Sak, 2004).

The CTYI students low in extraversion, including those in the Overcontroller class, will flourish in calm, small-group settings that attend to their introversion by reducing irritating stimuli. Those who tend to be less emotionally stable (high neuroticism) will benefit when others encourage their resilience through caring and supportive messaging. Professional counseling may help the Overcontroller students in reshaping their concerns of being evaluated by others (socially prescribed perfectionism) and providing strategies for coping with stressful situations. CTYI students in the Undercontroller class will benefit from social skill development, including development of their perspective-taking skills. Their strong desire for engaging with others (extraversion) may provide an inroad to teaching better strategies for interaction. In general, knowledge about the different personality characteristics will benefit adults who want to create optimal environments for adolescents.

CTYI students, perhaps by virtue of being accepted into the rigorous program, tended to have strong confidence in their academic abilities, although this did vary by subject area. The students in the Superstars class had very high confidence across the board, but nearly all the other students could improve on their belief that they can enlist the support of parents, siblings, and community members to help them with a problem. Teaching students how to recognize the sources of support they can count on and how to persuasively articulate their needs may improve their sense of efficacy in this kind of proxy agency (Bandura, 2001). In other areas where confidence is lacking, students will benefit when they have opportunities to be successful, particularly after receiving constructive feedback, or seeing the model of others trying hard at a task. Boosting self-efficacy will improve students' well-being and their academic success (Stajkovic et al., 2018). The importance of authentic praise, for students' actual behaviors and not just the end result, is helpful in developing self-efficacy and a growth mindset (Dweck, 2006).

Nearly all CTYI students exhibited high levels of self-oriented perfectionism (SOP). This type of perfectionism is associated with positive striving, a good thing in terms of academic success and well-being (Fletcher & Speirs Neumeister, 2012). When CTYI students become concerned that they must be perfect because of others' expectations, negative outcomes are likely to ensue. To avoid this concern, which was highest among the students in the Overcontroller class, it is important to foster an ethic of care, reducing unrealistic expectations. Knowing what is unrealistic for these highly able students can be a challenge in itself. Listening to students, encouraging them to be open with their feedback, will be successful if they trust they will not be dismissed or criticized. This requires adults to be responsive to students. Greenspon (2021) recommends adults develop empathy for the student by attempting to learn how they see the world. Pointing out their likeable qualities, as opposed to their achievements, can draw attention away from the perfect products and behaviors the students have come to believe is so important.

High expectations alone do not produce fearful perfectionists. When they are accompanied by adults who model a positive attitude toward failure as a learning opportunity, who are warm and accepting of the child's efforts, students will lose their fear of being evaluated negatively. It is critical for their talent development that young people have the psychosocial skills they need to succeed (Olszewski-Kubilius et al., 2015).

Fostering Positive Social Experiences

Numerous studies have found gifted students have positive peer relationships (e.g., Farmer et al., 2010; Lee et al., 2012) and the majority of CTYI students in this research had positive indicators, as well. The majority of CTYI students reported a preference for working independently, which may be a result of the pressures they feel from peers or the burden of helping expectations. French and colleagues (2011) found gifted students preferred to work with others except when their perceived they or their contributions were not appreciated. Many gifted students report feeling different from peers (Coleman & Cross, 1988; Coleman et al., 2015; Robinson, 1996), especially in terms of their seriousness about learning. This is one reason programs like CTYI are so important. Students are able to find intellectual peers who are similarly motivated to learn. In a mixed-ability classroom, CTYI students may worry about the visibility of their exceptional cognitive abilities. They may be concerned about hurting their peers' feelings if they outperform them. Teachers who avoid talking about the academic hierarchy in the class (e.g., holding up one student's work as an example, pointing out who performed best) will reduce the cost of outperformance (Mikami et al., 2012). Competitive environments raise the cost, when the high performer gets resources others want.

Students can learn strategies for maintaining positive relationships with students who cannot perform as well (T. Cross & Cross, 2022). Most already know the strategies of *lowering oneself* (Zell et al., 2020; hiding their accomplishments, downplaying their success, etc.; see Table 3.24) and helping peers (J. Cross et al., 2019). Other strategies that can be helpful are less researched, but are likely to be effective in supporting a mixed-ability relationship: simply being nice, complimenting the other person and doing favors. A positive environment will be a natural outcome when all students are encouraged to engage in prosocial behaviors. Lowering oneself, while helpful to relationships in the moment, may result in underachievement and loss of opportunity.

Providing an Appropriate Education

An appropriate education for gifted students is one that has curriculum that is more challenging than average, which utilizes advanced materials with options for learning at greater breadth, depth, and level of abstraction, offered at a pace that matches their rate of learning (Tomlinson, 2005). Finding the right combination of these characteristics for each child requires significant teacher skill, time for planning, and access to resources. High percentages of CTYI students reported rarely or never receiving assignments more challenging or complex than their peers received, indicating that the 85% of Irish teachers in a 2014 study (J. Cross et al., 2014) who claimed to be differentiating instruction in their classes were likely not doing so effectively. Many CTYI students reported being frequently bored in their classes and unable to go as in-depth as they would like.

Effective differentiation is only possible with appropriate professional development for teachers, adequate time for increased lesson planning, and the materials needed for this specialized instruction. All of this requires strong support from administrators. The contemporary movement in gifted education is toward a talent development approach (T. Cross & Cross, 2021a; National Association for Gifted Children Talent Development Task Force, 2015; Olszewski-Kubilius et al., 2018; Subotnik et al., 2011), which takes a broad, inclusive perspective to offer advanced instruction to all students capable of achieving at that level. The focus is on providing opportunities to explore domains of talent early, with targeted instruction designed to develop students' abilities in areas where they show exceptional ability and are motivated to learn at a higher level than peers. Talent development as the framework for offering gifted education will be best accomplished when the whole school applies its principles (T. Cross & Cross, 2021a).

CTYI programs offer gifted students tremendous opportunities for enrichment in a stimulating, challenging environment. When gifted education is lacking in their home schools, CTYI students find great satisfaction in the advanced programs it offers and revel in the time spent with intellectual peers. CTYI does an outstanding job of attending to the needs of this population, but it is available only to students who are able to access classes at the Dublin City University campus or other satellite locations and who can afford the tuition. Making it more available to students across the country and providing scholarships to those who qualify would be a great boon to more gifted students in Ireland.

Enrichment programs, motivating and challenging as they are, are not a substitute for a home school that addresses gifted students' needs. Advanced curriculum should be planned, with a scope and sequence that can be applied throughout the 13 years of schooling. To become an expert in a domain, as these students are capable of becoming in their talent areas, requires a firm foundation on which the learning is built, with increasing challenge that leads to expert performance (T. Cross & Cross, 2021a). Additionally, schools must attend to the psychosocial needs of their students, without which they are unlikely to persevere through difficulty or know the psychological and social strategies needed to succeed in their talent domain (T. Cross & Cross, 2021a; Olszewski-Kubilius et al., 2015). Trained school counselors who are versed in the unique needs of gifted students and how to offer the support they need will be invaluable (T. Cross & Cross, 2021b).

Conclusion

Irish gifted students are not all alike. They differ in personality, confidence, social acumen, and interests. Among the students who attended CTYI programs who participated in these studies were many confident, well-adjusted, and socially competent adolescents. There was also a subset of students who need extra support from adults who care about them and their well-being. It is important that we better understand these students and learn how to create environments that allow them to achieve their maximum potential while living a good life.

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Glossary of Terms

acceleration – any of myriad educational practices designed to move a student through curriculum already mastered, e.g., grade-skipping, curriculum compacting, dual enrollment, etc.

achievement goal orientation – a desire to learn for mastery of content or as a performance for others

adaptive/healthy perfectionism - perfectionistic attitudes that lead to excellence and positive psychological outcomes

agreeableness – considerate, kind, cooperative, prosocial behavior

Big-Fish-Little-Pond Effect – the experience of reduced self-concept when in the presence of others who perform better

cluster analysis – statistical technique for classifying cases (individuals) by multiple variables (characteristics) based on group similarity

conscientiousness – disciplined, organized, careful, diligent

differentiation – educational practice of modifying curriculum to meet the needs of learners of varying ability levels within the same classroom

downward comparison - perceiving onself as better than another person in characteristics or performance; part of social comparison theory

evaluative concerns – associated with socially prescribed perfectionism; a tendency to fear the negative evaluation of others in any effort that does not achieve perfection

extraversion – outgoing, talkative, active

five-factor model – personality model proposing five dimensions of openness, conscientiousness, extraversion, agreeableness, and neuroticism

fixed mindset – a belief that a human characteristic is an unchangeable entity within the person

group-based dominance – a belief that a hierarchical society should be maintained through a group's aggressive assertion of dominance

growth mindset – a belief that a human characteristic can be changed, is malleable

homophily - biological tendency to be attracted to similar others

implicit theory – a theory one holds about the cause of events; beliefs that are implied rather than stated explicitly; may be unconscious beliefs

incremental – in implicit theory, a belief that change occurs in small, cumulative steps

invariance hypothesis – social dominance orientation is consistently higher among males than females

latent profile analysis – statistical technique for classifying cases (individuals) by multiple variables (characteristics) based on model fit

maladaptive/unhealthy perfectionism – perfectionistic attitudes that lead to negative psychological outcomes

neuroticism – moody, easily made anxious or distressed, fearful, emotionally unstable

openness to experience – includes intellectual curiosity, desire for variety and novelty, etc.

opposition to equality - a belief that a hierarchical society should be maintained due to a preference for inequality among groups

ostracism – rejection by others by being excluded or ignored

other-oriented perfectionism - expecting flawless performance by others

overcontroller – personality type high in neuroticism, low in extraversion; attempts to excessive control over responses to environment

perfectionism/perfectionistic attitudes – a tendency to hold the expectation of the self or others that one's performance or characteristics should be flawless

personality – a set of enduring characteristics or patterns of behavior for an individual

positive striving – associated with self-oriented perfectionism; a tendency to try for perfection while maintaining a positive attitude toward the learning benefits of failure

resilient – in personality research, high in all personality dimensions; flexible, adaptive response to environment

self-beliefs – broadly defined understanding of the self, who one is, what they do well/poorly, what they like, etc.

self-concept – the beliefs one holds about their psychological and physical characteristics

self-efficacy – a perception of one's ability to perform in a specific task or in general; component of motivation to try a task

self-oriented perfectionism – expecting flawless performance of the self

self-regulated learning – self-initiated monitoring and controlling of learning processes, such as studying, planning for assignments, etc.

sensitivity to being a target of threatening upward comparisons – concern that outperforming others may result in negative consequences, e.g., loss of friendship, physical harm

social cognitive beliefs – understanding and thought processes related to others

social comparison theory – all people compare themselves against others on any characteristic or performance; see upward/downward comparison

social coping – strategies one engages in to deal with the stigma of giftedness

social dominance orientation – a preference for groups in societies to be organized as egalitarian, with resources distributed equally among groups, or hierarchically, with one group holding disproportionate resources of social value

socially prescribed perfectionism – believing others expect flawless performance of oneself

stigma - the negative social attitude attached to a characteristic of an individual that may be regarded as a mental, physical, or social deficiency. a stigma implies social disapproval and can lead unfairly to discrimination against and exclusion of the individual. (apa dictionary)

stigma of giftedness paradigm – gifted students want normal social interactions, but once known as gifted will not be treated normally; will manage information to maximize social latitude

talent development – as a framework for gifted education, emphasizes identification of potential in early stages through offering opportunities to all students, increases challenge with maturity, focusing on development of talent in specific domains

undercontroller - personality type high in extraversion, low in agreeableness; poor control over responses to environment

upward comparison – perceiving another person as better than oneself in characteristics or performance; part of social comparison theory

well-being - a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life (from APA dictionary)

List of Acronyms

Add Extraversion between Conscientiousness and Agreeableness.

ACADHI – SCCLU2; high academics self-concept cluster

ANOVA - univariate analysis of variance

APA – American Psychological Association

BFI – Big Five Inventory personality scale

BFLPE – Big-Fish-Little-Pond Effect

CAT - Centre for Academic Talent program for students with test scores between 85th - 94th percentile

COVID-19 – Coronavirus disease caused by the SARS-CoV-2 virus

CTYG - Center for Talented Youth-Greece

CTYI – Centre for Talented Youth-Ireland or its programs for students with test scores at 95th percentile and above

ECHA – European Council for High Ability

EFA - Exploratory Factor Analysis

FFM – Five-Factor Model of personality

FFMCL1 – Moderate Resilients personality class; positive profile

FFMCL2 – Overcontrollers personality class; high neuroticism, low extraversion

FFMCL3 – Undercontrollers personality class; high extraversion, low agreeableness

FFMCL4 – High Resilients personality class; extremely positive profile

GBD – Group-Based Domination; see SDO

GENHI – overall high self-concept cluster

HAS – High Ability Studies Journal

INSPIRE - Innovation in Science Pursuit for Inspired Research program in Kolkata, India

IPT - Implicit Person Theory scale

JBNS - Jagadis Bose National Science Talent Search program in Kolkata, India

LPA - Latent Profile Analysis

LPA – Latent Profile Analysis

MSPSE - Multidimensional Scales of Perceived Self-Efficacy

NAGC – National Association for Gifted Children

OCEAN – Personality factors Openness to experience, Conscientiousness, Agreeableness, Neuroticism

OEQ – Opposition to Equality; see SDO

OES-A - Ostracism Experience Scale for Adolescents

OOP – other-oriented perfectionism

SCB – Social Cognitive Beliefs scale

SCCLU1 – GENHI self-concept cluster; overall high self-concept

SCCLU2 – ACADHI self-concept cluster; high academics self-concept

SCCLU3 – SCLOW self-concept cluster; overall low self-concept

SCCLU4 – SCMOD self-concept cluster; overall moderate self-concept

SCLOW – SCCLU3; overall low self-concept cluster

SCMOD – SCCLU4; overall moderate self-concept cluster

SCQ - Social Coping Questionnaire

SDO – Social Dominance Orientation

SECL1 – Pushovers self-efficacy class

SECL2 – Insecure self-efficacy class

SECL3 – Need a Boost self-efficacy class

SECL4 – Confident Majority self-efficacy class

SECL5 – Superstars self-efficacy class

SECL6 – Confident Pushovers self-efficacy class

SECLn – Self-Efficacy Class number

SEGSS – Social Experience of Gifted Students Scale

SEGSS – Social Experience of Gifted Students Scale

SGP - Stigma of Giftedness Paradigm

SOP – self-oriented perfectionism

SPP – socially prescribed perfectionism

SRA – Society for Research on Adolescence

SRCD – Society for Research in Child Development

STTUC - sensitivity to being a target of threatening upward comparisons

Centre for Talented Youth, Ireland
Dublin City University
www.dcu.ie/ctyi

Center for Gifted Education
College of William & Mary
Williamsburg, VA
https://education.wm.edu/centers/cfge/index.php