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Abstract

The students with high abilities process information differently, as a high creativity and involvement in their tasks are found among their personal characteristics. This implies the need for conducting specific educational interventions, within which some theoretical models have shown the effectiveness of the ICT. The aim of this work was to analyze the scientific production in the shape of articles on the ICT as a support for the learning of students with high abilities, during the 2008-2018 period in five databases: Web of Science (WoS), Scopus, Google Scholar, Education Resource Information Center (ERIC) and PsycINFO. A descriptive and quantitative methodology was used to present the most significant bibliometric data (citation index and impact), as well as the analysis of co-words, and the visualization of the relationships between words or terms through bi-dimensional bibliometric maps. A total of 725 documents were analyzed, from which 92 KW+ were obtained. Among the conclusions, a medium-low impact index is underlined, as referring to the number of articles published in the five databases, as well as the citations received. With respect to the thematic network of interrelations of studies on ICT and high abilities, these are being thematically linked with the importance of the Technologies in the classroom, the curriculum, the family's participation and the training of teachers.

Keywords: ICT, high capacities, bibliometrics, scientific journals, databases

1. Introduction

The education of persons with high abilities (gifted) is not a new field of study, as it began at the end of the 19th century in the Unites States, but it did not gain prominence until after the launching of the Russian satellite Sputnik in 1957 (Davis, Rimm, & Siegle, 2011). At present, in that country there is a growing interest for the education of people with exceptional abilities. This is the case of the GATE (Gifted and Talented Education) program, directed towards young students who have shown to have an especially high intellectual ability.

In Europe, something similar is presently occurring. The Europe 2020 program named «A strategy for smart, sustainable and inclusive growth», approved by the European Commission in 2010 includes the improvement in the detection and educational attention of gifted individuals, as a key resource for guaranteeing the future of the EU. It recommends that the European Commission and the Member States support the conducting of studies and research and adopt adequate measures to favor the potentials of gifted children and youth, with the objective of promoting the assessment of specialized knowledge. In this sense, technology not only allows the teachers to provide differential instruction for gifted students, but also serves as an educational and creative outlet for the most brilliant minds in the world. In this modern era, the existence of high-ability minds involved in the new technological advances of society is crucial.

Information and Communication Technologies (ICT) can provide essential support for the learning of gifted individuals, when used for personalized educational interventions, where some theoretical models have shown their effectiveness, as related to their use as pedagogic tools that foment creativity (Tárraga, Sanz, & Pastor Fernández, 2014). In the last few years, this has become an emergent field of study. Thus, a fast search with the terms ICT and gifted in Google Scholar showed 409 results between 1988 and 1998, 4410 from 1998 to 2008 and an astounding

16900 results from 2008 to 2018. It is likely that not all of these documents were directly related with the use of the ICT and the gifted, however, these data suggested that there is a growing body of literature that has awoken the interest on this subject.

Within this context, it is necessary to conduct a study to analyze the different variables from a bibliometric and thematic point of view in order to place the researchers in the current scenario and the possible challenges of the study. Meaning, in terms of understanding what we know, what we need to know and what we can do.

2. Conceptualizations

The terminology used by every one of the countries, the classification criteria that are in agreement with them, as well as the aspects that are included vary considerably. The terms that frequently appear in the national definitions of most of the countries are «gifted» and «talented ». Normally, these terms are used interchangeably, although some countries give them different connotations (Mönks & Pflüger, 2017). The definition of «gifted» has a direct relationship with the intellectual quotient, according to the most recognized definition from the World Health Organization. Thus, the "gifted" are students who have an IQ of 130 or higher. Renzulli (1978) defined giftedness as a consistent interaction in three basic human features that characterize gifted individuals: a) general intelligence or ability that is above the mean; b) creativity and c) involvement with the task. In the last few years, Renzulli (2012) has complemented this initial theory with 3 new sub-theories: triad enrichment, social value and executional functions. However, at present, more than giftedness, there is also talk about high abilities, highlighting in this sense, the contributions by Pfeiffer (2015), where these are defined from three perspectives: high intelligence, excellent performance and high potential to excel or perform in an excellent

manner. Along this line, authors such as Olszewski-Kubilius, Subotnik & Worrell (2015) highlight the importance of education in the development of high abilities.

3. Research on ICT and High Abilities

3.1. What is known

In the last 40 years, the ICT have evolved continuously and progressively. From the first phase, at the end of the 70s, characterized by the model of programmed instruction; essentially exercising and practice, followed by the appearance of multimedia and hypermedia interfaces, at the end of the 80s, which contributed to the enrichment of educational programs. The generalized use of the Internet in the 90s was another milestone in the design, and overall, in the distribution of educational applications (*e-business, e-marketing, ecommerce...*). In the first decade of the third millennium, the ICT also reached the educational terrain, with the coining of terms such as *e-learning* to refer to electronic or distance learning educational systems. Lastly, the surge of social software and the Web 2.0 environments can be underlined, which referred to the creation of content and social participation (Tourón & Santiago, 2013). Proof of this can be observed in the bibliometric analysis conducted by Martín, Díaz, Sancristobal, Gil, & Castro (2011), who identified social web technologies, games and mobile devices as the most important technologies for education.

All of this evolution has been accompanied by research experiments, although they have not been very abundant in the field of special education needs due to high abilities. In despite of this, in the education area, models have been created to explain the use of the ICT in the education of gifted students. Examples of these are the CAITAC model by Pérez & Beltrán (2005), the *Enable, Enhance & Transform* model by Chen, Yun Dai and Zhou (2013), or the contributions by Goodhew (2009).

There are other contributions that have tried to argue for the benefits produced by the use of the ICT in the education of these students. Thus, Goodhew (2009) indicated that the educators should guide the talented students to become independent and competent learners on the use of technology, so that they may be able to take on the reins of their own learning. Authors such as Yong & Zhicheng (2009) conducted a more specialized proposal, and summarized the contributions that the educational work with ICT could provide to the treatment of information, in the following milestones: localization of information online; evaluation and validation of the information and interpretation.

Despite the different theoretical models, in the international arena there is a scarcity of scientific studies conducted that provide bibliographic reviews on the support of the ICT to the learning of gifted individuals. An example of this is the one conducted by Periathiruvadi & Rinn (2013), where through a review of online databases (ERIC, Education Research Complete, Academic Research Complete and PsychArticles), they revealed the predominance of descriptive reports over empirical ones on the use of technology with gifted students. Likewise, in their study, they underlined that the main themes of the studies referred to the following subjects: technology for learning and development; evaluations, study plans and planning of instruction; programing with technological tools; technology in various learning environments and professional development using technology.

Of all the themes studied, the resource that has been most utilized in the last few years has been instruction assisted by computers. Along this line, we can highlight the works by Dixon, Cassady & Cross (2005), who already examined if the use of computer tools helped to improve the abilities of critical thinking and the quality of writing of gifted adolescents. Grimes & Warschauer (2008) focused on the analysis of the results of a portable computer program used

with gifted students and normal students in a primary school. Also, evaluation assisted by computers for the identification of gifts and talents, as well as for the improvement of teaching of these students has also become a study alternative (Cope & Suppes, 2002). Another field of study that has focused the attention of the research community has been technology focused in learning environments, as well as works on the effectiveness and benefits of online courses for gifted students, and the positive perceptions on online learning (Wallace, 2009; Bohmova & Rostejnska, 2009).

The «professional development of teachers» has occupied an important place in research, as no matter how good a technological tool is, its effectiveness in the student's learning depends on how the teachers use and integrate the technology in the curriculum. Therefore, the teacher's training should be the first and foremost step for the education in the ICT used with talented or gifted students (Lee & Jin, 2015). Along this line, research works have been conducted that show the lack of the teacher's preparation for using technology as a support for gifted students (Bangel, Enersen, Capobianco & Moon, 2006; Shaunessy, 2007).

In this sense and according to what has been presented in the previous paragraphs, which detailed the interest that the scientific community has had for the texts and studies on ICT and high abilities (giftedness) in the last few years, a bibliometric study was proposed for the quantitative and qualitative analysis of published scientific studies from 2008 to 2018. This type of bibliographic study is considered important, as the concept of «bibliography» has been acquiring a greater importance and relevance in scientific research in constant evolution (Friedlander & Bessette, 2003, 5-6).

Likewise, scientific research could be measured very reliably by analyzing the number of publications (productivity) and their citation frequency (visibility) (De Moya, Chinchilla, Benavent, Corera, González & Vargas, 2010). The bibliometric indicators allow us to analyze

the scientific production in a quantitative and qualitative manner, meaning, the repercussion of this production (Velasco, Eiros, Pinilla, & San Román, 2012). Also, it allows us to precisely characterize the state of development of the research, and therefore to substantiate the making of decisions on scientific policy (Cunningham, 1997).

4. Purpose and research questions

The present study had two objectives:

1. To bibliometrically quantify, in the Web of Science (WoS), Scopus, Google Scholar, ERIC and PsycINFO databases, the scientific production on ICT and high abilities in the shape of scientific articles, during the period ranging from January 2008 to November 2018. The following variables will be analyzed: total number of published articles; number of citations received; main citing journals; average citations per year; name of the country, and institutional affiliations of the most-cited authors and the methodological focus of the articles.

2. To examine keywords used in the scientific articles on the use of the ICT as learning support for students with high capacities in order to establish possible trends and aims of the research.

This literature review explores the following research questions:

Q1 What is the general state of research on the ICT as support for the learning of gifted students?

Q2 What countries and journals have the most articles published?

Q3 What are the main lines of research within this domain?

Q4 What research designs predominate?

Q5 What areas could be addressed by future research studies on education with gifted students?

The analysis of the literature review was focused on identifying «*what we know*». The findings and recommendations of the present study will inform about «*what we need to know*» and the implications «*what we can do*».

5. Method

5.1. Characterization of the research

This research is characterized for being a systematic review of the literature, taking into account the principles established within the educational context for bibliometric studies (Fernández & Bueno, 1998), through the use of the descriptive, quantitative, correlational and the application of semantic techniques, or the analysis of social networks for the study of keywords (Knoke & Yang, 2008), through their graphical and visual representation with the VOSviewer software. The most common method for measuring the impact of any term or trend is through the comparison of different databases (Levine-Clark & Gil, 2009).

5.2. Procedure for finding, identifying and selecting of articles

For the extraction of data, a bibliographical search (computer-assisted direct consultation) in the following electronic databases: Web of Science (WoS), Scopus, Google Scholar, Education Resource Information Center (ERIC) and PsycINFO.

The search for the scientific articles took into account the following articles: a) published between January 2008 to November 2018; b) the search descriptors appeared on the title, keywords or abstract; c) published in English or Spanish; d) published in in peer-reviewed periodic journals; e) included within the area of education; and f) addressed the subject of the ICT with high-ability students in any stage in the educational system. As for the exclusion criteria, the following were not studied: a) publications whose texts were not complete; b) non-original scientific articles (abstracts, theses, dissertations, books, conference proceedings or

technical reports) and published in non-periodical publications; c) studies on high abilities outside the educational context, d) did not belong to the 2008-2018 period and e) articles found to be repeated in the databases.

To analyze the data extracted, indicators were obtained from the quantification of the information obtained from the articles, related with: main authors, journals, countries, affiliations and thematic subjects (Chiu& Ho, 2005; López, Vázquez & Román, 2015). Afterwards, special emphasis was placed on the analysis of co-occurrence within the domain of technologies and high abilities, with the aim of analyzing the main keywords (Bhattacharya & al., 2003; Ding, Chowdhury & Foo, 2001; Cahlik, 2000; Neff & Corley, 2009; Viedma & al., 2011). For searching for the articles in the different databases, the following equations were used: «*gifted*» and «*ICT*»; «*gifted*» and «*emergent technology*»; «*gifted*» and «*digital*»; «*talented*» and «*ICT*»; «*talented*» and «*emergent technology*» OR «*talented*» and «*digital*», in Web of Science, Scopus, ERIC, PsycINFO and Google Scholar. Thus, at first 995 articles were found in Google Scholar, 604 in Education Resource Information Center (ERIC), 604 in PsycINFO, 426 in Web of Science (WoS) and 51 in Scopus 604, which were reduced to 407, 130, 130, 30 and 28, respectively, after the application of the exclusion criteria and posterior manual elimination. The data were extracted from all the databases through their own automated mechanisms of analysis and online consultation, taking into account the following variables selected: number of articles published on ICT and high abilities; number of citations received; journals with a higher index of citations; main authors and institutional affiliations; productivity according to year and country; methodology used in the article (theoretical, quantitative, qualitative and mixed); distribution according to technology, with this information placed onto the tables and figures; and the relevance of the content, through the analysis of keywords from Web of Science, Scopus, Google

Scholar, ERIC and PsycINFO: through the extraction of a .txt file (in the case of WoS) and .csv (in the case of Scopus, Google Scholar, ERIC and PsycINFO), and the posterior visual representation with the VOSviewer software.

6. Results

6.1. What we need to know

The results are presented in two phases. The first phase shows the quantitative data, in a differential manner, of the analysis of the five databases, providing answers to the first objective of the study. In the second phase, in order to answer the second objective, the graphs of the keywords extracted from the different databases and their posterior analysis are visually represented in order to extract the main trends in the study of the ICT applied to students with high abilities.

Table 1 shows the number of articles published in the five selected databases in the period 2008-2018. It can be observed that the articles published in the two databases with greater international impact and renown (WoS and Scopus) are lesser in quantity as compared to the other three (Google Scholar, ERIC and PsycINFO).

(Table 1)

The greatest index of articles was found in the year 2013, in Google Scholar (50), as well as in PsycINFO (20), ERIC (20) and WoS (5). In the case of Scopus, the greatest number was found in 2014, with 10 publications. All of these publications were found in the different corresponding quartiles in the databases. Likewise, it is interesting to note the low repercussion of this subject of study in the last few years (Table 2), as a small number of publications have more than 1 citation.

(Table 2)

The number of citations received in the different databases was very low. For example, the professor Ton Mooij (Open University, the Netherlands), with his article «Education and self-regulation of learning for gifted pupils: systemic design and development» received 8 and 9 citations in the WoS and Scopus databases, respectively, while in ERIC, PsycINFO and Google Scholar, it received 14, 14 and 27, respectively. This implies that the repercussion in the high-impact databases is still not very significant. This verifies that the articles with the highest number of citations in the databases had an eminently theoretical focus, and that there is still a scarcity of empirical studies that investigate the learning of gifted students through the use of ICT (Table 3). This denotes that the research in this field is still in its initial phases, and the efforts that have been conducted until the present are more focused on the area of dissemination than the scientific-academic one.

(Table 3)

The type of methodology used provides information about how these studies on ICT and high abilities were being conducted in this initial and expansion stage. The analysis of the data shows that the research on this subject had mainly a quantitative focus, followed by theoretical articles of reflection and trials (Table 4).

(Table 4)

Among the countries that had greater impact in the last few years, in first place we found the Netherlands, with 17 citations in WoS, PsycINFO and ERIC, 16 in Scopus and 87 in Google Scholar; the USA (WoS=15; Scopus=13; PsycINFO=20; ERIC=20 Google Scholar=187); Australia (WoS=5; Scopus=5; PsycINFO=31; ERIC=31; Google Scholar=148) and Slovenia (WoS=1; Scopus=2; PsycINFO=12; ERIC=12; Google Scholar=103). Among the universities with the greatest repercussion, the European, North American and Australian ones were notable,

with the «Open University of the Netherlands» excelling in this group (WoS=3; Scopus=3; PsycINFO=3; ERIC=3 Google Scholar=3).

The ten most-represented journals belonged to German, Korean, Australian or English institutions, mainly represented by the journal «International Journal of Emerging Technologies in Learning» (12 citations), one of the most productive. It was followed by «Journal of Gifted/Talented Education» (11 citations), «Australasian Journal of Gifted Education» (7 citations) and «Gifted Education International» (7 citations).

As for the types of ICT tools utilized, the studies that used the computer (30.61%) and the Web 2.0 resources (38.78%), which included those that used E-Learning, social networks or virtual platforms, were notable. These were followed by the Smartphone (14.29%), Hardware and Software (10.20%), and Photography and Video (6.12%).

After the descriptive and quantitative analysis on the repercussion of the studies related with ICT and students with high abilities in the five databases analyzed, and with the aim of describing the possible thematic implications for future research studies, the keywords used in the articles were analyzed and presented with a graph. To obtain the network of words, the «Key-Words Plus (KW+)» were used. These were automatically extracted from the documents after loading the file.

Thus, after the analysis of the selected databases, 28 documents were found in Scopus, 30 in WoS, 130 in ERIC and PsycINFO and 407 in Google Scholar, as previously mentioned, from which a total of 92KW+ were obtained with a frequency of $\geq$10. After analyzing the homogeneity of the KW+, thematic clusters were generated according to the degree of similarity of the KW+. In this case, 5 clusters were found. Within them, the weight each descriptor had within the network can be observed according to the size of the node that represents it and its

links as well, which defines the relationships exchanged by each node through a straight line (Figure 1).

(Figure 1)

In the tagged bibliometric map (Figure I), the size of the clusters is determined by different factors such as the number of KW+ within the clusters or the frequency of occurrence of the KW+. The clusters placed in the center of the map indicate a high correlation of the KW+, while the ones found on the edges of the map indicate a lower correlation. The size of the tag is also proportional to its frequency of appearance. As the result of the tagged bibliometric map, 5 thematic clusters were found, which defined the main research lines of the studies of the ICT and high abilities:

Cluster1: related with technologies. Along this line, we find the main focus of the study, the importance of the use of technologies in society and in education mainly with gifted students. This cluster grouped 13 items, and the 3 that had the most weight were: *E-learning* (weight=274), *technology* (weight=184) and *ICT* (weight=141).

Cluster2: related with the use of the ICT in the classroom with gifted students and the importance of the teacher's training on this subject. It is fundamental to be trained in order to successfully conduct this educational practice with gifted students. This cluster grouped 22 items, with the most important ones being: *education* (weight=199), *school* (weight=171) and *teacher* (weight=74).

Cluster3: related with the role of the gifted students and their characteristics. It grouped 23 items, thus becoming the biggest cluster. The most notable items were: *student* (weight=308), *gifted* (weight=176) and *ability* (weight=146).

Cluster4: related to the main areas of the curriculum that were worked on with this type of students, or those related to their interests. This cluster grouped 20 items. The most important were: *mathematics* (weight=105), *engineering* (weight=76) and *creativity* (weight=51).

Cluster5: related to the inclusive educational practice and the family's participation. This cluster grouped 14 items. The most notable were: *development* (weight=135), *integration* (weight=21) and *participation* (weight=18).

Also, a density bibliometric map was included from the analysis of the databases. In this map, the KW+ tags and the color of the different areas indicated their level of relevance (Figure II). The following nuclei are highlighted:

In the center area of the map (white color), the KW+ belonging to the research line related with the students with high abilities and the use of the ICT are placed here due to their importance and their co-occurrence (*student, technology, school, gifted*). The colors next to the white show the areas of greater density of co-occurrences of the KW+.

In the peripheral area of the map (color next to the grey), the KW+ which referred to the teacher's training with respect to the ICT and the inclusion of students with high abilities were placed here (*teacher. participation. integration*). The areas next to the grey color show areas of less density of co-occurrences of the KW+.

(Figure 2)

7. Conclusions and discussion

With respect to the first research question (Q1), related to the general state of the research in the field of the ICT as support for the learning of gifted students, the main conclusion was that the high impact scientific production in the last ten years (2008-2018), this is still in its initial stages, and thus has not been well studied. The quantity of publications indexed in journals

belonging to WoS and Scopus, as well as Google Scholar, ERIC and PsycINFO is still not significant as compared to other emergent subjects and areas of research. This is because in order to efficiently integrate the ICT in teaching and learning, emerging lines of research are needed that can be added to the study plans, in initial as well as permanent training. Also, this could have an influence on the lack of preparation of the teachers, as already mentioned by previous studies (Bangel, Enersen, Capobianco & Moon, 2006; Shaunessy, 2007).

(Q2) Among the universities and countries that in the last ten years have had a greater scientific impact, European, North American and Australian ones were found. The most notable journals were from Germany, Korea, Australia and English, with the «International Journal of Emerging Technologies in Learning» excelling in this aspect.

The main research lines within the domain of the ICT and high abilities (Q3), through the visualization of the tagged bibliometric map, allowed us to extract a series of conclusions. Firstly that the studies on ICT and high abilities were thematically linked with the importance and use of the ICT. Secondly, an emergent thematic cluster was observed related to educational inclusion and accessibility of the students. Thirdly, the high percentage of the studies related to high abilities and E-learning were notable. And fourthly, a gradual interest in the research related to the knowledge and training of the teachers was detected in this period. The density map allowed us to obtain the focus of the areas where the co-occurrence of the KW+ with greater weight concentrated more frequently, solidifying into the following: student, technology, gifted, learning and education. It was also notable on the upper edge: ICT, interest, creativity, teaching and web; and on the lower edge: teacher, e-learning and program.

As for the research designs (Q4), the qualitative methodology articles predominated, followed by the theoretical ones of reflection and trial. This coincided with the study by

Periathiruvadi & Rinn (2013). Thus, the methodological focus of the articles published in the five databases mainly utilized a quantitative focus, followed by those that were more theoretical-reflective for the practice of education.

As for (Q5), the empirical research on emergent technologies of the Web 2.0 and its effectiveness needs more attention. The ICT should not only be oriented towards satisfying the learning needs of the students, but also their social and emotional ones. Thus, they should contribute to the development of their cognitive, affective and social abilities.

In future works, the construction and comparison of bi-dimensional bibliometric maps corresponding to various time periods could show where the trends and research fronts on the ICT and high abilities are evolving towards.

As for the limitations of the study, it should be mentioned that this review did not compare or contrast the effectiveness of specific technological tools for gifted students. This limitation was brought on by the scarcity of research studies and the scarce dissemination of empirical studies in the last decade of research in the area.

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Table 1

Number of articles published in the different databases

	Number of articles				
Year of publication	**Scopus**	**WoS**	**PsycINFO**	**ERIC**	**Google Scholar**
2008	2	3	9	9	21
2009	0	2	5	5	38
2010	1	4	12	12	34
2011	3	0	13	13	40
2012	2	2	12	12	44
2013	2	5	20	20	50
2014	10	2	14	14	36
2015	2	3	12	12	49
2016	2	1	13	13	34
2017	2	5	13	13	38
2018	2	3	7	7	23
Total	28	30	130	130	407

Table 2

Number of articles cited per year

	Databases																												
	2008-2013					**2014**					**2015**					**2016**					**2017**					**2018**				
Citations	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
0	4	10	7	7	26	3	1	2	2	10	1	1	3	3	18	2	1	5	5	12	1	4	7	7	18	1	3	7	7	18
1	0	1	4	4	29	3	0	1	1	7	1	0	1	1	5	0	0	4	4	3	1	1	4	4	6	0	0	0	0	2
2	0	0	1	1	17	0	1	2	2	2	0	1	1	1	10	0	0	0	0	7	0	0	2	2	2	0	0	0	0	1
3	0	0	1	1	11	0	0	1	1	6	0	0	3	3	2	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0
4	0	1	2	2	12	1	0	0	0	0	0	0	1	1	2	0	0	1	1	2	0	0	0	0	5	0	0	0	0	1
5	0	0	4	4	12	0	0	1	1	0	0	0	1	1	3	0	0	1	1	3	0	0	0	0	1	0	0	0	0	0
6	0	0	6	6	10	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	1	0	4	4	3	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8	0	1	4	4	4	0	0	1	1	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1
9	2	1	1	1	5	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
10	2	1	2	2	3	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
>10	1	1	35	35	95	0	0	4	4	8	0	1	0	0	5	0	0	1	1	2	0	0	0	0	1	0	0	0	0	0
Total	10	16	71	71	227	10	2	14	14	36	2	3	12	12	49	2	1	13	13	34	2	5	13	13	38	2	3	7	7	23

Note: 1=Scopus; 2=WoS; 3=PsycINFO; 4=ERIC; 5=Google Scholar

Table 3

Most-cited articles on ICT and high abilities (giftedness)

Title of the article	Authors	Journal	Year	Citations				
				1	2	3	4	5
The Juggling Act: A Phenomenological Study of Gifted and Talented Girls' Experiences With Facebook	Eunice, P., Wardman, J., Bruce, T., Millward, P.	Roeper Review	2016	0	0	2	2	2
Didactic strategies and competencies of gifted students in the digital era	Gojkov, G., Stojanovic, A., Gojkov-Rajic, A.	Center for Educational Policy Studies Journal	2015	0	0	0	0	1
To learn programming 'apps' as curriculum enrichment on gifted students	González, M.M.	Bordón	2014	6	0	0	0	16
Designing instruction and learning for cognitively gifted pupils in preschool and primary school	Mooij, T.	International Journal of Inclusive Education	2013	10	9	4	4	18
What makes giftedness? reexamining a definition	Renzulli, J.	Phi Delta Kappan	2011	10	0	581	581	27
Listening for voices of self: Digital journaling among gifted young adolescents	Dillon, L.	Qualitative Research Journal	2010	7	0	0	0	16
Education and self-regulation of learning gifted pupils: Systemic design and development	Mooji, T.	Research Papers in Education	2008	9	8	14	14	27

Table 4

Methodological focus of the articles

	Methodological focus (%)																			
	Theoretical					Quantitative					Qualitative					Mixed				
Year	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
2008	3.57	3.33	0.76	0.76	2.21	0.00	3.33	3.07	3.07	2.45	3.57	3.33	3.07	3.07	0.49	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.76	0.76	4.42	0.00	3.33	2.07	2.07	2.94	0.00	3.33	0.76	0.76	1.96	0.00	0.00	0.00	0.00	0.00
2010	3.57	3.33	3.84	3.84	3.43	0.00	6.06	3.84	3.84	2.94	0.00	3.33	1.53	1.53	1.47	0.00	0.00	0.00	0.00	0.49
2011	3.57	0.00	3.84	3.84	3.43	3.57	0.00	2.07	2.07	5.15	3.57	0.00	3.84	3.84	1.22	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	3.07	3.07	4.42	3.57	6.06	3.07	3.07	3.19	3.57	0.00	2.80	2.80	2.45	0.00	0.00	0.76	0.76	0.73
2013	3.57	3.33	6.15	6.15	3.93	0.00	3.33	1.47	1.47	4.17	3.57	10	3.84	3.84	2.94	0.00	0.00	0.76	0.76	1.22
2014	3.57	6.06	1.47	1.47	3.19	7.14	0.00	3.07	3.07	3.43	17.85	0.00	2.80	2.80	2.21	0.00	0.00	0.76	0.76	0.00
2015	3.57	3.33	0.76	0.76	4.17	0.00	3.33	1.47	1.47	4.66	3.57	3.33	3.84	3.84	1.96	0.00	0.00	0.00	0.00	1.22
2016	7.14	0.00	1.53	1.53	1.96	0.00	3.33	5.38	5.38	2.45	0.00	0.00	3.07	3.07	2.45	0.00	0.00	0.00	0.00	1.47
2017	0.00	0.00	3.07	3.07	3.19	3.57	6.06	6.15	6.15	2.72	3.57	10	0.76	0.76	2.94	0.00	0.00	0.00	0.00	0.49
2018	3.57	3.33	0.00	0.00	1.22	0.00	6.06	3.07	3.07	2.72	3.57	0.00	2.08	2.08	1.71	0.00	0.00	0.00	0.00	0.00
Total	39.28	23.33	28.43	28.43	35.62	17.85	43.33	41.53	41.53	36.95	42.85	33.33	27.69	27.69	21.86	0.00	0.00	2.80	2.80	5.65

Note: 1=Scopus; 2=WoS; 3=PsycINFO; 4=ERIC; 5=Google Scholar

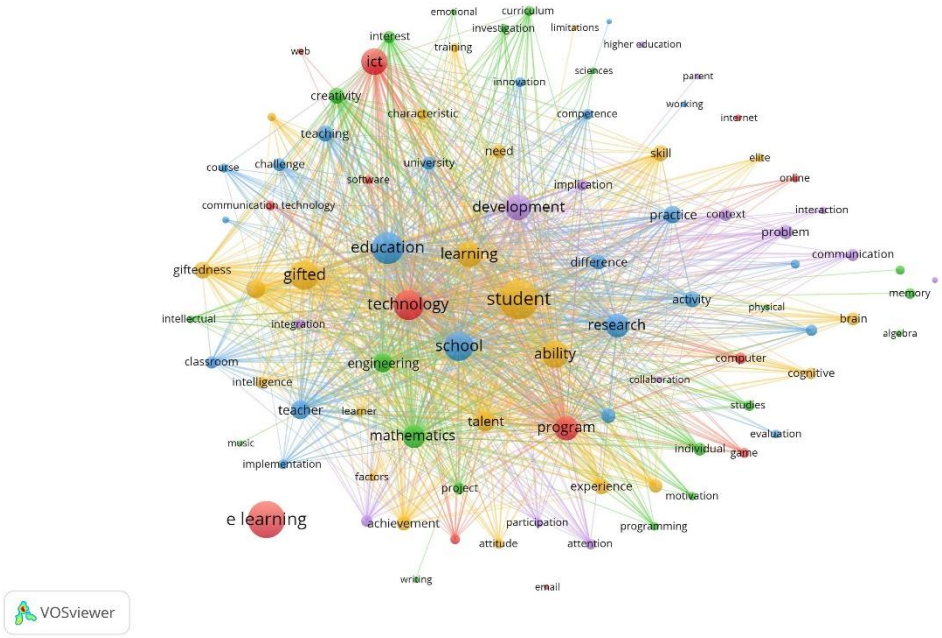

Figure I. Tagged bibliometric map, where the 92KW+ analyzed are shown (the tags and the size of the circles indicate the weight of the KW+).

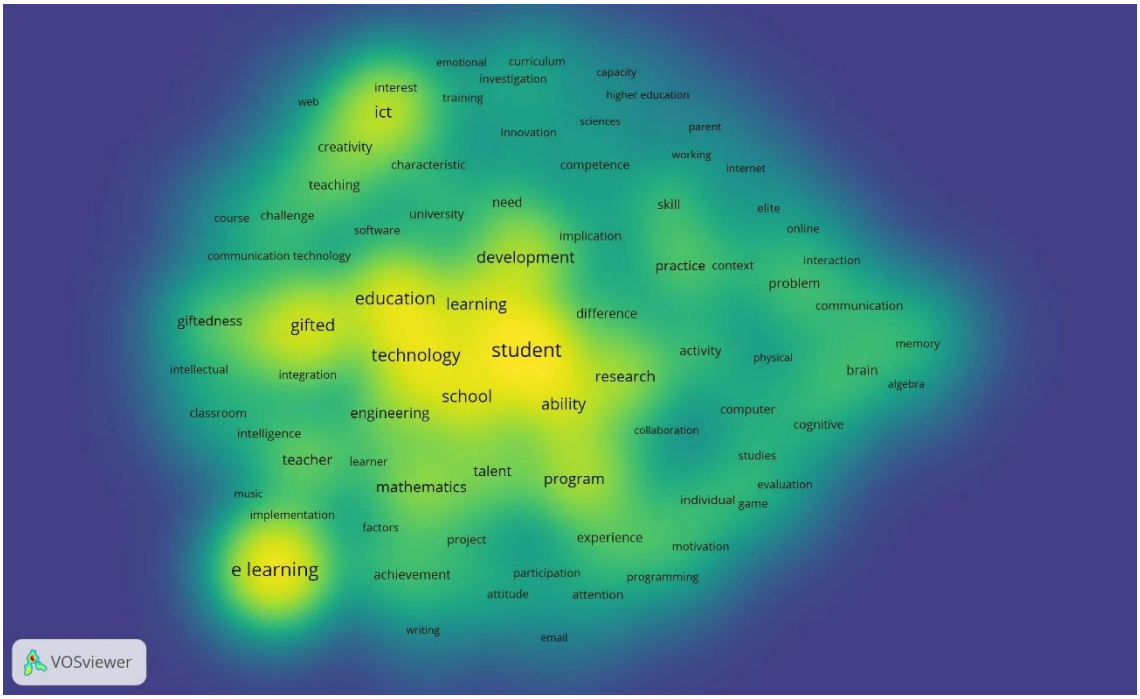

Figure 2. Density bibliometric map showing the 92KW+ analyzed in WoS.