Research Article

Academic and Affective Effects of Enrichment Programs from Parents' Perspectives

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Abstract

High-ability students can feel academically unchallenged and emotionally isolated in the regular classroom. Enrichment programs offer an option where they can efficiently develop their cognitive and social abilities. In this study, the authors examined the effects of an enrichment program perceived by the parents (n=296). Parents' open-ended responses from one university-based enrichment program survey (2013-2017) were analyzed qualitatively. Three major themes concerning academic needs (i.e., meeting academic needs; diverse activities and learning methods; and positive academic gains) and two concerning affective needs (i.e., interpersonal skills and interactions; and intrapersonal growth in students) were found. These themes reinforced current studies in the field showing the benefits of enrichment programs designed for students with gifts and talents.

Academic and Affective Effects of Enrichment Programs from Parents' Perspectives

Academic programs outside of school contexts can be beneficial for all students. Enrichment programs come in a variety of forms, including tutoring services and homework help, topic-focused activities like STEM clubs or language competitions, recreational activities, and programs that focus on academic challenges, among others [1,2]. Some enrichment programs are designed for students of all academic abilities, while others are centered on developing the strengths of high-ability students [2]. Students can engage in enrichment programs during the school day, after school, on weekends, or during school breaks like summer camps [1,3,4].

Enrichment programs are one option for meeting the unique needs of students with gifts and talents, and they are widely adopted in educational settings because of their flexibility [5].Enrichment programs encompass a broad range of instructional options, including activities, experiences, and even subject areas beyond the regular curriculum, through which these students can cultivate their curiosity and capabilities [6].No matter the type, enrichment programs tend to provide exploratory activities and emphasize independent projects, which foster students' higher-level thinking processes and creativity [7,2].Researchers argued that enrichment programs are an effective way of developing not only students' cognitive abilities but also their personal and social abilities [8,9]. Given this, [2] examined 26 articles published from 1985 to 2014 in a meta-analysis to find evidence of the effectiveness of enrichment programs. She used a random effects model to find that enrichment programs have a significantly positive impact on both academic achievement (g = 0.96, 95% CI [0.64, 1.30]) and socioemotional development (g = 0.55, 95% CI [0.32, 0.79]) for students with gifts and talents. With these findings in mind, we examined the effectiveness of an enrichment program from parents' perspectives concerning both academic and affective outcomes.

Literature Review

Opportunities beyond the school

One-size-fits-all instruction obstructs the achievement of students with high potential [10,11] and undermines their passion [12]. Feldhusen JF [13] mentioned that supplementary services such as out-of-school gifted programs can fill the missing pieces of these students' education. By offering an academically challenging curriculum and providing sufficient socioemotional support, out-of-school programs can support the talents of students with gifts and talents in a unique way [14]. Programs particularly designed for students with gifts and talents tend to have more hands-on activities, discussions, and problem-solving work [11]. It is a great fit for these students as they not only prefer to choose their own learning activities rather than participating in a task selected by the teacher but also perform better with flexible and unstructured assignments [15]. In a study of a German elementary extracurricular enrichment program designed for gifted students, [16] found that students who participated in the enrichment program earned higher grades in German and math, compared to their peers who did not attend the program. Researchers noted students' grades were significantly higher than their peers-who were also identified as gifted-even when students did not participate in enrichment classes focused on those specific topics. Enrichment programs also influence students' career interests and desires to attend college, particularly for students who are traditionally underrepresented in gifted programs or in their communities [17- 20].

In addition to improving academic achievement, enrichment programs can help students develop life skills. Hertzog NB [21] studied 50 college students who had experienced gifted programs during their elementary or secondary school period. According to her study, these students reported they have learned study management skills while completing challenging tasks in gifted programs. They also mentioned that they established higher self-esteem, an enjoyment of learning, as well as healthy work ethic through those programs. These students additionally noted that the teachers in gifted classes were more enthusiastic, treated them with higher levels of respect, and held higher expectations for them compared to their teachers in non-gifted classes.

Another unique aspect of enrichment programs is that they can allow students from many different backgrounds to participate together and learn from each other [22,23]. Jen E, et al. [22] interviewed 77 gifted middle and high school students from one multicultural enrichment program about their experiences in the affective small group discussions offered in the

program. Students in the program stated they learned about cultures other than their own and benefitted from interacting with students from diverse backgrounds. Although language barriers were a challenge at times, students generally said they benefitted from working with peers from different backgrounds. In another study of over 16,000 college faculty and 4,250 undergraduate students at various colleges, [24] found explicit gains from participating in the class with diverse peer groups:

"The opportunity to interact with a diverse group of peers is just as, if not more, important to the development of critical skills as is exposure to a curriculum that makes diversity its explicit focus. Thus, the presence of diverse peers… may indeed be an important pre-condition of learning from any curriculum that emphasizes diverse perspectives." [24].

As such, extra opportunities designed for students with gifts and talents may allow these students to have positive academic and socioemotional experiences with students from all backgrounds.

Academic Needs and Characteristics of Gifted Students

Students with gifts and talents who are more mature than their peers of the same age tend to have larger gaps between their educational development and educational environment [25]. These students have different reasoning styles, such as top-down (thinking from a general idea to specific examples) or more abstract thinking, as opposed to general education students who tend to use bottom-up (reasoning from specific examples to a general idea) strategies [26] Van Kessels as cited in [27,28]. Opportunities for gifted students to develop their creative thinking skills are not always present in traditional classroom settings but are important for the development of gifted students' abilities and potential [29,30].

In addition to general academic needs, students with gifts and talents may exhibit advanced critical thinking skills at an early age [31]. Participation in enrichment activities that are open, challenging, and foster engagement can be beneficial to this population to help them reach their potential in key areas [32]. Real-world, problem-based learning may specifically be a way to promote the development of 21st-century skills for students with gifts and talents [33]. Teachers should incorporate student choice in enrichment courses and engage students with work that is meaningful for and appeals to students' interests [34]. Creativity cannot be left out of the conversation for students with gifts and talents. These students also demonstrate creative abilities and needs that should be met for individual development and long-term goals. In a study of middle and high school students, [35] found that students who reported "higher levels of creative self-efficacy were significantly more likely to hold positive beliefs about their academic abilities in all subject areas and were significantly more likely to indicate that they planned to attend college than students with lower levels of creative self-efficacy" (p. 447). Thus, fostering creativity and creative self-efficacy should be done through in-school and out-of-school enrichment programs.

Affective Needs and Characteristics of Gifted Students

Students with gifts and talents have unique socioemotional challenges and needs that can go unmet within a typical academic curriculum. They face great pressure to strive for perfection, a pressure which comes from themselves, peers, family members, and the media [36,37]. These students can show an advanced sense of humor compared to their peers which may lead to isolation [3]. Various forms of asynchronous development-academic, social, emotional, and physical-may also create challenges students must face [38]. Although research shows that students with gifts and talents "are typically at least as well adjusted as any other group of youngsters…they face a number of situations that, while not unique to them, constitute sources of risk to their social and emotional development" [39,40] stated that "Some talented and gifted students face social and emotional issues deriving from their academic advancement in comparison with their age peers that makes them appear different in school and/or with their social groups" (p. 121). Affective characteristics influence student behavior in the classroom. Intensities and overexcitability can manifest as inattentive or distracting behaviors, emotional extremes, and heightened sensitivities to sound, touch, and taste, among other behaviors. [41,42]. Teachers of students with gifts and talents should be aware of these characteristics and develop strategies for how to help the students within their classrooms.

Enrichment programs that focus on socioemotional needs have been shown to help students with gifts and talents in the program and beyond. [43] found that children-maintained motivation throughout elementary school after participating in enrichment opportunities. These programs also encourage students academic and emotional self-perceptions. Students with gifts and talents who participated in a multi-year enrichment program reported long-term benefits of their participation. "For some students, the development of self-concept appears to have been by far the most important benefit of the program, especially when viewed from the perspective of the parents" [44]. Enrichment programs with affective components can meet the unique needs of students with gifts and talents [22]. Students who participated in a summer seminar course for gifted students indicated the program helped their understanding of themselves and others and allowed them to build positive relationships with other gifted peers [45]. These types of programs can also extend socioemotional benefits to all learners [46].

Gifted Students from Pre-Kindergarten to Adolescence

Much of the research on the effects of enrichment programs focuses on how they benefit elementary school students [47]. Young students with gifts and talents from pre-kindergarten to kindergarten often feel bored in their general classroom [48]. They have characteristics such as advanced language ability, high comprehension of abstract concepts and complicated rules, longer attention spans, fast-paced problem-solving abilities, and creative thinking skills [49]. These young students, however, have few opportunities to receive appropriate services in preschool and kindergarten [50,51]. stated that services for this population need to focus on stimulating potential and developing learning habits within an interactive and responsive environment. Based on a thorough understanding of the development and strengths of young students with gifts and talents, educators should continuously provide a stimulating curriculum for them [52].

According to [53] it is important to offer enrichment opportunities to all children in the early years of their development. [54] found students with gifts and talents in Grade 4 were more satisfied and reported more benefits than those in Grade 7 after three months of engaging in an enrichment curriculum. This indicated that the earlier the intervention programs were provided, the more positive the effects of the enrichment program were. As such, enrichment opportunities need to be provided as early as possible to maximize program effects. Similar to young students with gifts and talents, adolescents in this population also report a lack of challenge and insufficient academic and socioemotional support in their general classrooms [12]. High levels of motivation and belongingness are important factors directly related to adolescents' academic identity [55,56] however, their unmet needs in the classroom cause a sharp decrease in their perception of their academic performance [57]. Thus, it is not surprising that [12] reported that academically gifted adolescents preferred programs specifically designed for students with gifts and talents (e.g., advanced placement) compared to their regular classes. They stated that the main reason was because the former provides diverse curriculum choices as well as innovative and challenging work.

Methods

This is a replication and extension study of Tay et al.'s research which explored the parental perceptions of Science, Technology, Engineering, and Mathematics (STEM) enrichment programs for young children (Pre-kindergarteners to kindergarteners). Both authors of this current study were also the second and third authors in the previous study. In Tay et al.'s study, the focus was only on young students in Pre-K and Kindergarten level classes, and the subject areas were limited to STEM courses offered by the Saturday enrichment program. In addition, Tay et al.'s study did not differentiate the academic and affective benefits of the enrichment program but rather explored its effect more broadly. With survey data collected from 2013 to 2016, Tay et al. explored open-ended parent comments about benefits, drawbacks, and memorable moments that parents (n = 55) observed from their children during the enrichment program. The comments were qualitatively analyzed with NVivo software, and three main themes were created. These main themes were (a) children's reactions to STEM learning, (b) meeting the needs of young gifted learners, and (c) learning beyond the classroom.

As this study is an extended research of Tay et al.'s paper confirming the effects of enrichment programs, the analysis procedures were identical. However, we used the five years of survey data from 2013 to 2017, the students' age group was extended to Pre-K to 8th graders, and subject areas were not limited to STEM courses offered, but included all classes. Comments received by parents were analyzed more specifically under two main categories of academic and affective benefits of the enrichment program. The research question guiding this study was: What are parents' perceptions of the academic and affective outcomes of their children's participation in a university-based enrichment program? Based on Tay et al.'s findings, we hypothesized that although the dataset was enlarged by including more students from different age groups (PreK-Grades 8) throughout multiple content areas, parents' responses would still show positive gains in both academic and affective manner in general. However, we did not make any assumptions regarding possible differences in the frequency rate by different age groups and did not separate the class subject into STEM vs. non-STEM as most of the classes were STEM-related or integrated.

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Research Setting

The Saturday enrichment program in this study is located at a large Midwestern university and is designed to serve "the cognitive, affective-social, and generative needs of gifted, creative, talented, and high-ability youth" [58]. As the program aims to provide open opportunities to every student who are interested in the topics provided, enrollment in the program is not restricted to students with official intelligence or achievement test scores. The program, however, advertises that the curriculum is designed to meet academic standards two to three grade levels above the child's current grade level. This is intentional as identification and programming opportunities are often unavailable or inaccurate to young students [59]. Therefore, parents are encouraged to judge the abilities and emotional maturity of their child to determine if the program is appropriate for them. The program operates on six consecutive Saturdays from late January to early March, targeting students from age 4 to 8th graders. Based on the student's age, the programs are divided into classes for (a) Pre-kindergarten (age 4) - Kindergarten, (b) Grades 1-2, (c) Grades 3-4, and (d) Grades 5-8. Class sizes are small, with an average 10, 12, 14, and 15 students participating in each grade level grouping, respectively. Three to four class options are generally offered to each grade level and the course topics vary from STEM to humanities.

Data

At the end of the program, surveys are distributed to parents and students. Parents are encouraged to take the survey with them on the fifth Saturday and bring it back on the last day. Students complete a separate questionnaire on the last day, under the condition that their main teacher is outside of the classroom, and a course assistant stays in the classroom to help students if necessary. [60] argued that participant selection must be carefully reasoned and should be relevant to the research questions. Although we collected data from students and parents, we chose to focus on the parents' open-ended survey questions in this study for two reasons: (a) Some of the pre-kindergarten and kindergarten students' answers might not be sufficiently informative compared to that of parents. They are given a "smiley face" version of a Likert-scale to represent their responses. Some students simply color in a pattern or design, and may not fully understand the format; (b) Different from the Likert-scale questions, the open-ended answers provided by the parents deliver in-depth, direct, and indirect thoughts on the experience of sending their children to the camp.

The four open-ended questions used in this study are: "What has been the greatest short-term benefit to your child from your child's participation in this program?", "What has been the greatest short-term drawback to your child from your child's participation in this program?", "Are there other classes or topics you would like to see offered in future sessions of the program?", and " What was the single most memorable moment your child experienced in his/her class, and explain why that experience was important to him/her?" (See Appendix for the full parent survey).

Participants

The participants (*n* = 296) of this study were parents of students who attended the enrichment program from 2013 to 2017. Most respondents identified as White (72.96%), followed by Asian (9.12%), Multi-racial (6.42%), African American (6.08%), Hispanic (1.69%), and those who reported other (1.01%). Most parents (78.04%) held educational degrees above bachelors, and 25% had doctoral or professional (e.g., MD, MBA, JD) degrees. When parents selected multiple degrees, the highest level of degree was recorded. In terms of the annual income of the household, 64.87% of the parents indicated that they earned more than $75,000 and 4.73% replied that their annual income is less than $25,000. Almost equal numbers of parents participated from each grade level: 23.65%, 23.31%, 28.04%, and 25%, respectively from parents with their child in Pre-K, Grades 1-2, Grades 3-4, and Grades 5-8. Detailed demographic information about the participants is contained in Table 1. For each individual in the sample, we created a personal code number addressing the information of the year they participated in the program and their child's age group. For example, a code of "01-P26-2016" indicates that this parent had a child from PreK-K (i.e., 01 for PreK-K, 02 for Grades 1-2, 03 for Grades 3-4, and 04 for Grades 5-8), was a 26th participant among 296 parents when we combined the data, and their child participated the program in the year of 2016.

Table 1: Participant (n=296) Demographic Information by Percent.

Categories	%
Student Gender	
Female	44.26
Male	54.39
Student Ethnicity	
White	72.97
Asian	9.12
Multi-Racial	6.42
African American	6.08
Hispanic	1.69
Others	1.01
No Response	2.7
Student Age-group	
PreK-K	23.65
Grade 1-2	23.31
Grade 3-4	28.04
Graded 5-8	25
Parent Education	
PhD	18.59
Professional Degree	6.42
Some Post-Graduate	5.07
Master's	24.66
Bachelor's	23.31
Some College	15.2
High School Diploma	3.72
No Response	3.04
Annual Household Income	
More than $75,000	64.86
$50,000-$75,000	16.89
$25,000-$50,000	8.45
$15,000-$25,000	3.72
$10,000-$15,000	0
Less than $10,000	1.01
No Response	5.07

Data Analysis

Parents' responses from open-ended survey questions were organized into an Excel table and uploaded the information into NVivo 12 (Pro version) for analysis. After we initially read the data, we noticed that there were two main topics in the feedback – academic and affective aspects. During the process of developing the codes, we followed three procedures: (a) all of the open-ended comments were analyzed line by line, (b) several categories (e.g., enthusiasm, future goal, learning style, application, characteristics

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of giftedness) were developed from the initial coding process; and (c) consistencies across the categories were developed into themes (e.g., meeting academic needs, diverse activities and methods used in the class, and positive academic change) for further discussion. We grouped the initial salient themes and sub-categories with specific examples as a guideline [61, 62]. We first coded the data to compare how each author coded under these two main themes. In a second meeting, we discussed the ambiguity of certain responses. For instance, some parents wrote "fun", "exciting", and "interesting" without any context, which we decided not to include for analysis. We agreed that the terms "environment" and "future" would be applied to both the academic and affective sections based on the context provided by the parents. Irrelevant comments (e.g., some parents mentioned that the short-term drawback of the program was that they needed to wake up early in the morning on Saturday) were also omitted from the analyses. The initial inter-rater reliability dichotomizing academic and affective items was 86.32%, and the codes that were not initially matched were reexamined and discussed until all authors agreed. Based on the agreement, the first author coded the academic theme, and the second author coded the affective theme, then we crosschecked each other's codes to finalize our analysis.

Results

Parents' open-ended comments showed generally positive appraisals of the enrichment program. We generated three major themes from the academic aspect (meeting academic needs, diverse activities and learning methods, and positive academic gains) and two main themes for the affective aspect (interpersonal skills and interactions and intrapersonal growth in students). See Table 2 for more information about the main themes, sub-categories, and coding examples under academic and affective effects of enrichment programs. The number of parents who provided comments in each theme, the number of comments provided, and the number of parents in the theme grouped by their child's grade level are included in Tables 3 & 4 for academic and affective themes, respectively.

Table 2: Coded Themes and Examples.

Main Themes	Sub-Categories	Coding Examples
Academic		
Meeting academic needs	Challenging and in-depth content knowledge	"He learned more in-depth knowledge about animals than he does in school" "Covering topics that she would not have been exposed to in such depth"
	Introduced to new academic content knowledge	"My child has been exposed to educational activities that have not previously been exposed to" "A chance to learn something special outside of the daily routine of school… A chance to delve into a topic he otherwise would not have a chance at this point"
	Reviewing the preliminary knowledge	"Reinforcement of some concepts currently learning in kindergarten…" "We had a good time doing it and I understand that it was necessary to reinforce the concepts of the week" "
Diverse activities and learning methods	Hands-on activities and experiments	"He seems to enjoy the hands-on examples of the subjects such as testing Newton's theories" "Watching volcano eruption experiment was exciting. That was his first time to make science experiment by himself"
	New teaching and learning methods	"learning techniques not taught in the school" "She liked best when the house designer came to class to talk about what they do. This made the work in the class very real"
Positive academic gains	21st century skills	"She learned to think outside of box… she spent more time [using]her imagination…" "Since I hadn't expected she can think of those abstract things by herself, when I heard that from the teacher, I was impressed"
	Academic passion and interest	"My child has been more interested in reading and writing lately. I can tell it has renewed an interest" "My child has a positive outlook on writing. A task she never favored is now enjoyable"
Affective		
Interpersonal skills and interactions	Intellectual peers	"Exposure to kids of equal enthusiasm for learning and peer interaction" "Social experience… putting my child with other children of her own caliber"
	Supportive teachers	"The teacher has always approached my son with kindness and compassion. Gifted kids are different, and my son in no different. It takes patience and understanding to be a teacher" "Being around kind children with a teacher eager to instruct and care for her"
	Diversity and different cultures	"I've appreciated the different cultures my child has been exposed to" "He enjoyed meeting and working with a diverse group of kids in his age. We are from a small town with little to no diversity"
Intrapersonal growth in students	Personal development and growth of confidence	"Eagerness to keep trying and not giving up" "She gained more confidence in her ability. She learned that she can make friends outside of her general circle of friends"
	College exposure and setting a future goal	"The program boosted self-esteem, made her excited about going to college" "The past classes have made him excited about learning his future career choice"

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Table 3: Frequency of Participant Responses by Theme: Academic Aspect.

Main Themes	Sub-categories	Number of Comments	Number of Parents (%)	Number of Parents by Grade Level			
				PreK-K	G1-2	G3-4	G5-8
Meeting academic needs	Challenging and in-depth content knowledge	49	44 (14.86)	10	10	10	14
	Introduced to new academic content knowledge	77	69 (23.31)	14	11	18	26
	Reviewing the preliminary knowledge	7	7 (2.37)	4	1	1	1
Diverse activities and learning methods	Hands-on activities and experiments	113	89 (30.07)	17	35	28	9
	New teaching and learning methods	47	46 (15.54)	12	7	15	12
Positive academic gains	21st century skills	46	43 (14.53)	6	14	12	11
	Academic passion and interest	50	48 (16.22)	20	11	9	8

Table 4: Frequency of Participant Responses by Theme: Affective Aspect.

Main Themes	Sub-categories	Number of Comments	Number of Parents (%)	Number of Parents by Grade Level			
				PreK-K	G1-2	G3-4	G5-8
Interpersonal skills and interactions	Intellectual peers	26	22 (7.43)	3	5	5	9
	Supportive teachers	22	20 (6.76)	10	4	3	3
	Diversity and different cultures	8	8 (2.70)	2	2	3	1
Intrapersonal growth in students	Personal development and growth of confidence	40	37 (12.50)	8	14	7	8
	College exposure and setting a future goal	28	27 (9.12)	7	4	8	8

Theme I: Meeting Academic Needs

120 parents (40.54%) commented that their children were exposed to the extra curriculum with more challenging and in-depth content, introduced to new academic concepts, and were able to review and reinforce their prior knowledge during the program. Table 3 contains information about the frequency of coded responses under each academic theme.

Challenging and in-depth content knowledge

We found 49 comments from 44 parents (14.86%) that they were satisfied with the advanced knowledge of the course content. Although students in Grades 5-8 seemed to value more of the advanced curriculum provided, no specific pattern was found across students' age groups. Ten (22.72%), 10 (22.72%), 10 (22.72%), and 14 (31.81%) participants in each group commented their child was exposed to in-depth content knowledge throughout the program. Parents commented, "He learned more in-depth knowledge about animals than he does in school" (01-P26-2016), "He enjoys being challenged and he really enjoyed telling me about what was done in class" (02-P05-2017)", "Covering topics that she would not have been exposed to in such depth" (02-P37-2014), and "This class was the model of what we expect from this program. The coursework was relevant and challenging…" (04-P04-2017). As such, parents were pleased that their children were being exposed to in-depth content and challenging concepts which may not always be available in a general education classroom.

Although the course curriculum was designed to be two to three grade levels above the students' current grade level, not all parents were satisfied with the difficulty of the content and thought their child needed additional challenges. Ten parents stated they would like the courses to be more challenging, with comments like, "The class was too easy for her, since it was geared for pre-K and Kindergarten kids. My child has been reading proficiently since she was three years old and does math in her head. She needed something a bit more challenging" (01-P63-2013), "She seems interested in the topic, but bored with the level of material. Thought she would get a lot of more out of the program" (04-P52-2013), and "This year, he was not challenged and was bored so we took a step back in the excitement" (04-P07-2017) were examples showing parents' desire for more advanced content.

When asked about what courses they would like offered in the future, parents mostly answered with specific topics and subjects such as math, biochemistry, and robotics. Of the 198 comments related to future courses, 185 (93.43%) mentioned specific subject areas. From these, 153 (82.7%) requests were about STEM-related concepts, and 46 (24.86%) were about humanities courses, with some parents suggesting more than one-course topic. There were two parents replied that they just want generally more challenging classes rather than specifying the content area. "Offer more challenging course[s] (not necessarily tied to age or grade, but more based on their mental/cognitive age and ability/interest). The program should allow kids who are advanced to participate in a program that fits their ability level instead of grade" (01-P15-2017) is one such example. This indicates that a challenging curriculum that meets the academic needs of their children is important to the parents.

Introduced to new academic content knowledge

A total of 69 parents (23.31%) made 77 comments regarding the new concepts and knowledge that their children learned through the program. The number of respondents' children in each age group was 14 (20.29%), 11 (15.94%), 18 (26.09%), and 26 (37.68%) indicating these comments were more often created by the parents with older students (G3-8) compared to younger students (PreK-G2). As a short-term benefit, parents specifically pointed out the content knowledge and information their child learned. "He learned new scientific issues, such as chemical changes, weather, and matter" (01-P18-2016), "Learning new things about day-to-day chemistry" (02-P57-2013), "She was talking about how her teacher showed her to read nutrition facts" (02-P58-2013), "Learning the differences between moths and butterflies because the facts she learned was new to her…" (01-P44-2015), "So far, its' been the photovoltaic cells and how they'd switch, which LEDs lit up when exposed to light," and "Learning a new computer programming language" (04-P32-2014) were some examples.

Although not specific to certain content introduced in the course, parents also commented that they were satisfied their children learned something new in the program. The comments such as "Being introduced to new concepts and ideas" (01-P01-2017), "My child has been exposed to educational activities that have not previously been exposed to" (02-P59-2013), "Obtaining information on science that is missing in school" (03-P29-2016), and "A chance to learn something special outside of the daily routine of school…

A chance to delve into a topic he otherwise would not have a chance at this point" (04-P51-2013) were representative comments from parents.

Reviewing the preliminary knowledge

Although few compared to the comments about attaining challenging concepts and new knowledge, seven parents commented that the program offered great opportunities to review and reinforce knowledge previously learned by their children. By students' age group, four (57.14%), one (14.29%), one (14.29%), and one (14.29%) comment were created, showing parents from PreK-K group provided more than half of the comments in this subcategory. Comments such as "Reinforcement of some concepts currently learning in kindergarten…" (01-P62-2013), "Reviewing things that she already knew" (01-P15-2017), "I've also enjoyed the fact that my child has had weekly homework assignments. It helped to generate conversations with our 5-year-old, and given us the opportunity to reinforce lessons/skills" (01-P62-2013), "We had a good time doing it and I understand that it was necessary to reinforce the concepts of the week" (03-P66-2013), and "Repetition of concepts which she was familiar with" (01-P40-2015) supported the idea that the program strengthened and enhanced children's preliminary knowledge.

Theme II: Diverse Activities and Learning Methods

A total of 135 parents (45.61%) perceived that the enrichment program offered unique experiences to their children by providing plenty of hands-on activities and experiments, along with new learning methods and styles.

Hands-on activities and experiments

Hands-on experiences including experiments during the course were highly valued by parents. One-hundred thirteen comments from 89 parents (30.07%) were recorded regarding this experience. Among 89 parents, 17 (19.10%), 35 (39.33%), 28 (31.46%), and nine (10.11%) were from PreK-K, Grades 1-2, Grades 3-4, and Grades 5-8, respectively. From the findings, parents of the students in the middle age group (Grades 1-4; 70.79%) commented more frequently about the hands-on activities provided during the enrichment program compared to the youngest or oldest group. "Watching volcano eruption experiment was exciting. That was his first time to make science experiment by himself" (01-P03-2017), "Glitter infection rate – Ms. [teacher name] put glitter on a few children's hands, then had all of the children repeatedly shake hands. My daughter was astounded by how fast a germ could spread" (01-P20-2016), "He was excited about the film canister rockets and how they were powered by Alka-Seltzer tablets" (02-P10-2017), "The liquid sandwich is probably the most memorable and most talked about experience. I think that the fact the liquids did not mix and that you could see the multiple layers…" (02-P21-2016) were key examples. We also observed from the comments that many parents used the exact phrase, "hands-on", as a benefit of the program. Such comments include "Her most memorable moment was building a building out of straws and pipe cleaners. It was more hands-on than previous activities which she enjoyed" (02-P03-2017), "Hands-on experiences were clearly his favorite activities, with the "magic milk" topping" (02-P38-2014), and "He seems to enjoy the hands-on examples of the subjects such as testing Newton's theories" (03-P65-2013). When asked about their desired future course topics, parents made remarks about the importance of hands-on activities in the classes. "Other hands-on classes involving building things, engineering topics, robotics, and physics experiments" (02-P29-2015), "As long as they [the classes] are hands-on and experimental, I would be happy to continue…" (02-P30-2015), "More types of engineering programs with hands-on activities" (03-P61-2013), and "He really likes the hands-on programs like Rube Goldberg and Autobots…" (04-P10-2016) were specified.

New teaching and learning methods

Throughout the program, children were exposed to new teaching and learning methods that were different from their traditional school experiences. Forty-seven comments from 46 parents (15.54%) pointed out that the courses operated "using multiple teaching-learning methods" (01-P44-2015) and "learning techniques not taught in the school" (01-P30-2016). 12 (26.09%), seven (15.22%), 15 (32.61%), and 12 (26.09%) comments were from the different age groups and no specific pattern was observed. The importance of project-based learning and presentations was also brought up by the parents. Examples include: "Working on a parent-showcase project. Because it was a chance to demonstrate his knowledge" (030-P08-2017), "The presentation has been in a fun format…" (02-P61-2013), and "Making his final project and the fact that each member of the team was building a piece of the final product that had to go together" (03-P62-2013). In addition, specific learner-centered teaching methods were highlighted by parents. "She liked best when the house designer came to class to talk about what they do. This made the work in the class very real" (03-P38-2014), "Going outside for drawing

pictures; observing them and then making" (02-P04-2017), "Enjoyed the engineering approach…" (02-P09-2017), "… learning with art" (02-P48-2013), and "It is good to have group conversation and question/answer session" (03-P07-2017) were some illustrative examples from parents.

Theme III: Positive Academic Gains

Throughout the program, 91 parents (30.74%) noticed that their children attained and developed not only 21st-century skills (e.g., creativity, and critical thinking skills), but also experienced positive changes in their academic interest.

21st century skills

Forty-six comments from 43 parents (14.53%) were recorded that the children were able to develop 21st-century skills including creativity, imagination, critical thinking skills, and problem-solving skills. Six (13.95%), 14 (32.56%), 12 (27.91%), 11(25.58%) participants were from each age group, indicating that parents with children above grade 1 continuously commented more often about 21st-century skills than parents of PreK and Kindergarteners. In terms of children's creativity and curiosity, "This experience was important to our son because it gave him the freedom and opportunity to express his love for science. It made him a challenge to be both creative and constructive" (02-P12-2017), "She learned to think outside of box… she spent more time pursuing her imagination…" (02-P38-2014), "How creative a designer could be to turn a small space into a very organized and functional home/office. It will encourage her to think out of the box to change the limits into blessings" (03-P34-2015), and "… sparked his imagination. He asks great questions about things that we eat and are in our environment at home" (02-P61-2013) were direct quotes from parents.

Parents were also satisfied that their children's attention span and problem-solving skills had improved through the course of the program. Comments such as "Since I hadn't expected she can think of those abstract things by herself, when I heard that from the teacher, I was impressed" (01-P31-2016), "Learning problem-solving skills and different STEM areas that are not normally available at school" (01-P08-2017), "Expanding his thinking and understanding…" (02-P19-2016), "Participating in higher level thinking" (02-P22-2016), and "To increase logical idea and defense herself" (02-P53-2013) supported the argument. Furthermore, the parents added that their children were able to concentrate more and expand their knowledge by providing examples such as "He enjoyed sitting and focusing on one subject for 3 hours! That is rare chance he can get" (01-P33-2016), "Ability to expand knowledge of science…" (04-P03-2017), and "Enjoyed the engineering approach and challenges in the program. Enjoyed the 3-hour format" (02-P08-2017).

Academic passion and interest

Forty-eight parents (16.22%) reported that their children became more passionate, enthusiastic, and interested in the topics covered in the program. In each age group, 20 (41.67%), 11 (22.92%), nine (18.75%), and eight (16.67%) parents commented their child showed more academic passion and interests after participating the program. These comments were seen more frequently within the younger age groups Fifty comments supported this, such as "My child has been more interested in reading and writing lately. I can tell it has renewed an interest" (04-P24-2015), "Her enthusiasm for science and hands-on experiments has blossomed" (01-P11-2017), "Sparked a new interest in space" (01-P45-2014), and "Started being curious about mechanical laws" (03-P67-20123).

Children not only gained new interests in the topics introduced in the course, but also became more enthusiastic and excited about learning. "Excited and enthusiastic about the topic, materials… She is now taking books out of the library about ancient civics, Greek language…" (02-P53-2013, "My child has a positive outlook on writing. A task she never favored is now enjoyable" (04-P23-2015), "He is excited about learning. Prior to this class, he didn't like school…" (01-P48-2013), and "My daughter loved this class and was excited about going every time. She was excited about learning and about not knowing what would happen next" (01-P50-2013) were examples of positive changes from the children who participated the enrichment program.

Theme IV: Interpersonal Skills and Interactions

In addition to academic gains, parents also perceived the affective benefits their children received by participating in the enrichment program. About half of the parents in this study ($n = 154$) made comments about the social emotional and personal aspects the program addressed. Parents indicated that their children benefitted from socializing with others outside of their typical educational environment. They met same-age peers

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of similar intellectual abilities, supportive teachers, and others with different cultural backgrounds, which broadened their perspectives (see Table 4 for the frequency of coding by the participants).

Intellectual peers

Parents believed that their children working with others like their own was one of the greatest benefits of the program. Sixty-eight comments from 61 parents were related to interacting with peers. Twenty-six comments from 22 parents directly highlighted the benefits of working with peers of similar abilities and interests. From each age group, three (13.64%), five (22.73%), five (22.73%), and nine (40.91%) parents had children in PreK-K, Grades 1-2, Grades 3-4, and Grades 5-8, respectively. This pattern shows that more parents of older children emphasized the benefits their children received from working with their intellectual peers, with the number of comments increasing as the groups aged. Example responses include: "Exposure to kids of equal enthusiasm for learning and peer interaction" (01-P66-2013), "He gets to work with his intellectual peers and challenging to him" (04-P29-2014), "Learning advanced things among his peers" (01-P07-2017), and "Social experience… putting my child with other children of her own caliber" (03-P82-2013). In the same vein, one parent said the only drawback of the program was that she wanted to have a longer program, so that her student could be with other students with gifts and talents. "It would be nice to have an entire quarter program so they can build relationships with peers" (01-P25-2016). Comments provided by parents support the idea that students with gifts and talents may need additional opportunities to interact and socialize with their intellectual peers. Though 22 parents commented 22 times about their children's interactions with similarly abled peers, 39 parents also made 42 generalized remarks about their children benefitting from interacting with peers in the program, without specifically mentioning the peers' intellectual abilities or similar interests. Some examples of benefits were: "Making new friends" (01-P22-2016), "Learning to work better with various levels of interaction from peers" (03-P154-2016), and "Getting to know other people" (04-P274-2013). These statements were not directly related to their children's abilities and were not included in Table 4 for analysis.

Supportive teachers

Teachers also played a large role in the student's experience in the program. Twenty-two comments were made regarding teachers. Parents felt teachers in the Saturday enrichment program were highly skilled at working with students with gifts and talents. By age group, 10 (50%), four (20%), three (15%) and three (15%) parents commented on the teachers in the program. Thus, parents of younger children made more statements about the teachers' interactions with students than parents of older children, emphasizing the importance of positive teacher-student relationships in early education. They said, "The instructor was very welcoming, kind, and friendly. She made my child feel at ease" (01-P65-2013), "[Teacher name] was a very inspirational teacher for our daughter" (03-P24-2016), "I know that she enjoyed her teacher and respected her knowledge base" (04-P62-2013), and "Being around kind children with a teacher eager to instruct and care for her" (01-P29-2016) were some of the benefits reported by parents.

Specific characteristics of the teachers were cited by parents as well, as a reason for their positive experience in the program. "The teacher has always approached my son with kindness and compassion. Gifted kids are different, and my son is no different. It takes patience and understanding to be a teacher" (03-P33-2015) and "If the program has an award for the instructors, I definitely would like to recommend both teachers in [Course name]. They deserve it!! Both teachers were so kind, helpful, friendly, [and] active!" (01-P51-2013) are some examples. One parent also said that her child was nervous about gender and race issues, but they were easily abated in this program. "[My daughter was] nervous about being the only girl. And then a young, smart, black American woman taught the class with another smart young female assistant" (03-P64-2013). Davis et al. (2011) stated that a good teacher of students with gifts and talents "should have such traits as high enthusiasm, empathy, broad knowledge, maturity, and willingness to work with other staff" (p. 53). Although these characteristics are not limited to the teachers who teach high-ability students, parents felt the supportive teachers in the class were one of the greatest benefits of the program.

Diversity and different cultures

Although not often discussed, we found eight comments from eight parents who felt the diversity of students in the program was a positive factor. Two (25%), two (25%), three (37.5%), and one (12.5%) comment were from the different age groups and no specific pattern was observed. A few example comments were: "I've appreciated the different cultures my child has been exposed to" (01-P62-2013), "Interaction with new kids from various cultures" (03-P62-2013), and "Meeting and listening to the children

from China" (03-P35-2015). One parent specifically stated that their child, who lacked previous exposure to diverse cultures, was enriched by the experience in this program, sharing "He enjoyed meeting and working with a diverse group of kids in his age. We are from a small town with little to no diversity" (02-P20-2016). These findings align with studies by Hurtado (2001) and Jen (2017), who found that students of all ages and abilities benefitted from working with diverse peer groups.

Theme V: Intrapersonal Growth in Students

Different from academic and interpersonal development, 66 (22.3%) parents mentioned their children's gains in intrapersonal growth during the program. These include characteristics such as pride in their work, high levels of motivation, self-confidence, and development of future goals.

Personal development and growth of confidence

Students with gifts and talents exhibit different academic and affective traits compared to their peers, and they are not exempt from character development issues like self-confidence, persistence, motivation, and other developmental concerns. Thirty-seven (12.5%) parents generated 40 references to their child's personal growth. It appears as though parents of younger children (PreK-G2) noticed more gains in this area than parents of older children (G3-8), with eight (20%), 14 (35%), seven (17.5%), and eight (20%) parents, respectively, from each age group making comments. They stated that their child exhibited "eagerness to keep trying and not giving up" (02-P15-2016), and kept "pushing himself to explore unknown" (02-P18-2016), which may later impact their academic achievement. In terms of gaining confidence, parents said, "His confidence is up. This was challenging for him but not too much. Hard but in a good way" (04-P08-2017), "She gained more confidence in her ability. She learned that she can make friends outside of her general circle of friends" (03-P68-2013), and "Confidence in self and abilities" (02-P16-2016). One parent noted, "The chance to meet new people who are more like her helps give her the confidence to step out of her comfort zone and not be afraid to try new things. She now is comfortable with the idea of going into a place where she doesn't know anyone and feels she can always make new friends" (02-P65-2013). Students sharing their classroom experiences and expanding them to their family members were clear signs that they developed self-confidence and motivation throughout the program. One parent stated that the child took projects and activities home to practice with family members, and their most memorable experience was doing "Fingerprints! She enjoyed coming home and taking everyone's fingerprints and showing how to do it" (04-P54-2013).

College exposure and setting future goals

Parents noticed that their students discussed career and educational goals following completion of the program. Across all age groups, 27 parents made 28 references to future goals and goal orientation. These occurred slightly more often among the older age groups. Seven (25.93%) and four (14.81%) references were from PreK-K and G1-2, respectively, while both G3-4 and G5-8 each had eight (29.63%) references. Examples of comments related to children's career goals were: "The past classes have made him excited about learning his future career choice" (04-P07-2017), "The greatest benefit was that my child became an engineer, thanks to this program. When he saw a building, he started to think about the structure of it and how to build it" (03-P40-2014), and "The program boosted self-esteem, made her excited about going to college" (04-P64-2013). The setting of future career goals was not only achieved by the specific course the child attended, but also by being exposed to a college environment. Eighteen (6.08%) comments were directly related to this. Examples were: "Exposure to college atmosphere in a college setting where his father attended school has [Child's name] thinking about going to college" (03-P16-2016), "It has exposed her to a college campus" (02-P24-2016), and "The exposure to [University name] and the importance of higher education" (01-P62-2013). Parents believed that these nontraditional experiences in a university setting were unique and may lead their child to set a goal to pursue higher education in the future.

Discussion

Out-of-school enrichment programs utilize a variety of teaching methods and educational practices that meet the complex needs of students with gifts and talents [12,14,15]. Despite the Saturday enrichment program's primary focus on academic gains, it became clear from our findings that parents perceived both academic and socioemotional benefits from their child's participation. In terms of academic gains, parents said the program addressed their child's needs for challenging and deep content while reinforcing prior learning. Many parents confirmed that their students' needs were unmet in their regular school setting [30,63], therefore they were looking for enrichment programs that

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could provide challenging content. Parents of students with gifts and talents specifically mentioned that they were satisfied by observing their child learning about new topics with a challenging curriculum that was not covered in the school system. This finding supports [52]'s argument that educators should continuously provide a stimulating curriculum to students. As it is difficult for classroom teachers to always prepare and provide differentiated content to every student, individualized and engaging curriculum provided in enrichment programs can be alternatives for students who need additional stimuli.Parents' comments also revealed that their satisfaction with the program comes primarily through the hands-on, real-world activities and experimentation conducted in many classes. The results were similar to what [12] found; that programs designed for students with gifts and talents are more likely to provide hands-on activities, discussion opportunities, and problem-based learning projects. Although students with gifts and talents often have different reasoning styles such as top-down thinking procedures (Van Kessels, as cited in [27] and tend to recognize concepts in more abstract ways (Lupkowski, [28], these students still benefit from the hands-on and activity-based curriculum.

Also promoted through the courses were 21st-century skills such as the development of critical thinking skills, creativity, and imagination. As students with gifts and talents are more likely to exhibit advanced critical and creative thinking skills from an early age (Kettler [30,26], the exploration-based and independent activities designed in enrichment programs fit well with the characteristics of these students [7,2].This is corroborated by the parents' comments indicating that their children learned how to think outside of the box, sparked their imaginations, and increased logical thinking skills [29, 26,28] This finding is in line with Edens's (2000) finding that the real-world application and problem-based learning used in enrichment programs helped students develop 21st-century skills. As Beghetto (2006) explained, students with high levels of creative self-efficacy tend to have more positive beliefs about their academic abilities. Parents also observed their child's passion for the subject area of the courses they took. This is important since passion can affect students' motivation, which is directly connected with their achievement [64]. In addition to the academic benefits, parents reported socioemotional gains as well. Mainly, supportive teachers and a diverse group of intellectual peers were perceived to aid in students' experiences. Although not limited to teachers of students with gifts and talents, parents felt the teachers in the program were supportive and understanding of their children's needs [3,34]. The comments regarding teacher effects were similar to what Hertzog (2003) found from 50 college students who had participated in enrichment programs during their K-12 period. They noted that teachers in gifted classes had higher expectations and showed higher levels of respect for them compared to their regular classroom teachers.

Parents also saw their child's growth in interpersonal skills and interactions with same-age intellectual peers. Peer relationships can be challenging for some students with gifts and talents [39] due to various forms of asynchronous development these students may experience [38, 40]. It was obvious from the parents' comments that the students benefited from exposure to their intellectual peers with high levels of interaction (Simpson, 2014). The positive interaction and stimulus also came from students with diverse cultural backgrounds (Hurtado, 2001; [22] and parents perceived that their children were enriched by their peers from various cultures.Other socio-emotional and intrapersonal concerns like motivation and self-esteem are other critical issues among students with gifts and talents [43,44]. Parents noted their children developed confidence, goal-setting behaviors, persistence, and self-esteem throughout the program. They eagerly shared and repeated what they had learned at home. This supports previous research findings from Hertzog (2003) that students who joined enrichment programs indicated that they were able to establish management skills, healthy work ethic, and higher self-esteem following participation in the programs. These traits may positively lead to one's long-term future goal-setting and academic achievement. The comments specifically describing parents' appreciation of their children being exposed to a college environment as well as setting up future career goals corroborate the positive effects of the programs [17,18,19 20].

Results from this study were similar to those found in Tay et al.'s study of parent perceptions of the Saturday enrichment program. Although our initial categories of analysis were slightly different because we distinguished academic and affective themes separately, the final themes were similar (see Table 5). In Tay et al.'s study, the first main theme was that students had positive experiences in their enrichment program classes, as reported by their parents. The subtheme "enjoyed and excited about learning" aligns most closely with our subtheme of "academic passion and interest". This was when students showed they were passionate about the topic discussed in their enrichment class and excited to continue learning in that area. Both studies identified parents' comments indicating the courses were challenging and provided more information than what would be available in the children's traditional educational experiences. This information was also new to many children. Courses were taught with hands-on activities and using

a variety of teaching methods. According to parents, participation in the Saturday enrichment program helped students develop confidence and an openness to new experiences. Finally, both studies found parents emphasized future goals and plans for higher education.Key differences between the findings from Tay et al. and this study are likely as a result of the scope of analysis. In our study, we coded parents' responses for their affective qualities in the initial analysis, including inter- and intrapersonal attributes. As such, we had codes like "intellectual peers", "supportive teachers", and "diversity and different cultures". These themes were not highlighted by Tay et al.We also identified themes of "reviewing the preliminary knowledge", "new teaching and learning methods," and "21st century skills". Themes like these may be addressed in Tay et al.'s codes for "hands on activities", among others. Tay et al. had a code of "applying knowledge at home and with family". Although these comments were in our data as well, we did not include this as a separate theme.

Table 5: Similarities between Tay et al. (2018) and the current study.

Tay et al. (2018)	Current Study
Enjoyed and excited about learning	Academic passion and interest
Providing challenge and widening interests	Challenging and in-depth content knowledge
New Knowledge	Introduced to new academic content knowledge
Hands on activities	Hands-on activities and experiments
Changes in attitudes and behaviors	Personal development and growth of confidence
Thinking about the future	College exposure and setting a future goal

After reviewing and analyzing parents' open-ended responses, it was clear that even though the Saturday enrichment program primarily centered on academic outcomes, parents noticed socioemotional benefits as a result of their children's involvement in the program. They perceived the effectiveness of the enrichment programs as a way of developing their child's cognitive and social abilities [2, 8, 9]. No matter which age group their children belong to, parents of young children to adolescents were satisfied with the opportunities provided beyond the school [54,12], Olszewski-Kubilius et al. Hence, it is important to continuously develop more diverse educational services and construct support systems for students with gifts and talents to fulfill their unique needs [65,66].

Limitations

Data in this study was gathered from parent surveys at the end of the enrichment program. Therefore, the perceived benefits and drawbacks of the program are from a parental perspective. This was done because of the depth of responses parents were able to provide over that of their children, and their understanding of survey responding in general. Had the students participating in the program answered similar questions to those asked of their parents, their responses and results may have differed. For example, what a parent perceives to be the greatest benefit to their child's participation in the program may not be exactly what the child sees as the greatest benefit. These findings are also not generalizable to all enrichment programs, settings, or contexts. Demographic information collected indicated that families of children enrolled in the program mostly represented middle- and upper-level income brackets, and many had obtained post-secondary degrees. This may be due, in part, to the enrichment program being offered through a university. Thus, parents participating in this program may have already been aware of the benefits of out-of-school enrichment programs, which may be evident in their responses.

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