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What Do We Know about Giftedness and Underachievement? A Bibliometric Analysis

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Abstract

This bibliometric study aimed to analyze the main trends of published articles and reviews between 1958 and 2018 regarding underachievement in gifted students. The sample included 203 files extracted from the databases Scopus and Web of Science. The analysis included the number of publications; most productive journals, countries, and authors; affiliations; language; and citations. Main results indicate that *Roeper Review* has published most of the documents in this area, and Donna Y. Ford is the author with most publications. The U.S. is the most productive country, while the *University of Georgia* is the most productive institution. Additionally, the predominant language is English, with 91.63% of the publications. These results are discussed and analyzed based on the existing literature. Limitations and future research are also considered.

Introduction

Diversity within an educational context is determined by the students' characteristics such as gender, race, socio-economic level, language, as well as their abilities and academic achievements, among other elements (Birtel et al., 2020; Busse et al., 2020; Grossen & Muller Mirza, 2020; Jiménez-Rodrigo & Guzmán-Ordaz, 2016; Petts, 2020; Wisman, 2020). A significant amount of research into students' abilities has been undertaken, for instance, in terms of students' disabilities (Connor & Cavendish, 2020; Fenty & Brydon, 2020; Gabriely et al., 2020; Hughes et al., 2020; Jacques & Abel, 2020), and gifted students (Freedberg et al., 2019; Kong & Liu, 2020; Preckel et al., 2019; Ramos et al., 2020; Yu & Jen, 2020). There are different definitions for giftedness, and the percentage of people identified as gifted varied according to them, for instance, the top 1% of the population for Terman (1925), top 10% for Gagné (2018), and between the top 15-20% for Renzulli (2005). Although, there is a lack of consensus in the definition of this construct (Hately & Townend, 2020; Mooij, 2008; Subotnik et al., 2011), the Columbus Group (1991) stated that giftedness involves asynchronous development, in which the advanced cognitive abilities and heightened intensity combine to create experiences and needs that are qualitatively different from the norm. These characteristics affect parenting, teaching, and counseling approaches in order to promote an optimal development (Columbus Group, 1991; Silverman, 1997). For many years, the characteristics of gifted children and adolescents were identified based exclusively on their IQ and standardized achievement tests (Hodges et al., 2018; Schiltz, 2016). Nowadays, other criteria have been included for the identification process of gifted and talented students, and have been revised in different studies

(see Hodges et al., 2018; Matthews & Rhodes, 2020; Ricciardi et al., 2020; Silverman & Gilman, 2020). This process of identification of gifted students is complex, especially when gifted students are underachieving in their school contexts (Ziegler & Stoeger, 2003).

Underachievement is defined as a severe discrepancy between a student's expected and actual achievement over a period of time, which is not due to a diagnosed learning disability (Reis & McCoach, 2000). It is usually expected that gifted students are also high achievers, which is one of the most widespread myths (Borland, 2009; Fiedler et al., 2002; Hately & Townend, 2020). There are many and varied causes for underachievement in gifted students such as a coping strategy to avoid being bullied (Cooper, 2012), socio-emotional factors (Moon, 2004; Neihard et al., 2002), unmet academic needs and boredom (Kanevsky & Keighley, 2003; Ridgley et al., 2020), among others. Unfortunately, there is no clear evidence to determine the prevalence of underachievement in gifted students, but a few studies have been conducted to understand this issue (Lupart & Pyryt, 1997; Matthews, 2009; Peterson & Colangelo, 1996). In this regard, there are studies, which concluded that the percentage of gifted students with school failure was similar to the non-gifted population being around 30% (Jiménez Fernández & Álvarez González, 1997; García-Alcañiz, 1991). Other study suggested that up to 50% of gifted students underachieve at some stage of their educational trajectory (Siegle, 2018). What is clear is that underachievement can cause several negative consequences, especially when this issue is not addressed on time. These consequences could be at an emotional or academic level (Damian et al., 2016; Moon, 2004), and could end in school dropout (Renzulli & Park, 2002), which represents a significant loss for society (Siegle et al., 2019; Kaur & Bhalla, 2020).

There are studies analyzing the content and trends of the scientific publication in the field of giftedness and underachievement. For instance, there are meta-analyses, which have been focused on underachievement in gifted boys (Hately & Townend, 2020); interventions on emotional and motivational topics (Schiltz, 2016), and effectiveness of the interventions to reverse the underachievement of gifted students (Steenbergen-Hu et al., 2020). There are also systematic reviews, which have studied the effectiveness of the interventions (Snyder et al., 2019a), and the factors associated to underachievement (White et al., 2018). However, it was not possible to find a bibliometric historical study regarding the literature in the field. Due to the negative consequences that underachievement can cause in gifted students, conducting a study of this kind will allow us to better understand the trends in this area of knowledge, as well as the areas which require more attention for future studies. Additionally, this study seeks to facilitate and organize the information for those interested in this topic. In the present study, published articles in two databases regarding underachievement and giftedness between 1958 to 2018 were analyzed to identify general trends in the field.

Methods

Documents used in this study were retrieved from Scopus and Web of Science (WoS) databases on September 12, 2019. The Scopus and WoS databases cover more than 20,000 academic journals (Clarivate Analytics, 2020; Mongeon & Paul-Hus, 2016). The following search algorithm was used in both databases: Underachiev* AND gifted* OR talent* OR "highly able" OR "high potential" OR "high abilit*". The search was conducted by

theme, which includes title, abstract, and keywords. The initial search resulted in 495 articles (*n*=306 from Scopus, *n*=189, from WoS), published between 1958 and 2018. The final number, resulted in 203 documents (see Appendix for summary), 50.74% (*n*=103) from Scopus, 6.90% (*n*=14) from WoS, and 42.36% (*n*=86) from journals indexed in both databases. Therefore, duplicated documents were counted only once. This total included articles (93.10%, *n*=189) and reviews (6.90%, *n*=14), and excluded editorials, conference papers, interviews, books, and book chapters (*n*=64). The other 143 documents were excluded due to they were not related to the topic or only covered part of the main topics of this study. This filter was conducted by the authors. Additionally, documents published in 2019 were also excluded. The records were organized in a Microsoft Excel 2016 spreadsheet. The analyses included the number of publications between 1958 and 2018; productivity by country, journal, author, and affiliation; collaboration between countries; language; citations received; and keywords.

Results

General Trends in Gifted and Underachievement Publications

The number of published articles per year varied. Figure 1 organizes the years considered in this study in six periods. These periods evidence the trends of the scientific publications, where it is possible to identify an increase in the number of publications in the group starting in 1968 onwards. There is a higher productivity in 1998 (*n*=11), followed by 2006 (*n*=10), and 2013 (*n*=10). A significant decrease was identified in 2017 (*n*=1), as well as an absence of publications in 11 years, most of them in the second period, from 1968-1977. Moreover, the first document registered in the databases was published in the *Journal of Counseling Psychology*, and it is entitled "Hostility and able high school underachievers" (Shaw & Grubb, 1958).

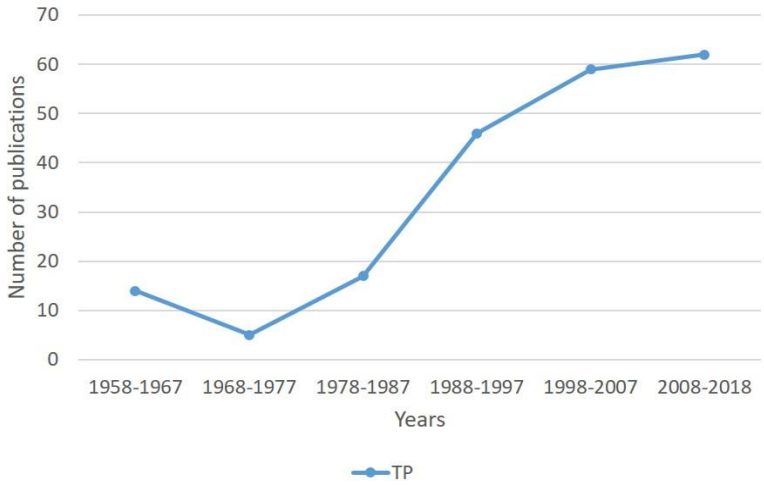

Figure 1. Number of Documents Published between 1958-2018 (*Note.* TP Total of Publications per 10-year-period.)

In terms of productivity by country, the U.S. stands out with 56.65% (*n*=115) of the publications, followed by Australia with 7.88% (*n*=16). In third place is Germany, with 6.40% (*n*=13) of the total documents. Table 1 shows information of other countries.

Table 1. Most Productive Countries

Ranking	Country	NP	%
1	United States	115	56.65%
2	Australia	16	7.88%
3	Germany	13	6.40%
4	Netherlands	8	3.94%
4	United Kingdom	8	3.94%
6	Canada	5	2.46%
7	France	4	1.97%
8	Spain	3	1.48%
9	Switzerland	3	1.48%

The most productive journals are identified in Table 2. It is observed that *Roeper Review*, indexed in Scopus, published 17.24% (*n*=35) of the documents, followed by *Gifted Child Quarterly*, indexed in Scopus and WoS, with 16.75% (*n*=34) documents published. Five of the eight journals in the Top 5 of most productive journals in the studied topics, are indexed in both databases. In this regard, the journals *Gifted Child Quarterly* and *Journal of Counseling Psychology*, are positioned in Quartile 1 (Q1) in both databases.

Table 2. Top 5 of Most Productive Journals

R	Journal	N.P. (%)	Scopus		WoS	
			SJR_{2019}	Q	IF_{2019}	Q
1	Roeper Review	35 (17.24)	0.284	Q3	N/A	N/A
2	Gifted Child Quarterly	34 (16.75)	1.353	Q1	2.014	Q1
3	Journal for the Education of the Gifted	16 (7.88)	0.707	Q2	N/A	Q4
4	High Ability Studies	7 (3.45)	0.438	Q2	0.714	Q4
4	Journal of Advanced Academics	7 (3.45)	N/A	Q2	N/A	N/A
5	Australasian Journal of Gifted Education	4 (1.97)	0.191	Q3	N/A	N/A
5	Journal of Counseling Psychology	4 (1.97)	2.533	Q1	3.697	Q1
5	Psychology in the Schools	4 (1.97)	0.676	Q2	1.134	Q4

Note. R Ranking; N.P Number of publications; Q Quartil; SJR Scientific Journal Ranking; IF Impact Factor; N/A Not available.

In total, 390 authors wrote the 203 studied documents. The average of authorship was 1.92 per document, where 47.29% documents (*n*=96) presented single authorship, 30.05% (*n*=61) two authors, 12.81% (n=26) three authors, and 9.85% (*n*=20) of the documents had four to seven authors. In terms of productivity, Table 3 shows the most productive authors. It is possible to identify that Donna Y. Ford, from the U.S., stands out with 5.91% of the publications (*n*=12).

Table 3. Most Productive Authors

R	Author	N.P (%)
1	Donna Y. Ford	12 (5.91)
2	Karen E. Ablard	4 (1.97)
2	Thomas P. Hébert	4 (1.97)
4	Fabian Guénolé	3 (1.48)
4	Ton Mooij	3 (1.48)
4	Jean S. Peterson	3 (1.48)
4	Sally M. Reis	3 (1.48)
4	Mimi Wellisch	3 (1.48)

Note. R Ranking N.P Number of Publications

As shown in Table 4, it is possible to observe that six, out of the nine institutions ranked in the top 5, are located in the U.S. The other three are European institutions located in France and Spain. *The University of Georgia*, is the most productive institution in the researched topic, with 9.36% (*n*=19) of the publications. It is relevant to mention that the rest of the publications (59.61%) were written by authors from other institutions with a lower frequency. Moreover, all the institutions ranked in the top 5, are Universities.

Table 4. Top 5 of Most Productive Institutions/Organizations

R	Institution/ Organization of 1st Author	N.P (%)	Country
1	University of Georgia	19 (9.36)	United States
2	University of Connecticut	15 (7.39)	United States
3	CHU de Caen	8 (3.94)	France
4	University of Virginia	8 (3.94)	United States
4	Hospices Civils de Lyon	7 (3.45)	France
5	University of Kentucky	7 (3.45)	United States
5	Johns Hopkins University	6 (2.96)	United States
5	The Ohio State University	6 (2.96)	United States
5	University of Alicante	6 (2.96)	Spain

Note. R Ranking; N.P Number of publications

English is the most widely language used in these publications with 91.63% (*n*=186). English was followed by German with 2.96% (*n*=6), and French with 1.48% (*n*=3). The rest of the documents were written in Portuguese, Spanish, Chinese, Czech, Russian, and Servian. The 203 documents received a total of 3,411 citations. The most cited articles are shown in Table 5. In first place of the ranking, with 183 citations, it is the article "The underachievement of gifted students: What do we know and where do we go?" published by Sally M. Reis in 2000. Gagné's article "Giftedness and Talent: Reexamining a Reexamination of the Definitions" published in 1985 is positioned in second place with 143 citations. From this ranking, six articles were published in the journal *Gifted Child Quarterly*. Sally M. Reis and D. Betsy McCoach stand out with two articles each author in the top 10 ranking of the most cited documents.

Table 5. Top 10 of Most Cited Articles

R	First Author	Title	Journal	Y.P	T. C
1	Reis, S. M.	The underachievement of gifted students: What do we know and where do we go?	Gifted Child Quarterly	2000	183
2	Gagné, F.	Giftedness and Talent: Reexamining a reexamination of the definitions	Gifted Child Quarterly	1985	143
3	McCoach, D. B.	Factors that differentiate underachieving gifted students from high-achieving gifted students	Gifted Child Quarterly	2003	110
4	Gross, M. U. M.	The pursuit of excellence or the search for intimacy? The forced- choice dilemma of gifted youth	Roeper Review	1989	98
5	Reis, S. M.	We can't change what we don't recognize: Understanding the special needs of gifted females	Gifted Child Quarterly	1987	82
6	Emerick, L. J.	Academic underachievement among the gifted: Students' perceptions of factors that reverse the pattern	Gifted Child Quarterly	1992	80
7	Silverman, L. K.	Invisible gifts, invisible handicaps	Roeper Review	1989	68
8	Dai, D. Y.	State of research on giftedness and gifted education: A survey of empirical studies published during 1998-2010 (April)	Gifted Child Quarterly	2011	67
9	McCoach, D. B.	The school attitude assessment survey-revised: A new instrument to identify academically able students who underachieve	Educational and Psychological Measurement	2003	65
9	Ablard, K. E.	Parents' achievement goals and perfectionism in their academically talented children	Journal of Youth and Adolescence	1997	65

Note. R Ranking Y.P Year of Publication T.C Total Citations received

Discussion

Results from this study allowed us to explore and comprehend the trends in the field, as well as to illustrate and organize the field to researchers interested in the topic. Underachievement of gifted students is a complex issue, which can affect students from different socioeconomic levels and backgrounds (Cavilla, 2017; Matthews & McBee, 2007) and can cause that students with high abilities cannot develop their potential (Siegle et al., 2019). Underachievement can begin in primary education, becoming a serious problem even in tertiary education affecting career success (Barbier et al., 2019; Snyder et al., 2019b). For these reasons, knowing what has been

researched and published in this field will contribute to clarify the area for those interested in this relevant issue.

In this study, the literature was analyzed in terms of different features, such as productivity, language, and citations. Main results showed that the productivity in time is not consistent; however, it is possible to identify an increasing number of published documents. The U.S. was the country with the most publications, probably due to its early interest in the field of gifted education and reknown precursors in the area of giftedness (see Hollingworth, 1926, 1930; Terman, 1915, 1925). Moreover, most of the institutions with more publications are located in the U.S., as well as the author with the most articles published, Donna Y. Ford. With the U.S. publishing most of the documents, it could be reasonable that most of the publications were written in English.

It is important to mention that the journals with more publications are also specialized journals in the field of gifted education. Along the same line, the most cited articles were published mostly in specialized journals, such as *Roeper Review* and *Gifted Child Quarterly*. Sally M. Reis and Karen E. Ablard, were authors acknowledged for their contributions in the field in the ranking of most productive authors. In addition, these two authors were also placed in the ranking with the most cited articles with the documents "The underachievement of gifted students: What do we know and where do we go?" (Reis & McCoach, 2000), "We can't change what we don't recognize: Understanding the special needs of gifted females" (Reis, 1987), and "Parents' achievement goals and perfectionism in their academically talented children" (Ablard & Parker, 1997). The most cited article (Reis & McCoach, 2000) received 183 citations, which could be explained by the fact that it is a review of published literature to establish the state of research, and this document is probably a relevant reference in the area. Finally, there is no significant difference in the percentage of documents with one (47.29%) and multiple authors (52.71%).

It is relevant to highlight that one of the most cited documents refers to underachievement in gifted female students, which is interesting because, usually the literature identifies more frequently that gifted male students are underachievers (Matthews & McBee, 2007; Mofield & Peters, 2019; Siegle et al., 2006). However, this does not mean that this issue is not affecting female gifted students, as it has been strongly stated by diverse authors (Kerr, 1985; Reis, 1987; White, 2000). These results cannot be compared with other bibliometric studies in the field of underachievement of gifted students, due to it was not possible to find such kind of studies available in the literature. However, common findings with other bibliometric studies in gifted education are the U.S. as the most productive country, the U.S. institutions with the highest number of publications, and *Roeper Review* and *Gifted Child Quarterly* as the journals with the highest number of documents published (Gürlen et al., 2019; Hernández-Torrano & Kuzhabekova, 2019).

Conclusion

The findings suggest that there has been interest in underachievement of gifted students since the late 1950's. These more than 60 years have provided evidence and reflections about the topic, but there is still need for more studies and research. There is a tendency, evidenced in this study, to publish documents in specialized journals in gifted education; however, there is also proof that other areas are also interested in publishing documents

related to the studied topic such as the *Journal of Counseling Psychology* and *Psychology in the Schools.* This could also be an opportunity to spread interest and communicate the relevance of this topic.

This study presents some limitations associated with the procedure and method. First, bibliometric studies do not contextualize the data, which could be helpful to understand the trends more deeply. Secondly, this study only considered articles and reviews, excluding other forms of scientific documents. Including these resources could have provided a wider view and understanding of the studied topic. Finally, only two databases, Scopus and WoS, were used, excluding other sources of information.

Future research could provide insights including other documents and databases. An updated bibliometric study or a qualitative content analysis could also be beneficial for the area. It would also be interesting to develop more research from countries in other parts of the world, such as South America, Asia, or Middle East. Gifted students who underachieve are a continuous concern for those working in the field, and the information provided in this article aims to be a motivation for conducting new research and new discussions in the field.

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