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FEMALE GIFTEDNESS, AN OUTDATED OXYMORON? INCURSION INTO THE STATE OF THE ART[1]

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ABSTRACT. The study of gender issues can also be associated with the study of gifted and talented students. The main goal of this paper was to conduct a literature review in the area of gifted and talented women to understand the state of the art and to clarify if this topic is still current and pertinent. In that sense, a research was done in the PSICINFO database, using two descriptors: 'gifted and talented girls' and 'gifted and talented women', and three cumulative criteria, using the available resources and designations in the database: a) research period: referring to the last 5 years (from 2011 to 2016); b) relevance, considering the descriptor: five stars; and c) reviewed with peer review. Thirteen studies were selected and analysed. The data were organised according to categories such as: year of publication, journal, authors, objectives, research typology, participants, instruments and results. Three categories emerged according to the main goals of the studies: experiences of gifted girls (4 studies); differentiated perceptions and productions according to gender (5 studies); and, intervention effects on gifted girls (4 studies). The data suggest the relevance of research on the subject.

Keywords: Gifted, literature review, human sex differences.

SOBREDOTAÇÃO NO FEMININO, UM OXÍMORO ULTRAPASSADO? INCURSÃO PELO ESTADO DA ARTE

RESUMO. O estudo das questões de género também pode aparecer associado ao estudo dos alunos com altas habilidades e sobredotação. O principal objetivo deste trabalho foi realizar uma revisão da literatura na área da temática das mulheres sobredotadas e talentosas, para perceber qual é o estado da arte e se este tópico ainda se revela atual e pertinente. Nesse sentido, foi realizada uma pesquisa na base de dados PSICINFO, utilizando dois descritores: *gifted and talented girls* e *gifted and talented women*, e três critérios cumulativos, utilizando os recursos e designações disponíveis na base de dados: a) período de pesquisa: referente aos últimos 5 anos (de 2011 a 2016); b) relevância, considerando o descritor: cinco estrelas; e c) revista com revisão de pares. Foram selecionados e analisados 13 estudos. Os dados foram

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organizados em função de categorias como: ano de publicação, revista, autores, objetivos, tipologia de investigação, participantes, instrumentos e resultados. As 3 categorias que emergiram em função dos objetivos dos estudos são: vivências de raparigas sobredotadas (4 estudos); perceções e produções diferenciadas em função do género (5 estudos); e, efeitos de intervenção em raparigas sobredotadas (4 estudos). Os dados permitem verificar a pertinência de investigar a temática.

Palavras-chave: Sobredotados; revisão de literatura; diferenças sexuais.

SUPERDOTACIÓN EN EL FEMENINO, UN OXÍMORON SUPERADO? INCURSIÓN EN EL ESTADO DEL ARTE

RESUMEN. El estudio de las cuestiones de género también puede aparecer asociado al estudio de los alumnos con altas capacidades y superdotación. El principal objetivo de este trabajo fue realizar una revisión de la literatura en el área de la temática de las mujeres sobredotadas y talentosas, para percibir cuál és el estado del arte y si este tópico todavía se revela actual y pertinente. En este sentido, se realizó una investigación en la base de datos PSICINFO, utilizando dos descriptores: *gifted and talented girls* y *gifted and talented women*, y tres criterios acumulativos, utilizando los recursos y las designaciones disponibles en la base de datos: a) período de investigación: para los últimos 5 años (de 2011 a 2016); b) relevancia, considerando el descriptor: cinco estrellas; y c) revisada con revisión de pares. Se seleccionaron y analizaron 13 estudios. Los datos fueron organizados en función de categorías como: año de publicación, revista, autores, objetivos, tipología de investigación, participantes, instrumentos y resultados. Las 3 categorías que surgieron en función de los objetivos de los estudios son: vivencias de chicas superdotadas (4 estudios); percepciones y producciones diferenciadas en función del género (5 estudios); y efectos de intervención en las niñas superdotadas (4 estudios). Los datos permiten verificar la pertinencia de investigar la temática.

Palabras clave: Superdotados, revisión de literatura, diferencias sexuales.

Introduction

Gender studies have sought to clarify and to deepen the knowledge about labor performance and the attribution of social and professional roles. In fact, throughout the mankind history, women have not assumed, as prominently as men, outstanding professional roles. According to Reis (2005), women are less recognised as gifted [throughout the paper the term giftedness and/or talent is used in a broad sense, since there are several designations that can be adopted in this scope, but referring to potential and superior performance, which can be translated, in Brazil, by the designation of High Abilities Students/Giftedness (AH/G) and, in English, by Gifted/Talented Students (G/T)], they write and publish fewer books, hold fewer leadership positions, regist fewer patents, and receive fewer awards. This can be illustrated, for example, by the awarding of the Nobel Prize, which, over its lifetime, from 1901 to 2017, was awarded 585 times, with 923 laureates (892 persons and 24 organisations) (The Nobel Foundation, 2017a), but only 48 of them were

women, which were awarded 49 prizes with Marie Curie receiving 2 prizes (Physics, in 1903, and Chemistry, in 1911) (The Nobel Foundation, 2017b).

In this context, studies on the presence of women in some knowledge and professionals areas have been developed. In this regard, Lombardi (2016) recently published a paper on the presence of women in engineering, in Brazil, revealing a growing feminisation process in science and technology, accompanied by a scientific production affirmation. In fact, some of the personality traits, more traditionally associated with the female gender, seem to be an asset to performance on top professional roles, such as the case of business management in large companies (Garcia-Santos & Antunes , 2013).

More specifically, the concern with the choice of science and technology usually appears in the literature under the STEM acronym (Science, Technology, Engineering and Mathematics), trying to understand the factors associated with the lower interest and investment of women in these domains (Heilbronner, 2013; Kerr, Vuyk, & Rea, 2012). In fact, it has been asked whether the gap between men and women in the STEM areas still exists, also in the presence of giftedness, since the social, economic and political conditions, in which gifted and talented girls nowadays live are considerably different from those existing some time ago (Roeper, 2003). Schober, Reimann and Wagner (2004) found that, although there was less discrepancy between the performance of gifted boys and gifted girls, there were still some differences, particularly behavioural, such as the preference of boys for natural sciences and the preference of girls for languages. According to these authors, and despite the evolution registered of lower gender performance differentiation, the study of achievement of gifted girls was not, at the time, an obsolete issue (Schober et al., 2004).

Recently, when comparing talented youngsters, Heilbronner (2013) observed that girls reported lower self-efficacy in STEM areas, at higher education, and few of them selected these areas for admission. She also noted that interests were recognised by participants of both sexes as a decisive factor for the choice of the profession, with more girls choosing areas such as Biology and fewer girls selecting fields of Engineering and Physics or Astronomy. It should also be noted that a large proportion of older women reported having left the STEM area due to the lack of flexible hours and their need to respond to family responsibilities. These results correspond to what Reis and Graham (2005) had already mentioned, namely that gifted girls tend to consider a relatively narrow range of career options, excluding mathematics, technology and engineering. Despite this fact, there are gifted girls who choose STEM areas and for whom the management of family life is a reality, albeit the dilemma between work and family may not happen if the partner is perceived as one of hers main supporting persons (Antunes & Almeida, 2008).

This last aspect refers to the fact that gender issues are not only related to women, but also to men, that is, the role men play in society and how they handle it (Kerr & Multon, 2015). However, in the case of gifted girls and gifted boys, it seems that more than a focus on the duality female versus male, it is important to recognise them as gifted people or, in other words, bright young people, advocating a certain psychological androgyny, which will allow them to follow more idiosyncratic careers (Freeman & Garces-Bascal, 2015).

In fact, some literature reveals that gifted girls and gifted boys have more similarities with each other, than those registered between the gifted students and other non-gifted students of the same sex, in variables such as intelligence, creativity and psychological adjustment (Kerr et al., 2012). Considering these data, Kerr et al. (2012) question why the interest in the study of gender differentiation in gifted people remains, and they point out two reasons for this to happen: on the one hand, the existence of differences in vocational options, with the supremacy of men in the STEM areas, as well as the salary differentiation

and the recognition in high-level positions more favorable to men as well; and, on the other hand, the curiosity of academics and the general population to understand the apparent polarity of men and women in several traits and behaviours. According to these authors, research shows that gender-biased practices interact with individual variables producing possible differences in interests, achievements and well-being. Therefore, work with educators is needed, throughout schooling, to prevent such effects on gifted students (Kerr et al., 2012). The beliefs that teachers have are reflected in their educational practices, thus conditioning the achievement and choices of students. In this sense, the counseling provided should not ignore gender issues and should involve not only students but also the distinct educational players (Kerr & Multon, 2015).

Identification and intervention procedures and practices have also been studied, revealing that girls have been less recognised as gifted (Reis, 2005). However, a contrasting reference is made in Petersen's (2013) meta-analysis, where he found the existence of a low gender bias in the identification of gifted, that is, boys and girls were equally identified as gifted. Nevertheless, he also found that the data appeared to be more favorable to boys, when considering the IQ scores, performance tests, and participation in summer programmes (Petersen, 2013).

The main goal of this study, according to the literature review, is to realise if the study of gifted and talented women is still relevant, through the analysis of scientific production, available online, and recently carried out in specialised journals. More specifically, it is sought to know, within a defined time frame, which aspects were studied and how were the researches conducted.

Method

A search for journal articles was conducted in the PSICINFO database, in the last week of December 2016. This database was selected because it was created by the American Psychological Association (APA) and is considered a bibliographic reference database with a wide coverage and specialised in the field of Psychology and related disciplines.

The search for articles was carried out considering two descriptors: 'Gifted and talented girls'; and 'Gifted and talented women', which have been defined more specifically in line with the organising categories of information in the database. Thus, the two descriptors and the related terms (including related terms), that occurred in the database associated with each of them, were also considered. Concretelly, the following descriptors and inclusion criteria were taken: (1) 'Gifted and talented girls', with the related terms:' gifted, intellectually gifted, intellectually above average, genius, talented; gifted, exceptional children gifted geniuses, girls, girl, young girls, young girl'; and (2) 'Gifted and talented women', with the related terms: 'gifted, intellectually gifted, intellectually above average, genius, talented; gifted, exceptional children gifted, geniuses, women; human females; females human; girls'.

Furthermore, three additional cumulative criteria were used for the research: (a) the search period, that is, the option referring to the last 5 years, which reported works from 2011 to 2016; (b) the relevance, that is, the selection of the works that were included in the database with the designation of five stars; and (c) publication, namely articles published in peer-reviewed journals.

The search for articles was conducted under the previously described conditions, and 109 articles were found. For the descriptor 'gifted and talented girls' were found 63 articles and for the descriptor 'gifted and talented women' were found 46 articles. A comparative analysis allowed to verify that 45 articles were associated to both descriptors, 18 articles were specifically associated to 'gifted and talented girls' and only one article was associated with 'gifted and talented women'. From this analysis resulted 64 articles, excluding those that were duplicated. Then, the titles and abstracts of these 64 articles were analysed, which allowed the exclusion of 14 articles because the object of study did not fit the theme in question. So, 50 articles remained on the subject of gifted girls and gender gap. At this point, a new inclusion descriptor, that was related to the type of publication journal, was introduced. Therefore, only journals related to giftedness were considered.

Under this process 19 articles were selected, which had been published in the journals *Gifted Child Quarterly, High Ability Studies, Journal for the Education of the Gifted* and *Roeper Review,* but 6 articles were excluded because they did not specifically addressed female giftedness. Thus, 13 articles were selected from journals specialised in giftedness, mainly, on aspects related to gifted/talented girls/women, or on gender issues associated with giftedness. Thereupon, the titles and the abstracts were read again, and the information was organised through content analysis for the following categories: Year of publication, journal, authors and study objective(s), typology of the study, participants, instruments and results. When necessary, the full article was consulted to clarify some information. It should be noted that it was not possible to have access to the full text of four articles through the database consulted. So, it is referred below in the paper when that fact had implications in the present work.

Results

All 13 articles found were published between 2011 and 2016. It is possible to see in Table 1 that the largest number of publications was registered in 2011 (five articles), followed by the year 2016 (four articles), then 2012 (three articles) and, finally, 2014 (one article). In 2013 and 2015 there were no publications that fulfilled the defined inclusion criteria. The articles selected were published in four journals specialised in giftedness, with a greater concentration of publications in the Roeper Review: A Journal on Gifted Education (six articles), followed by the Gifted Child Quarterly (four articles), the High Ability Studies (two articles), and the Journal for the Education of the Gifted (one article).

It is also verified that the subject in question was studied by different authors (men and women) and the objectives of the studies were also diverse. The work carried out, considering what they wanted to study and the intended contribution can be grouped into three main categories:

(1) Personal experiences of gifted girls (Fugate & Gentry, 2016; Kao, 2011; Price, Wardman, Bruce, & Millward, 2016; Stutler, 2011);

(2) Gender differenciated perceptions and productions (Bianco, Harris, Garrison-Wade, & Leech, 2011; Kohan-Mass, 2016; Malin & Makel, 2012; Tirri & Nokelainen, 2011; Wirthwein, Becker, Loehr, & Rost, 2011); and

(3) Intervention effects on gifted girls (Lee & Sriraman, 2012; Pramathevan & Garces-Bacsal, 2012; Webb, Vandiver, & Jeung, 2016; Yeo & Garces-Bacsal, 2014).

Table 1. Summary description of the articles

N	Journal[a]	Author(s) (Year)	Research Aim(s)
1	*RR*	Price et al. (2016)	To understand how leader girls experience social networks (FB[b]).
2	*HAS*	Fugate & Gentry (2016)	To understand how gifted girls with ADHD[c] handle the academic pressure throughout the schooling (at secondary school years).
3	*RR*	Kohan-Mass (2016)*	To characterise gender patterns of gifted young people, that are associated with thinking and learning.
4	*GCQ*	Webb et al. (2016)	To analyse the effect of participation in a writing enrichment programme in the final grades of talented students.
5	*RR*	Yeo & Garces-Bacsal (2014)	To study the impact of the frequency of advanced classes on the academic self-concept of high abilities girls.
6	*GCQ*	Lee & Sriraman (2012)*	To report the influence of experiences of participation in programmes for gifted, family and social in the choice of career in nonmathematical areas.
7	*RR*	Pramathevan & Garces-Bacsal (2012)	To identify factors that influence actions of altruism in gifted girls.
8	*JEG*	Malin & Makel (2012)	To analyse gender differences expressed by gifted students when solving world problems.
9	*GCQ*	Stutler (2011)*	To analyse the meanings that pre-adolescent girls with verbal talent attribute to fiction reading.
10	*RR*	Bianco at al. (2011)	To explore the effects of gender's students in teachers' refalls for gifted programmes.
11	*GCQ*	Kao (2011)*	To explore the interpersonal relationships of adolescent girls with mathematical talento.
12	*HAS*	Wirthwein et al. (2011)	To explore *overexcitability* in gifted women and men.
13	*RR*	Tirri & Nokelainen (2011)	To emphasise the importance of self-perception for the development of academic talent and to encourage this knowledge among researchers and educators.

[a]Journal: RR= Roeper Review, HAS= High Ability Studies,GCQ= Gifted Child Quarterly, JEG= Journal for the Education of the Gifted; [b]FB= Facebook; [c]ADHD= Attention Deficit Hyperactivity Disorder.

*It was not possible to access the full article through the database consulted.

Source: The author.

Now, let's verify how the researches were conducted, that is, what kind of studies were carried out and what kind of methodological options were followed by the authors to achieve the objectives outlined. Thus, it is verified that,for the 13 articles found,only one constitutes a theoretical study (Tirri & Nokelainen, 2011), and the remaining are empirical ones. The theoretical study is a literature review, highlighting the importance of self-perception and attributional styles in academic talent and vocational choices, as well as the gender differentiation in these aspects. Most of the studies presented in the article are related to mathematical talent, especially about students that participated in the Finnish

Mathematical Olympiads, and the authors finish it with some implications for gifted education (Tirri & Nokelainen, 2011).

In the others 12 papers, the use of the qualitative methodology is found in five of them (Price et al., 2016; Lee & Sriraman, 2012; Pramathevan & Garces-Bacsal, 2012; Stutler, 2011; Kao, 2011), the quantitative methodology in four papers (Kohan-Mass, 2016; Webb et al., 2016; Malin & Makel, 2012; Wirthwein et al., 2011), and the mixed methodology in three articles (Fugate & Gentry, 2016; Yeo & Garces-Bacsal, 2014; Bianco et al., 2011).

In the qualitative studies, the group of participants is composed by a relatively small number of gifted adolescents/young girls (less than 10 participants in all studies), depicting experiences in different parts of the world, namely New Zealand (Price et al., 2016), Korea (Lee & Sriraman, 2012), Singapura (Pramathevan & Garces-Bacsal, 2012), United States of America (Stutler, 2011) and Taiwan (Kao, 2011). In order to collect the data, it was used an interview with the participants (Price et al., 2016; Pramathevan & Garces-Bacsal, 2012), interviews with parents and parents (Lee & Sriraman, 2012), or interviews with other sources of data such as researcher's field notes, girls' discussion logs, reading logs, and parent interviews (Stutler, 2011). In the article by Kao (2011), it was not possible to discriminate the materials used in the data collection by reading the abstract only.

In the quantitative studies, the number of participants is larger (more than 100 subjects in all articles) and the participants are young gifted girls and boys, in Israel (Kohan-Mass, 2016) and in the United States (Webb et al., 2016; Malin & Makel, 2012), but, in one study, in Germany, participants are adults (Wirthwein et al., 2011), and there is still a comparison group with non gifted people. The instruments used to collect data were diverse questionnaires related to the variables studied (Kohan-Mass, 2016; Wirthwein et al., 2011), questionnaires and academic ratings (Webb et al., 2016) and written productions (Malin & Makel, 2012).

In the mixed studies, the number and the characterisation of the participants were diverse. There is a study with five gifted girls in the United States (Fugate & Gentry, 2016), another study with 91 participants comparing high abilities girls with average and below average girls in Singapore (Yeo & Garces-Bacsal, 2014), and a study with 28 male and female teachers in the United States (Bianco et al., 2011). In line with this diversity, there is also a variety in the instruments used to collect data. It can be seen the concurrent use of narratives, documentary analysis, questionnaires and interviews (Fugate & Gentry, 2016), questionnaires and interviews (Yeo & Garces-Bacsal, 2014) and vignette with a hypothetical description of a gifted student (Bianco et al., 2011).

Recapturing the three main goals categories, as previously referred, we can also categorise the works according to them. In that sense, when the authors tried to analyse some 'personal experiences of gifted girls', we can find three qualitative studies with varied approaches: phenomenological (Price et al., 2016), ethnographic (Stutler, 2011) and multiplecase (Kao, 2011); and also one study with a mixed aproach (Fugate & Gentry, 2016). The results allow us to understand that the phenomenological approch appears to be important in the access to the information experienced, revealing that the interaction on 'Facebook' has added a new level of complexitiy on the girls life who have leadership talent. It provoks a tension state resulting from the juggling act that they have to do to deal with the management of online self-image and the opening of their real self, due to the massified communication and the need of a bigger intimacy, the desire of connection to others, as well as the desire for privacy, and the feelings due to the acces to the others´ life, and the feelings of isolation and emptiness resulting from the comparision between the others´ life and their own (Price et al., 2016). It was also shown that reading fiction allows gifted girls to envolve

in a growth process in human conscious domains such as intellect, imagination and emotion, challenging themselves with complex, thoughtful, critical and empathic literature, and problem finding. As they read and construct meanings, they get envolved in a process of construction of their own meaning of life (Stutler, 2011).

In the multiplecase study about interpersonal relationships with peers emerged six caractheristics of adolescents with mathematical talent: loneliness, indifference towards popularity, better relationships with talented peers, preference for independent classes for gifted students, preference for classes for gifted students attendended mostly by boys, and a greater attachment to family than friends (Kao, 2011). Finally, there is a study that suggests a different approach to students with twice exceptionality of giftedness and Attention Deficit Hyperactivity Disorder (ADHD), that is, authors propose that, given their specificity, they can be seen as girls who are Attention 'Divergent' Hyperactive 'Gifted' (ADHD) (Fugate & Gentry, 2016). This taxonomy emerges from the results found, which revealed that girls in these circumstances have innate qualities that make them so special, such as: motivation, fortress, preserverance and resiliance.

When researchers investigated “gender differenciated perceptions and productions” were found three quantitative studies (Kohan-Mass, 2016; Malin & Makel, 2012; Wirthwein et al., 2011), one mixed study (Bianco et al., 2011) and another theoretical study (Tirri & Nokelainen, 2011). The results show gender differences in all studies.

In the quantititative studies, with young participants, we verify that the attitudes pattern of gifted students towards learning and knowledge is gender-differantiated, and is similar to the pattern found in the non-gifted population (Kohan-Mass, 2016). When we analyse the hypothetical resolution of a world wide problem, to present to the american president, we can highlight gender differences in the choise for the work office, the kind of problem to solve as well the implications of the presented solutions (Malin & Makel, 2012). In the case of the quantitative study, with adult participants, no interaction effect was found between giftedness and sex. However, women, regardless of their level of intelligence, had higher results than men, gifted and non-gifted, on the subscales of emotional and sensual overexcitation. There were also higher results in the subscale of intellectual overexcitation in the group of participants (men and women) considered to be gifted (Wirthwein et al., 2011). As regards the referral of students to gifted programmes, it seems that teachers tend to refer more boys and to recognise more characteristics of giftedness in boys than in girls (Bianco et al., 2011). In this line of thought can be referred the theoretical study, where several aspects are discussed, and is pointed out that some gifted girls and their parents tend to underestimate their mathematical talent and to perceive higher skills in arts and languages, even if their performance in both areas is similar. Moreover, in some studies, girls seem to attribute success more to effort than to ability (Tirri & Nokelainen, 2011).

Finally, when researchers wanted to know the effects of 'intervention effects on gifted girls', two of the studies are characterised by the use of qualitative methodology, adopting the ethnographic approach (Lee & Sriraman, 2012) and the grounded theory (Pramathevan & Garces-Bacsal, 2012), one work follows the quantitative methodology (Webb et al., 2016) and another the mixed methodology (Yeo & Garces-Bacsal, 2014). The results reveal differentiated consequences of the intervention, being also differentiated the type of intervention triggered. Perhaps the most surprising result is that of the study in which two gifted Korean girls, whose experience in the gifted programme, led them to options not related to mathematics. It is also mentioned that the process of enculturation of girls with these characteristics in this country also contributed to their options (Lee & Sriraman, 2012). In addition, considering the importance of non-cognitive variables in personal development,

it is also worth mentioning the study that suggests the development of volunteer programmes throughout academic training, since personality factors, the value system, social skills and social factors seem to contribute to the development of acts of altruism by gifted girls and to engage in voluntary activities (Pramathevan & Garces-Bacsal, 2012).

When it comes to analyse the effectiveness of a writing course, there are gender differences and diferences between students in different courses. In classes about the writing process, girls obtained higher results in their approach to writing when compared to boys. Girls scored higher than boys, but considering the approach to writing, girls who showed a greater change in this aspect also scored higher than boys who showed greater change, and than boys and girls who showed less change (Webb et al., 2016).

As regards the effect of participation in exclusive classes for gifted, the study of Yeo and Garces-Bacsal (2014) revealed that gifted girls, after participation in those classes, had lower values of self-concept, that were statistically significant, when compared with other girls that were attending other training modalities.

Discussion

The data collected allow us to say that, in general, the study of gifted and talented women and girls is still relevant and current. It was verified, in the time period considered (from 2011 to 2016), that there is interest and research on the subject of gifted or talented girls/women, or in other words, gender issues associated with giftedness, and in different parts of the world. More specifically, were analysed 13 articles that were published in four journals in the field of giftedness, although other works published in other journals have also been found. The analysis in specific journals allows us to understand how the researchers of the area are interested and dedicated to the subject studied and the pertinence attributed to it. Thus, when the year of publication is considered, there is no linear trend, with the limit years of the defined period (2011 and 2016) being the years in which there were more productions, with intermediate years in which no article on the subject under study was published (2013 and 2015). It should be added that, over this time, a greater number of works is found in one of the journals, which may reflect a certain increase in the contribution to deepen the knowledge of the authors published in it.

Considering all 13 articles it seems that researchers are mainly interested in three basic axes, that is, knowing how gifted girls experience and deal with certain situations (Fugate & Gentry, 2016; Kao, 2011; Price et al., 2016; Stutler, 2011), which gender differentiation is found in terms of perceptions and productions (Bianco et al., 2011; Kohan-Mass, 2016; Malin & Makel, 2012; Tirri & Nokelainen, 2011; Wirthwein et al., 2011), and what effects any activity or intervention has had on gifted girls (Lee & Sriraman, 2012; Pramathevan & Garces-Bacsal, 2012; Webb et al., 2016; Yeo & Garces-Bacsal, 2014). These three categories of goals refer to cognitive and behavioural aspects of the participants, and mainly empirical studies have been carried out, following a qualitative, quantitative or mixed methodology.

In this sense, knowledge in this area comes from diverse studies with different ways to access knowledge, prevailing the option for qualitative methodology (Price et al., 2016; Lee & Sriraman, 2012; Pramathevan & Garces-Bacsal, 2012; Stutler, 2011; Kao, 2011), followed by the quantitative methodology (Kohan-Mass, 2016; Webb et al., 2016; Malin & Makel, 2012; Wirthwein et al., 2011), and, finally, the mixed methodology (Fugate & Gentry, 2016; Yeo & Garces-Bacsal, 2014; Bianco et al., 2011). These data allow us to perceive

that the qualitative methodology is recognised as a valid way to acquire knowledge in the field, recognising also the complementarity that can provide in studies where mixed methodology is adopted. Moreover, when they try to perceive the experiences of the gifted girls as well as the intervention effects, the qualitative (and mixed) methodology is seen as a preferential resource because it allows to access more deeply the meanings and the processes experienced by the participants, which are of great interest to social scientists, and is also important in the evaluation of intervention programmes (Antunes et al., 2017). In contrast, in the articles about gender-differentiated perceptions and productions, no qualitative study is found, predominating quantitative studies (Kohan-Mass, 2016; Malin & Makel, 2012; Wirthwein et al., 2011), which allow the comparison of groups, as also happens in the mixed study (Bianco et al., 2011), or even in the theoretical study (Tirri & Nokelainen, 2011) in which reference is made to other studies.

The results in the articles show that, although gifted girls experience the typical processes of human development, their development can also be accompanied by some specificity. For instance, the importance attributed to fiction reading as an aid in the construction of the meaning of life (Stutler, 2011) or to equate the form of diagnosis of ADHD, considering it not a deficit of attention but a divergence of attention (Fugate & Gentry, 2016). Moreover the contributions related to social interaction are important, emphasising the need for interaction and the need for privacy (Price et al., 2016), and the tendency of girls with mathematical talent to become more isolated, to develop better relationships with gifted peers, and a preference for interaction with family (Kao, 2011).

Studies that explore gender differences reveal a differentiation in all of them, and this difference may be more related to gender issues than to giftedness (e.g., Kohan-Mass, 2016; Wirthwein et al., 2011). It is important to consider the development of beliefs and stereotypes not only of students but also of parents and teachers, as they will influence young people (Kerr & Multon, 2015). In this sense, some studies reveal that girls and parents tend to underestimate the mathematical talent they have (Tirri & Nokelainen, 2011) or to perceive themselves as less effective in the STEM fields (Heilbronner, 2013), considering more conservative and traditionally associated options to men. In fact, vocational interventions can help to broaden the range of options for both gifted girls and gifted boys (Freeman & Garces-Bascal, 2015), although a more conformist option may also prevail (Lee & Sriraman, 2012).

Intervention opportunities are an asset in gifted education with teachers referring more boys to them (Bianco et al., 2011; Petersen, 2013), revealing gender-differentiated practices (Kerr et al., 2012). However, the intervention options should be adjusted to specific cases and when attending homogeneous groups can be registered the phenomenon 'little pond effect', which is characterised by a decrease of self-concept, as in the study of Yeo and Garces-Bacsal (2014), because when interacting with similar pairs gifted students tend to perceive themselves as less effective (Marsh & Hau, 2003). Possibly, a good practice could be the proposal of Tourón and Freeman (2017), whom suggest that, in Europe and perhaps in other continents, should be given personalised learning to gifted and talented students, responding with flexibly and respect to their diversity.

Final considerations

The main contribution of this paper can be formulated in the answer to the research question posted as the starting point, that is, this incursion through the state of the art allows us to say that, in fact, female giftedness is unquestionable and that as there are gifted men there are also gifted women. However, as in other aspects of human existence, recognition, self-perceptions and hetero-perceptions about gifted people, conditioning the manifestation of abilities and performances, are still mixed by gender and social and cultural environment, affecting not only the gifted girls but also the gifted boys (Freeman & Garces-Bacsal, 2015; Kerr et al., 2012).

Despite the contribution related to the investement that the subject still deserves some limitations can be pointed out. Then, can be highlighted the descriptors used and the defined inclusion and exclusion criteria, as well as the database considered, which allowed access to a given number of studies, which could constitute only a part of the existing scientific production. In this sense, the continuity of the work would be important, on the one hand, to analyse studies published in other journals, other than those on the area of giftedness, and, on the other hand, to consider other types of works (e.g. books) in the inclusion criteria. An analysis by stage of development would be equally interesting since most of the studies analysed were not related to adulthood but to youth and school context.

Despite the blurring of the differences gap between gifted boys and girls, and the opportunities offered to gifted girls and women, results of the studies still reveal discrepancies, justifying the continuity of research on the subject. It is expecteded that a greater awareness and elimination of gender-based social prejudices will result in a greater equality of opportunities for the excellent achievement of women (and men) with high ability in certain fields.

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