(ISSN: 2587-0238)

Talas, S., Gül, M.D. & Sönmez, S. (2023). Content And Bibliometric Analyses Of Articles Regarding Gifted/Adhd Studies, *International Journal of Education Technology and Scientific Researches, 8(24), 2956-2891.*

DOI: http://dx.doi.org/10.35826/ijetsar.697

Article Type (Makale Türü): Review Article

CONTENT AND BIBLIOMETRIC ANALYSES OF ARTICLES REGARDING GIFTED/ADHD STUDIES

Sertan TALAS
Dr. Öğr. Üyesi, Tokat Gaziosmanpaşa Üniversitesi, Tokat, Türkiye, sertan_talas@hotmail.com
ORCID: 0000-0003-1635-9707

Muhammet Davut GÜL
Dr. Öğr. Üyesi, Tokat Gaziosmanpaşa Üniversitesi, Tokat, Türkiye, muhammetdavut.gul@gop.edu.tr
ORCID: 0000-0003-0437-5865

Serdar SÖNMEZ
Dr. Öğr. Üyesi, Tokat Gaziosmanpaşa Üniversitesi, Tokat, Türkiye, serdar.sonmez@]gop.edu.tr
ORCID: 0000-0002-9050-3570

Received: 18.04.2023 *Accepted: 14.09.2023* *Published: 01.10.2023*

ABSTRACT

The aim of this study was to investigate the trends of articles regarding gifted/ADHD studies focusing on both bibliometric and content analysis. For this purpose, the PRISMA protocol was followed, and 42 articles were found for bibliometric analysis and 28 articles for content analysis based on WoS and Scopus databases. Rstudio tool was used for image/table creation and data analysis. The results of bibliometric analysis showed that the most cited journals are Gifted Child Quarterly and Rooper Review. The most productive authors were Anne N. Rinn and Kevin M. Antshel. The most relevant keywords were gifted, ADHD, and twice exceptional. The most productive country was the USA. There was no strong collaboration between countries. The findings of content analysis showed that the research aims could be classified into five categories: identification, behavioural, cognitive, academic and social-emotional, characteristics of gifted/ADHD students. The most preferred research aims were identification and behavioural, and cognitive characteristics of these students. The most used research method is quantitative approaches. The most preferred sample groups are primary and middle school students. The least ones are university students, teachers, parents, and adults.

Keywords: Bibliometric analysis, Content analysis, Gifted, ADHD.

INTRODUCTION

In the last two decades, the possibility of a dual diagnosis of gifted children with any disability or disorder has drawn scholars' attention, leading them to investigate whether this diagnosis is valid. The findings of research on this concern have demonstrated the validity of dual diagnosis in different categories: gifted with/learning disability (Foley-Nicpon, 2015), gifted with/autism (Cain et al., 2019), and gifted with/ADHD (McCoach et al., 2020). Thus, a new classification was created, comprising approximately 2 to 7 percent of the special education population (McCallum et al., 2013), and this group was called twice exceptionality. Although there is no common agreement on the definition of 2E, it is generally defined as individuals with one or more diagnoses in addition to giftedness, such as specific learning disabilities, neurodevelopmental disorders, intellectual disabilities, sensory and physical disabilities (Reis et al., 2014; Ronskley-Pavia, 2015).

One of these groups, and the most prevalent one, is the gifted with/ADHD group, which accounts for approximately ten percent of ADHD students (Antshel, 2008). Due to (1) the increase in the diagnosis of ADHD symptoms among gifted students, (2) problems in diagnosing these students as a result of their strengths and weaknesses masking each other, (3) the anxiety caused by dual diagnoses among students and families, and (4) lack of a comprehensive description of their social, emotional and cognitive profile, it is obvious that it would be beneficial for both researchers, teachers, and families to present an overall wiev of the studies conducted in this field. Thus, the study aims to map studies regarding gifted the with/ADHD groups through both bibliometric and content analysis in the last two decades.

Mapping studies -bibliometric analysis and systematic literature reviews- are useful tools that enable analysing of scientific information, reveal the research conducted so far, help in comprehend specific conceptual cuts, and discusses future directions (Comaru et al., 2021). The former uses statistical methods to analyse the mass data sets while investigating possible future trends and evolution in subject-specific fields and comprehensively put the overall picture (Vogel & Masal, 2015). In addition to this, it employs different methodologies to compare the relative importance of research in a specific field based on metadata (e.g. title, abstract, keywords, and references) (Gimenez et al., 2018). In this way, for instance, it reveals the most productive authors, countries, institutions, and cooperation networks between them, as well as the most cited articles and the main journals which contributing to theoretical background and dissemination of the specific area. On the other hand, the latter also uses the content of publications, but through content analysis which enables the systematic way of collecting, critically evaluating, integrating, and presenting findings from multiple research studies on a research question or topic of interest (Pati & Lorusso, 2017).

This study aims to employ a synergistic integration of both approaches to holistically elucidate the emerging issue at hand, thus engendering a comprehensive exposition. Consequently, the amalgamation of these approaches not only advances the existing body of knowledge but also serves novice researchers, facilitating their progression in this domain. Unlike Coutinho-Souto and de Souza Fleith (2022) article, articles published over the last two decades was analysed in this study, scanned in WoS and Scopus databases. Different research questions

were also investigated, different keywords were used in the query process, and bibliometric and content analysis were combined.

Research questions

(1) How does the annual distribution of published articles on Gifted/ADHD studies vary over the years?
(2) What is the distribution of the most cited journals regarding Gifted/ADHD studies?
(3) Who are the most productive authors regarding Gifted/ADHD studies?
(4) Which are the most cited articles regarding Gifted/ADHD studies?
(5) What are the most prevalent keywords found in the abstracts of articles related to Gifted/ADHD studies?
(6) Which studies have been impacted by each other in the historical process in this field?
(7) Which countries are the top contributors to research articles in the field of Gifted/ADHD studies, and which countries engage in collaborative research in this area?
(8) What are the aims of these articles related to Gifted/ADHD studies?
(9) What are the predominant research methodologies commonly employed in this field?"
(10) What are the most commonly utilized special education approaches or strategies in the context of Gifted/ADHD studies?
(11) What are the most used sample group and size in this field?

Theoretical background

Giftedness

There is a lack of agreement on the definition of giftedness in children since it is a difficult concept to operationalize clearly (Antshel et al., 2007). Leading scholars and organizations studying gifted education have provided various definitions (Gagne, 2008; Marland, 1972; National Association for Gifted Children, 2010; Piechowski & Colangelo, 2004; Renzulli, 1978; Sternberg, 1999; Tannenbaum, 2003; Terman, 1925). Based on psychometric definitions, intelligence quotient (IQ) score is an indicator of giftedness. As a common approach, various authors have attempted to define giftedness by comparing an individual's score on the test with a specific cut-off score (120, 125 or 130 for Wechsler Intelligence Scale for Children) (Budding and Chidekel 2012; Lovecky and Silverman 1998; Webb et al. 2005). While the Marland Report (1972) and NAGC consider giftedness in children as demonstrating high performance/potential/ability in some fields (e.g., general cognitive skills, specific academic aptitude, visual or performance-based artistic talent), Renzulli (1978), Sternberg (1999), and Tannenbaum (2003) state that giftedness is a multifaceted concept and emerges from the interaction between distinct human traits. For instance, Renzulli's 3-ring Model views giftedness as a dynamic interaction between above-average ability, high levels of task commitments, and high levels of creativity. That is, gifted children can manifest this composite and interactive set of behaviours in any field of human performance.

At this point, Gagne's (2008) Differentiated Model of Giftedness and Talent (DMGT) differs from prior approaches by defining the concepts of giftedness and talent separately. According to this model, while giftedness is developmental and refers to high cognitive abilities, talent refers to high levels of achievement, developed abilities, and competencies. Researchers have also defined giftedness as demonstrating an intensified manner of responding and experiencing stimuli in different areas (the psychomotor, sensual, intellectual, imaginational, and emotional), called overexcitability (Piechowski & Colangelo, 2004; Silverman, 1993; Tieso, 2007; Winkler & Voight, 2016). All in all, despite the ambiguous definition, it can be stated that giftedness is a multifaceted phenomenon, a developmental process, and arises from the interrelationships between neurophysiological, psychological, and environmental factors.

Attention Deficit Hyperactivity Disorder (ADHD)

As stated by American Psychiatric Association (APA) (2013), ADHD is the most prevalent chronic and pervasive neurodevelopmental childhood disorder. The global prevalence rate is approximately 7.2% (Organization for Economic Cooperation and Development, 2020), and the prevalence rate among school-age children is approximately 9% (Danielson et al., 2018). It is commonly characterized by impulsivity, developmentally inappropriate activity levels, low tolerance for frustration, challenges in organizing behaviour, and an inherent difficulty in sustained attention, and concentration, which impact the physiological, psychological and academic development of the individual (Drechsler et al., 2020; Planton et al., 2021). Hinshaw (2018) claims that ADHD does not solely arise from biological factors, it is a multifaceted and heterogeneous condition that results from also the relationship between the individual, family, friends, and environment. According to Barkley (2013), ADHD is a disorder of executive function regarding deficits in self-regulation. In a direct quotation, "…a disorder of self-control, executive functioning, will power, and the organizing of behaviour toward the future" (Barkley, 2013, p. 70). ADHD is classified into three types (predominately inattentive presentation (IA), predominantly hyperactive–impulsive presentation (HI), and combined presentation) and includes eighteen symptoms (APA, 2013). While the first group includes nine symptoms such as challenges in maintaining sustained focus on tasks and distractibility; and the HI symptom group includes behaviours such as excessive talking, fidgeting, and restlessness.

Gifted/ADHD

Research investigating the social, emotional, and behavioural characteristics of gifted students has revealed that these students experience difficulties in these areas (Blaas, 2014; Cross & Cross, 2015). This concern has led researchers to examine the possibility of giftedness being diagnosed alongside autism, learning disabilities and ADHD. Experimental studies have shown that diagnosing ADHD in gifted children is valid (Antshel et al., 2009; Harnett et al., 2004; Rommelse et al., 2015). It is observed that half of gifted students who have unexpectedly low achievement met the criteria for ADHD (McCoach et al., 2020). Rinn and Reynolds (2012) compared giftedness and overexcitability areas and found a significant relationship between psychomotor overexcitability

and ADHD. Additionally, there might be a relationship between emotional overexcitability and daydreaming and wandering attention (Cramond, 1995). Al-Hroub and Krayem (2020) also found a significant relationship between overexcitability and ADHD characteristics.

Analysing studies that compare gifted students diagnosed with ADHD to gifted, it has been observed that the former group displays comparatively lower levels of self-perception and social skills (Corderio et al., 2011; Foley-Nicpon et al., 2012). Whitaker et al. (2015) conducted a study that revealed that the first group exhibited a relative weakness in verbal memory capabilities. Additionally, the findings of the research indicate that the group mentioned above demonstrated more functional impairments, higher impairments in social and academic functioning, lower quality of life, and lower working memory scores (Antshell et al., 2008; Antshell et al., 2009; Fugate et al., 2013). It was also found that the first group naturally differed in terms of specific hyperactive/impulsive behaviours in subjects on psychomotor and verbal activities (Gomez et al., 2020). Gifted with/ADHD students also suffer from executive function impairments such as processing speed, working, and verbal-auditory memory (Brown et al., 2011). Conversely, in another study, the first group was more creative (Fugate et al., 2013; Healey & Rucklidge, 2006).

Beyond the - differences mentioned above, these two groups show similar behavioural patterns such as fidgeting, inattention, failing to finish schoolwork, high activity levels, making careless mistakes in schoolwork, and disobedience to authority, although the reasons are different (Hua et al., 2014; Lee & Olenchak, 2015). For instance, although two groups exhibited disobedience to authority, the first group may have been unable to follow instructions, while the other group may have been unable to meet or limited their interests and needs by the authority. Gifted students may also be inattentive, daydream, and become distracted when the curriculum is not challenging enough (Baum & Owen, 2004). All in all, gifted with/ADHD and gifted children share common and distinct characteristics in different fields, which are generally explained by Dabrowski's theory of overexcitabilities.

METHOD

In this study, the researchers employed bibliometric mapping and conducted content analysis.

Article selection process

The rigorous protocol called the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) was followed through the data collection process (Moher et al., 2007; Xia & Zhang, 2018). The protocol enables reviewing the studies systematically. In this study, WoS and Scopus databases were scanned on January 10, 2023 based on the criteria listed in Table 1.

Table 1. Inclusion and Exclusion Criteria

Inclusion	Exclusion
Must -include ADHD related studies in gifted education, -be in WoS and Scopus databases -be journal articles -be published before 2023 -be written in English -be accesible	-Including editorials and early access articles -Not written in English -Not related to ADHD studies in gifted education

Based on the criteria, in Wos ve Scopus data base according to study subjects “gifted-adhd” or “gifted/adhd” or “gifted and adhd” or “giftedness-adhd” or “giftedness/adhd” or “giftedness and adhd” or “gifted-attention-deficit hyperactivity disorder” or “gifted/attention-deficit hyperactivity disorder” or “gifted and attention-deficit hyperactivity disorder” or “giftedness-attention-deficit hyperactivity disorder” or “giftedness/attention-deficit hyperactivity disorder” or “giftedness and attention-deficit hyperactivity disorder” keywords were used for scanning. In the first screening 83 researchs were reached. After, the researchs obtained from both databases were brought together in the Rstudio program and similar research was made and 56 researchs have left. The full texts of the remaining 42 articles were reached on the databases and controlled whether the articles were appreriate for the purpose of the study. As a result of recent controls, 42 articles were included in the scope of the research to be included in the bibliometric analysis and 28 articles were included in the content analysis. 14 articles not included in the content analysis because they were review and general informative article about Gifted/ADHD (Figure 1).

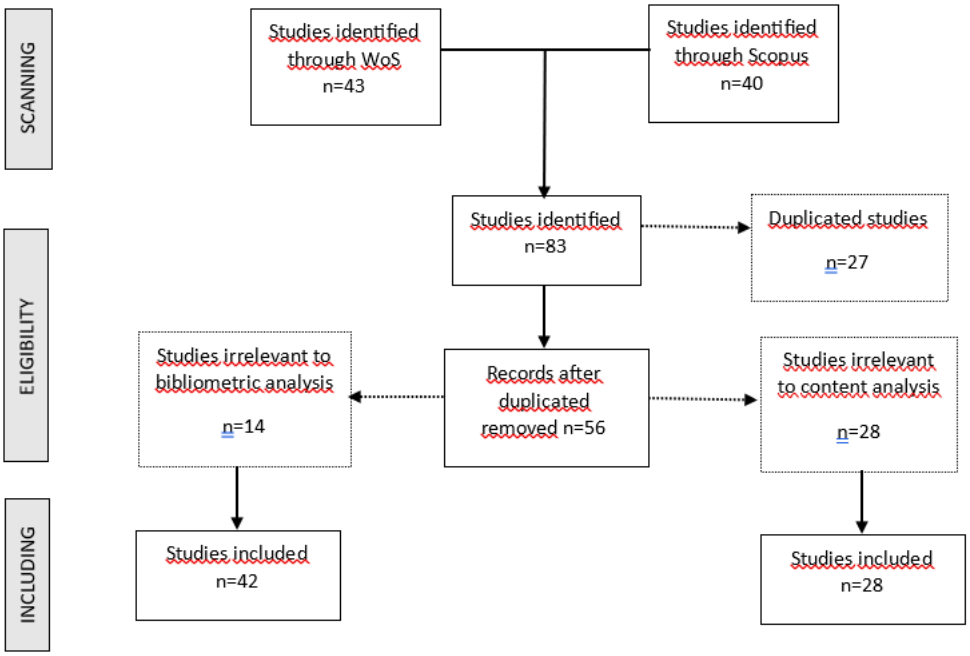

Figure 1. Steps in collecting data.

Data Coding and Analysis

Content analysis was used in the examination of the researches. According to the examinations, a) research purposes, b) research methodology, c) special education types (N, Grade/Age, Diagnosis), and d) sample group data were evaluated from the angles. The study's findings related to the mentioned variables are showcased through the utilization of descriptive statistical methods. The variables related to each study examined are briefly placed under the appropriate headings in the Figure 2. The information obtained from the content analysis of the studies examined is also included in Figure 2. For bibliometric analysis, RStudio served as the platform of choice, proving highly valuable due to its integration with the R programming language, particularly for the visualization of scientific maps (Gandrud, 2013).

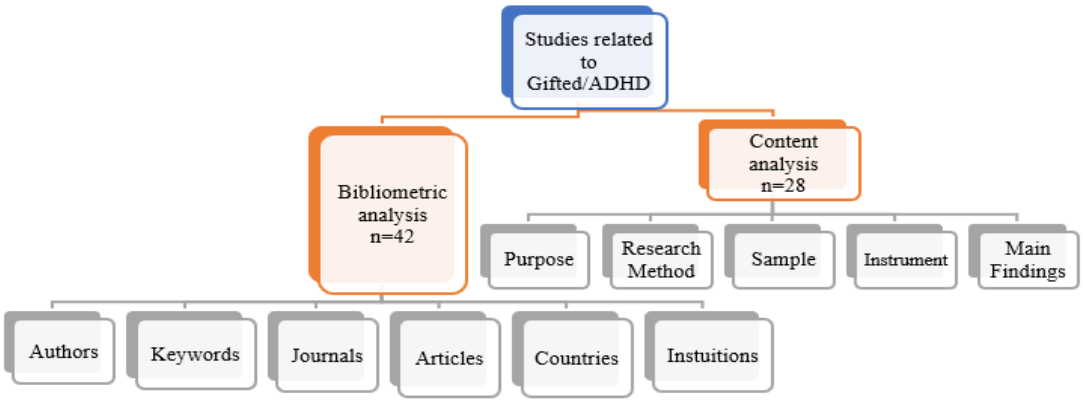

Figure 2. Data analysis procecess

Intercoder Reliability

The reliability study on content analysis was selected by all (n = 28) of the designated researches, and by the authors of the research, by using a form consisting of Author, Purpose, Research Method, Sample, Instrument, and Main Findings. Intercoder reliability was assessed using the formula [(Consensus / (Consensus + Dissent)) x 100], resulting in an intercoder reliability score of 93%.

FINDINGS

Bibliometric Analysis Findings

General information regarding the studies is given in Figure 3. Based on the data shown in Figure 3, the first study in the field subject to research was published in 2000. In 22 years, a total of 42 studies were conducted, derived from 28 distinct sources and the annual growth rate of the studies was 7.59%. Among the 42 analysed studies, a mere 4 were single-authored and the remaining 38 were written by more than one author. In the studies with a total of 126 authors, the number of co-authors per article is 3.33 and the average number of citations per article is 18.6.

Figure 3. Numerical summary of all studies.

According to Figure 4, which shows the distribution of articles according to years, while the number of articles was similar until 2011, it reached the highest number of 6 in 2012 with a significant increase. While 9 articles were published in the period covering the years 2000-2011, 32 articles were published in the last decade (2012-2022).

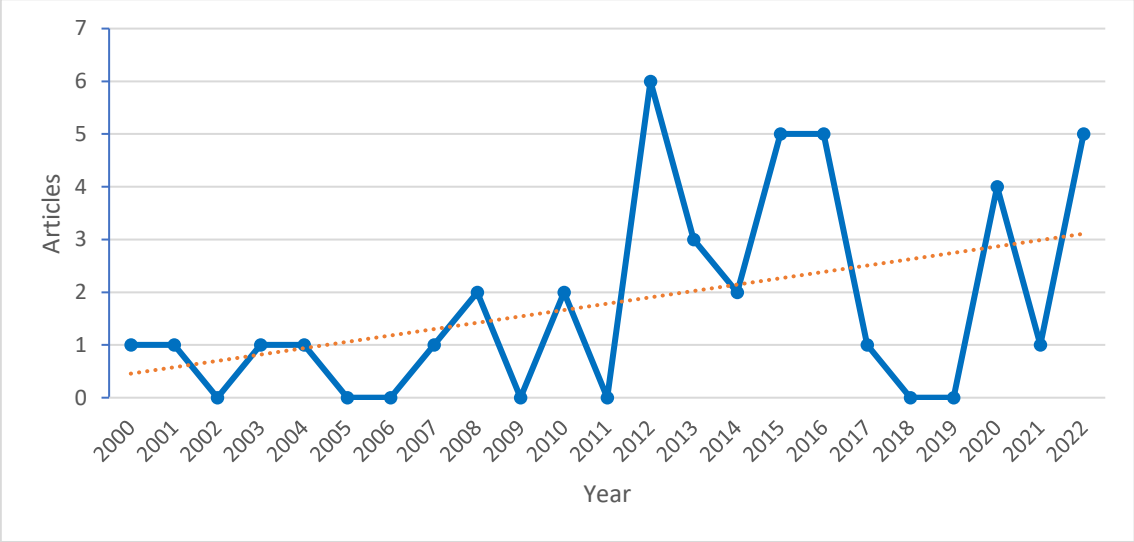

Figure 4. Articles by year.

Journals that Publish the Most Articles and Receive Citations

As can be seen in Figure 5, which lists the journals that publish the most articles in the field of Gifted/ADHD, the top three journals are Gifted Child Quarterly, Roeper Review-A Journal On Gifted Education and Gifted Education International, respectively. The number of journal citations was also examined in the study. When the journals were ranked according to the number of citations, it was seen that the top three journals were Gifted Child

Quarterly (146), Roeper Review-A Journal On Gifted Education (115) and Gifted Education International (46) in the same order.

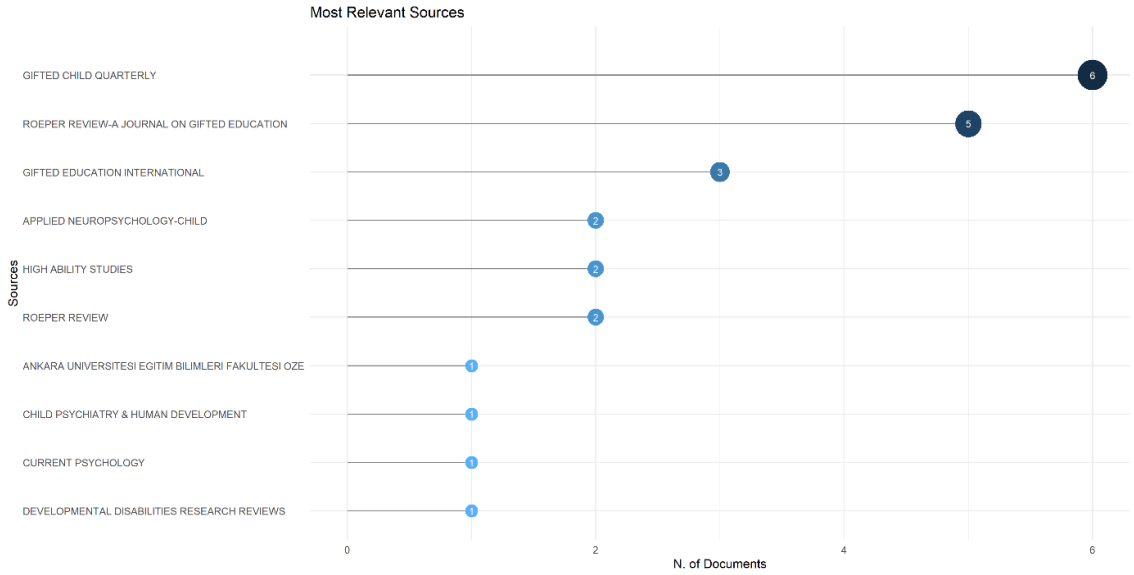

Figure 5. Most releavant sources

The Most Relevant/Productive Authors

The number of publications and the year of publication of the most productive authors working in the field of Gifted/ADHD are presented in Figure 6. Eminent researcher A. N. Rinn is the most productive author in the field of Gifted/ADHD with 5 studies, closely followed by K. M. Antshel with 3 studies. It is noteworthy that the remaining authors each contributed 2 studies. Furthermore, the number of citations of the authors was examined. In this respect, from the most cited author to the least cited author, K. M. Antshel (18 citations), S. S. Zentall (14 citations), A. N. Rinn (12 citations) and other authors (11 citations), respectively.

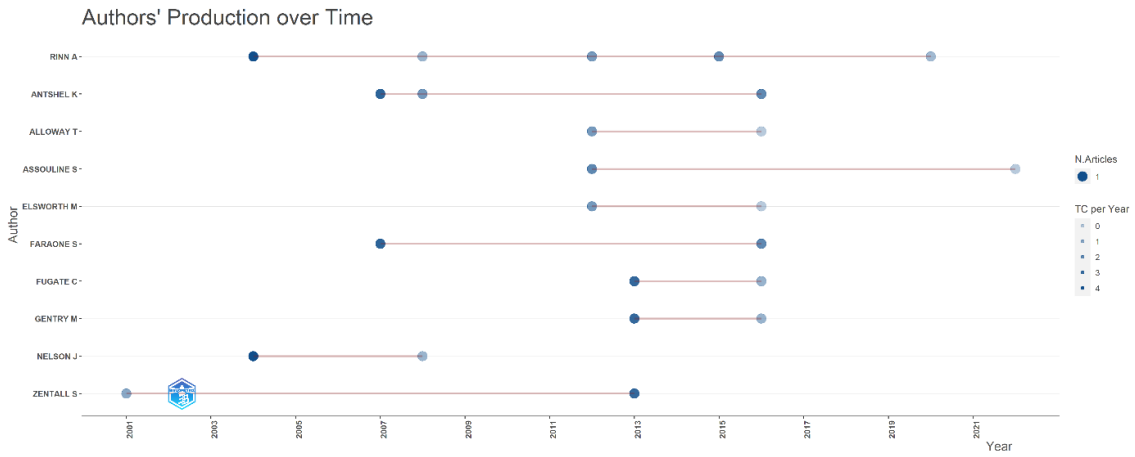

Figure 6. Authors' production over time.

The Most Global Cited Documents

The top ten most cited studies regarding the number of citations of the studies conducted in the field of Gifted/ADHD are given in Table 2. pon careful examination of Table 2, it becomes evident that the research endeavour undertaken by Hartnett, Nelson, and Rinn (2004) occupies the foremost position. Martin, Burns and Schonlau (2010) ranked second with 71 citations. The third place is shared by two studies by Reis, Baum and Burke (2014) and Leroux and Levitt-Perlman (2000) with 60 citations.

Table 2. Articles, Authors, and Total Citations.

Authors	Total Citations
Hartnett et al. (2004).	81
Martin et al. (2010).	71
Reis et al. (2014).	60
Leroux & Levitt-Perlman (2000).	60
Antshel et al. (2007).	57
Fugate et al. (2013).	35
Lee et al. (2015).	34
Paek et al. (2016).	30
Foley-Nicpon et al. (2012).	26
Bussing et al. (2012).	26

The Most Relevant Words

The analysis revealed that the most frequently utilized keywords were "gifted" or "giftedness" (22), "ADHD" (21), "twice exceptional" (11), "intelligence" (6), "behavior" (3), "hyperactivity" (3), and "misdiagnosis" (3). Upon observing the Co-occurrence Network (keywords plus), it was found that the commonly used words were children (19), deficit hyperactivity disorder (14), students (10) and ADHD (9). In addition, the associations of the keywords were examined, and it was seen that the other words were divided into three main clusters: children, deficit hyperactivity disorder, and students.

Historiograph

Information on the historical process of research in the field of Gifted/ADHD is presented in Figure 7. When we look at Figure 7, it is observed that a study was first conducted by Zentall et al. in 2001, followed by another study by Chae et al. in 2003, but there was no relationship between these two studies. The next study was conducted by Antshel et al. in 2007. This study was found to be related to Zentall et al. (2001) but not to Chae et al. (2003). In 2008, one of the two studies was conducted by Rinn & Nelson and it was found that there was no connection with the other three studies before that date. Antshel conducted the other study and it was found that it was only related to Antshel et al. (2007) among the previous studies among the previous studies. The studies conducted in the following years were found to have links with the studies conducted in the previous years.

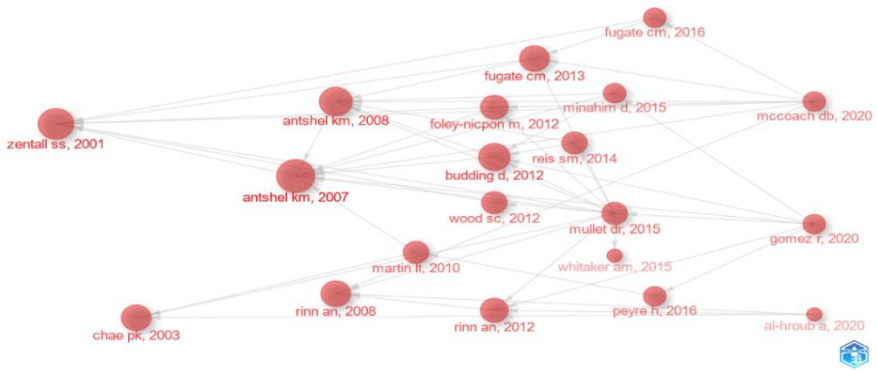

Figure 7. Historical process of research

Countries' Collaboration World Map

The world map, depicted in Figure 8, provides insights into the cross-country associations about research within the realm of Gifted/ADHD. When looking at the relationships between countries, it was seen that there was only one relationship between all countries with a connection. The following inter-country relationships were identified: Australia exhibited connections to both China and the United Kingdom, Belgium demonstrated a relationship with Norway, China displayed a connection with Denmark, the Netherlands exhibited associations with Belgium and Norway, and the USA showcased connections to Bahrain, Belgium, the Netherlands, and Norway.

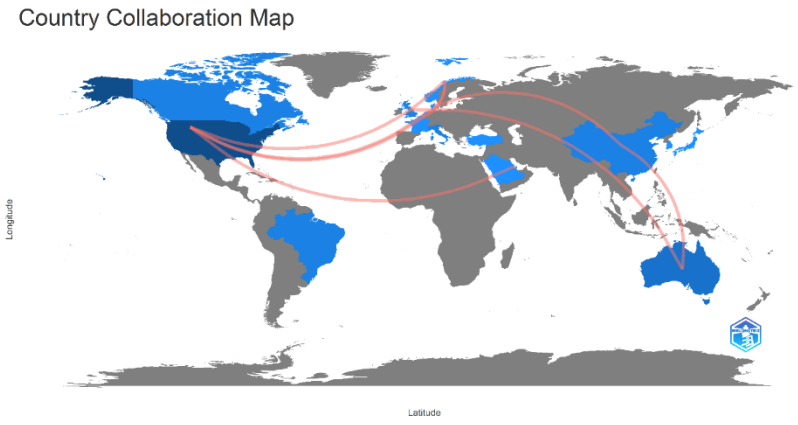

Figure 8. *Countries' collaboration world map*

CONTENT ANALYSIS FINDINGS

Research Aims

When the aims of the studies included in the content analysis were examined regarding the years, it was determined that the studies were clustered under the following five main headings: identification, behavioural, cognitive, social-emotional, and academic. It was found that most research was concentrated between 2011-14 (N=15). Between 2001-10, it was revealed that the field of gifted/ADHD was just beginning to be addressed and these studies were mostly focused on identifying these individuals and determining their cognitive characteristics. Between 2011-14, when most studies were conducted, it was seen that the aims of the studies evolved towards defining the behavioural, cognitive, social-emotional, and academic characteristics of these individuals rather than diagnosing them. After these years, the number of studies decreased and it was observed that five studies in 2015-18 were like the studies conducted in previous years, while two studies (Alloway et al., 2016; Fugate & Gentry, 2016) differed from other studies by aiming to look at the effect of some variables on individuals' behaviours and academic skills. Between 2019 and 2022, it was found that the studies were again parallel to the previous period in terms of objectives, and only one study (Alnaim, 2022) differed from the previous period in that it examined the perspective of teachers on the educational services offered to gifted/ADHD students.

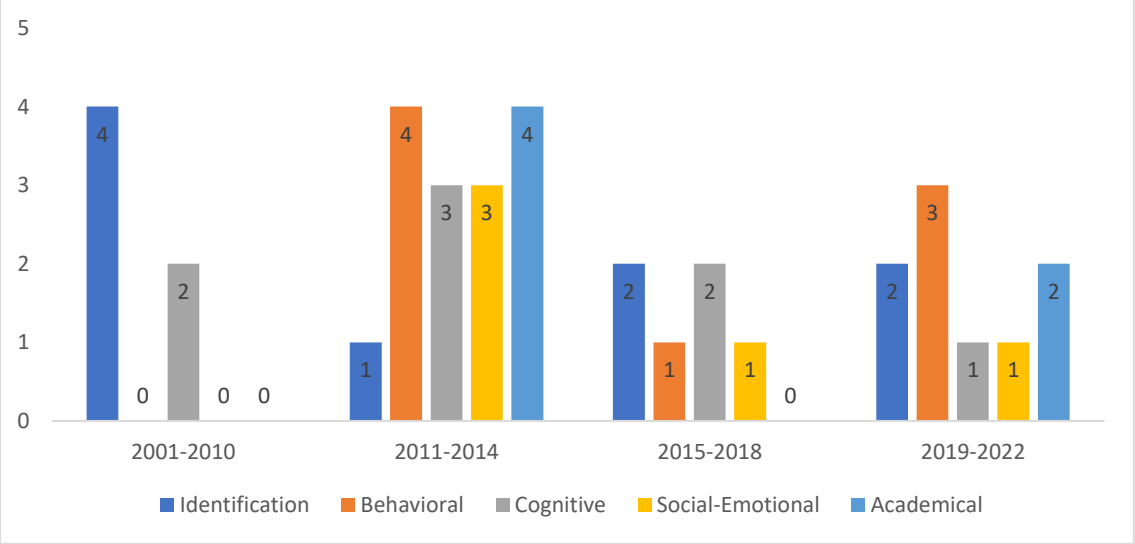

Figure 9. Aims of researchs

Research Methodology

The research methods used in the articles were determined with content analysis. Of the 28 studies included in the systematic analysis, 21 (75%) were Quantitative, 3 (10.71%) were Qualitative and 4 (14.29%) were Mixed methods.

Special Education Types

Information on the diagnoses of individuals with special needs in the sample of the studies analysed is presented in Table 3. It was observed that some studies focused on individuals belonging to a single diagnostic group, while others focused on individuals belonging to more than one diagnostic group. It was observed that the number of studies focusing on a single diagnostic group was 8 and the number of studies focusing on more than one diagnostic group was 15. The number of studies in which there was no information about the focused study group was 5. A total of 17 (39.53%) studies (15 quantitative, 1 qualitative, and 1 mixed method study) focused on gifted, 10 (23.26%) studies (8 quantitative, 1 qualitative, and 1 mixed method study) focused on ADHD, and 8 (18.60%) studies (6 quantitative and 2 mixed method studies) focused on Gifted/ADHD, A total of 3 (6.98%) studies, including 2 quantitative and 1 qualitative study, focused on learning disabilities, 2 (4.65%) studies, including 1 quantitative and 1 qualitative study, focused on ASD, and 3 (6.98%) studies, including 3 quantitative studies, focused on non-gifted.

Table 3. Types of Special Needs.

Special Education Types	Quantitative	Qualitative	Mix Method	Total	%
Gifted	15	1	1	17	39,53
ADHD	8	1	1	10	23,26
Gifted/ADHD	6		2	8	18,60
Learning Disability	2	1		3	6,98
Autism Spectrum Disorder	1	1		2	4,65
Non-Gifted	3			3	6,98
TOTAL				43	100

Sample Group

The distribution of the sample groups in the articles is presented in Table 4. The most preferred sample groups in these articles were Primary (N=12, 25%), Middle (N=11, 22,9%), and High school students (N=9, 18,7%) respectively. In studies focusing on student groups, the least studied student groups were Early childhood education students (N=2, 4,1%), and university students (N=2, 4,1%). There are also few studies focusing on teachers, parents, and adult groups.

Table 4. Sample Groups.

Sample Group	f	%
Early childhood education students	2	4,17
Primary school students (1–4th grade)	12	25,00
Middle school students (5–8th grade)	11	22,92
High school students (9–12th grade)	9	18,75
University students	2	4,17
Teachers	3	6,25
Parents	2	4,17
Adults	5	10,42
Unspecified	2	4,17
TOTAL	48	100,00

Table 5. Summary of The Articles.

Author	Purpose	Research Method	Sample			Instrument	Main Findings
			N_{total}	Grade/Age	Diagnosis		
Zentall et al. (2001)	Comparing academic and learning characteristics of ADHD, gifted and gifted/ADHD.	Mixed	-	-	Gifted; ADHD; Gifted/ADHD	-Conners' Rating Scale-Revised; School Situations Questionnaire-Revised	-Giftedness linked to talent benefits, not AD/HD protection.
Chae et al. (2003)	Testing the correlation between intelligence and ADHD. Examining characteristics of gifted children/ADHD.	Quantitative	177	6-9 years	Gifted (N=106); Nongifted (N=71)	-Test of Variables of Attention (TOVA); The Korean Educational Development al Institute-WISC (KEDI-WISC); The Scale for Rating the Behavioral Characteristics of Superior Students; The Korean Children Behavior Checklist	-Significant correlation between intelligence and omission error, commission error, and response time. -Gifted performed better on TOVA than non-gifted. -Only 9.4% of gifted was identified with ADHD.
Hartnett et al. (2004)	To provide empirical support for the possibility of misdiagnosis of giftedness and ADHD.	Quantitative	44	20-36 years	-	-Two vignettes	-The suggestion of the diagnosis of giftedness can lead participants away from a diagnosis of ADHD.
Antshel et al. (2007)	Assessing the validity of diagnosing ADHD in gifted children.	Quantitative	141	10-12 years	Gifted (N=92); Gifted/ADHD (N=49)	-The Schedule for Affective Disorders and Schizophrenia, Epidemiologic; WISC; The Wide Range Achievement Test-Revised; The Social Adjustment Inventory for Children and Adolescents	-Gifted individuals showed ADHD traits and characteristics in line with average IQ.
Rinn & Nelson (2008)	Examining the potential for the misdiagnosis of giftedness and ADHD.	Quantitative	132	17-46 years	-	-Vignettes	-The suggestion of giftedness impacted the diagnosis of behaviors common to giftedness and ADHD.

							-Future school counselors may not consider giftedness as an explanation for ADHD-like behaviors.
Sumida (2010)	Developing a checklist to recognize science learning-specific traits in twice-exceptional students.	Quantitative	86	3-6 grades	LD; ADHD; HA	-WISC–III; Japanese Kaufman Assessment Battery for Children (K = ABC); Illinois Test of Psycholinguistic Abilities; Developmental surveys, scholastic records; Early developmental history	-Three gifted styles were identified: spontaneous, expert, and solid style. -LD/ADHD/HA children showed spontaneous style, while typical children had solid style. -The number of expert styles was lower in both groups.
Alloway & Elsworth (2012)	To investigate the cognitive and behavioral profiles of high-ability students.	Quantitative	211	High 10.4 (y); Average 9.8; Low 9.10; ADHD 9.9	High (N=44); Average (N=38); Low (N=46); ADHD (N=83)	-WASI; AWMA; The Conner's Teacher Rating Scale; Conners' Parent Rating Scale; The Working Memory Rating Scale (WMRS)	-Gifted rated higher than the low and average groups in the working memory.
Bussing et al. (2012)	Examining the relationship between ADHD and academic performance among three groups: ADHD, subclinical/ADHD, and control group.	Quantitative	222	8-17 years	ADHD (N=87); Subclinical/ADHD (N=23); Control group (N=112)	-SNAP-IV; Vanderbilt ADHD Diagnostic Rating Scale; Diagnostic Interview Schedule for Children; The FCAT Norm-Referenced Test	-A high correlation between ADHD and poor academic performance. -Typical students and gifted/ADHD had similar achievement and learning gains as comparison students with the same exceptional education status.
Foley-Nicpon et al. (2012)	Examining the self-esteem and self-concept of gifted and gifted/ADHD.	Quantitative	112	6-18	Gifted (N=58); Gifted/ADHD (N=54)	-WISC-IV and WAIS-III; BASC-2; PH-2	-Gifted/ADHD had lower self-esteem, behavoiral self-concept, and happiness scores than gifted/ADHD
Rinn & Reynolds (2012)	Examining the relationship between overexcitabilities and ADHD in the group of adolescents.	Quantitative	116	12-16 ages 7-10 grades	Gifted (N=116)	-OEQ-II -The Conners ADHD/DSM-V Scales-Adolescent scale	-A significant relationship between Psychomotor OE and hyperactive-impulsive ADHD; the sensual OE, the emotional OE

							scores, and the Conners' ADHD Index subscale.
Wood (2012)	Investigating the views on behaviors of gifted students who may have ADHD.	Quantitative	33	-	Parents (N=26); Teachers (N=13)	Conners 3	-Parents' and teachers' ratings of inattention, hyperactive-impulsive behaviors, executive functions, and learning problems were normal. -Challenges misdiagnosis of ADHD in young gifted. -Ratings on Executive functioning and learning problems seem typical. -Low correlations and lack of significant differences between ratings of teachers and parents.
Fugate et al. (2013)	Assessing working memory and creativity in gifted and gifted/ADHD.	Quantitative	37	10-17 years; 5-12 grades	Gifted/ADHD (N=17); Gifted (N=20)	-TTCT; The Woodcock-Johnson III Normative Update Cognitive Abilities	Gifted/ADHD had lower working memory than gifted, but higher than non-ADHD gifted students.
Wellisch & Brown (2013)	Categorzsing gifted children according to certain types, and finding common gifted characteristics.	Quantitative	-	-	-	-WISC-IV	-Characteristics aid early identification of gifted children and gifted/ADHD.
Hua et al. (2014)	Examining the role of inquiry-based instruction in talent development for gifted–ADHD undergraduate students.	Qualitative	1	23 years	Bacholar	-	-This narrative suggests that inquiry-based teaching in an authentic community can aid in talent development for gifted-ADHD undergrads.
Reis et al. (2014)	A new research-based rationale for the definition of twice-exceptional children.	Qualitative	-	-	-	-	-The definition offered four components: guidelines for identification (comprehensive assessment and professionals) and programming (differentiated instruction and

							individual education plan).
Whitaker et al. (2015)	Exploring strategic verbal memory processing among gifted and gifted/ADHD.	Quantitative	125	6-16 years	Typical/ADHD (N=56); Gifted/ADHD (N=30); Gifted (N=39)	-WISC-IV -The California Verbal Learning Test-Children's Version	-Gifted/ADHD got lower T (number of words recalled) scores than gifted youth. -Gifted/ADHD achieved higher T than typical/ADHD. -2e found to impact verbal memory processing.
Minahim & Rohde (2015)	To evaluate the presence of symptoms of ADHD in intellectually gifted adults and children.	Quantitative	155	78 (grades 1-5) 77 (20-64 years)	-	-WHO Adult ADHD ASRS; NIMH Collaborative Multisite Multimodal Treatment Study of Children With AD/HD; Swanson, Nolan, and Pelham IV Rating Scale	-37.8% of gifted adults had ADHD, and the total MPA score was significantly linked to ADHD. -The gifted group had an ADHD-positive case frequency of 15.38%, while the control group 7.69%.
Alloway et al. (2016)	The impact of computer games and TV watching on behaviors of gifted students.	Quantitative	20	G = 10.6 years ADHD= 9.7 years	Gifted (N=20); ADHD (N=53)	-Wechsler Abbreviated Scales of Intelligence (WASI); Automated Working Memory Assessment (AWMA); Conners Teacher and Parent Rating Scale – Revised Short Form	-The gifted and the gifted/ADHD had similar oppositional and hyperactive behaviors, but did not in inattentive behaviors. -The gifted performed significantly better than the gifted/ADHD in the cognitive tests. -Watching TV and gaming predict to inattention at home, not in a classroom setting.
Fugate & Gentry (2016)	Exploring the life experiences of five gifted girls/ADHD, in coping with academic pressure during secondary school years.	Mixed method	5	12-13 ages 7-8 grade	Gifted/ADHD (N=5)	-Early Adolescent Temperament Questionnaire; Students' Perceptions of Control Questionnaire	-All scored higher than normal in aggression and depressive mood on the behavioral scale. -Most reported low pleasure sensitivity scores in intensity, complexity, and novelty. -Having ADHD greatly affected their academic motivation. -Girls stressed academic and

							motivational support from teachers and parents.
Peyre et al. (2016)	To investigate the association between high IQ and behavioral, emotional and/or social difficulties at an earlier age.	Quantitative	1100	5-6 years	Gifted (N=23)	-Wechsler Preschool and Primary Scale of Intelligence (WPPSI); The Strengths and Difficulties Questionnaire; Centre for Epidemiological Studies-Depression scale (CES-D); Edinburgh Postnatal Depression Scale; Home Observation for the Measurement of the Environment Scale;Obstetrical records	-No significant differences in SDQ scores between gifted and typical, except a marginally significant association between high-IQ and emotional difficulties at 5–6 years. -Sensitivity analyses did not support the association between high-IQ and emotional difficulties.
Hurford et al. (2017)	To examine the performance differences on the TOVA among different IQ level groups.	Quantitative	138	6-10 years	Low average (N=14); Average (N=78); High average (N=27); Superior (N=19)	-TOVA; Wechsler Nonverbal Scale of Ability (WNV™)	-On all TOVA measures (response time, response time variability, errors of omission and commission, and ADHD scores), intellectual functioning significantly influenced performance. -Performance on the TOVA was affected by intellectual functioning.
Gomez et al. (2019)	Inattention and hyperactivity/impulsivity differences between gifted with and without ADHD.	Quantitative	507	6-17 years	ADHD (N=350); Gifted (N=15); Gifted/ADHD (N=18); Clinical controls (N=124).	-The Anxiety Disorders Interview Schedule for Children (ADISC-IV); WISC-IV; Strengths and Weaknesses of ADHD-Symptoms and Normal Behavior Scale (SWAN)	-ADHD outscored gifted/ADHD in inattention. -ADHD rated the gifted/ADHD similarly in hyperactivity/impulsivity. -ADHD is a valid diagnosis among gifted. -Gifted/ADHD may be less inattentive than non-gifted/ADHD.

							-Gifted/ADHD shows distinct hyperactive/impulsive behaviors from non-gifted/ADHD.
Al-Hroub & Krayem (2020)	Studying the link between overexcitabilities (O) and ADHD traits, and gender-based variations in OE levels.	Quantitative	265	9-11 grades	Gifted (N=265)	-The Overexcitability Questionnaire-Two (OEQ-II); The Conners ADHD/DSM-V Scales-Adolescent scale	-A small positive correlation between Psychomotor OE and hyperactive-impulsive ADHD, and Imaginational OE and ADHD. -A small negative correlation between Intellectual OE and inattentive ADHD. -A significant gender gap in the Psychomotor OE, with boys performing better, while girls performed better in the Emotional, Sensual, and Imaginational OEs.
Bishop & Rinn (2020)	To explore the possibility of misdiagnosis of high IQ youth by mental health professionals.	Mixed methods	330		Counselors (N=132); Psychologists (N=76); Social workers (N=67); Marriage and family therapists (N=55)	-Case Study Vignettes; Survey Questions	-Regardless of whether a high IQ is suggested as a possible explanation of the presenting issues of a high IQ youth, mental health clinicians still leaned toward some type of diagnosis of the disorder.
McCoach et al. (2020)	Exploring whether gifted students with underachievement show symptoms of ADHD.	Quantitative	212	9-17 ages 5-13 grades	Gifted underachievers (n=212)	-ADHD-IV Rating Scales; School Achievement Attitudes Survey–Revised	-Many underachieving gifted children have significant attention issues at home. -Both parents and teachers ranked inattention as a bigger issue than hyperactivity. -Inattentive behavior was more common in the classroom than at home. -The rate of inattention was significantly higher in gifted underachievers.
Alnaim (2022)	Investigating teachers' perspectives of the reality, challenges	Mixed methods	107		Teachers of gifted students (N=47);	-Questionnaire	-Inadequacy of educational services -Lack of teacher qualifications,

	and prospects of educational services provided for gifted/ADHD in gifted and LD programs.				Learning difficulty teachers (N=60)		appropriate scales, and social awareness regarding students' characteristics and educational environment. -Need for competent authority to support 2e students and others. -There were no statistically significant differences in professions nor in the region.
LeBeau et al. (2022)	Developmental milestones predict ADHD, ASD, and SLD diagnosis.	Quantitative	1320	4-39 years	Gifted Program (N=606); ADHD (N=446); SLD (N=215); ASD (N=141)	-WAIS; WISC; Wechsler Preschool and Primary Scale of Intelligence (WPPSI); The parent/guardian intake form	-Academic milestones predict ADHD, ASD, or SLD diagnosis in clinical sample. -Bladder control predicts ADHD and ASD, tricycle-riding predicts ASD. -Walking and nighttime bladder control not linked to diagnosisof ADHD, ASD, or SLD diagnosis. -Early speaking associated with lower risk of ADHD. -ASD and SLD more common in males. -White were more likely to be diagnosed with ASD, but less likely to be diagnosed with SLD. -Those from low SES families were associated with fewer diagnoses compared to high SES peers.
Slater et al. (2022)	To summarises the demographics and influences upon the decision to home educate.	Qualitative	385	21-70 years	Gifted; ASD; SLD; ADHD; Other	-The Australian Home Education Questionnaire (AHQ)	-Highly educated female caregivers mainly oversee home education. -The current education system was unable to provide a learning environment that would meet the educational and psychosocial needs of their children.

DISCUSSION

This study reports the results of bibliometric and content analysis of gifted/ADHD-related articles published in Wos and Scopus databases, including the year 2022. It is seen that the first study in the field included in the bibliometric analysis and subject of the research was published in 2000. While a total of 9 articles were published in the period covering the years 2000-2011, a total of 32 articles were published in the last ten years (2012-2022). Based on this finding, it can be concluded that the gifted/ADHD subject area is a new field for special education literature and has attracted increasing attention in the last decade. It is thought that this increase in interest may be related to the introduction of the concept of twice exceptional, which emerged as a result of scientific research on gifted individuals being affected by different disabilities. In light of this information, it is predicted that the number of articles on the subject area will continue to increase in the coming years.

The analysis of the journals in which the articles on the subject were published shows that the journals that published the most articles were Gifted Child Quarterly (n=6), Roeper Review-A Journal On Gifted Education (n=5) and Gifted Education International (n=3), respectively. In this case, it is concluded that the articles are mostly published in journals that specialize in and publish in the field of gifted education. In addition, it was observed that a small number of articles were also published in journals in the field of education, special education, and psychology. In the analysis of the journals according to the number of citations, it was seen that the top three journals were Gifted Child Quarterly (146), Roeper Review-A Journal On Gifted Education (115), and Gifted Education International (46) in the same order. Similarly, Cornejo-Araya et al. (2021) found that the most cited articles were mostly published in journals specializing in the gifted field such as Roeper Review and Gifted Child Quarterly.

A. N. Rinn (n=5) and K. M. Antshel (n=3) are the most productive authors studying in the field of gifted/ADHD. In addition, these two authors are also among the top three based on the analysis of the number of citations of the authors. The most cited authors in the subject area are A. N. Rinn (130 citations), K. M. Antshel (100 citations) and S. S. Zentall (61 citations). The fact that the same authors are both the most cited author, and the most productive author can be explained by the parallelism of the rankings. The most cited article is "Gifted or ADHD? The Possibilities of Misdiagnosis" (Hartnett et al., 2004). The reason for this is that the study focuses on misdiagnosis in determining whether gifted individuals have ADHD or not, which is the most controversial issue in this field.

When the keywords in the publications on gifted/ADHD are investigated, it is comprehended that the articles focus on the keywords gifted/giftedness (22), ADHD (21), twice exceptional (11). Considering the subject of the research, it is claimed that the intensive use of these keywords in the articles is a natural result. In addition to these, intelligence (6), behaviour (3), hyperactivity (3), and misdiagnosis (3) were also used, albeit to a lesser extent. It was concluded that intelligence and misdiagnosis were related to giftedness, while behaviour and hyperactivity were related to ADHD. It is also stated by Şakar and Baloğlu (2022) that this tendency in keywords is expected. Another striking point is that the word misdiagnosis is among the most common words used in the

articles. This situation shows again that the possibility of misdiagnosis of twice-exceptional individuals is emphasized a lot. The fact that the title of the most cited article in the field of Gifted/ADHD (Gifted or ADHD? The possibilities of misdiagnosis) also includes these words is a sign of this.

When the relationship between the articles in the historical process was analysed, it was seen that the first articles written in the field of gifted/ADHD were written between 2000-2003 and there was no relationship between these studies. Later, three more articles were written in 2007 and 2008. It was also found that the relationship between these articles and their predecessors was very weak. However, the articles written in 2010 and later were found to have ties with the studies conducted in previous years. The fact that 2010 and earlier articles have no or very little relationship with each other can be explained by the small number of articles written in the first half of the process, considering the period covered by the studies conducted in the field of gifted/ADHD. In the period 2010 and after, the increase in both the number of studies and the relationship between studies reveals that the first studies pioneered the field.

When the inter-country relationships of research in the field of gifted/ADHD are analysed, it is found that the country with the highest number of relationships is the USA (from the USA to Bahrain, Belgium, Netherlands, and Norway). This finding indicates that the USA dominates the gifted/ADHD field and is strong in this field. The fact that the USA has the highest number of relationships can be explained by the fact that the USA is the country that publishes the most articles in this field and the most prolific authors are from the USA. In addition, the fact that the USA is scientifically advanced and has an expert and long-established tradition in the field of special education research (Zigmond & Kloo, 2011) can be said to be another reason explaining the country with the highest number of relationships.

The studies included in the content analysis underwent scrutiny with respect to their research purposes, research methodology, special education types, and sample groups. There is a shift in studying subject areas over the years. Initially, during the early stages of research, the primary objective revolved around identifying individuals who exhibited characteristics of both giftedness and ADHD, while simultaneously discerning their cognitive attributes. In the following years, the research focus shifted towards elucidating the behavioural, cognitive, social-emotional, and academic characteristics of these individuals, prioritizing a comprehensive understanding rather than solely identification. The tendency towards identifying gifted/ADHD individuals in the initial studies can be attributed to the relative novelty of this interdisciplinary field in the literature. As the field grew, it became imperative to investigate and establish a broader range of characteristics associated with gifted/ADHD individuals beyond mere identification. Consequently, studies conducted in subsequent years sought to examine the behavioural, cognitive, social-emotional, and academic dimensions of these individuals, aiming to fulfil the necessity of comprehensively understanding their multifaceted nature subsequent to the identification process. It is noteworthy that the keywords commonly used in publications on giftedness/ADHD are closely aligned with the research objectives described above, which further confirms the congruence between the research objectives and the terminologies chosen in the field.

Most of the studies were quantitative (n=21, 75%), while the others were qualitative (n=3, 10.71%) and mixed method (n=4, 14.29%). In line with the objectives of the studies, the fact that various measurement tools were used in the studies to diagnose gifted/ADHD individuals and to determine their behavioural, cognitive, social-emotional, and academic characteristics explains the preponderance of quantitative studies. In the information on the diagnoses of individuals with special needs in the sample of the analysed studies, it was observed that some studies focused on individuals belonging to a single diagnostic group, while some studies focused on individuals belonging to more than one diagnostic group. It was concluded that 17 studies (39.53%) focused only on gifted, 10 studies (23.26%) focused only on ADHD, and 8 studies (18.60%) focused on gifted/ADHD. In the context of the subject of this study, it is expected that most of the studies (n=35, 81.39%) consisted of individuals diagnosed with gifted/ADHD. Primary (N=12, 25%), middle (N=11, 22,9%), and high school (N=9, 18,7%) students are the most common sample groups in terms of the developmental stages of individuals. It is reasonable and expected result that the studies were conducted with individuals in these developmental stages in line with the aims of the research to diagnose individuals and determine their characteristics.

As a conclusion, this study contributes to the general understanding of the gifted/ADHD subject area through literature mapping by conducting bibliometric and content analysis. On the other hand, it provides an overview of the distribution of scientific knowledge and orientation in the field of gifted/ADHD from publications worldwide and the increase in r esearch in the field. Despite the increase in the number of research studies, it is thought that scientific productivity in the field of gifted/ADHD is not sufficient and there is a lack of diagnoses of gifted/ADHD individuals based on research topics. The sample included in the study was selected only through WoS and Scopus databases. This situation represents the limitation of the study in this field by excluding studies published locally in languages other than English.

ETHICAL TEXT

In this article, journal writing rules, publishing principles, research and publication ethics rules, and journal ethics rules have been followed. Responsibility for any violations that may arise regarding the article belongs to the author(s). Since the study is a review article, an ethics committee rapor is not required.

Author(s) Contribution Rate: In this study, the contribution rate of the first author is 40% , the contribution rate of the second author is 35%, the contribution rate of the third author is 25%

REFERENCES

(included in bibliometric analysis n=42; * included in content analysis n=28)

*Al-Hroub, A., & Krayem, M. (2020). Overexcitabilities and ADHD in gifted adolescents in Jordan: Empirical evidence. *Roeper Review*, *42*(4), 258-270.

*Alloway, T. P., & Elsworth, M. (2012). An investigation of cognitive skills and behavior in high ability students. *Learning and Individual Differences*, *22*(6), 891-895.

*Alloway, T. P., Elsworth, M., Miley, N., & Seckinger, S. (2016). Computer use and behavior problems in twice-exceptional students. *Gifted Education International*, *32*(2), 113-122.

*Alnaim, F. A. (2022). Educational Services for Gifted Students with ADHD: Reality, Challenges and Prospects. *Journal of Educational and Social Research*, *12*(4), 202.

Angela, F. R., & Caterina, B. (2022). Creativity, emotional intelligence and coping style in intellectually gifted adults. *Current Psychology*, *41*(3), 1191-1197.

Antshel, K. M. (2008). Attention-Deficit Hyperactivity Disorder in the context of a high intellectual quotient/giftedness. *Developmental Disabilities Research Reviews*, *14*(4), 293-299.

*Antshel, K. M., Faraone, S. V., Stallone, K., Nave, A., Kaufmann, F. A., Doyle, A., Fried, R., Seidman, L. & Biederman, J. (2007). Is attention deficit hyperactivity disorder a valid diagnosis in the presence of high IQ? Results from the MGH Longitudinal Family Studies of ADHD. *Journal of Child Psychology and Psychiatry, 48*(7), 687-694.

*Bishop, J. C., & Rinn, A. N. (2020). The potential of misdiagnosis of high IQ youth by practicing mental health professionals: A mixed methods study. *High Ability Studies*, *31*(2), 213-243.

Budding, D., & Chidekel, D. (2012). ADHD and giftedness: a neurocognitive consideration of twice exceptionality. *Applied Neuropsychology: Child*, *1*(2), 145-151.

*Bussing, R., Porter, P., Zima, B. T., Mason, D., Garvan, C., & Reid, R. (2012). Academic outcome trajectories of students with ADHD: Does exceptional education status matter? *Journal of Emotional and Behavioral Disorders, 20*(3), 131-143.

Cain, M. K., Kaboski, J. R., ve Gilger, J. W. (2019). Profiles and academic trajectories of cognitively gifted children with autism spectrum disorder. *Autism*, *23*(7), 1663-1674.

*Chae, P. K., Kim, J. H., & Noh, K. S. (2003). Diagnosis of ADHD among gifted children in relation to KEDI-WISC and TOVA performance. *Gifted Child Quarterly*, *47*(3), 192-201.

Cornejo-Araya, C. A., Gómez-Araya, C. A., Muñoz-Huerta, Y. P., & Reyes-Vergara, C. P. (2021). What do we know about giftedness and underachievement? A bibliometric analysis. *International Journal of Research in Education and Science (IJRES), 7*(2), 400-411. https://doi.org/10.46328/ijres.1481

Coutinho-Souto, W. K. S., & de Souza Fleith, D. (2022). Giftedness and ADHD: A systematic literature review. *Revista de Psicología*, *40*(2), 1175-1211.

Foley-Nicpon, M. (2015). Voices from the field: The higher education community. *Gifted Child Today*, *38*(4), 249-251.

*Foley-Nicpon, M., Rickels, H., Assouline, S. G., & Richards, A. (2012). Self-esteem and self-concept examination among gifted students with ADHD. *Journal for the Education of the Gifted, 35*(3), 220-240.

*Fugate, C. M., & Gentry, M. (2016). Understanding adolescent gifted girls with ADHD: Motivated and achieving. *High Ability Studies*, *27*(1), 83-109.

*Fugate, C. M., Zentall, S. S., & Gentry, M. (2013). Creativity and working memory in gifted students with and without characteristics of attention deficit hyperactive disorder: Lifting the mask. *Gifted Child Quarterly*, *57*(4), 234-246.

*Gomez, R., Stavropoulos, V., Vance, A., & Griffiths, M. D. (2020). Gifted children with ADHD: how are they different from non-gifted children with ADHD?. *International Journal of Mental Health and Addiction*, *18*, 1467-1481.

*Hartnett, D. N., Nelson, J. M., & Rinn, A. N. (2004). Gifted or ADHD? The possibilities of misdiagnosis. *Roeper Review, 26*(2), 73-76.

*Hua, O., Shore, B. M., & Makarova, E. (2014). Inquiry-based instruction within a community of practice for gifted–ADHD college students. *Gifted Education International*, *30*(1), 74-86.

*Hurford, D. P., Fender, A. C., Boux, J. L., Swigart, C. C., Boydston, P. S., Butts, S. R., Cox, C. L., Becker, T. A., & Pike, M. E. (2017). Examination of the Effects of Intelligence on the Test of Variables of Attention for Elementary Students. *Journal of attention disorders*, *21*(11), 929-937.

*LeBeau, B., Schabilion, K., Assouline, S. G., Nicpon, M. F., Doobay, A. F., & Mahatmya, D. (2022). Developmental milestones as early indicators of twice-exceptionality. *Neurobiology of Learning and Memory*, *194*, 107671.

Lee, F. L. M., Yeung, A. S., Tracey, D., & Barker, K. (2015). Inclusion of children with special needs in early childhood education: What teacher characteristics matter. *Topics in early childhood special education, 35*(2), 79-88.

Lee, K. M., & Olenchak, F. R. (2015). Individuals with a gifted/attention deficit/hyperactivity disorder diagnosis: Identification, performance, outcomes, and interventions. *Gifted Education International*, *31*(3), 185-199.

Leroux, J. A., & Levitt-Perlman, M. (2000). The gifted child with attention deficit disorder: An identification and intervention challenge. *Roeper Review, 22*(3), 171-176.

Martin, L. T., Burns, R. M., & Schonlau, M. (2010). Mental disorders among gifted and nongifted youth: A selected review of the epidemiologic literature. *Gifted Child Quarterly, 54*(1), 31-41.

*McCoach, D. B., Siegle, D., & Rubenstein, L. D. (2020). Pay attention to inattention: Exploring ADHD symptoms in a sample of underachieving gifted students. *Gifted Child Quarterly*, *64*(2), 100-116.

*Minahim, D., & Rohde, L. A. (2015). Attention deficit hyperactivity disorder and intellectual giftedness: a study of symptom frequency and minor physical anomalies. *Brazilian Journal of Psychiatry*, *37*, 289-295.

Mullet, D. R., & Rinn, A. N. (2015). Giftedness and ADHD: Identification, misdiagnosis, and dual diagnosis. *Roeper Review*, *37*(4), 195-207.

Paek, S. H., Abdulla, A. M., & Cramond, B. (2016). A meta-analysis of the relationship between three common psychopathologies-ADHD, anxiety, and depression-and indicators of little-c creativity. *Gifted Child Quarterly, 60*(2), 117-133.

*Peyre, H., Ramus, F., Melchior, M., Forhan, A., Heude, B., Gauvrit, N., & EDEN Mother-Child Cohort Study Group. (2016). Emotional, behavioral and social difficulties among high-IQ children during the preschool period: Results of the EDEN mother–child cohort. *Personality and Individual differences*, *94*, 366-371.

*Reis, S. M., Baum, S. M., & Burke, E. (2014). An operational definition of twice-exceptional learners: Implications and applications. *Gifted Child Quarterly, 58*(3), 217-230.

*Rinn, A. N., & Nelson, J. M. (2008). Preservice teachers' perceptions of behaviors characteristic of ADHD and giftedness. *Roeper review*, *31*(1), 18-26.

*Rinn, A. N., & Reynolds, M. J. (2012). Overexcitabilities and ADHD in the gifted: An examination. *Roeper Review*, *34*(1), 38-45.

Rommelse, N., van der Kruijs, M., Damhuis, J., Hoek, I., Smeets, S., Antshel, K. M., Hoogeveen, L., & Faraone, S. V. (2016). An evidenced-based perspective on the validity of attention-deficit/hyperactivity disorder in the context of high intelligence. *Neuroscience & Biobehavioral Reviews*, *71*, 21-47.

Shi, J., Tao, T., Chen, W., Cheng, L., Wang, L., & Zhang, X. (2013). Sustained attention in intellectually gifted children assessed using a continuous performance test. *PloS one*, *8*(2), e57417.

*Slater, E. V., Burton, K., & McKillop, D. (2022). Reasons for home educating in Australia: who and why?. *Educational review*, *74*(2), 263-280.

*Sumida, M. (2010). Identifying Twice-Exceptional Children and Three Gifted Styles in the Japanese Primary Science Classroom. *International Journal of Science Education*, *32*(15), 2097-2111.

Şakar, S. N., & Baloğlu, M. (2022). Twice exceptionality with RStudio: A bibliometric analysis. *Hacettepe University Journal of Education.* Advance online publication. doi: 10.16986/HUJE.2022.474

Tasca, I., Guidi, M., Turriziani, P., Mento, G., & Tarantino, V. (2022). Behavioral and Socio-Emotional Disorders in Intellectual Giftedness: A Systematic Review. *Child Psychiatry & Human Development*, 1-22.

*Wellisch, M., & Brown, J. (2013). Many faces of a gifted personality: Characteristics along a complex gifted spectrum. *Talent Development & Excellence*, *5*(2), 43-58.

*Wood, S. C. (2012). Examining parent and teacher perceptions of behaviors exhibited by gifted students referred for ADHD diagnosis using the Conners 3 (an exploratory study). *Roeper Review*, *34*(3), 194-204.

*Whitaker, A. M., Bell, T. S., Houskamp, B. M., & O'Callaghan, E. T. (2015). A neurodevelopmental approach to understanding memory processes among intellectually gifted youth with attention-deficit hyperactivity disorder. *Applied Neuropsychology: Child*, *4*(1), 31-40.

Yılmaz-Yenioğlu, B., & Melekoğlu, M. A. (2021). Öğrenme güçlüğü ve özel yeteneği olan iki kere farklı bireylere yönelik yapılan çalışmaların gözden geçirilmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 22*(4), 999-1024.

*Zentall, S. S., Moon, S. M., Hall, A. M., & Grskovic, J. A. (2001). Learning and motivational characteristics of boys with AD/HD and/or giftedness. *Exceptional children*, *67*(4), 499-519.

Zigmond, N. P & Kloo, A. (2011). General and special education are (and should be) different. In J. M. Kauffman and D. P. Hallahan (Eds.), Handbook of special education (pp. 160-172). New York and London: Routledge, Taylor & Francis Group.