Global Journal of Arts Humanity and Social Sciences ISSN: 2583-2034

Glob. J.Arts.Humanit.Soc.Sci

ISSN: 2583-2034

Vol-3 Iss-12, page 1503-1511

DELVING INTO PROGRAM MODELS THAT CATER TO THE GIFTED STUDENTS' NEEDS

BY

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Article History

Received: 20/11/2023

Accepted: 23/12/2023

Published: 24/12/2023

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Abstract

Gifted students, the treasures of every nation, need programs that cater for their level and assist them in their development. Acceleration and enrichment programs are models used to address the gifted needs. Teachers' viewpoints might differ from those of students regarding the favored program model. This study attempts to explore teachers' as well as gifted students' perspectives on these two approaches, acceleration and enrichment. Its purpose is to answer which of these programs better serve gifted students. Quantitative and qualitative methods were utilized in this study. A survey was conducted in September 2023 with 40 gifted students and 40 teachers in a private international school in Doha, Qatar to elicit their feedback on the program model that best fits gifted students. Interviews with the same gifted students were followed to collect data on their preferred mode. Recommendations were then displayed for teachers to consider students' preferences before adopting a program model for these students.

Keywords*: Gifted students, programs, acceleration, enrichment*

Introduction

Gifted students have special needs that should be addressed to secure their development. Heacox & Cash (2014) define acceleration and enrichment as two program models that target the enhancement of gifted students (Heacox & Cash, 2014). Acceleration as defined by them is moving at a faster pace in curriculum or at a younger age than usual. Davis et al. (2014) explain that acceleration refers to the process of progressing more quickly through academics by making the regular curriculum available to pupils at an earlier age than is customary. Acceleration has many methods that fall under two major categories (Davis, Rimm, & Siegle, 2014). Rosemary (2010) highlights the categories as content-based acceleration or grade-based acceleration (Rosemary, 2010). Plucker et al. (2017) elaborate that content or subject acceleration is when students are moved up for only one subject, such as reading or math, but remain with their age-peers for other subjects while whole-grade acceleration, includes grade-skipping, early access to kindergarten or first grade, or early entrance to college (Plucker, Rinn, & Makel, 2017).

Plucker et al. (2017) clarify that throughout research acceleration has proved its efficiency with gifted students. Studies in context that follow students over time have shown that those who took accelerated programs chose majors that are more difficult, enrolled in prestigious universities, and achieved exceptional results (Wai, 2015).

On the contrary, Davis et al. (2014) explain that teachers, administrators, and psychologists have worries regarding acceleration. Children who undergo acceleration will not be able to socialize with older children, leading them to have less friends and will eventually not feel content. These children will be robbed of crucial childhood experiences. For all the mentioned, choosing to accelerate should be considered with care for these students.

Enrichment on the other hand is defined by Van Tassel-Baska (2007) as those educational services that delve deeper in breadth and depth in a certain followed curriculum (VanTassel-Baska, 2007). Davis et al. (2014) further explain that enrichment takes place when the instructor gives students who have mastered the content of the grade level extra tasks, activities, or resources. Enrichment thus can have many forms such as independent studies, mentors, resource rooms, or even mentoring opportunities.

Reis et al. (1998) draw attention to the fact that enrichment is effective for students to learn better when they enjoy the process of learning (Reis, Gentry, & Maxfield, 1998). Davis et al. (2014) explain that one of the major benefits of enrichment is that students enjoy learning when they have a choice and can make decisions on the content they want to learn. However, it is crucial to pay attention to the drawbacks of enrichment. Enrichment can become a burden when it appears that being a bright mind results in needing to work and put in more effort. Thus, Davis et al. (2014) mention that we should be cautious while implementing the proposed enrichment for this might be considered torture rather than a reward for gifted students.

To sum up, enrichment as well as acceleration both prove to have benefits and setbacks. For this, it is essential to consider the options thoroughly before employing any program model to ensure the best services for gifted students.

Research Method

The aim of this study was to gather the opinions of middle school gifted students and teachers regarding two programs designed for the enhancement and progression of gifted students. According to the literature, acceleration, and enrichment are recommended services for aiding the development of gifted students. Theorists have emphasized the benefits of these programs while also highlighting their drawbacks. This study aims to determine which program model is favored by collecting the thoughts of gifted students and teachers. Initially, a survey was conducted via Google Forms in September 2023 and was sent to several middle school teachers to gather their insights on the subject.

In September 2023, a survey was conducted on 40 gifted students to gather their opinions on this particular matter. Out of these 40 students, 20 underwent an enrichment program while the other 20 did not. The surveys consisted of fundamental survey questions and five-point Likert scale questions. They were filled out during school hours at a private international school in Doha, Qatar.

The students were interviewed again to clarify the reasons for their preferences. Each survey took less than ten minutes to complete. Afterwards, the collected data was sent to a statistician who ran descriptive statistics through the SPSS program, which was used for the final write-up.

Participants

We implemented a thorough and multi-level screening process during the selection stage to identify students with exceptional talents or a high potential to participate in the study. Our aim was to minimize the number of candidates and select only the most suitable ones.

In the beginning, the Evaluation of Potential Creativity (EPoC) exam served as our main screening instrument. According to the outcomes of the EPoC exam, the cutoff value would be 115, which would include students whose scores were higher than the mean as well as those who were within the first standard deviation or above. Due to the use of this selection criteria, the size of our original sample was reduced from 364 to 129.

The pupils' "academic performance" within the context of the school was the subject of our next evaluation, which served as our second screening criteria. During this stage, we had a look at the academic performance of the 129 students who had been identified. Only the pupils who had shown excellent academic achievement, which was shown by an average grade of 90 or more out of 100, were thought to be qualified for further consideration. Because of the results of this academic evaluation, the total number of students ended up being lowered to 67. After that, we continued by taking an extra step, which consisted of reaching out to both the instructors and the parents of those 67 pupils and questioning whether they believe each youngster to be an appropriate candidate for the study. As a consequence of going through this procedure, the number of participants was reduced to 51, as a result of receiving nominations from both their instructors and their parents.

At the final stage of our research process, we conducted brief interviews with all 51 students to determine their willingness to participate. Out of the total number of students, 40 of them consented to take part in the research. Regarding the selection of teachers, all 40 middle school teachers at the academy, teaching various subjects, were involved in completing the survey.

Results and Discussions

The primary aim of this survey was to evaluate the opinions of middle school gifted students and their teachers concerning enrichment and acceleration programs. The survey also aimed to identify the most appropriate approach between the two for meeting the needs of gifted students. Our survey has been carefully designed to collect a range of perspectives on both types of programs. We included 40 teachers and 40 gifted students.

Teachers' Survey

In the first two questions, we collected feedback on different types of enrichment and acceleration programs. We provided eight options for each program type and asked teachers to select their two preferences from the list. This resulted in a total of 80 responses for each program type. The results for enrichment and acceleration programs are presented in Tables 1 and 2.

The tables display the frequency of selected responses as well as their corresponding percentages. For enrichment programs, the majority of teachers chose "programs based on research on exploration like field trips" (18.8%), "programs that cover nonacademic content" (17.5%), "mentors and mentorship programs" (17.5%), and "clubs based on students' interests" (16.3%) as the most effective types. Other program types were less frequently chosen (Table 1).

Table 1
Teachers' responses on eight different types of Enrichment program

In your opinion, which type of enrichment program can be most effective in meeting the needs of gifted students?		
	Frequency	Valid Percent
Clubs based on students' interest	13	16.3
Programs based on research projects	4	5

Programs based on exploration like field trips	15	18.8
Programs that offer competition opportunities	8	10
Mentors and mentorship programs	14	17.5
Teacher-made learning centers	6	7.5
Summer programs that offer leadership and self-esteem skills	6	7.5
Programs that cover nonacademic content as in drama, art, & PE	14	17.5
Total	**80**	**100**

Teachers preferred "Curriculum compacting" (33.8%) and "Subject skipping" (27.5%) for Acceleration programs, with less frequent selection of other types (Table 2).

Table 2
Teachers' responses on eight different types of Acceleration program

In your opinion, which type of acceleration program can be most effective in meeting the needs of gifted students?		
	Frequency	Valid Percent
Grade Skipping	7	8.8
Subject Acceleration / Subject Skipping	22	27.5
Early Graduation	1	1.3
Telescoping	10	12.5
Early entrance to middle school	4	5
Curriculum compacting	27	33.8
Self-paced instruction	7	8.8
Correspondence courses	2	2.5
Total	**80**	**100**

In the survey, the next two questions were designed to assess the effectiveness of the enrichment and acceleration programs using a 5-point Likert scale. The scale ranged from "very effective" to "not effective", and the 40 teachers rated both programs. This helped us to understand their opinions on how effective each program was in meeting the needs of gifted students. The results are presented in Figures 1 - 2.

It is worth noting that teachers' evaluations of the enrichment program were quite positive. In particular, the majority of teachers rated the enrichment program as "very effective" (with 21 responses, accounting for 52.5%) or "effective" (with 19 responses, accounting for 47.5%). There were no neutral or negative responses on the scale, indicating a strong consensus among the teachers regarding the program's effectiveness in meeting the needs of gifted students.

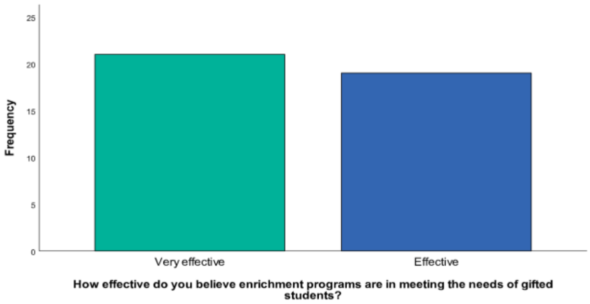

Figure 1. Teachers' rated effectiveness of enrichment programs

On the other hand, the responses for the acceleration program were spread out across the Likert scale. Notably, the most common response, with a frequency of 15 (37.5%), was "neutral." 22.5% of the teachers found the program "effective," while 20% thought it was "somewhat effective." This indicates that there is a diversity of views among teachers about the program's effectiveness.

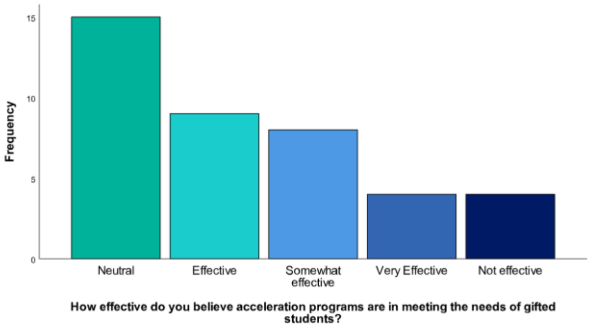

Figure 2. Teachers' rated effectiveness of acceleration programs

In the next question, we asked teachers to choose one of the programs that they prefer. Out of the 40 teachers who were surveyed, 35 of them (which is 87.5% of the total) expressed their preference for the Enrichment program. On the contrary, only 5 of them (which is 12.5% of the total) favored the Acceleration program. This clearly indicates that a majority of the surveyed teachers preferred Enrichment programs over Acceleration programs in catering to the needs of gifted students (as depicted in Figure 3).

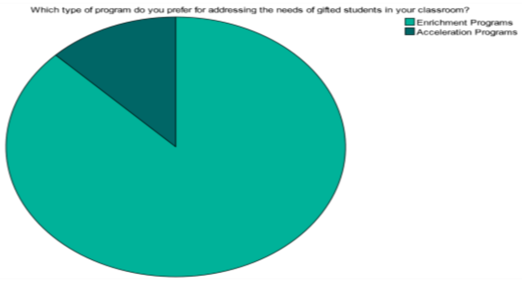

Figure 3. Program preference distribution among teachers

To gain further information about the rationale behind their preference, we included an open-ended question at the end of the survey. This question asked the teachers to provide explanations for their preference, allowing us to better understand their choices. Following a thorough review and analysis of the responses, three distinct categories emerged: emotional, social, and cognitive skills development. Teachers provided a variety of reasons for their preference, some of which fell into one of these categories, while others covered two or all three. The categorization allows us to gain a deeper understanding of their various motivations for seeking enrichment programs. The results of the study are presented in Figure 4. Out of 35 teachers who opted for the enrichment program, the following responses were categorized: 31.7% of the total responses were related to emotional skill development, with a total of 20 responses. Social skill development accounted for 20.6% of the responses, with a total of 13 responses. The number of responses for cognitive skill development was 23, which accounted for 36.5% of the total. Out of the 5 teachers who preferred acceleration programs, their responses were as follows: One response, which represents 1.6% of the total, was related to emotional skill development. One response, which represents 1.6% of the total, was related to social skill development, and 5 responses, which represents 7.9% of the total, were categorized under cognitive skill development.

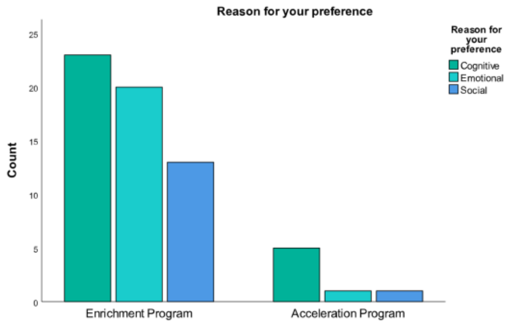

Figure 4. Categorized reasons for teachers' preferences for both enrichment and acceleration programs.

Experimental Students' Survey

The same survey with identical objectives was administered to 20 gifted students who were part of the experimental group in a previous study implemented between January 2023 and June 2023 that intended to check the impact of an English enrichment program on the writing skills development of middle school gifted students (which is currently unpublished). The results for the initial two questions have been presented in Tables 3-4.

In terms of enrichment programs, the students showed a greater inclination towards choosing "Clubs based on students' interests" (27.5%) and "Mentors and mentorship programs" (25%) (Table 3). The other options were less frequently selected.

Table 3
Experimental students' responses on eight different types of Enrichment program

In your opinion, which type of enrichment program can be most effective in meeting your needs?		
	Frequency	Valid Percent
Clubs based on students' interest	11	27.5
Programs based on research projects	1	2.5
Programs based on exploration like field trips	5	12.5
Programs that offer competition opportunities	3	7.5
Mentors and mentorship programs	10	25
Teacher-made learning centers	2	5
Summer programs that offer leadership and self-esteem skills	3	7.5
Programs that cover nonacademic content as in drama, art, & PE	5	12.5
Total	**40**	**100.0**

Students identified "Self-paced instruction" (25%), "Curriculum compacting (15%)" and "telescoping (15%)" as the most effective types of acceleration programs (Table 4).

Table 4
Experimental Students' responses on eight different types of Acceleration program

In your opinion, which type of acceleration program can be most effective in meeting your needs?		
	Frequency	Valid Percent
Grade Skipping	5	12.5
Subject Acceleration / Subject Skipping	5	12.5
Early Graduation	4	10
Telescoping	6	15

Early entrance to middle school	4	10
Curriculum compacting	6	15
Self-paced instruction	10	25
Correspondence courses	0	0
Total	**40**	**100**

In the 5-point Likert scale questions, students rated enrichment and acceleration programs based on their effectiveness. The rating scale ranged from "very effective" to "not effective." The results are shown in Figures 5 - 6.

The evaluation of the enrichment program by most students was very positive. 60% of the students rated the enrichment program as "very effective," and 40% of the students rated it as "effective." None of the students gave a neutral or negative response. Similarly, most students rated the acceleration program as "neutral," with 25% of the students giving this response. 10% of the students found the program "somewhat effective," and 5% of the students rated it as "effective." This indicates that there is a range of opinions among students regarding the effectiveness of the acceleration program, similar to the responses given by the teachers.

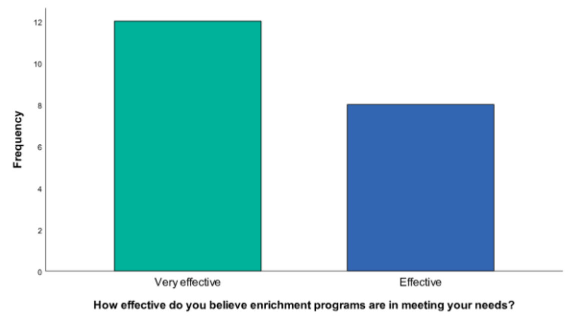

Figure 5. Experimental students' rated effectiveness of enrichment programs

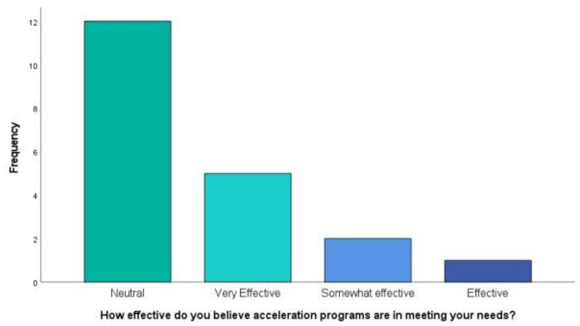

Figure 6. Experimental students' rated effectiveness of acceleration programs

When surveyed about their preferred choice, 75% of students (15/20) favored Enrichment programs while 25% (5/20) favored Acceleration programs. This indicates a strong preference for enrichment programs among the surveyed students (Figure 7).

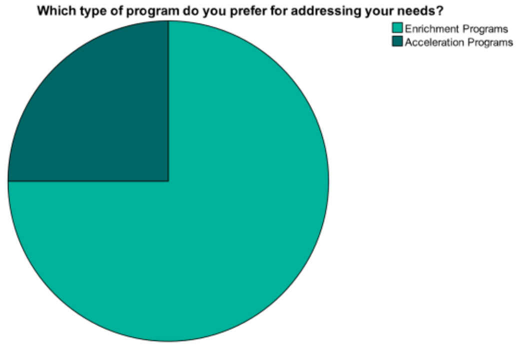

Figure 7. Program preference distribution among experimental students

Experimental Students' Interview

The reasons given by students for preferring either the enrichment or acceleration programs were categorized into three groups: emotional, social, and cognitive skills development. The results are presented in Figure 8.

Out of the 20 students who chose the enrichment program, 10 responses (27% of the total) were related to emotional skill development, 10 responses (27% of the total) were related to social skill development, and another 10 responses (27% of the total) were related to cognitive skill development.

On the other hand, out of the 5 students who chose the acceleration program, only 2 responses (5.4% of the total) were related to social skill development, while 5 responses (13.5% of the total) were related to cognitive skill development. Interestingly, none of the reasons given by the students who preferred the acceleration program were related to emotional skill development. This might suggest that acceleration programs are more closely associated with cognitive development, but this hypothesis cannot be confirmed given the small number of respondents who favored the acceleration program.

To gain more insights into the preferences and motivations of students and teachers regarding Enrichment and Acceleration programs, further research with a larger sample size may be needed.

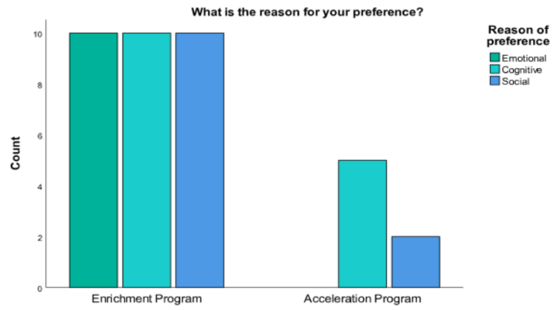

Figure 8. Categorized reasons for experimental students' preferences for both enrichment and acceleration programs

Control Students' Survey

This group also included 20 gifted students who were in the control group in our previous study that was conducted between January 2023 and June 2023 and aimed at checking the impact of an

English Enrichment program on the development of middle school gifted students’ skills in writing. The same survey was conducted and had the following results.

In Table 5, you can see the distribution of students' preferences for the types of enrichment programs that they believe would be most effective in meeting their needs. The results show that students in the control group were more likely to choose enrichment programs that involve mentors and mentorship programs, programs that cover non-academic content, clubs based on students' interests, and programs based on exploration such as field trips, compared to other types. These choices are similar to the ones made by the experimental group (Table 3), indicating a common consensus among students.

Table 5
Control students' responses on eight different types of Enrichment programs

In your opinion, which type of enrichment program can be most effective in meeting your needs?		
	Frequency	Valid Percent
Clubs based on students’ interest	7	17.5
Programs based on research projects	2	5
Programs based on exploration like field trips	7	17.5
Programs that offer competition opportunities	4	10
Mentors and mentorship programs	8	20
Teacher-made learning centers	2	5
Summer programs that offer leadership and self-esteem skills	2	5
Programs that cover nonacademic content as in drama, art, & PE	8	20
Total	**40**	**100**

Among the types of acceleration programs, students preferred self-paced instruction, subject skipping, and curriculum compacting (Table 6). Self-paced instruction was similarly the most frequently chosen by students in the experimental group (Table 4).

Table 6
Control students' responses on eight different types of Acceleration program

In your opinion, which type of acceleration program can be most effective in meeting your needs?		
	Frequency	Valid Percent
Grade Skipping	3	7.5
Subject Acceleration / Subject Skipping	9	22.5
Early Graduation	3	7.5
Telescoping	5	12.5
Early entrance to middle school	2	5
Curriculum compacting	8	20
Self-paced instruction	10	25
Correspondence courses	0	0
Total	**40**	**100**

The results for the perceived effectiveness for the enrichment and acceleration programs among students in the control group are presented below:

Regarding the enrichment program, the students in the control group expressed mixed opinions, as shown in Figure 9. Their views varied from "Very effective" to "Somewhat Effective", with the most commonly chosen response being "Effective" (8 out of 20 responses, 40%). This differs from the feedback provided by the students in the experimental group, as can be seen in Figure 5.

Students in the experimental group had only positive opinions that were either “very effective” or “Effective”. This finding is crucial in our study, reflecting the way students assess the effectiveness of the enrichment program, in particular. In other words, students that were part of the experimental group felt that the different experiences they had while being enrolled in the program benefited them (unpublished work in process), and so it was effective.

On the other hand, students that did not engage in the different experiences of the enrichment program could not sense the positive impact and thus had mixed opinions. Although 55% had a positive rating (very effective 15% and effective 40%), the other 45% were either neutral or negative (neutral 25% and somewhat effective 20%). Notably, none considered the enrichment program to be “Not-effective”, a finding that was common among students and teachers as well (check above), which might hint to a consensus about enrichment program being an “acceptable program”.

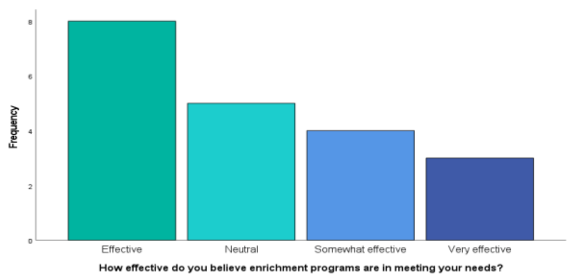

Figure 9. Control students' rated effectiveness of enrichment programs

The effectiveness of the acceleration program varied greatly between students in the experimental and control groups. According to Figure 10, 70% of students in the control group rated the program positively as "very effective" (25%) or "effective" (45%), while only 30% of students in the experimental group rated it positively as such (25% for "very effective" and 5% for "effective"). This suggests that students who did not participate in the enrichment program, and therefore did not directly benefit from it, were more likely to find the acceleration program effective compared to those who did receive direct benefits from the enrichment program.

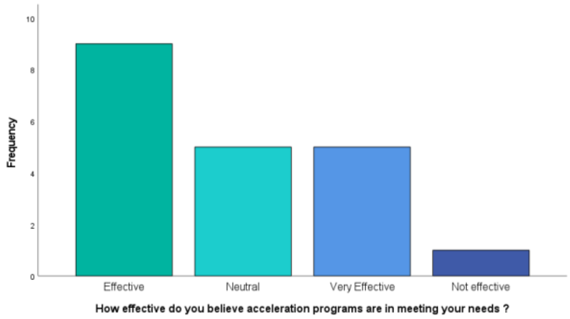

Figure 10. Control students' rated effectiveness of acceleration programs

In the control group, 55% of students reported that they preferred acceleration programs, while 45% preferred enrichment, according to Figure 11. This is different from the students' preferences in the experimental group, where 75% voted for enrichment, as shown in Figure 7. Based on these results, we can conclude that there is a discrepancy between the students' preferences on what they found to be more beneficial.

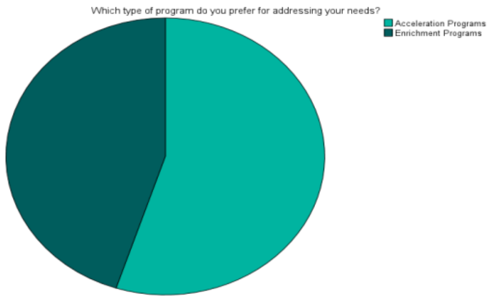

Figure 11. Program preference distribution among control students

Control Students' Interview

Inquiring about students' preference, we discovered a significant outcome. Out of the total 20 students in the group, 11 students voted for the acceleration program. All of them believed that the acceleration program is more beneficial for enhancing their cognitive skills, and none of the responses were related to emotional and/or social skills development. On the other hand, students who voted for enrichment had various reasons that involved not only cognitive development but also emotional and/or social aspects. You can find the detailed results in Figure 12.

Our earlier findings have been confirmed by this study, which shows that students in the enrichment program had a varied range of experiences. The breadth of these experiences may have contributed to the emotional and social benefits being associated with cognitive skills. Meanwhile, those who were not part of the enrichment program tended to focus more on the core cognitive component of the program. In the absence of such enriching experiences, students may be more inclined to choose programs that focus solely on developing their cognitive abilities in order to graduate faster.

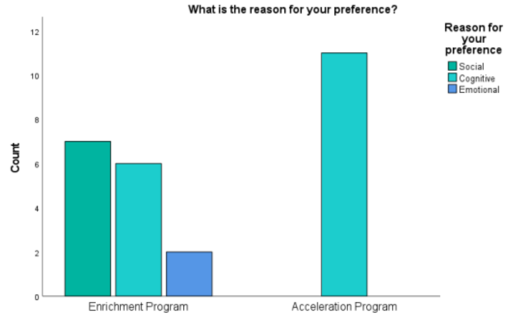

Figure 12. Categorized reasons for control students' preferences for both enrichment and acceleration programs

Enrichment vs. Acceleration

In our study, we noticed a clear difference between the experimental and control group students in terms of their perceived effectiveness and preference for two types of programs. To expand our exploration, we decided to include the results obtained from the teachers to our comparisons. Our goal was to formulate a comprehensive conclusion for this study.

We filtered our participants into three groups, namely teachers, students of the experimental group, and students of the control group, based on their program preference. The results, which are presented in Figure 13, revealed that 59 out of 80 participants preferred the enrichment program. Among these participants, there were 35 teachers, 15 students from the experimental group, and 9 students from the control group.

On the other hand, only 21 out of 80 participants preferred the acceleration program. This group included 5 teachers, 5 students from the experimental group, and 11 students from the control group.

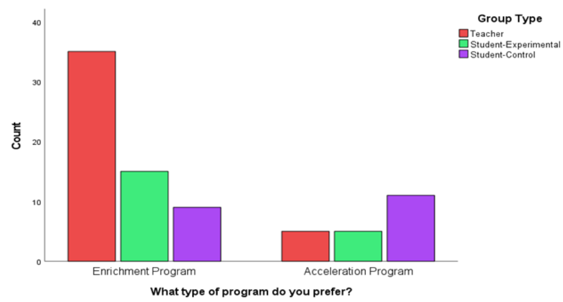

Figure 13. Program preference among our three groups

After extracting the participants who preferred the enrichment program, we cross-tabulated their reasons for choosing it over acceleration to gain better insights about each program separately. (59 participants)

Reason of Preference for Enrichment Program

Our comparison shows that in all groups, the reasons to prefer enrichment programs were related to all three aspects of development that are: Emotional, Social, and Cognitive (Figure 14).

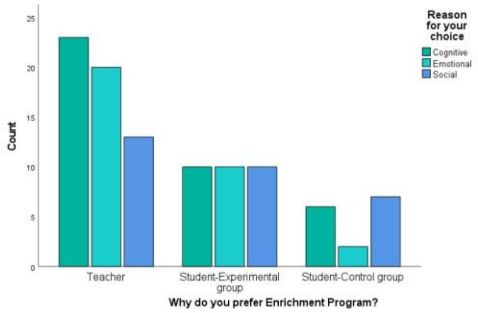

Figure 14. Reason for preferring enrichment program among the three group types

Reason of Preference for Acceleration Program

Even though the number of participants who voted for the acceleration program were few, when presented together, data shows that responses from all three groups fall more within the “cognitive” category (Figure 15), especially among students from the control group, as noted previously.

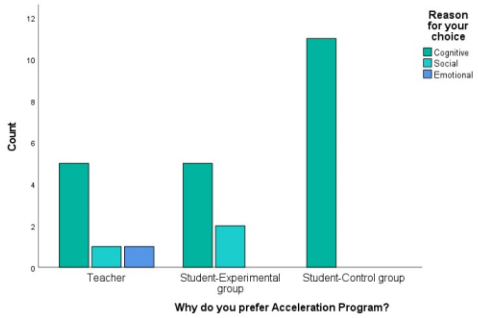

Figure 15. Reason for preferring acceleration program among the three group types

Perceived Effectiveness of Each Program

Next, for each group aligned with their preferred program type, we displayed their respective responses regarding the perceived level of effectiveness for each program.

Perceived Effectiveness for Enrichment Program

The data below displays responses from individuals who have chosen to participate in the enrichment program, and their perceived effectiveness of the program. In contrast to the previous sections, where we evaluated the effectiveness of each program among all participants, here we focus only on those who chose the enrichment program. This approach helps us better comprehend their perspective.

As expected, most individuals who chose the enrichment program rated it as a "Positive Program," with responses in the "Very Effective" and "Effective" categories (33/59 and 24/59, respectively) across all three groups, except for two responses from students in the control group. One response was categorized as "Neutral," while the other was rated as "Somewhat Effective" (Figure 16). This triggered our curiosity because both respondents had already chosen the enrichment program, yet rated its effectiveness less positively.

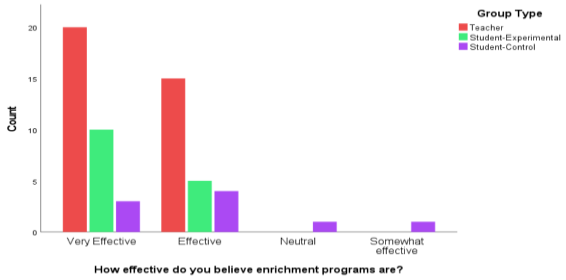

Figure 16. Perceived effectiveness of enrichment program among those who chose it as a preferred program type

In order to understand why some participants chose the enrichment program despite giving it a low rating, we reviewed the data from those cases to determine the reason behind their decision. Figure 17, a bar graph, shows that both participants chose the program for social or emotional reasons in conjunction with cognitive benefits. This aligns with our previous observation that students in the control group may believe that enrichment programs could enhance emotional and social skills, but cannot evaluate its effectiveness as they were not enrolled in the program.

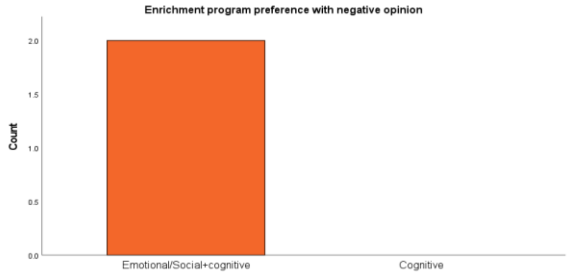

Figure 17. Reason for choosing Enrichment but having less positive opinion of its effectiveness

Perceived Effectiveness for Acceleration Program

We sorted the data in the same way as we did for the enrichment groups. Similar to the results we obtained for the enrichment groups, some participants in the control group of students preferred the acceleration program but rated its effectiveness as "Neutral" or "Somewhat effective" (4 out of 21 and 3 out of 21, respectively) as shown in Figure 18.

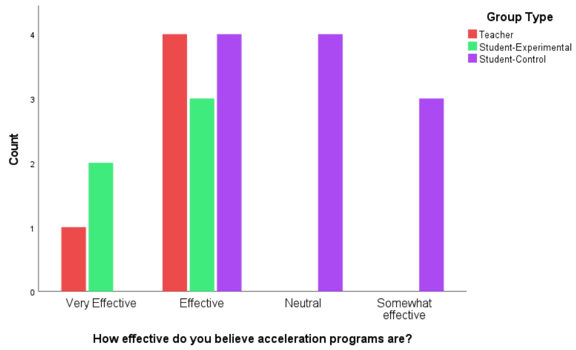

Figure 18. Perceived effectiveness of acceleration program among those who chose it as a preferred program type

During our analysis, we found it necessary to investigate why the participants made their choices in order to draw a more accurate conclusion. Our findings indicate that the 9 students selected acceleration as their preferred program because they perceived it as a way to skip grades/subjects and complete school early (as shown in the figure). However, they did not consider acceleration programs to be "Positive Programs".

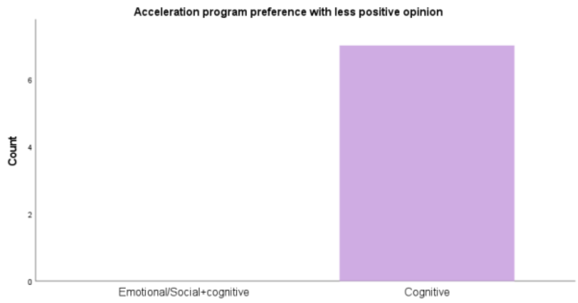

Figure 19. Reason for choosing Enrichment but having less positive opinion of its effectiveness

Conclusion

After conducting research into the perspectives of middle school gifted students and teachers in an international school located in Doha, Qatar, it was observed that teachers and students who had previous experience with enrichment programs preferred enrichment models. On the other hand, control students tended to prefer acceleration programs, as they believed it was strongly linked to cognitive development.

Recommendations

This study has been conducted to reveal the gifted program model that is preferable to teachers and gifted middle school students. According to results, teachers as well as students who sat for an enrichment program previously chose enrichment programs over acceleration, while students who did not pass through the experience of enrichment selected acceleration as their favored program model. For this, it is highly recommended for middle school teachers to seek input from their gifted students before implementing any program. Teachers should explain to students the nature of each program before deciding on one. The tools used in this study can be helpful for teachers who want to cater to their student's individual needs. However, it is important to note that the sample population in this study was small and limited to only one school in Doha, Qatar. Therefore, it is suggested that future researchers focus on conducting studies in more schools to gather data on the program models that are most effective in meeting the needs of gifted students.

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