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The Reality of International Research in the
Identification of Gifted Individuals: Bibliometric
Study of International Refereed Journals from 2004 to 2009

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Abstract

Identification of gifted individuals is a central issue in the psychology of mental superiority and the education of gifted students. It is the initial basic step in gifted programs. However, the contemporary literature of this important process has not received comprehensive bibliometric analysis. Hence, the researcher investigated the identification of gifted students in international contemporary research published in refereed journals from 2004 to 2009. Using the bibliometric method, 157 studies were analyzed (all the studies in the identification of gifted students in the specified period). These studies constituted 15.54% of the international scientific production in the talent and superiority field. The reality of identification research was investigated by analyzing the following indices: quantity of production and its time allocation, journals publishing the largest number of studies, type of talent identified, issues, methods, tools, educational stages, and number of authors and their gender and countries. The results were discussed, conclusions concerning positive and negative aspects were drawn, and recommendations and suggestions for further research were offered. The study concluded that the identification of gifted individuals is concerned with varied talent categories and rich in models, approaches and issues, which entail continuous efforts for professional development on the part of researchers.

Key Words: Gifted, Identification issues, Bibliometric Studies.

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The identification of gifted students is a basic aspect of the education of gifted students. However, this aspect has a lot of vagueness, confusion, interrelatedness (Booolootian, 2005; Cramer, 1991; Feldhusen, Hoover & Sayler, 1990), and continuous change (Calderon, Subotnic & Knotek, Rayhack & Gorgia, 2007; Hsintailin, 1998). This entails periodic and comprehensive examination of published literature to identify the basic features of this aspect and to examine the component characteristics of this body of knowledge in a way that provides a more profound understanding of the issue. Such periodic examination of literature is also expected to help researchers and practitioners to keep abreast of contemporary international trends. For these reasons, the present study attempted to identify the reality of contemporary international research in the identification of gifted students between 2004 and 2009 through analyzing these indices: quantity of production and its time allocation, journals publishing the largest number of studies, type of talent identified, issues, methods, tools, educational stages, and number of authors and their gender and countries. This research tries to help the specialists in the field of gifted Identification with the contemporary issues that concerned the Global Research in this field, as well as modern tools used, and the different models used in this field, which deepening their awareness of this field.

Review of Literature

Several bibliometric, analytic and survey studies were conducted in the area of the identification of talent and superiority both regionally and internationally. The researcher presents in this section the most important studies that analyzed research in this area, placing more emphasis on the research into the identification of the gifted.

Parker, Jordan, Kirk, Aspiranti, and Bain (2010) analyzed publications in four gifted education journals from 2001 to 2006 according to these indices: content analysis, types and characteristics of authorship, aim of the study (Al-Suleiman, 2009), and identification of creative abilities through cross-cultural studies, seeking to investigate the cultural and societal effect on the development of creative abilities. Coleman, Guo, and Dabbs (2007) conducted a critical and analytical examination of published talent and superiority research to identify the nature of qualitative research in talent and superiority.

In a study by Friedman-Nimz, O'Brien, and Frey (2005) the following resources were analyzed: Exceptional Children Educational Resources, PsychINFO and ERIC to investigate the nature of research in talent and superiority publications. Paul and Plucker (2004) examined the effect size (significance) of statistical results in the research on giftedness. This later study is an extension of a study conducted by Plucker in 1997. The researchers analyzed the content of the research employing statistical treatment in three specialized journals: *Journal for the Education of the Gifted*, *Gifted Child Quarterly* and *Roepers Review* in the period from 1995 to 2000. The results were similar to those of the 1997 study. The effect or significance was either average or weak in most studies. Mendaglio (2003) did a survey study to examine the frequency of the case study methodology in research on talent.

Abo Hashem (2003) surveyed Arabic research on talent from 1990 to 2002 to explore the most common criteria used in identifying gifted and superior individuals and the degree to which those criteria differed across educational stages (preschool, elementary, preparatory, secondary and university) and gender (male and female). Abo Hashem surveyed 61 studies (studies published in journals, M.A theses and Ph. D dissertations): 18 on giftedness and 43 on superiority. The researcher found that behavioral characteristics, achievement scores, intelligence and achievement combined respectively were the most common criteria. It was also found that criteria differed across educational stages (the behavioral characteristics criterion was the most common in secondary and university education) and gender (the behavioral characteristics criterion was the most common in the studies whose samples were males only or both males and females). The most common criterion in the studies whose samples included only females was intelligence and achievement combined.

Heller and Schofield (2001) did an analytical evaluative study to investigate the international trends in research on talent and superiority. In 2000, four journals from 1997 to 1998 were analyzed by Ziegler and Raul to identify the types of research included. These journals are: *Gifted Child Quarterly*, *Roepers Review*, *Journal for the Education of the Gifted*, *Gifted Education International*, and *High Ability*. Khaleefa (1999, 2006) surveyed research on creativity, intelligence and talent in Arabic research. It was found that 14% of Arabic studies were on the identification of gifted and intelligent students.

Fraiser et al (1995) sought to find the characteristics of gifted children in minorities and economically disadvantaged groups in the American society. Available literature and research were analyzed and ten characteristics of giftedness in those children were found: communication skills, imagination/creativity, the spirit of humor, verification, illumination, varied interests, strong memory, motivation, problem solving and inference. The researcher discussed the use of these characteristics in the identification and selection of gifted programs and the development of talent identification checklists. The researcher also discussed the way people of education and families can benefit from these characteristics to identify giftedness. Karnes and Lewis (1995) examined the approach of mass media to talent issues.

In the Javits Project, a number of studies tackling the identification policies in gifted education programs were conducted. Two issues were focused on in those studies: (1) the State's local policies for the identification of gifted individuals in given populations (culturally disadvantaged, children with handicaps and economically disadvantaged) and (2) the role of education reform movements - e.g. cooperative learning in the provision of services to gifted students. One of these is Gallagher-Coleman's study (1994) in which the researchers analyzed the content of the documents of the identification of gifted individuals in every state. Results revealed that there were comprehensive policies in the states but the inclusion of special categories of individuals in programs was limited in reality. The study also identified the barriers of inclusion and produced a model for legislation for each state.

Keller (1993) attempted to analyze the content, aims and topics of research on talent and superiority in the period from 1971 to 1991 in the international book of talent and superiority research. The first index he reached was the comprehensive approach to the study of giftedness and the use of multiple tools for identification purposes. Results revealed that research concerned with identification came fifth (7.5%) among seven various fields of talent research. Identification came in the same position when the researchers analyzed 6 periodicals in talent research. Thirteen percent of talent studies were conducted in the elementary stage. The study also found that the percentage of identification research in the period from 1980 to 1991 ranged between 9.5 and 14.5, and between 4% and 16% in the *Journal of Educational Psychology* and the *Journal of Exceptional Children* respectively. Hays (1992) conducted a historical analysis of all publications in journals: *Gifted Child Quarterly*, *Roeper Review*, and the *Journal for the*

Education of the Gifted from their first volumes to 1989. Identification topics ranged between 5.1 to 6.8%.

Coleman and Gallagher (1992) attempted to survey the American polices for the identification of gifted individuals with the purpose of presenting models for promoting these polices, especially in the identification of talent in economically disadvantaged and handicapped populations. Analysis covered the following six aspects: legislation, the definition of talent, standard identification practices, non-standard identification practices, the procedure for complaints concerning the identification process, and the special policies for special groups.

Results showed that 42 states had policies for initial survey and identification, and that official identification was based on the approach of multiple criteria. It was also found that (1) 46 states included identification with non-curricular activities such as models of activities and products, (2) 43 states applied creativity measures, (3) 33 states had legislation for the education of gifted individuals and provision of funds for this education, (4) 40 states exposed culturally disadvantaged groups to special identification procedures, (5) 38 states included economically disadvantaged populations, (6) 38 states identified gifted students with learning disabilities, and (7) 36 states cared for gifted students with sensory and physical handicaps. However, despite the presence of policies for identification processes, results showed, in general, that states' policies did not display the sufficient provision of services to special groups, and that demographic analysis of programs referred to the underrepresentation of special groups in gifted programs.

Four barriers for the inclusion of special groups were identified: limited understanding of local policies, fear of identifying large numbers of children, limitedness of resources, and limitedness of gifted programs in special groups. Meadows and Carnes (1992) did an analytic study of the public opinion about giftedness by analyzing the content of daily papers. The citations in talent research were analyzed in a study by Carter and Sawanson (1990). Also the literature of gifted education between 1975 and 1986 was analyzed by Rogers (1988, 1989) based on the literature available if these resources: Educational Resources Information Center (ERIC), Exceptional Child Education Resources (ECER), and Psychological Information Abstracts (PSYC).

It is obvious from the survey of relevant literature that specialized studies on analysis of talent identification research were very few. Most studies tackled the topic in combination with

other topics of talent without comprehensive examination that can stress its character. Most studies focused on research methodology and its weaknesses. Most studies focused on the principal journals of gifted education like *Gifted Child Quarterly*, *Roeper Review* and *Journal for Education of the Gifted*, and principal educational databases like *ERIC*, *ECER* and *PSYC*.

The identification of gifted individuals was tackled in the studies by Rogers (1988, 1989) and Heller (1993) and its proportion to other topics on giftedness in the two studies was 18% and 7.5% respectively. This proportion ranged between 9.5% and 14.5% (Heller, 1993) in the *Journal of Educational Psychology*; between 4% and 16% in the *Journal of Exceptional Children*; and between 5.1% and 6.8% in Meadows and Karnes (1992). The study by Abo Hashem (2003) revealed that the most common criteria used in identifying gifted and superior individuals were behavioral characteristics, achievement scores, intelligence and achievement combined respectively.

The social conditions of the population (e.g. poverty and minorities) have reflections on the identification process. For this reason several identification studies were conducted on special groups - e.g. Coleman and Gallagher (1992); Gallagher & Coleman, (1994) and Fraiser et al (1995). Some studies tackled the identification process through governmental documents - e.g. Coleman and Gallagher (1992) and Gallagher and Coleman (1994).

Method

The researcher used ERIC database as a main source of data for the present study as it encompasses the basic peer-reviewed journals in gifted education. Furthermore, the researcher used research published in the journal "Gifted and Talented International" through its electronic site as its publications are not included in ERIC database. Inclusion of studies in the present review of literature was based on several criteria. Studies to be included had to (1) be published in peer-reviewed journals, (2) be written in English and (3) contain all or any of these key words: gifted or talent identification, assessment, ability identification.

It is noteworthy that the current study is limited to research about the identification of gifted and superior students in ERIC educational database, and Gifted and Talented Journals from 2004 to 2009. Although there are several quantitative and qualitative aspects that can be analyzed in research in the identification of talent and superiority, the study is limited to these

indices: quantity of production and its time distribution, journals publishing the largest number of studies, type of talent identified, issues, methods, tools, educational stages, and number of authors and their gender and countries.

Results and Discussion

Quantity of Scientific Production in talent identification

To identify the quantity of scientific production in talent identification in the specified period, a comprehensive survey of talent research published in the two target sources was conducted. The number of studies was 1010. The studies in the identification of talent and giftedness were counted (N = 157) - i.e. 15.54% of the publications from 2004 to 2009.

This finding is similar to the study of Khaleefa (1999, 2006), the study of Rogers (1988, 1989), the *Journal of Educational Psychology* and the *Journal of Exceptional Children* where the percentages were 14%, 18%, between 9.5%, 14.5%, and between 4% and 16% respectively. Yet, it is different from the studies of Heller (1993), Hays (1998) and Meadows and Karnes (1992) where the percentages were 7.5%, between 5.2% and 6.8, and 3% respectively. It is noteworthy that Heller's and Meadow-Karnes's studies analyzed research studies of conferences, whereas Hays's study analyzed the first volumes of the journals. In general, talent identification research kept a similar percentage over long periods of time. This can be due to innovations in the topics and issues of identification, which lead to further research.

Time Allocation of Studies

Table (1) show time allocation of studies from 2004 to 2009. It is clear that the year 2009 had the largest number of publications (23.6%), whereas the year 2004 had the least number (12.7%). The annual rate of publications is 26.16%. This finding reveals the continuous increase in publications in the six years covered in the study. This indicates that topics and issues of identification witness innovations.

Table 1
Time Allocation of Talent Identification Publications

Year	Frequency	%
2004	20	12.7
2005	27	17.2
2006	23	14.6
2007	27	17.2
2008	23	14.6
2009	37	23.6
Total	157	100

Journals Publishing the Largest Number of Studies

Table (2) shows that talent identification publications are distributed on 37 journals. It also shows that *Gifted Child quarterly* is at the top of all journals in terms of the number of publications (20.4%). This journal, which dates back to 1957, is the oldest in the field, and it is the official publisher of the National Association of Gifted Children in America. Two journals shared the second position: *Gifted and Talented International* issued by the International Board for Gifted and Superior Children, and *Journal for the Education of the Gifted* issued by the Division for Gifted and Superior Children in the International Board for Exceptional Children (12.1%). In the third position came *Gifted Child Today* issued by the Resources Center for the Education of the Gifted (11.5). *Roeper Review*, issued by the Roeper School in Michigan, came in the fourth position (8.3). Finally, *High Ability Studies* issued by the European Board for Individuals with High Abilities came sixth in order with 6.4% of publications. In addition, 23 journals published just one study in talent identification.

This finding means that *Gifted Child Quarterly* is the first and oldest journal at the international level, which urges researchers to publish their work in it. Added to this, this journal is issued 4 times a year and it is the longest. It is noteworthy here that this journal came first in Hays's study (1992) in multiple topics. *Gifted Child Quarterly* is considered the main journal in the field as it is the oldest journal in gifted education, dating back to 1957. It is also the main text of the National Association of Gifted Children in America, the first and the oldest association in

the field all over the world. Its high scientific status makes it the publisher of research conducted by the most distinguished researchers from all over the world.

Table 2
Journals Including Publications in Talent Identification

No.	Journal	Frequency	%
1	Gifted Child Quarterly	32	20.4
2	Gifted and talented international	19	12.1
3	Journal for the Education of the Gifted	19	12.1
4	Gifted Child Today	18	11.5
5	Roeper Review	13	8.3
6	High Ability Studies	10	6.4
7	Journal of Secondary Gifted Education	8	5.1
8	International Journal of Mathematical education in Science and Technology	3	1.9
9	Journal of Educational & Psychological Consultation	3	1.9
10	Physical Education and Sport Pedagogy	2	1.3
11	Journal of Educational Psychology	2	1.3
12	Multicultural Education	2	1.3
13	Psychology in the Schools	2	1.3

14	Professional School Counseling	2	1.3
15	Elementary School Journal	1	.6
16	Middle School Journal	1	.6
17	Oxford Review of Education	1	.6
18	Journal of Learning Disabilities	1	.6
19	Journal of Psycho educational Assessment	1	.6
20	British Journal of Special Education	1	.6
21	Exceptionality education International	1	.6
22	Remedial and Special Education	1	.6
23	American Educational History Journal	1	.6
24	Journal of Career Assessment	1	.6
25	International Journal of Language & Communication Disorders	1	.6
26	International Journal of Special Education	1	.6
27	Journal of Advanced Academics	1	.6
28	Leadership	1	.6
29	Kappa Delta Pi Record	1	.6
30	Canadian Journal of School Psychology	1	.6

31	Journal of Education Finance	1	.6
32	RE: view: Rehabilitation Education for Blindness and Visual Impairment.	1	.6
33	Professional School Counseling	1	.6
34	Australian Senior Mathematics Journal	1	.6
35	School Psychology Quarterly	1	.6
36	Computers and Education	1	.6
37	Qualitative Report	1	.6
Total		157	100.0

Type of identified talent

Table (3) lists talent categories that many studies attempted to identify. It is obvious from the table that there are 18 types of talent. The most frequent of these are academic talent (43.9%) and mental talent (27.4). These two talents are followed by gifted students with learning disabilities (6.3%), talent in mathematics (5.7%), and talent in leadership (2.5). This finding refers to the multiplicity of talent categories tackled in research. It also refers to the advancement made in the field since long neglected talents were examined.

Table 3
Type of Identified Talent

No.	Type of Talent	Frequency	%
1	Academic Giftedness	69	34.9
2	Mental Giftedness	43	27.4
3	Gifted Students with learning disabilities	10	6.3

4	Talent in Mathematics	9	5.7
5	Talent in Leadership	4	2.5
6	Gifted low achievers	3	1.9
7	Artistic Visual Talent	3	1.9
8	Gifted visually handicapped	2	1.3
9	Gifted Students with High Spatial Ability	2	1.3
10	Talent in Sports	2	1.3
11	Gifted hyperactive Students	2	1.3
12	Gifted Students in Multiple Intelligences	2	1.3
13	Gifted Autistic Students	1	0.6
14	Talent in the English Language	1	0.6
15	Talent in Technology	1	0.6
16	Gifted Students with Language Disorders	1	0.6
17	Creative Talent	1	0.6
18	Commercial Talent	1	0.6

Main Issues Including Talent Identification Topics

Table (4) presents the main issues including talent identification topics. These issues were classified in larger categories. It can be seen from the table that there were 29 issues. The most frequent of these was the underrepresentation of given population categories in gifted programs (15.3%). The second position was shared by two issues: (1) development, design and adaptation of measures of gifted individuals' characteristics and (2) theories and models of giftedness, and approaches of identification (10.2%). Two issues came in the third position: identification of gifted handicapped individuals and talent identification techniques (7.6%).

This finding shows that talent identification is affected by environmental factors. The issues of minorities, for instance, capture interest in the American society to the extent that

scientific divisions were established specifically to study the issues of minorities. Besides, it is clear that the multiplicity of educational models and approaches has its reflections on the identification process. This multiplicity leads to the development of many tools and techniques which require further investigations to establish their validity.

Table 4
Main Issues Including Talent Identification Issues

No.	Main Issues	Frequency	%
1	The underrepresentation of given population categories in the identification process and gifted programs (minorities, ethnic groups, the poor, individuals with diverse cultures and languages, and rural people)	24	15.3
2	Development, design & adaptation of measures of gifted individuals' characteristics	16	10.2
3	Theories & models of giftedness, & approaches of identification	16	10.2
4	Identification of gifted handicapped individuals	12	7.6
5	Talent identification techniques	12	7.6
6	The role of teachers in gifted identification	8	5.1
7	Procedures & policies of gifted identification	8	5.1
8	Identification in national programs	7	4.5
9	Talent in mathematics	7	4.5
10	Development, design & adaptation of measures & batteries of abilities	5	3.2
11	Early identification of high ability students	4	2.5

12	Families & gifted identification	3	1.9
13	Evaluation of the identification process	3	1.9
14	Initial survey in gifted identification	3	1.9
15	Historical analysis of gifted identification	3	1.9
16	Spatial abilities	3	1.9
17	Administration & its relation to the identification process	3	1.9
18	Talent in leadership	3	1.9
19	The role of counselors in gifted identification	3	1.9
20	Personal predictors of giftedness	2	1.3
21	Talent in the English language	2	1.3
22	Companions between identification systems	2	1.3
23	Differential diagnosis between gifted children	2	1.3
24	Interviews with identification experts	1	0.6
25	The economics of the identification process	1	0.6
26	Regulations governing the identification process	1	0.6
27	Strategies of treating identification data	1	0.6
28	The creative personality	1	0.6
29	Investigating the rate of gifted individuals in the society	1	0.6
	Total	157	100

Methodology

Table (5) clarifies the methodologies used in gifted identification research. It is obvious that the most widely used methodology is the descriptive procedural methodology (54.8%), followed by literature review (35.7%).

This finding is different from Heller-Schofield's study (2001) and to some extent similar to the study of Suleiman (2006) in which field and theoretical descriptive methodologies respectively constituted 67% and 18% of all methodologies used in the surveyed research. This finding also indicates the low frequency of quantitative methodologies in talent identification research in comparison with other methodologies such as literature review and qualitative research.

Table 5
Methodologies Used in Talent Identification Research

No.	Methodology	Frequency	%
1	Descriptive Procedural	86	54.8
2	Literature Review	56	35.7
3	Qualitative	12	7.6
4	Experimental	1	0.6
5	Content Analysis	1	0.6
6	Interviewing Experts	1	0.6
	Total	157	100

Identification Tools

The number of tools used in talent identification research was 89. The order of these tools according to frequency of use came as follows: teachers' referral (14); the cognitive ability test, Raven's matrices and achievement test (14); teachers' observation (9); and interview and case study (8). This refers to the multiplicity and variation of tools used for talent identification. The presence of multiple tools is due to the multiplicity of talent theories, models and approaches.

Educational Stages of Research Populations

Table (6) shows the educational stages of research populations. As listed in the table, the most studied educational stage is the elementary stage (52.9%) followed by the secondary stage (12.7%) and kindergarten (6.4%).

This finding is consistent with the study of Rogers (1988, 1989) where the frequency of the elementary stage was 46%. It is nevertheless different from the study of Heller and Schofield (2001) where the most studied educational stage was the intermediate stage, and the study of Heller (1993) where the elementary stage attained a frequency of 13%. It is also partially different from the study of Suleiman (2006) where the order of stages was as follows: the secondary stage (40.3%), the elementary stage (22.1%), the intermediate stage (16.4%), the university stage (14.6%), the preschool stage (5.7%), and the post-university stage (.9%). This finding signifies that identification research places most emphasis on younger students.

Table 6
The Educational Stages of Research Populations

No.	Educational Stage	Frequency	%
1	Elementary	83	52.9
2	Secondary	20	12.7
3	Preschool	10	6.4
4	Elementary/Secondary	7	4.5
5	Intermediate	5	3.2
6	Elementary/Intermediate/Secondary	3	1.9
7	University	2	1.3
8	Elementary/Intermediate	2	1.3
9	Intermediate/Secondary	1	0.6
10	Unspecified	24	15.3

Number of Authors

Table (7) shows that the number of authors of talent identification research works ranged from 1 to 9 authors. Studies conducted by 1 author were 40.8% and studies by more than 1 author were 59.2% with an average of 2.06 authors for each study. This finding is different from the study of Attallah (2008) and the study of Khaleefa (1999, 2006) which revealed the

prevalence of single authorship. The authorship rate differed also from the study of Hays (1992) where it was 1.5 authors for each study. This reveals that recent trends in research encourage co-authorship.

Table 7
Number of Authors of Talent Identification research Works

No.	Author(s)	Frequency	%	No.	Author(s)	Frequency	%
1	1	64	40.8	5	5	5	3.2
2	2	45	28.7	6	6	2	1.3
3	3	36	22.9	7	9	1	6
4	4	4	2.5	8			

The Gender of Authors

Table (8) displays the total number and gender of authors. The total number was 324 publications, 50.62% of which were conducted by male authors and 49.38% by female authors. This is different from the study of Attallah (2008) where the majority of authors were male. However, the finding is quite similar to the study of Hays (1992) where first male authors were 53.1% and first female authors' were 46.9%. This finding means that production of research in giftedness has been shared by male and female researchers. This is different from other branches of knowledge, especially in the Arabic world. This phenomenon can be named research equality. This is opposite to what is known as the issue of gifted female students - i.e. gifted females' concealing their giftedness.

Table 8
Gender of the Author

Author	Number	%
Male	164	50.62
Female	160	49.38
Total	324	100

Table (9) shows the gender of first authors in research works. The percentage of first male authors is 52.23 compared with 47.77 for female authors. Here again male and female authors share first authorship

Table 9
Gender of First Authors

Author	Male		Female	
	Number	%	Number	%
First	82	52.23	75	47.77

Country

Table (10) displays the countries where studies were conducted. As illustrated in the table, most studies were conducted in America (82.2%) followed by (with a great difference) Germany (3.2%).

This finding is similar to findings in several scientific fields since American researchers outnumber others in scientific production. This is also consistent with the UNESCO report (2005) about the participation of countries in scientific research. Evidence for the preponderance of research in America and specifically in the English language is attributed to the funding available for scientific research. The researcher attributes this to scientific precedence in the education of gifted and superior students in America and the presence of several divisions specialized in giftedness and superiority in American universities, which, in turn, leads to the presence of a large number of researchers in the field. Add to this the large number of journals (37) issued in America. The English language, which is the language of publication, also contributes to the American precedence in giftedness and superiority research. On the other hand, productivity is low in Arabic countries (3 countries only). Again this is consistent with the UNESCO report mentioned above. Even the two studies conducted in Lebanon were done by an American researcher working in the American University in Beirut. It is also clear that Israel and Japan are not represented. A final observation is the presence of two cross-cultural studies.

Table 10
Countries Where Research Works Were Conducted

No.	Country	Frequency	%	No.	Country	Frequency	%
1	USA	129	82.2	9	The Sudan	1	.6
2	Germany	5	3.2	10	Jordan	1	.6
3	Britain	4	2.5	11	China	1	.6
4	Canada	4	2.5	12	France	1	.6
5	New Zealand	2	1.3	13	South Korea	1	.6
6	Japan	2	1.3	14	Mexico	1	.6
7	Hong Kong	2	1.3	15	Puerto Rico	1	.6
8	Lebanon	2	1.3				

Conclusions

The study aimed to describe and analyze talent identification in international contemporary research, and to investigate contemporary trends in talent identification in the period from 2004 to 2009. The following conclusions were drawn from this research:

1. Identification research kept the same rate (between 15% and 20%) in most previous studies. That is, talent identification research represents 1/6 or 1/5 of the scientific production on education of the gifted. It therefore comes in a lower position compared to other aspects of the education of the gifted. It is also clear that production fluctuated throughout the years of study since it increased in a year and decreased in the following year.
2. One fifth of publications appeared in one journal (*Gifted Child Quarterly*), which means that this journal is the central in the field.
3. Most identified talent types are mainly classical. There are only fewer studies on multiple intelligences, successful intelligence and technological talents. This means that talent identification is still dominated by the traditional trend. So far it has not included modern ability theories and has not developed techniques to identify them.
4. The issue of minorities and their representation in gifted programs captured researchers' interest, whereas other important issues such as the use of modern measurement theories (i.e. Item Response Theory, Latent Trait Theory and Rasch Modeling) in talent identification

were ignored. It is also noticeable that studies tackling talent identification data, legislation and economics of talent identification and development of creativity measures are few.

5. The use of experimental and qualitative methodologies is limited.
6. Studies conducted in the preschool stage are few, though this stage is supposed to capture the research interest, not the elementary stage.
7. The international production in talent identification research is not proportional since it is focused in given countries.

Recommendations for Administrators

- Responsible people of education should take the due interest in developing and renewing talent identification policies according to modern international trends.
- Responsible people of education should provide funds for developing, adapting and purchasing international identification tools and devices, and holding workshops to train practitioners on such tools and devices.

Suggestions for further research

- Studying talent identification in other information sources such as research papers presented in international conferences, MA and PhD theses.
- Studying talent identification in documents of relevant educational authorities in ministries of education and special centers providing care for the gifted.
- Studying talent identification in study courses presented to specialists in the education of the gifted whether in the university, post-university or habilitation courses for teachers of the gifted.

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