Parental Evaluation of the Socio-Personal Adjustment of High Ability Students in a Cluster Grouping Program

María de los Dolores Valadez 1, Julián Betancourt 2, Triana Aguirre 3,*, Elena Rodríguez-Naveiras 3 and África Borges 3

1 Institute of Psychology and Special Education, Department of Applied Psychology, University Center for Health Sciences, University of Guadalajara, Guadalajara 44340, Mexico; dolores.valadez@academicos.udg.mx
2 Jalisco Educational Center for High Abilities, Jalisco Education Secretary, Guadalajara 44100, Mexico; coordinacion@cepac.edu.jalisco.gob.mx
3 Department of Clinical Psychology, Psychobiology and Methodology, University of La Laguna, 38200 San Cristóbal de La Laguna, Spain; naveiras@ull.edu.es (E.R.-N.); aborges@ull.edu.es (A.B.)

* Correspondence: taguirre@ull.edu.es

Abstract: High ability students have differential cognitive characteristics that require a specific educational response to develop their full potential. Cluster ability grouping is one of the available approaches to respond to their training. One of the main criticisms of this teaching method, also supported by the big-fish-little-pond effect (BFLPE), is that high ability students may show a decrease in their self-concept. The aim of this research is to present the evaluation carried out by parents of primary school high ability students on the effect of an educational cluster grouping program on their personal and social adjustment, comparing these variables before the beginning of the school year and at the end of it. Approximately 100 students’ parents of the Educational Centre for Highly Ability Pupils participated in the evaluation. The instrument used for the evaluation was the Socialization Battery (BAS-2) for parents. The results showed that parents observed some improvements, either due to an increase in the scales measuring positive socialization variables or a decrease in the scales measuring negative socialization variables. The most substantial improvements are found in the second and third grades. We conclude that the results do not support the big-fish-little-pond effect (BFLPE).

Keywords: high ability; cluster grouping; parental evaluation

1. Introduction

High ability students have differential cognitive characteristics that require a specific educational response to develop their full potential [1,2]. To support their educational needs, specific approaches have been adopted, such as in-school programs, which focus on the enrichment, acceleration, and cluster grouping, or after-school programs [3,4] and out-of-school [5].

Cluster grouping can be defined as an intervention for high ability or high achieving students which places together, in small groups or classrooms, a small number of students according to the initial assessments of their readiness, knowledge, interests, and abilities [6–16].

Many studies have investigated the effects of within-class ability grouping on the academic achievement of high ability students [17–27]. The findings show that the impact on academic achievement may or may not depend on the type of grouping implemented, the student’s socio-economic status, and their academic history [10,22,28].

According to [29], negative and non-significant results on academic performance in high ability children by using cluster grouping intervention might show that this approach on its own is not sufficient. What is more relevant is the so called “optimal match”, which appears when high ability students are offered a differentiated curriculum, full of challenges...
and in line with their interests and abilities, together with an educational environment that promotes their talents [18,30].

A more controversial subject is the effect that cluster grouping has on the personal and social adjustment of high ability students, an effect that has been the center of many investigations around their psychological and socioemotional well-being, focusing mainly on their self-concept and their self-esteem [6,8,24,30–38]. The results obtained by these investigations show different results. Some seem to find a very small positive impact on social self-concept among high-ability students participating in cluster grouping compared to those in a regular classroom. On the other side, whereas [39] consider that this type of clustering negatively affects self-concept, other researchers consider the decrease in self-concept because of clustering as being purely speculative [8,40–42].

Some researchers consider that cluster grouping can lead to a decrease in the self-concept of highly ability students and that this can be explained by the big-fish-little-pond effect (BFLPE) [8,24,35,39,43–45]. The BFLPE describes a frame of reference model affirming that self-perceptions in educational settings are largely determined by social comparison processes [4,46]. When highly ability students are subjected to a social comparison with a high ability reference group, such as students who also have high abilities, they experience a negative effect and their self-concept decreases [24,35,44,46].

Ref. [24] also consider that lower self-concept in high-ability students may be related to age, socio-economic status, or gender, among other factors. However, belonging to the high ability group may result in an increase their self-concept due to the so-called “basking in reflected glory effect” [38,41], which occurs when high ability students are in a classroom or school with students with similar characteristics. This can fill them with pride and with a sense of belonging; it can also make them strive for academic excellence, as well as strengthen their self-esteem and their school engagement [26,47–49].

Another research topic is how cluster grouping impacts students’ self-esteem; study [10] evaluated 13 meta-analysis studies describing the effects of cluster grouping on self-esteem in high ability students. The results showed a decrease in self-esteem scores. However, they were considered insignificant due to the low effect size. Study [10] also analyzed 11 studies of multilevel ability cluster grouping. The average effect size was very low or minimal for high ability students [10].

Then again, benefits in socioemotional aspects have also been reported, such as: (a) strong intrinsic motivation for learning; (b) a greater development of their interests and healthy social relationships [36,50,51]; (c) coexistence with peers with similar characteristics that strengthens their self-esteem and social skills; (d) opportunity to learn to work in groups and to configure a more accurate perception of their own socioemotional resources [41,52]; and (e) the problems of social isolation, peer rejection, loneliness and alienation that afflict extremely gifted students decrease with grouping as they feel accepted and equal to the rest of their group [25,53,54].

Therefore, it is essential to develop studies that analyze the effects of cluster grouping, with a rigorous evaluation. The evaluation of the psycho-pedagogical intervention for students with high abilities is a complex task that not only involves students and teachers but should also be carried out with parents’ participation, because their information can enrich the intervention [55], making them important agents for the evaluation of the changes.

Unfortunately, the number of studies on programs’ evaluation for parents of high ability children has been limited due to the lack of systematicity and research [56]. However, it is important to carry out these evaluations because it would help to understand whether these mentoring programs allow parents to identify and recognize the educational needs of their children, among other aspects, as well as to assess the effectiveness of the implemented programs [57].

In a study conducted with parents from three different countries, who attended programs for families of high ability children, they rated positively the content, the implementation time and the teachers who taught them, showing the relevance of the program.
The authors conclude their work by pointing out the importance of promoting programs for parents as a strategy to provide greater support to their children [58].

Studies reviewing evaluation of programs for parents of high ability children highlight two important points: first, the need to implement these programs to respond to the demand of the parents to improve their knowledge about high abilities and to manage the different aspects of their children’s life, especially the academic, social, and emotional. Second, the importance of evaluating the program and its impact on parents, having reliable measurement instruments for this purpose [59,60].

The aim of this research is to present the evaluation made by parents of primary school students with high abilities on the effect of their personal and social adjustment, in an educational cluster grouping comparing these variables before the beginning of the school year and at the end of it. The contrasted hypothesis is that if any effect is shown, it will be positive, indicating improvements in personal and social adjustment at the end of the school year.

2. Method
2.1. Participants

The families (mothers and fathers) of 100 students of the Centre for Highly Ability Pupils (CEPAC) participated in the evaluation. The number of students in each grade was distributed as follows: 27 in first grade, 15 in second grade, 15 in third grade, 14 in fourth grade, 14 in fifth grade, and 15 in sixth grade. Each grade was initially composed of 15 students, except for first grade where there were two groups. The average age of the mother was 37.08 years (SD = 6.459 years) and the father’s mean age was 38.649 years (SD = 6.452). Table 1 shows the frequency of schooling and occupation of the parents of the 100 students of the Centre for Highly Ability Pupils who participated in the evaluation.

| Schooling    | Fathers | Mothers | Type of Employment   | Fathers | Mothers |
|--------------|---------|---------|---------------------|---------|---------|
| Primary education | 14      | 8       | Labourer (or workman) | 3       | —       |
| High school  | 19      | 22      | Employee            | 36      | 24      |
| Graduate     | 55      | 56      | Professional        | 33      | 36      |
| Postgraduate | 9       | 11      | Businessman         | 12      | 5       |
| No data      | 3       | 3       | Technician          | 4       | —       |
|              |         |         | Household            |         | 35      |
|              |         |         | No data              | 12      | —       |
| Total        | 100     | 100     | Total               | 100     | 100     |

2.2. Instruments

The Socialization Battery (BAS-2) [61] is a set of scales for parental assessment of children and adolescents’ socialization in school and out-of-school contexts. The items in the battery (114 in BAS-2) basically have two functions: (a) to obtain a socialization profile with seven scales, four of which related to positive-facilitating aspects (leadership, joviality, social sensitivity, and respect-self-control) and three with negative, disruptive, or inhibitory aspects (aggressiveness-stubbornness, apathy-withdrawal, and Anxiety-shyness); (b) to obtain an overall assessment of socialization with a socialization criterion scale. The socialization battery is appropriate for subjects aged 6 to 15 years old and can be completed by parents (BAS-2). The socialization battery is typed and allows us to obtain centiles for the scales of both versions, by sex and schooling. The higher the centile obtained in the facilitating scales, the greater the socialization. Conversely, the higher the centile in the disturbing scales, the greater the presence of aggressiveness-stubbornness, apathy-withdrawal and/or anxiety-shyness. Table 2 shows reliability results of the scale, which have been obtained by means of internal consistency and test-retest reliability.
Table 2. Reliability presented in the BAS-2 manual.

| BAS-2             | Le  | Jo  | Ss  | Rsc | Ast | Aw  | As  | Le  |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Internal Consistency | 83  | 80  | 82  | 86  | 84  | 83  | 82  | 79  |
| Test-retest       | 58  | 55  | 54  | 61  | 67  | 70  | 66  | 69  |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

2.3. Procedure

After the parents signed the informed consent form, they were asked to answer the Socialization Battery (BAS 2) at the beginning and end of the school year.

2.4. Data Analysis

Cronbach’s alpha was calculated to test the reliability of the scales in the sample. Student’s t-test for repeated measures was used to compare differences in students’ personal adjustment before and after the school year, using the statistical package for social sciences SPSS version 21.

3. Results

3.1. Instrument Reliability

The reliability of the instruments was calculated using Cronbach’s alpha. Table 3 presents the values obtained in the pre and posttest.

Table 3. Reliability of the BAS-2 scales.

| Application | Le  | Jo  | Ss  | Rsc | Ast | Aw  | As  |
|-------------|-----|-----|-----|-----|-----|-----|-----|
| Pre-Test    | 0.87| 0.90| 0.88| 0.91| 0.85| 0.82| 0.81|
| Post-Test   | 0.84| 0.91| 0.87| 0.92| 0.84| 0.85| 0.82|

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

3.2. Comparison the Perception of Personal and Social Adjustment before and after the End of the School Year at CEPAC

To test the hypothesis that support the existence of a positive social impact on students with high abilities who entered CEPAC, we compared the results obtained in the pretest and posttest on the parents’ BAS-2 socialization questionnaire for each school grade. As we were dealing with seven variables to compare, Type I errors were corrected using Bonferroni’s correction ($\alpha = 0.05/7$), producing a significance level of 0.007.

For the first grade of primary school, after applying the Bonferroni correction, no significant differences appear in any of the variables studied (see Table 4). However, in leadership and anxiety-shyness a small effect size was observed, which decreased at the end of the school year, whereas in joviality and respect-self-control the effect size, although also small, increased.

For the second grade, again no significant differences appear in any of the variables studied. However, the effect size is medium for joviality, social sensitivity, and respect-self-control and increase by the end of the school year. For aggressiveness-stubbornness and anxiety-shyness (see Table 5) the effect size is small and decline at the end of the school year.
Table 4. Scores obtained in the parents’ BAS at the beginning and end of the first grade of primary school.

| Scales | Pre-Test Mean | Pre-Test SD | Post-Test Mean | Post-Test SD | t | gl | p | d |
|--------|---------------|-------------|----------------|--------------|---|----|---|---|
| Le     | 41.22         | 5.720       | 39.00          | 8.981        | 2.356 | 26 | 0.026 | 0.453 |
| Jo     | 30.59         | 3.661       | 31.74          | 4.399        | −1.312 | 26 | 0.201 | −0.252 |
| Ss     | 27.48         | 5.720       | 25.56          | 6.123        | −0.053 | 26 | 0.958 | −0.010 |
| Rsc    | 38.11         | 7.454       | 38.89          | 8.149        | −1.151 | 26 | 0.260 | −0.221 |
| Ast    | 7.59          | 5.976       | 7.04           | 5.481        | 0.500  | 26 | 0.621 | 0.096  |
| Aw     | 3.48          | 3.446       | 3.78           | 4.644        | −0.423 | 26 | 0.675 | −0.081 |
| As     | 6.07          | 3.362       | 5.33           | 3.063        | 1.243  | 26 | 0.225 | 0.239  |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

Table 5. Scores obtained in the parents’ BAS at the beginning and end of the second grade of primary school.

| Scales | Pre-Test Mean | Pre-Test SD | Post-Test Mean | Post-Test SD | t | gl | p | d |
|--------|---------------|-------------|----------------|--------------|---|----|---|---|
| Le     | 41.87         | 6.379       | 42.40          | 6.266        | −0.431 | 14 | 0.673 | −0.111 |
| Jo     | 31.33         | 4.483       | 33.20          | 3.385        | −1.943 | 14 | 0.072 | −0.501 |
| Ss     | 28.87         | 6.368       | 32.33          | 7.961        | −2.606 | 14 | 0.021 | −0.672 |
| Rsc    | 36.13         | 8.123       | 41.07          | 9.453        | −2.486 | 14 | 0.026 | −0.641 |
| Ast    | 8.60          | 7.099       | 5.43           | 4.627        | 2.486  | 14 | 0.026 | 0.641  |
| Aw     | 2.13          | 3.619       | 2.07           | 3.390        | 0.076  | 14 | 0.941 | 0.019  |
| As     | 6.33          | 3.619       | 4.87           | 2.475        | 1.682  | 14 | 0.115 | 0.434  |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

In the third grade, the differences in the scales are again insignificant, but the effect size is medium in all them, except for the social sensitivity, where it is small (see Table 6). In all cases, the trend is in the same direction: scales indicating better fit are increasing and those indicating worse fit are decreasing.

Table 6. Scores obtained in the parents’ BAS at the beginning and end of the third grade of primary education.

| Scales | Pre-Test Mean | Pre-Test SD | Post-Test Mean | Post-Test SD | t | gl | p | d |
|--------|---------------|-------------|----------------|--------------|---|----|---|---|
| Le     | 39.00         | 8.544       | 36.00          | 7.151        | 2.254  | 14 | 0.041 | 0.582 |
| Jo     | 27.27         | 7.116       | 30.20          | 3.821        | −2.155 | 14 | 0.049 | −0.557 |
| Ss     | 29.27         | 7.450       | 28.13          | 6.243        | 1.139  | 14 | 0.274 | 0.294  |
| Rsc    | 37.27         | 10.173      | 41.40          | 8.131        | −2.199 | 14 | 0.045 | −0.568 |
| Ast    | 4.73          | 6.703       | 5.93           | 7.126        | 2.901  | 14 | 0.012 | 0.749  |
| Aw     | 8.00          | 7.865       | 3.33           | 4.850        | 2.606  | 14 | 0.021 | 0.673  |
| As     | 8.67          | 6.388       | 4.87           | 4.868        | 2.816  | 14 | 0.014 | 0.727  |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

For the fourth grade, significant differences were observed in joviality, where scores increased at the end of the school year. Significant differences were also observed for apathy-withdrawal, although in this case the scores decreased at the end of the school year and the effect size was large (see Table 7). A medium effect size is also observed for apathy-withdrawal and small effect sizes for social sensitivity and respect-self-control.
Table 7. Scores obtained in the parents’ BAS at the beginning and end of the fourth grade of primary school.

| Scales | Pre-Test Mean | SD | Post-Test Mean | SD | t | gl | p | d |
|--------|---------------|----|----------------|----|---|----|----|---|
| Le     | 37.57         | 7.251 | 36.50         | 7.251 | 0.627 | 13 | 0.541 | 0.168 |
| Jo     | 25.36         | 7.023 | 29.43         | 4.815 | −3.818 | 13 | 0.002 | −1.020 |
| Ss     | 27.00         | 7.200 | 28.21         | 6.507 | −0.764 | 13 | 0.459 | −0.204 |
| Rsc    | 36.36         | 9.337 | 38.71         | 5.837 | −1.074 | 13 | 0.302 | 0.287 |
| Ast    | 9.71          | 8.624 | 8.36          | 7.196 | 0.673 | 13 | 0.512 | 0.180 |
| Aw     | 10.07         | 6.855 | 3.64          | 2.818 | 3.313 | 13 | 0.006 | 0.885 |
| As     | 7.79          | 4.726 | 5.64          | 2.437 | 2.206 | 13 | 0.046 | 0.590 |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

Table 8 shows the results for the fifth grade. The differences were not significant in any of the any scales and whereas for leadership, social sensitivity, respect-self-control, aggressiveness-stubbornness and apathy-withdrawal the effect size was small, for joviality there was medium effect.

Table 8. Scores obtained in the parents’ BAS at the beginning and end of the fifth grade of primary school.

| Scales | Pre-Test Mean | SD | Post-Test Mean | SD | t | gl | p | d |
|--------|---------------|----|----------------|----|---|----|----|---|
| Le     | 42.00         | 6.139 | 40.29         | 5.622 | 1.008 | 13 | 0.332 | 0.269 |
| Jo     | 29.93         | 5.717 | 33.14         | 3.900 | −2.330 | 13 | 0.037 | −0.622 |
| Ss     | 30.07         | 6.183 | 31.43         | 6.813 | −0.919 | 13 | 0.375 | −0.245 |
| Rsc    | 38.29         | 7.322 | 42.57         | 7.663 | −1.785 | 13 | 0.098 | −0.477 |
| Ast    | 6.50          | 3.838 | 8.57          | 8.401 | −0.958 | 13 | 0.356 | −0.256 |
| Aw     | 2.93          | 1.730 | 4.43          | 3.817 | −1.623 | 13 | 0.129 | −0.433 |
| As     | 5.36          | 4.343 | 5.71          | 3.771 | −0.354 | 13 | 0.729 | −0.094 |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

For the sixth grade no significant differences were observed for any of the scales, although joviality, apathy-restraint and anxiety-shyness showed a medium effect size (Table 9).

Table 9. Scores obtained in the parents’ BAS at the beginning and end of sixth grade of primary school.

| Scales | Pre-Test Mean | SD | Post-Test Mean | SD | t | gl | p | d |
|--------|---------------|----|----------------|----|---|----|----|---|
| Le     | 40.53         | 6.685 | 39.27         | 5.496 | 0.659 | 14 | 0.521 | 0.170 |
| Jo     | 27.40         | 7.109 | 31.40         | 5.565 | −2.131 | 14 | 0.051 | −0.550 |
| Ss     | 31.87         | 10.398 | 32.53        | 7.110 | −0.232 | 14 | 0.820 | −0.059 |
| Rsc    | 42.60         | 8.467 | 42.67         | 5.367 | −0.035 | 14 | 0.973 | −0.008 |
| Ast    | 5.27          | 4.728 | 7.87          | 9.448 | −0.898 | 14 | 0.384 | −0.231 |
| Aw     | 5.73          | 5.431 | 3.20          | 3.764 | 1.792 | 14 | 0.095 | 0.462 |
| As     | 6.60          | 3.521 | 5.13          | 1.846 | 1.361 | 14 | 0.195 | 0.351 |

Note: Le = Leadership; Jo = Joviality; Ss = Social Sensitivity; Rsc = Respect-Self-Control; Ast = Aggressiveness-Stubbornness; Aw = Apathy-Withdrawal; As = Anxiety-Shyness.

4. Discussion

Regarding the hypothesis about the positive social impact on the high ability children who entered CEPAC, the results indicated that, according to the parents’ perception, at
the end of the school year the students improved in facilitating aspects of socialization. The third, fourth, and fifth grade groups improved especially in joviality, whereas in the second grade group the improvement was in social sensitivity and respect-self-control. It is also important to note that the disruptive aspects decreased, particularly in the second, third, and fourth grade groups, which shows that clustering facilitates socialization because students live together with others like them. Even first grade students decreased their leadership, probably because they saw themselves among peers.

Although one of the main concerns of parents is the education of their children, they are also concerned about their socialization and adjustment [59,60]. Although it has been shown that high ability students as a group do not present difficulties in this area, attending a grouped school allowed for increasing the facilitating aspects of socialization and decreasing the disruptive ones that were present previously.

The main finding of this study is the absence of negative effects on students participating in a cluster grouping program. This is a relevant result, as it contradicts [38] results and supports studies pointing to the absence of negative effects [8,40–42]. However, it may help to clarify the growing debate the specialized literature on the adverse effects produced by this type of program.

These results are encouraging. Education with students with similar intellectual ability not only has no disruptive effects but also appears to be a very important socialization agent.

The principal limitation of this study is that only one educational center was analyzed without a control group that would allow us to understand whether there are differences in these variables when high ability students are educated in classrooms with peers of different intellectual abilities.

Moreover, given that CEPAC receives students every year, not only from elementary school, but also from middle and even high school, it is very important to continue these evaluations, in order to verify the effects of the grouping on the personal and social adaptation of the students with longitudinal and cross-sectional analysis.

5. Conclusions

In conclusion, parents perceive that their children’s socialization increase after studying in a cluster grouping for one year.

The increase is due to the school’s encouragement of the development of socioemotional skills in students and the creation of future active citizens, concerned with ethical and social problems of the world in which they live.

It is also evident that grouping not only has an impact at the academic level but also at the social level, particularly in aspects related to leadership, joviality, respect, self-control, among others.

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