Outstanding Studies which Shape the Field of Giftedness: From 1894 to 2012

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Abstract
Titles such as "Scientists that Changed History" challenge us to make meaning of events and to evaluate what life was like before and after them. Likewise, research can help us to shape what happens today and, in the future, however, there are far fewer studies which make the first turning point. This can be seen in the field of gifted education where a significant body of research has accompanied the development of this century old field. Based on this observation, this paper reports the outcome of an evaluative review of literature associated with gifted education, spanning the work of Galton (1894), Terman (1921), Cox (1926), Hollingworth (1942), Hollingworth (1923), Dabrowski (1964), Gino and Ariely (2012), each included on the basis of the qualitative effects of their findings. Analysis of the descriptions and justifications for each indicate three common dimensions: (1) A study belongs to sub-field changes not the same sub-field, but all other sub-fields of the field. (2) The impact is cumulative for all sub-fields. (3) Reductionism is hard to imply when the results of research are fragmented. The author discusses how these principles helps us to understand theoretical view about the transformations in giftedness.

Keywords: meta-evaluation, gifted education, change

Introduction

Books like "Scientists who Changed History" and "Books that Changed History" challenge us to make meaning of events and to evaluate what life was like before and after them. Research can help us to shape what happens now and, in the future, however, there are far fewer studies which make the first turning point. This can be seen in the field of gifted education where a significant body of research has accompanied the development of this century old field.

The present study needed to establish the actual impact of a selection of works concerning giftedness, but how to do this became the principle problem to be addressed. At this point, it has become increasingly necessary for practitioners to be able to readily distinguish between studies that are speculative in nature or that replicate the findings of earlier work from those that are large-scale-change-causing in terms of their intellectual understanding or social practice. Tracing such qualitative improvements and their origins nonetheless pose significant challenges.

Firstly, a little more than a century of content about giftedness (Misset & McCornick, 2014) has been progressed not subject by subject, but on questions and inquiry. Textbooks on the subject have tended to paraphrase the accumulated research-content and present its findings in terms of the conventions groupings and topics convenient to mainstream education. In this way the student is not necessarily aware of the questioning that generated the need for much gifted education research in the first place. Various forms of inquiry-based advancements can of course be unified and purified under the general picture. While this may cause separation from the nature of knowledge, the role of evaluation in this article is to endeavor to find where value was added to perspective over a whole body of knowledge. This attempt has a hope for the creation of a space in new interpretation based on the basic idea that researchers are not bound by topics, they have only questions in their minds.

Secondly, the structure of research has changed over time; gifted education literature is now more complex, conceptual, and includes more conflicts based on the cumulation of knowledge. Researchers have also become more collaborative and inclusive minded, taking more heed of issues facing minorities, such as, poverty, diversity, race, and ethnic discrimination in gifted learning and associated research (Calikoglu, 2018). Yet, are we taking into account how shifts related to the structure of knowledge and context-based improvement are related? And how changes in either can affect our attempts at evaluation? These questions are very difficult to discern.

Thirdly, research-selection of ground-breaking work is complicated by the nature of the changes that it brought about, its often multi-dimensional character, along with particular features that can be non-linear, complex, and culture bounded. Notwithstanding, the elimination of thousands of works reflects the author's determination to differentiate the qualitative from the quantitative and repetitive in terms of their specific endowments to social change. While contemporary authors have more experiences and experiences related to their expectations about early studies providing foundations, the issue for recent research is not regarded as well-defined from the point of experiences and expectations. The difficulty in maintaining objectivity gradually increases as we approach the realms of contemporary research. Here, subjectivity has brought a significant burden of persuading peers, sponsors and publishers, that the inquirer's selections are truly valid.

Methodology

In their study of literature review methodology, Polat and Osman (2016) found meta-synthesis is a viable method due to its conceptual and evaluative style. In seeking to evaluate the contributions of prominent works in the field, the author needed to consider how her research would be undertaken and satisfactory conclusions drawn. While analyzing citation rates is recommended, these can only be used as an objective indicator as they do not provide information on quality and accuracy of conclusion. Older articles may simply be more cited because they appeared earlier than ones published more recently. It is therefore necessary to obtain a method that enables the researcher to first assess the advantages and disadvantages of the quantitative indicators, in the knowledge that a true evaluation can only be made by taking qualitative considerations into account. This in mind, and for the purposes of a meta-evaluative study of the field of gifted education, the following criteria for selection were determined:

(1) Studies selected for analysis should only be about giftedness. In this context it is important to know that the concept is contested amongst educators and there is a century long tradition of counter-position in some quarters. This has evolved over time and often expresses itself through research which is neither original or helpful to those in the field. Therefore, an objective assessment of the field should exclude those studies originating from outside it, particularly those that ideologically resist the notion that educators and parents can nurture the development of special talent among children.

(2) Studies should be relevant to the challenges gifted education teachers encounter in the field:

- How to describe and diagnose gifted children? [Identification and Diagnosis]
- How to design educational programs for these children? [Education]
- How to provide guidance and counseling to these children? [Counseling]

(3) The importance of the study should be conveyed using qualitative indicators, not quantitative. For example, such questions might help us to select them: How is it different from previous approaches? How does it affect subsequent research? What kind of stereotype is broken with this study?

(4) Selected studies should not merely be a repetition or a confirmation of previous ones, but ones which challenge or even disprove them. Those selected should be groundbreaking and a real addition to the literature of the field. The quantity in research acquired by repetitions, routines or practices of previous recommendations or advancement of the existing publications constitute just a norm when viewed over a wide period of time.

Display quotations of over 40 words, or as needed.

Findings

(1) Galton, 1894

Study Name. Inheritance of Intelligence

Description. Based on statistics, he showed how much intelligence within a population varies in terms of their genes and found statistically significant relations between the degree of talent and family relationship.

Justification. Galton shared his book with his half-cousin Charles Darwin before he published it. According to Darwin's letter, he stated that Galton had made a convert of an opponent in one sense, for he had always maintained that, excepting fools, men did not differ much in intellect, only in zeal and hard work; and he still thought this is an eminently important difference. Darwin said he read 50 pages of Galton's book, and was one of the first people to admire Galton's study. Although Darwin studies genes, he believed before Galton that intelligence was a result of motivation and hard work; not because of genes. Very ironically, even Darwin shows the social norms of that period about the relations between human and nature, still influenced by John Locke's "tabula rasa" argument which originated in the 17th century when the English philosopher claimed that all knowledge is constructed on experience.

(2) Terman, 1921

Study Name. Genetic Studies of Genius, Volume I-V
Description. Lewis Terman with French Psychologist Alfred Binet developed the Stanford Binet IQ Test. Using this test, Terman gathered data on 11 years old 1528, 11 year olds with an IQ of 140 and above which he used to apply 30 years of longitudinal research into their physical, psychological and personality traits. Based on his comparisons among typical and gifted children, they are more positive, charming, and healthier than non-diagnosed ones.
Justification. His big-scale study broke the stereotype of a thought that gifted children are frail, prone-to-be-unhappy, nerdy with glasses and lost in thousands of books (Sellin & Birch, 1980). Thereafter, Hollingworth (1942) supported Terman's study with data that indicated there was an optimal range of intelligence -roughly between 125 and 155 IQ points- contributed to gifted students experiencing superior adjustment. In this area, they can win the confidence of the majority around them to be the effective leaders. However, while his studies offer new statements about gifted children, they were also used to develop a standardized monotype about gifted children. They were erroneously believed to be highly-talented in every aspects of intelligence.

(3) Cox, 1926

Study Name. Genetic Studies of Genius, Volume II
Description. Catharine Cox, was Lewis Terman's doctorate student. While Terman determined gifted children and observed their childhood, adulthood and old age using longitudinal research methodology, she studied 301 eminent people's early childhoods if they showed any signs of superiority. Cervantes, Leibniz, Lincoln, John Locke, Leonardo da Vinci, Jeremy Bentham and Jean Jacqoues Rousseau were included in her sample.

Justification. Findings of Terman's prospective and Catharine's retrospective studies clashed on some points. Catharine's sample were philosophers, political leaders and artists. Gifted children determined by Terman became doctors, engineers and lawyers; but not philosophers, political leaders or artists. Simonton (1987) states that the environmental effect affects the self-realization of a skill in three ways: (1) birth order, (2) traumatic events, (3) education. Terman's

group generally comprised first born children who had a regular family life and they were well-educated, highly successful and were able to obtain full-scholarships from Ivy League Schools. On the other hand, people in Catharine's sample, were not first-born, experienced traumatic events in their childhood and their education were not dependent on competing for diplomas, but their expertise was shaped by mentors they and their parents determined. Simonton (1987) interpreted these split findings provide evidence of the distinction between intelligence and creativity.

(4) Hollingworth, 1942

Study Name. Children above 180 IQ Stanford-Binet
Description. Hollingworth, as a clinical psychologist and considered gifted herself had a chance to closely observe gifted children and make sense of their abilities. The author studied 12 exceptional children in terms of their family, siblings, education, and social life. She also included detailed observations about their characteristics, creativity and psychometric traits. Based on her clinical experience, results related to creativity were not straightforward. While children coded as A, D, H and L showed notable signs of creativeness, those coded C, E, I, J showed moderate creative skills. The remaining children coded as B, F, G, K, showed no indication of originality (Hollingworth, 1942).

Justification. According to Hollingsworth's findings, although they were highly intelligent, only 4 children (1/3 ratio) were defined as notably creative. However, for decades intelligence has been understood as the central characteristic of creative people (Albert & Runco, 1999). Intelligence seemed a "necessary but not sufficient" component for creativity (Heilman et al., 2003). Hollingworth's research indicated that there is no central or threshold relationship between intelligence and creativity, because of dispersion in her results. She proposed the concept of heteroscedasticity in order to explain the relationship of a variable that is unequally dispersed with reference to the second variable (Runco, 2014).

(5) Hollingworth, 1923

Study Name. Special Talents and Defects: Their Significance for Education.
Description. Hollingworth (1923) called attention to the curriculum being delivered in schools nationwide at the time for not only being adapted to favor high intelligence in general; but also to ignore individual differences in special ability groups. In her book, she initially discussed the skills of reading, spelling, arithmetic, and drawing related to neurology. She then goes on to analyze skills like left-handedness, mirror-writing, mechanics and leadership. Her work concluded by making an appeal for the individualization as opposed to standardization of education.
Justification. With the discovery of facts concerning special talents and disabilities, a growing interest had begun about the topic of individual differences among giftedness. Hollingwroth's study (1923) is the first noteworthy one to challenge Terman's globally-giftedness misbelief (Little, 2001) and open doors to research about twice-exceptionality (Baldwin, Baum, Pereles

& Hughes, 2015). 21 years later asperger was first defined as a new disorder syndrome and hypothesized to appear in highly intelligent people (Asperger, 1944).
Additionally, interest in individual differences among gifted children became a topic among researchers. Lately, Betts and Neihart (1988) revealed a powerful profile study that highlights typical differences between gifted students namely (1) successful, (2) challenging, (3) underground, (4) at-risk, (5) twice-exceptional and (6) autonomous. Using this very convincing categorization, Betts and Neihart (1988) made the balance and imbalances between achievement and talent more understandable.

(6) Dabrowski, 1964

Study Name. Positive Disintegration
Description. Polish psychiatrist Kazimierz Dabrowski (1902-1980), who experienced the brutality of the First World War and the death of his six-year-old sister, stated that it is essential to experience a certain intensity of emotion in the development of individual potential. He defined five overexcitabilities which have this emotional intensity, and the ones that we have the most opportunity to develop.
Justification. Although both helped to understand individual differences, unlike Betts' categorization which was based on real-life situations, seen and rationally weighted, Dabrowski's study is not real - in the words of Piechowski (Kane, 2009), it is spiritual, unseen, and emotionally weighted. In other words, the importance of this theory comes from distorting conventional thinking by helping us to consider that our ability to behave irrationally against, to test, rational thinking is more important than emotion.

(7) Gino and Ariely, 2012.

Study Name. The dark side of creativity: original thinkers can be more dishonest.
Description. Gino and Ariely (2012) designed an experiment to understand the relationship between creativity and cheating behavior. They showed that creativity is a better predictor of unethical behavior than intelligence. They found that when creative people faced difficult problems, they could resort to using a short cut or looking to exploit any gaps in the rules. They can also make convincing excuses that enable them to appear ethical while in fact their actions were sometimes unethical.
Justification. Dabrowski's theory helps us to an understanding of positive transitions in children who hold high developmental potential. In his theory, the downsides have been generally used positively in the broad term. Only one negation in his theory was the "inability to develop" meaning to be stuck in the same level which may result in recession or intuition (Neihart, Reis, Robinson & Moon, 2002). Until this time, giftedness and ethically-negative traits were not used together in article. A solid literature shows that there is a strong positive correlation between moral reasoning and giftedness. Dabrwoski's theory also supports the view that gifted children's overexcitability is the primary requirement for life-time value-oriented improvement. Then this would leave no doubt that gifted children do not have a dark side. However, with Gino and Ariely's (2012) study, unnoticed truth came to light. Creatively gifted

children might not be morally-bright that much. Creativity as a talent basically compromises cognitive manipulation.

Two years later, Maupin (2014) published "Cheating, dishonesty & manipulation: Why bright kids do it?". She showed that creativity is not the only reason for gifted individuals to act unethically. By investigating the dishonesty of gifted children through real cases, Maupin was able to establish relationships between the characteristics of gifted children and their unethical behaviors. Accordingly, in addition to creativity, features related to giftedness such as perfectionism, social isolation, overexitability and boredom support fraudulent behavior in them. These findings related to ethics and giftedness confirmed Colangelo (2002)'s predictions about how counseling for gifted students might be shaped in the 21st century and beyond, expecting rising concern for ethics and moral issues as students obtain a more global perspective.

Conclusion and Discussion

The author's analysis of the descriptions and justifications for conducting these studies, suggested three principles: (1) A study belonging to a sub-field changes not the same sub-field, but all other sub-fields of the field. (2) The impact is cumulative for all sub-fields. (3) Reductionism is hard to imply when the results of research are fragmented. Each of these principles is discussed below.

(1) A study belongs to sub-field changes not the same sub-field, but all other sub-fields of the field.

The literature on gifted education deals with three sub-questions:

(a) How to describe and diagnose gifted children? [Identification and Diagnosis]
(b) How to design educational programs for these children? [Education]
(c) How to provide guidance and counseling to these children? [Counseling]

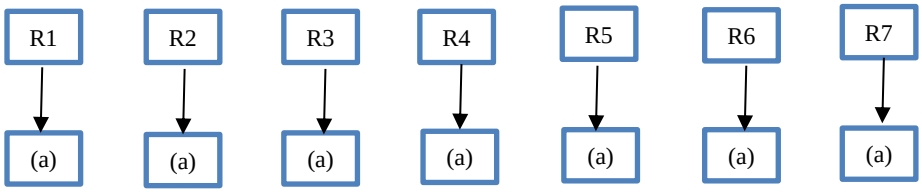

Figure 1.
Mis-image of the effects of research just on the contributed fields

According to the outstanding studies, shown in Table 1., all contribute in some way to the (a) identification and diagnosis of giftedness. As shown in figure 1, one might think, conclusions of the research effects just the knowledge about what is studied. Despite the fact that outstanding selections of research answered the question of how to describe and diagnose gifted children, in the section on Justifications, how their findings affected education and counseling was explained. Fundamentally, changes happen in the characteristics of the concept of giftedness which directly effects models or the structure of education guidance and

counseling. In this composition, characteristics are affecting, while education and counseling are affected by these changes. That selections of research in the literature of gifted education were all related to the re-description of giftedness became expected when recalling the principle that any learning environment is organized according to the characteristics, interests and needs of the child.

Table 1.
Summary and interpretation of results of outstanding research articles

	Study Name	Source Type	Contribution in which area?	Perspective
1. Galton, 1894	Inheritance of Intelligence	Book/Research	Identification or Diagnosis	How they are different from others or typicals
2. Terman, 1921	Genetic Studies of Genius, Volume I-V	Book/Research	Identification or Diagnosis	How they are different from others or typicals
3. Cox, 1926	Genetic Studies of Genius, Volume II	Book/Research	Identification or Diagnosis	How they are different from others or typicals
4. Hollingworth, 1942	Children above 180 IQ Stanford-Binet	Book/Observation	Identification or Diagnosis	How they are different related to each other
5. Hollingworth, 1923	Special Talents and Defects: Their Significance for Education	Book/Observation	Identification or Diagnosis	How they are different related to each other
6. Dabrowski, 1964	Positive Disintegration	Book/Observation	Identification or Diagnosis	How they are different related to each other
7. Gino and Ariely, 2012.	"The dark side of creativity: original thinkers can be more dishonest."	Article/Research	Identification or Diagnosis	How they are different from others or typicals

(2) The impact is cumulative for all sub-fields.

On paper, outstanding studies were written in order. This might mislead the reader into thinking that previous research effects the next one, and the next one effects the other as shown in Figure 2. However, the possibility of an exponentially increased effect should not be

overlooked. For example, Galton's (1894) extraordinary study still has effect on Hollingworth's (1923) clinical observations.

Figure 2.
Mis-image of effect when a successive writing style of research is used

(3) Reductionism is hard to imply when the results of research are fragmented.

Again as shown in Table 1., the studies selected as outstanding were based on either research or observation and had an impact on changing the characteristics of knowledge obtained from previous ones. As author to a previous study concerning the Knowledge Characteristics of Literature in Gifted and Talented Education, the researcher obtained useful experience of making comparative analysis between early and contemporary studies related to giftedness. Today research is more collaborative and greater effort is taken not to exclude people from research for reasons of sex, race, family income, education background, disability, family structure, their mother tongue, ethnicity, religion, etc. (Calikoglu, 2018). Although the current study is not a standard summary, there is a parallel with Terman (1921), who explained how giftedness makes people different from others, but after Hollingworth (1942) the diversity among gifted children was recognized. Today, the concept of giftedness is far more inclusive and diverse, and helps us to understand much more than IQ.

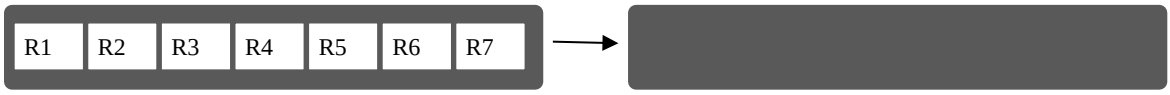

Figure 3.
Mis-image related to the fallacy of reductionism when collect all the research

As seen in Table 1, improvements can be divided into three stages: (1) From Galton (1894) to Cox (1926) how gifted students are diverse from others or typical is concluded. (2) From Hollingworth (1942) to Dabrowski (1964), studies are based on how they are different related to each other. Lastly, (3) Gino and Ariely (2012) again show how highly intelligent individuals are dissimilar and opposed to typicals. When we review these outstanding contributions to the field of gifted education, we also realize that they cannot be depicted in a reductionist way. What we have got in our hand may still be fragmented, and hard to generalize as shown in Figure 3.

Recommendations

For, proceeding studies to make sense of the history of giftedness, by going deeper, foundational studies of the current selected studies could be useful. For example, if Galton did not find the concept of correlation, the relationship between genes and intelligence could not be understood. Or, before Dabrowski, Ericson and Kohlberg theorized specific crisis for the development of soul. Thus, a detailed composition is obtained in collaboration with other fields of social science like psychology, sociology, philosophy or even economy. In this way research and ultimately our understanding of giftedness would be boosted on a major scale.

References

[1] Asperger, H. (1944). "Autistic psychopathy" in childhood. In U. Frith (Ed.), Autism and Asperger syndrome (translated and annotated by Frith U) (pp. 37-92). New York, NY: Cambridge University Press. (Original work published 1991)

[2] Albert, R. S., & Runco, M. A. (1990). Theories of creativity. Newbury Park ; London: Sage Publications.

[3] Baldwin, L., Baum, S., Pereles, D., & Hughes, C. (2015). Twice-exceptional learners: The journey toward a shared vision. *Gifted Child Today*, *38*(4), 206-214.

[4] Betts, G. T., & Neihart, M. (1988). Profiles of the gifted and talented. *Gifted child quarterly*, *32*(2), 248-253.

[5] Colangelo, N. (2002). *Counseling Gifted Students In edts.* Colangelo, N., & Davis, G. A. *Handbook on gifted education*. Allyn & Bacon, 75 Arlington St., Suite 300, Boston, MA 02116.

[6] Çalıkoğlu, B. S. "Knowledge Characteristics of Literature in Gifted and Talented Education Comparative Analysis". V. Üstün Yetenekliler Eğitimi Kongresi: 4-6 Mayıs 2018, İstanbul. *Poster Sunumu*.

[7] Dabrowski, K. (1964). *Positive disintegration.* Little, Brown.

[8] Gino, F., & Ariely, D. (2012). The dark side of creativity: original thinkers can be more dishonest. *Journal of personality and social psychology*, *102*(3), 445.

[9] Heilman, K. M., Nadeau, S. E., & Beversdorf, D. O. (2003). Creative Innovation: Possible Brain Mechanisms. Neurocase, 9(5), 369–379.

[10] Hollingworth, L. (1923). Special talents and defects: Their significance for education. Ithaca, NY: Cornell University Library.

[11] Hollingworth, L. S. (1942). *Children above 180 IQ Stanford-Binet; origin and development.* World Book.

[12] Kane, M. (2009). Contemporary voices on Dabrowski's theory of positive disintegration.

[13] Little, C. (2001). A closer look at gifted children with disabilities. *Gifted Child Today, 24*(3), 46-64.

[14] Maupin, K. (2014). *Cheating, dishonesty & manipulation: Why bright kids do it?* Tucson, AZ: Great Potential Press.

[15] Misset, T. C., & McCornick, K. M. (2014). Conceptions of Giftedness. In J. A. Plucker & C. M. Callahan (Eds.) *Critical issues in gifted education* (2nd ed., pp. 143-158). Waco, TX: Prufock Press.

[16] Neihart, M., Reis, S. M., Robinson, N., & Moon, S. (2002). *The social and emotional development of gifted children: What do we know?*. Sourcebooks, Inc..

[17] Polat, S., & Osman, A. Y. (2016). Meta-sentez: Kavramsal bir çözümleme. *Eğitimde Nitel Araştırmalar Dergisi*, *4*(2), 52-64.

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