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ARTICLE

Enrichment activities experienced by students with high abilities/giftedness

Lurian Dionizio Mendonça[I]
Vera Lucia Messias Fialho Capellini[I]
Olga Maria Piazentin Rolim Rodrigues[I]

ABSTRACT

Students with high abilities/giftedness stand out for their superior intelligence or special talent in different areas of knowledge, requiring specialized care. Enrichment activities are educational alternatives planned to serve this public. The aim of this research was to describe the enrichment activities experienced by students with high abilities/giftedness, based on the reports of students themselves, their families, and teachers. Questionnaires and specific protocols were developed and applied for each group of informants. As a result, it was found that students attended few enrichment activities, most of which available in laboratories of a university. They often consisted of exploratory activities, without considering the students' interest and abilities, not reaching type II and III enrichments, according to reports from all segments.

KEYWORDS

high abilities/giftedness; enrichment activities; special education.

[I]Universidade Estadual Paulista, Bauru, SP, Brazil.

ATIVIDADES DE ENRIQUECIMENTO VIVENCIADAS POR ESTUDANTES COM ALTAS HABILIDADES/SUPERDOTAÇÃO

RESUMO

Os estudantes com altas habilidades/superdotação se destacam por sua inteligência superior ou por um talento especial, em diferentes áreas do conhecimento, necessitando de atendimento especializado. As atividades de enriquecimento são alternativas educacionais previstas para atender esse público. Pretendeu-se na presente pesquisa descrever as atividades de enriquecimento vivenciadas por estudantes com altas habilidades/superdotação a partir do relato dos próprios estudantes, seus familiares e professores. Foram elaborados e aplicados questionários e protocolos específicos para cada grupo de informantes. Como resultados, verificou-se que os estudantes frequentaram poucas atividades de enriquecimento, a maioria delas disponíveis em laboratórios de uma universidade. Com frequência, elas consistiram em atividades exploratórias, sem considerar o interesse e as habilidades dos estudantes, não atingindo os enriquecimentos do tipo II e III, segundo relatos de todos os segmentos.

PALAVRAS-CHAVE

altas habilidades/superdotação; atividades de enriquecimento; educação especial.

ACTIVIDADES DE ENRIQUECIMIENTO CURRICULAR EXPERIMENTADAS POR ESTUDIANTES CON ALTAS CAPACIDADES/SUPERDOTACIÓN

RESUMEN

Los alumnos con altas capacidades/superdotación se destacan por su inteligencia superior o talento especial en diferentes áreas del conocimiento, que requieren atención especializada. Las actividades de enriquecimiento son alternativas educativas diseñadas para atender a este público. El objetivo de esta investigación fue describir las actividades de enriquecimiento experimentadas por estudiantes con altas capacidades/superdotación, a partir de los relatos de los propios estudiantes, sus familias y docentes. Se desarrollaron y aplicaron cuestionarios y protocolos específicos para cada grupo de informantes. Como resultado, se encontró que los estudiantes asistieron a pocas actividades de enriquecimiento, la mayoría disponibles en laboratorios de una universidad. Consistían muchas veces en actividades exploratorias, sin considerar el interés y las capacidades de los alumnos, no alcanzando enriquecimientos tipo II y III, según relatos de todos los segmentos.

PALABRAS CLAVE

altas capacidades/superdotación; actividades de enriquecimiento; educación especial.

INTRODUCTION

Students with high abilities/giftedness (HA/G), like students with a disability, have specific educational needs, which need and must be met appropriately, in the educational system, for each demand (Brasil, 2008). It is a right guaranteed by the National Policy of Special Education in the Inclusive Education Perspective, which is based on the Law of Directives and Bases of National Education (LDBEN) (Brasil, 1996) and the Federal Constitution (Brasil, 1988). Such legislations have as their basic principle a quality education, which is for all students, defining that the target audience of Special Education are students with: disabilities, global development disorders, and HA/G.

People with HA/G are those who "[…] present a high potential and great involvement with the areas of human knowledge, isolated or combined: intellectual, academic, leadership, psychomotor, arts, and creativity" (Brasil, 2009, p. 2). They stand out for their superior intelligence or special talent in different areas of knowledge or human activity.

Renzulli (2012), when asked about the need to offer special services for students with HA/G, commented on two purposes:

1. to provide young people with maximum opportunities for self-fulfillment, through the development and expression of the superior potential that can be present and,
2. to increase the pool of highly creative and productive individuals, because society needs more scientists, artists, writers, political leaders, and entrepreneurs in all fields of human activity. They are people who will try to solve the problems of our current society, improving health, economy, arts, human rights, quality of life, and preservation of natural resources.

The Special Education Operational Guidelines for Specialized Educational Assistance in Basic Education (Brasil, 2009) establish that education systems must enroll the students' target audience of special education in regular classes of mainstream education and in Specialized Educational Service (SES). SES has the function of complementing or supplementing the training of students, who "[...] will have their curricular enrichment activities developed within the scope of public schools of mainstream education in interface with the centers of activities for high abilities/giftedness […]" (Brasil, 2009, p. 2).

However, it appears that the assistance to students with HA/G has been dependent on actions carried out by the school itself or on initiatives of higher education institutions, via extension or research projects. However, when the service comes from higher education institutions, the activities do not always meet the interests of the students, since these institutions offer opportunities that are within the research area of postgraduates and not really what these students would like and need to learn. Nevertheless, they serve as exploratory activities, as students have the opportunity to get to know different things and, with that, they can expand their areas of interest.

Among the most used service alternatives are grouping, acceleration, and enrichment (São Paulo, 2012). Grouping consists of a differentiated service in which students are separated into small groups, defined according to their skill or performance level. These groups can take place in specific centers or in the mainstream school itself, either in specific classes or on a flexible part-time basis (Sabatella and Cupertino, 2007; São Paulo, 2008). The authors suggest that flexible groupings are considered desirable, as they can occur inside the classroom or in another space of the school, but within a certain period. The objective is for students to develop the topics covered in the classroom at their own pace, generating a greater possibility of deepening the themes and also allowing collaboration between peers (Virgolim, 2014).

Acceleration is a public policy provided for in the LDBEN (Brasil, 1996), which allows students to complete the school program in a shorter time, advancing stages of mainstream training, through the verification of learning. The São Paulo State Department of Education, through Resolution No. 81/2012 (São Paulo, 2012), provides that students with HA/G can be enrolled in a more advanced year, provided their school performance and their socio-emotional maturity is respected and, furthermore, this advance cannot exceed two years. Acceleration is a positive practice, which promotes better academic performance, increases motivation to learn, enables greater involvement in school activities and, also, a positive self-concept can be observed (Maia-Pinto and Fleith, 2015). However, these benefits are only verified when the process is well conducted since there are several variables that must be observed when referring a student for acceleration, as it may be that all their educational needs have not yet been met (São Paulo, 2008; Virgolim, 2014). Therefore, teachers must be prepared to assist accelerated students.

For Subotnik, Olszewski-Kubilius, and Worrell (2011), acceleration, regardless of the form used, can result in adjustment difficulties, especially if students are not evaluated properly or if they are placed with teachers who see this alternative in a negative way, creating unrealistic expectations about student performance and maturity. Pérez and Freitas (2014, p. 631) see acceleration as "[…] an administrative measure, but not a pedagogical strategy.", because it is an acquired right, but there is no regulation for its implementation. It is up to each school to decide how this process will take place, and not always all aspects involving the student are taken into account and, consequently, the best decisions are not always made (Maia-Pinto and Fleith, 2015).

Enrichment is a strategy that allows the flexibility of the school curriculum, with the aim of supplementing, deepening, and expanding school content. In this modality, students must be offered "[…] learning experiences different from those that the mainstream curriculum normally presents." (São Paulo, 2008, p. 51). According to Negrini, Rech, and Bulhões (2016, p. 41), "[…] enriching means promoting different experiences of stimulation in order to achieve a more expressive performance of the student.".

Sabatella and Cupertino (2007) indicated that enrichment can take different forms: enrichment of curricular contents; enrichment of the learning context, and

extracurricular enrichment. In addition to these forms, there are two modalities: vertical expansion, restricted to only one discipline, which will have its content expanded and deepened, and horizontal expansion, which involves several disciplines, integrated into a single project. This educational alternative can occur both in the mainstream classroom and in other spaces (São Paulo, 2008). Still, regardless of modality or form, enrichment should always be planned based on students' interests and abilities.

The Schoolwide Enrichment Model (SEM) was developed by Joseph Renzulli in the 1970s. It is considered one of the best-known and most solid alternatives for students with HA/G, and its effectiveness has been studied and validated for over 30 years of research, in addition to having already been implemented in several countries, including Brazil (Renzulli and Reis, 2000; Sabatella and Cupertino, 2007; Reis *et al*., 2011; Renzulli, 2014; Callahan *et al*., 2015). However, despite being widely cited in our country, there are few studies that have pointed out the impacts resulting from the application and execution of this type of enrichment (Bergamin, 2018; Arantes-Brero, 2019).

This enrichment model provides activities of three types: I, with exploratory experiences, such as lectures, mini-courses, and visits; II, with training activities, teaching of research techniques and personal skills such as leadership, communication, and self-concept; and III, with projects developed individually or in groups, with the objective of investigating real problems, deepening the knowledge in an area of interest (Sabatella and Cupertino, 2007; Reis *et al*., 2011; Virgolim, 2007; 2014; Renzulli, 2012; 2014).

Among the educational alternatives foreseen for a population with HA/G at the beginning of schooling, types I and II enrichments are considered the most appropriate, since students attend their classes regularly and, in the afternoon, receive specific assistance (São Paulo, 2008). Therefore, they keep in touch with their peers of the same age and, at the same time, can live with other students who have the same interests and affinities. Ribeiro, Souza, and Nogueira (2015, p. 5) considered the Schoolwide Enrichment Model as the most appropriate alternative and pointed out that the Centers for Activities of High Abilities/Giftedness (NAAH/S) have performed this type of service, given that it "[…] encourages students to delve deeper into their domains, to plan and organize their tasks, to participate in study and research groups, as well as to produce scientific projects according to the area that satisfies their interests.".

Even so, Callahan *et al*. (2015) stated that, although there are several educational alternatives for students with HA/G and that educators have advocated these special services, this group of students is still not challenged at levels that reflect their current performance or capabilities. Therefore, there is no way to define which is the best and most effective alternative, as each service "[…] must be tailor-made, according to the student's needs and their specific conditions." (Carneiro and Fleith, 2017, p. 1), with the aim of maximizing their capacity, without losing interest and motivation. However, in order to offer specialized services, it is necessary to identify this population.

Cao, Jung, and Lee (2017), in their study, sought to identify the types of assessments that were used in research in the area of HA/G from 2005 to 2016. The authors found that the assessments focused on identifying this population and that, despite being important and necessary, is not the only one, but perhaps the first. It is necessary to continue evaluating the progress and growth of these people's learning and the effectiveness of what was offered to them. In the literature review they conducted, of the 148 articles they found, 86% referred to identification, 9% to care programs, and 5% to the assessment of the learning of students with HA/G.

It appears that one of the problems faced is that there is not much empirical evidence of the effects of the services offered to students with HA/G. Several models are found in the literature, mainly referring to curriculum enrichment, but studies that showed the results of interventions are limited (Callahan *et al.*, 2015). Therefore, the present study aimed to describe the curriculum enrichment activities experienced by students who were identified with HA/G, based on the reports of the students themselves, their families, and their teachers, and also to examine their experiences and perceptions of these activities.

METHOD

This is an exploratory case study research. This design provides a closer approach to the research problem, making it more explicit. The main resource used in the case study is the use of several sources of evidence, giving more significant results to the research (Gil, 2017).

The present study was approved by the Research Ethics Committee (CAEE: 47138415.0.0000.5398) and all ethical aspects, such as the signing of the Informed Consent by parents and teachers and the Assent Term by the students, were followed.

PARTICIPANTS

The study consists of 17 students who were identified with HA/G, in an extension project that sought to identify and enhance the development of children and adolescents with superior abilities. It is worth mentioning that the students joined the extension project at the request of their parents or were referred by their schools. For identification and diagnosis, the project follows a multimodal evaluation protocol, adopting psychological and psychopedagogical instruments, with parents, teachers, and students as informants.

Of the students, 13 were boys and four were girls, aged between seven and 15 years, all enrolled in elementary/middle school, nine from public schools, and eight from private schools. The low number of girls compared to boys participating in the project reinforced gender inequality, as girls are often not referred for identification because they are seen as incapable of having high performance and potential (Reis and Gomes, 2011).

The families of these students and their teachers participated as informants. Family members were, on average, 39 years old, eight had higher education, four had secondary education, three had completed middle school education and two did not report their educational level. As for teachers, the questionnaires were sent to those responsible for the classroom or for the Portuguese Language and Mathematics subjects, as they corresponded to most of the class hours. Of the 25 questionnaires sent, four were not returned and three did not have all the questions answered. Thus, 18 teachers participated in the research, of which 15 were women, with an average of 12 years of teaching experience, and three of them had more than one degree.

PLACE

All data were collected in 2019 on the premises of a psychology training clinic at a public university in the state of São Paulo, where the extension project takes place.

MATERIALS

To verify the enrichment activities experienced by each student after being identified with HA/G, the following instruments were developed specifically for this study: a protocol in which students made a description of the activities developed, containing the name of the activity, duration, objectives, and a self-assessment of the activity and a questionnaire with open and closed questions for family members and teachers to fill in, indicating the curricular changes implemented and the opportunities offered to these students after the identification of the HA/G. The instrument consisted of two versions (parents and teachers) with 14 questions each. In addition to these instruments, a semi-structured interview was carried out with the students to complement the information about the enrichment activities experienced.

PROCEDURES FOR DATA COLLECTION AND ANALYSIS

Students and their families completed the questionnaires, individually, at the training clinic at a previously scheduled time, in sessions of approximately 45 minutes each. Students were required to complete a protocol for each activity they had participated in. Along with the questionnaires, students answered the interview, which was audio recorded . The questionnaire was sent to teachers, through family members, in a sealed envelope with a letter explaining the research and how to fill it out, with a stipulated period of 15 days for return.

Data analysis was carried out qualitatively and quantitatively. After transcribing the collected data, the materials were read in full and grouped into categories according to the questions and answers given. Thus, the answers were computed in frequency for quantitative analysis. The qualitative analysis was carried out based on the content analysis method which, according to Bardin (2009), is a set of techniques for analyzing communications that uses systematic

and objective procedures for describing the content of messages. This method is organized into three phases:

1. pre-analysis;
2. exploration of the material; and
3. treatment of the results (inference and interpretation).

RESULTS AND DISCUSSION

STUDENT REPORT

In total, 30 protocols were completed. Chart 1 shows how many activities were reported by the students, considering gender. It is observed that, in addition to the small number of girls identified with HA/G participating in the project, they are the ones who experienced fewer enrichment activities, which reinforces the stereotype of cognitive gender differences and giftedness as something inherent to men also by their families, as it was necessary for them to agree and take their daughter to activities. However, despite the need for and importance of analyzing the gender issues associated with giftedness, this research did not intend to deepen this subject.

Chart 1 – Number of activities that each student participated

Gender	No. of activities					Total
	0	1	2	3	4	
Boys	3	3	3	3	1	13
Girls	0	2	0	2	0	4
Total	3	5	3	5	1	17

Source: Elaborated by the authors.

Fifteen activities were described by the students, of which nine were promoted by the extension project that takes place in partnership with the university, two were developed by the university itself (outside the project), and the other four were activities promoted by the students' schools. Chart 2 presents a summary of the activities experienced by the students, according to their reports and the number of students who participated in each activity.

Overall, it appears that students participated in few activities. Of the 15 reported by them, only one student performed four activities, which was the maximum amount, representing only 27% of the activities offered, and three of the students reported that they did not participate in any activity. However, this can be justified by the fact that these activities are not in accordance with the students' prior interest, but rather based on the existing research laboratories at

Chart 2 – Description of the activities performed

	Place	Activity	No. of participants
Extension project	Center for Advanced Product Development (*Centro Avançado de Desenvolvimento de Produtos* – CADEP)	Observation of different printers (one for each type of material) and formation of some objects	3
	English curriculum enrichment	Language teaching and curiosities	1
	Human Movement Research Laboratory (MOVI-LAB)	Observation of the objects used in the tests and how the human being moves	1
	Didactic Laboratory of Human Anatomy	Manipulation and description of anatomical parts, such as organs and parts of the human body	3
	Herbarium Laboratory	Collection of plants in the field, observation of characteristics, dehydration, and archiving	2
	Didactic astronomical observatory	Explanation and visualization by the telescope of some planets and their moons	4
	Handball project	Sport teaching and how to improve agility	1
	Robotics project	Building robots with different programming	4
	Music project	Study of musical instruments, reading sheet music, and sound evaluation	4
	Psychomotricity project	Body and motricity skills activities	5
University	Vacation course - math challenges	Thinking and doing math using math games	1
	Science curriculum enrichment	Research on subjects of interest, readings, and creation of objects in the area of science	1
	Bio na rua project	Visualization, explanation, and handling of science objects	1
School	Plastics Industry and Trade (Plasútil)	Explanation and observation of plastic handling	1
	Municipal Zoo Park	Record of the characteristics of the observed animals	1
	Municipal Theater	Observation of the play: The Ugly Duckling	1

Source: Elaborated by the authors.

the university and available for guided visits to the participants and by the activities developed at the students' schools. Little adherence is observed even in the activities developed by the school.

The remaining activities, English enrichment, music/robotics, and psychomotricity project, were also developed by the students of the extension project. However, they are activities classified as type II enrichment. In this case, a more in-depth investigation of the student's area of interest may occur.

The music and robotics projects took place in 2017 and were organized in 12 fortnightly meetings of 50 minutes each, covering curricular contents of music education. Robotics was used as a pedagogical support tool. On the other hand, the psychomotricity project took place in the same year, for 25 weeks, with meetings of 90 minutes each. This project aimed to work emotion, cognition, and motricity simultaneously, through playful activities (Peixoto, 2019). English enrichment took place during 2018, with weekly meetings of 50 minutes each. The activities were planned according to the level of learning of each student, aiming at their deepening in the language.

The vacation course and the Bio na Rua project were activities developed at the university and open to the population, and not exclusively to project participants. The vacation course consisted of different activities that were developed during the school holidays, with the aim of providing students with the possibility to know and explore the different spaces and research existing at the university. Among the activities carried out in the course, the one reported by the student refers to mathematical challenges, which took place in a single day, lasting four hours, aiming to develop logical reasoning through the construction and execution of mathematical games. The *Bio na Rua* project takes place annually and aims to bring curiosities and information about all areas of biology by exposing biological materials such as animals fixed in alcohol, taxidermized animals, didactic models, microscope slides, and anatomical models, among others. These two activities are classified as type I enrichment.

Science enrichment, linked to the university, was developed within a state public school for a single class, which had a student with HA/G. The activities took place once a week during 2018 and were planned based on the school curriculum in the science area and the interest shown by students, with the aim of achieving the three types of activity proposed by Renzulli, type I, II, and III enrichment (Carneiro, Bergamin and Zanata, 2019).

Regarding the activities promoted by the schools, based on the students' descriptions, one can infer that they are type I enrichment activities. However, there was no information about a possible deepening, reaching type II and III activities.

Another highlight is that during data collection, students were instructed to report all activities in which they participated shortly after being identified with HA/G. However, some students had difficulties in pointing out the enrichment activities they experienced because they did not remember or did not understand what these activities would be, even after the explanation. Thus, it is believed that these students performed other activities that were not described as enrichment.

However, with regard to the extension project, we know that only the nine activities reported were actually carried out between 2017 and 2018. Considering the cognitive capacity that these students have, 15 activities fall far short of what was expected and desirable for the full development of their capabilities and, still, more than 70% of the activities were exploratory in nature, without a deepening.

Mendonça, Rodrigues, and Capellini (2020) highlighted the importance of offering type I activities, considering that students, in the age group of project participants, know very little about their potential and the many possibilities of knowledge that, in general, the areas of the school curriculum are restricted to. Hodges, McIntosh, and Gentry (2017) pointed to positive results in relation to enrichment activities, even if they were not previously chosen by students, showing that often the child is not interested, though due to a lack of knowledge of the various possibilities of study areas.

Chart 3 presents the students' evaluation of the activities they experienced, in terms of learning, what they thought of them, how they felt when performing them, and whether they would recommend the activity to other students. Concerning the students' evaluation of these activities, it is observed that they reported good performance, they liked the proposed activities, especially the music/robotics project, and they felt very good when performing them. All students said they recommend these activities to other children or teenagers.

In the interview, the students pointed out that they would like to learn new things, which they do not learn at school. Some pointed out school subjects that are not part of their school curricula, such as chemistry, physics, and Spanish, and more specific areas of science such as medicine, marine biology, plants, the human body, rivers and fish, and, in the area of mathematics, the square root. Others described activities in the artistic area, such as music, theater, cinema, and photography, and still others in the area of technology, such as computer programming, game design, and robotics.

It appears that, of the interests pointed out by students, several corresponded to the activities offered by the extension project; however, it is necessary to investigate the level of depth of students in these areas and, therefore, promote new activities in order to increase the complexity. As for the other areas of student interest, a partnership between the community and universities is necessary to promote the full development of these students, according to their area of interest and motivation.

Overall, everyone reported that these activities were important because they were not taught at school and many of them could only be seen in college, such as music theory and computer programming. Students also said that there were various equipment and materials in these activities, such as a telescope, games, and parts of the human body and it was possible to see the objects in a real way and manipulate them, unlike the school, which does not have these materials and, when they have them, they cannot be touched. They also highlighted that at school they can only go through photos, which are presented in books, or when teachers draw on the blackboard, and it is not possible to touch, feel, and smell. Tay, Salazar, and

Chart 3 – Assessment of the activities performed by the students

Activity	Apprenticeship			Activity			Feeling			Recommends
	E	B	R	O	B	R	MB	B	M	S
3d printer	1	2	0	0	3	0	2	1	0	3
Vacation course	0	1	0	1	0	0	0	1	0	1
English Enr.	0	1	0	1	0	0	1	0	0	1
MOVI-LAB	0	1	0	1	0	0	1	0	0	1
Anatomy	2	1	0	2	1	0	1	2	0	3
Herbarium	1	1	0	1	1	0	2	0	0	2
Astronomy	2	1	1	3	1	0	2	2	0	4
Bio na rua	0	1	0	0	1	0	1	0	0	1
Handball	0	0	1	0	1	0	1	0	0	1
Music/Robotics	1	3	0	4	0	0	3	1	0	4
Psychomotricity	3	0	2	3	1	1	2	3	0	5
Science Enr.	0	1	0	1	0	0	1	0	0	1
Plasútil	0	0	1	0	1	0	0	1	0	1
Zoo	1	0	0	0	1	0	0	0	1	1
Play	0	1	0	1	0	0	1	0	0	1
Total	11	14	5	18	11	1	18	11	1	30

Caption: E = Excellent. B = Good/Good/Good. R = Regular. O = Great. MB = Very good. M = Bad. S = Yes.
Source: Elaborated by the authors.

Lee (2018) affirmed the importance of practical and concrete activities in teaching children and adolescents with HA/G, emphasizing that they can be challenging and stimulating, in addition to favoring the understanding of more complex and abstract concepts.

Students said that the teachers of these activities have more expertise in their areas of study, are nice, fun, playful while teaching, they are more patient, calm, explain the activities step by step, inform the details, allow and wait for students to try and manipulate objects, do not give a ready answer, answer questions, and address various curiosities. These data corroborate the findings of Miller and Gentry (2010) in which students reported having learned new concepts in enrichment programs, as teaching was more advanced than in regular schools, learning was more interactive and practical and, also, there was support from the teachers.

Despite this, such judgments are justified because they are more playful and practical activities in which students are the protagonists of their learning and, teachers do not have a curriculum that must be followed and fulfilled. Furthermore, curriculum enrichment activities are organized according to students' interest and motivation.

With this in mind, enrichment for the whole school is necessary, as it makes the regular curriculum more flexible, with the inclusion of broader and investigative activities, taking into account the diversity of students that the school encompasses (Renzulli, 2014). Bergamin (2018) and Arantes-Brero (2019) found satisfactory data when proposing this type of intervention, showing that it is possible and how learning becomes more meaningful for all students.

RELATIVES' REPORT

In the parents' report about the care provided by their children's school, after being identified with HA/G, it was found that acceleration was the form of care most performed by schools (75%) and no family member pointed out grouping. Callahan, Moon, and Oh (2017) investigated the educational practices developed for students with HA/G in the United States and found acceleration as the most offered service in high school. However, as in this case, they are children and adolescents, aged between seven and 15 years, care must be taken so that the immaturity and emotional insecurity that these students may have do not hinder and/or harm their adaptation and good academic performance (Sabatella and Cupertino, 2007; São Paulo, 2008; Negrini, Rech and Bulhões, 2016). It is worth mentioning that this study did not aim to evaluate this type of intervention, but it needs to be planned and organized, always under the supervision of specialized teachers in the area and psychologists.

With regard to adaptations, only 23% of family members stated that the schools made some adaptation to meet these students after the identifying HA/G. Among the adaptations, the family members pointed out the teacher of the mainstream classroom as the main responsible for the changes, that there was a referral to the resource room and, one of the family members highlighted that the school management team sought guidance from the Education Board to understand how to deal with this student, as well as to know what their rights and duties are. However, none of the family members could describe which adaptations were performed exactly. Furthermore, it was reported by the parents that, instead of making changes to better accommodate these students, the school indicated the transfer to another institution, usually a private one, because they would not be able to serve them. Such data can be verified in the excerpts below:

> The 3rd and 4th grade teachers elaborated different tests, but not now, he has help from other colleagues. (F05)
>
> The school sought out the Education Board in search of information and received guidance for curriculum adaptation from a specialist in the area. (F09)

Curriculum supplementation is also a form of enrichment, which consists of adapting or deepening the regular curriculum, corresponding to the educational needs of students with HA/G, thus, small adjustments made within the context of the classroom, which can be easily performed by teachers (Bueno, 2016). It is verified that, despite the parents not knowing what adaptations were made and

even if a very small number of teachers demonstrate having carried them out, it is observed that there are professionals committed to teaching and, especially to these students, even if it is trying to seek help and minor adjustments.

Also, through the parents' report, it was found that only 23% of the schools/teachers provided students with HA/G with differentiated activities, which consisted of doubling the volume of activities, supplementing materials, and borrowing books for studies. In this case, the biggest flaw observed is the complexity of the activities, which focus on the quantity rather than on the quality of what is offered. In the words of the parents, it seems that what the school offers are activities in exhaustive quantities, which do not contribute anything to the education of the students. For Sabatella and Cupertino (2007) overloading children with a large volume of tasks is penalizing them for their abilities. In enrichment for the whole school, Renzulli (2014) defends the compaction of the curriculum, through elimination or simplification of the contents, in order to avoid the repetition of the contents that the students already dominate and, thus, they can dedicate themselves exclusively to new subjects.

Regarding the educational alternatives that these students participated in outside the school, 68% of the family members pointed out the extracurricular enrichment and described the visits carried out in the extension project. The other activities mentioned refer to private lessons paid for by the family members in order to complement school activities, such as drawing, soccer, volleyball, violin, and chess classes. Of the parents, 12% said they had not provided any educational alternative for their children and 23% did not consider these activities to be different. It appears that there is still confusion about curriculum enrichment activities, showing that family members need to be instructed in how they can help in the development of their children's skills.

May (2000) points out that these parents feel unprepared to deal with their gifted children, due to myths and misinformation. "Mistaken and contradictory information make parents, for example, feel confused about the stimulation they should provide to their children" (Silva and Fleith, 2008, p. 342). This indicates that family members need to be guided by professionals specialized in the area and support groups to study and exchange experiences regarding giftedness has proved to be a good strategy (Aspesi, 2007; Sabatella, 2008; Sakaguti, 2010).

Almost 60% of the parents believe that the activities offered are not enough for the full development of their children, justifying the lack of financial conditions and availability of time, both for the child and the family itself, to provide other activities. Others believe that more activities would overwhelm their children. The reports of family members can be seen in the following statements:

> Having more things would be interesting, but he doesn't have many interests, maybe swimming, a sport he lacks. (F01)
> I think it's too little, limited, he doesn't do it more for lack of opportunities. (F10)

> The week is already busy, leisure is only on Saturday and Sunday (when there is no championship), he has to be a child too. (F12)

Aspesi (2007) highlighted that parents of children with HA/G feel confused about the number of stimuli they should offer to their children. The importance of listening to these children and adolescents is highlighted, granting them autonomy so that they can decide whether these activities meet their needs or not.

Regarding the different activities that the family could offer to their children, most (45%) mentioned extra activities related to sports, such as soccer, futsal, judo, swimming, volleyball, and dancing. In the area of music, piano, flute, keyboard, guitar, and violin classes were reported, and in other areas, such as English classes, drawing, cinema, and chess. Another 18% reported that they would like to be more present in their children's school life, 14% that they want to provide a better school, such as a private one, and the others highlighted the desire to invest in their children's ideas and inventions, to provide the participation in scientific events, such as fairs and exhibitions and in long-term courses in the area of interest.

As for enrichment activities, parents agreed with what their children reported and described the projects and visits. However, 42% said they did not know how to describe the activities carried out in these enrichments and the others made superficial descriptions, reporting that they visited laboratories and observed some objects, as the reports point out:

> In the anatomy laboratory, he couldn't explain what he did, in robotics they assembled a robot, like a car with a distance sensor, light, and music. (F05)
> They talk a lot about astronomy, science fair. I don't know how to describe the activities, he tells everything, but he doesn't describe the practice. They produce games. (F12)

Thus, it is clear that parents do not know exactly what their children did in these activities, which can be explained by the lack of interaction and dialogue between parents and children, or even by the parents' difficulty in understanding the activities offered. According to Silva and Fleith (2008, p. 339) "[…] for an individual to achieve superior performance in some area of knowledge, the interactions established between him and the members of his family become important.", as the family is the foundation of any individual's development.

Regarding the evaluation of the enrichment activities experienced by the students, 71% of the parents stated that they contribute to school activities. More than 80% considered these experiences as important or extremely important in the lives of their children and rated them as excellent or good, since they were able to perceive an improvement in school grades, that the child learned to have more opinions, to listen to the other, to work in a group, which improved self-perception, the making of new friends, the experience brought maturity, improved social life, they are more stimulated and motivated to learn new things, as the following reports show:

> It contributed to everything, he is living with people just like him, it helps in socializing, he sees that he is not 'different' by himself. (F04)
> He's in contact with other children like him, curious, new environment, new learning. (F13)
> He becomes more stimulated and works on the social issue. What they have in school is too little, and they get discouraged, they lose interest. It develops the issue of learning, independence, self-esteem as a whole. (F16)

The family members who said that there was no contribution justified that the activities needed to be more constant and of long duration or because they had not seen any change so far: "Not just visits, it needs to be something constant, with closed periods." (F11).

As evidenced by Olszewski-Kubilius and Lee (2004) and Tay, Salazar, and Lee (2018), it can be seen that parents appreciated the activities provided in the extension project and their effects on the development of their children, evaluating them positively, even if they were few and that they were only in the first level of enrichment.

TEACHERS' REPORT

Regarding the educational alternatives offered to students identified with HA/G, the acceleration and enrichment modalities were the most cited by teachers, corresponding to 30% each, reaffirming what was reported by the parents. Of the forms that enrichment can take, the learning context was the most mentioned (13%). For Sabatella and Cupertino (2007, p. 75) this form of service must "[…] take into account the different characteristics of the students, the level of previous knowledge, the work capacity and learning and expression styles of each one.".

With regard to adaptations, tutoring, monitoring, and individualized teaching plan, it was noticed that more than 70% of the teachers did not provide these opportunities or did not respond, perhaps due to a lack of knowledge of the terms, however, this is an alarming fact, demonstrating a lack of knowledge on the subject and commitment to the care of these students. It is worth noting that, after identifying students with HA/G in the extension project, teachers and school staff received feedback, in which they were guided on the need for this service to these students.

The adaptations that teachers reported having made for these students refer to material that comes from more advanced classes. According to Sabatella and Cupertino (2007), we should avoid overlapping curricular contents from the following years, as this only postpones the problem and causes disinterest and demotivation. It was also highlighted that the school works with groupings by learning levels and that the adaptations made were not specific to this student, since this is a common practice at the school. The following excerpts describe some of the reports:

> Regardless of the diagnosis, the methodology works with groupings by learning levels and constant formative assessments. (P09)

> Access to the following year's material; in everyday life (routine) challenges were presented in addition to the contents of their class. (P14)
> When students finish their activities, extra complementary activities are offered. (P16)

As for tutoring, one of the participants said that the school's management team performs this function, following the student's individualized teaching plan and directing the student's participation in school Olympics. Regarding the monitoring, the teachers reported that these students help their colleagues in the correction of exercises and act in the leadership of the colleagues in some activities: "He monitors his colleagues in the correction of exercises, explores a monitoring leadership." (P14).

It appears that the tutoring presented does not correspond to the direct monitoring of the student, as it should be, but of the teacher responsible for planning the classes. This reinforces the need to prepare the teacher for the care of these students. When monitoring occurs, it benefits other students. There were no reports in which students with HA/G received specific monitoring, focused on their needs and interests. However, this is a strategy cited in some studies (Pérez and Stobaus, 2005; Rech and Freitas, 2005). Sabatella and Cupertino (2007, p. 75, emphasis added) explain that:

> **Specific tutoring** involves assigning someone in charge of assisting the student in their enrichment activities. This person could be a regular teacher from the school itself, someone from outside the school, or a more advanced classmate. This alternative offers a specialized and personalized service in the planning, ranking, and execution of the activities necessary for the acquisition of knowledge. **Monitoring** is also a specialized and personalized way of learning, but in this case, it works both ways: students can benefit from the help of a monitor or, on the other hand, when the monitor is the student, they may feel more motivated and deepen their knowledge.

About the individualized teaching plan, about 90% of teachers said they did not perform or did not respond. One of the professionals reported that the school team is undergoing training to meet the needs of these students and therefore, so far, no special activity has been carried out for this student.

The teachers, who said that they developed activities with these students in addition to those planned for the others, justified that they carried out diagnostic activities to verify the level of knowledge. They also informed that the grouping carried out by the school already provides more activities according to the level of learning of students and that these additional activities are directed to the field of arts or that, when students finish the activities, they create games or build objects.

When asked whether these activities are sufficient for the development of these students, the teachers were divided. 44% said that these activities are not enough, claiming that these students are very dynamic, that they cannot stay still

for a long time and, therefore, the activities are always insufficient. 39% considered these activities sufficient and one of the teachers claimed that the curriculum content is already extensive and has extra activities, which seems to be sufficient to meet the needs of these students. Another teacher explained that these students are already very productive and, therefore, do not need anything else. As the following statements show:

> The school develops many diversified activities; however, it is always important to deepen them for skills training and growth in areas of interest. (P06)
> We believe that most (if not all) educational institutions in the city are not prepared to deal with the total stimulation of children/adolescents with high abilities. (P07)

However, we know that without stimuli, people with HA/G can "[…] despise their high potential and present frustration and inadequacy to the environment." (São Paulo, 2008, p. 13). Callahan *et al*. (2015) reiterated that people with HA/G, in our current society, are still not stimulated according to their real capabilities and needs.

As for the activities that teachers could offer to favor the development of these students, 35% indicated complementary and in-depth activities, such as resuming basic content from the previous year, extra challenges, and logical reasoning exercises, solving mathematical problems, activities of reading, interpretation, and production of texts. It should be noted that none of the activities mentioned by the teachers are consistent with the areas of interest described by the students themselves.

Teachers interviewed by Maia-Pinto and Fleith (2004) reported assisting students with HA/G using the following strategies: monitoring, answering questions, carrying out group activities, and indicating bibliographic references. Bahiense and Rossetti (2014) pointed out as the most cited by teachers: encouraging and motivating students, carrying out extra activities, carrying out interdisciplinary activities with the help of other teachers, seeking to extract the maximum of the students' capacity, and answering questions when asked for their help. Thus, it is observed that the strategies pointed out by the teachers are summarized in this study, like those mentioned by other researchers, as extra activities.

Callahan, Moon, and Oh (2017) found that, in the United States, the most developed content in activities to enrich students with HA/G refers to the area of language and mathematics, and the skills refer to creative thinking and problem-solving. However, there was no evaluation to find out whether the proposed activities were in accordance with the students' interests, similar to what was found in this study.

Sabatella and Cupertino (2007, p. 78) argued that we cannot "[…] privilege content over the practice of critical thinking or more original and in-depth approaches to a problem.". For Virgolim (2007, p. 66) the educational services offered to these students need to "[…] promote their academic, artistic, psychomotor and

social development […]". It can be seen that, from the activities described, in addition to the teachers not paying attention to the students' areas of interest, they did not show concern for the global development of these individuals, especially in terms of criticality and creativity.

It is noteworthy that the identification of students with HA/G is the basis for SES to be performed. When the school does not have a student in this condition, it is expected that it has not yet been challenged to implement curriculum enrichment. But in these cases, the participants were already confirmed with HA/G. This means that the schools had this knowledge for at least a year and, even so, they ignored it and did not offer enrichment, which is a right (Brasil, 2009).

The results obtained by Arantes-Brero (2019) confirmed the results of this study, when he observed that a specialized teacher, from the resource room for students with HA/G, showed little commitment with regard to her own education/training and in the provision of activities to students. The author found that the low motivation presented by her had an impact on the students' performance, given that some of them gave up attending the service.

With regard to referrals to enrichment activities outside the school context, it is observed, once again, that teachers are not attentive to the needs of their students, as well as the opportunities that can be provided through partnerships with the community. Of the professors, 30% said they had referred and/or indicated these students to some extracurricular enrichment activity.

Regarding the contribution of participation in these extracurricular enrichment activities to school performance, 44% of teachers agreed that these activities help at school and explained that, through them, it is possible to meet the needs and interests of these students individually. As an immediate result, there would be less chance of demotivation along the academic path. Of the teachers, 17% said that these activities do not help at all at school, and the others did not respond. For Heredero (2010, p. 194), "[…] with regard to actions, Special Education throughout the country has been much more in the hands of philanthropic, assistance and segregationist entities and institutions.". Undoubtedly, schools cannot exempt themselves from the responsibility of serving these students, leaving it only to the family and the community. Pavão, Pavão, and Negrini (2018) highlighted that we need to invest in the process of training teachers, so that new teaching practices will emerge and it will be possible to pay more attention to students with HA/G.

More than 70% of teachers considered these enrichment activities as important or extremely important, and half rated these experiences as excellent or good, and the rest did not respond. The teachers who evaluated the activities positively reported several contributions to the development of these students, such as personal acceptance and appreciation of themselves, improvement in relationships and communication, and enhancement of their skills and abilities, which made students more satisfied and stimulated in addition to serving as an experience. Teachers' reports can be seen in the following excerpts:

> Better participation in the classroom, communication, interpretation, and interaction with colleagues. (P05)
> It can bring the student more autonomy, emotional security, and confidence in oneself to fight for higher goals. (P16)

These data reaffirm the findings of research in the area, such as improvements in the emotional (Sastre-Riba *et al.*, 2015; Kaul *et al.*, 2016; Kim, 2016; Santos, 2016), motivational (Sastre-Riba *et al.*, 2015; Kaul *et al.*, 2016; Arantes-Brero, 2019), social (Miller and Gentry, 2010; Kaul *et al.*, 2016; Kim, 2016; Santos, 2016) and cognitive aspects (Miller and Gentry, 2010; Sastre-Riba et al., 2015; Kaul *et al.*, 2016; Kim, 2016; Santos, 2016; Tay, Salazar and Lee, 2018; Arantes-Brero, 2019). Finally, most teachers (78%) would recommend the participation of other students in these extracurricular enrichment activities, justifying that every form of support is important, that they observed more family participation, and that students are able to improve their knowledge, due to more specific work.

FINAL CONSIDERATIONS

The present study sought to describe the enrichment activities experienced by students with HA/G. Results indicated that most of the activities offered to students were mostly exploratory, promoted by the extension project of a public university, which organized activities in the existing laboratories. It was found that none of these proposed activities were organized according to the interest and abilities of the students, not reaching the enrichment of types II and III. However, considering the age of the participating children, it is a way of exposing them to information about different scientific activities. It was observed that parents did not know what schools offered to their children and also how they could offer additional developmental activities. On the other hand, it was found that schools leave the care of this population to family members and other institutions. Not even within the classroom itself, differentiated activities are offered for these students, which could also benefit the whole class. It is noticed that students with HA/G are still not met in their needs and stimulated in all their potential. It is evident that the teachers knew about the conditions of these students and, even so, they ignored it and did not offer enrichment, which is a right.

As limitations of this research, we point out the fact that enrichment activities were only at the exploratory level, not being possible to offer a continuity of the activities, and because they were not planned considering the interests and needs of the students. As strengths, it is evident that there is little research on the services offered to students with HA/G, especially with regard to their interventions, which reinforces the importance of this study, based on the need to provide adequate and quality care to students with HA/G.

We hope that the results of this study will provide subsidies for carrying out further research, encouraging reflection, and expanding actions and services, with the aim of improving and expanding the service opportunities for students with

HA/G. Interventions with the proposal of different types of enrichment, valuing the students' areas of interest, can be the object of new research in the area. It is important that such activities are disseminated, serving as a model for the creation of new service opportunities.

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ABOUT THE AUTHORS

Lurian Dionizio Mendonça has a doctorare in Psychology of Development and Learning from the Universidade Estadual Paulista (UNESP). She is a teacher in the municipal network of Bauru (SP).
E-mail: lurian.dionizio@unesp.br

Vera Lucia Messias Fialho Capellini has a doctorare in Special Education from the Universidade Federal de São Carlos (UFSCar). She is a professor at the Universidade Estadual Paulista (UNESP).
E-mail: vera.capellini@unesp.br

Olga Maria Piazentin Rolim Rodrigues has a doctorare in Experimental Psychology from the Universidade de São Paulo (USP). She is a professor at the Universidade Estadual Paulista (UNESP).
E-mail: olga.rolim@unesp.br

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