



Research Article

Gifted education in Indonesia: A call for action

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Abstract

Gifted education has been practiced for hundreds of years in dozens of countries in many ways. In most cases, systems have been initiated by parents of gifted children and further developed by governmental, private, or non-profit organizations. However, until the third decade of the 21st century, many prejudices, half-truths, and even lies have been widespread. One of those non-true beliefs is that education of the gifted is unnecessary once the basic education is effective, when participation in primary and high school education is high, and the rate of non-literacy is low. The truth is the opposite: when public, free education is accessible, it means that the economic situation of the county is satisfactory, that good education is supplied to a high percentage of the population – if not for all of it, and that gifted education is either a part of the general high educational level, as is the situation in Finland, for example, or that private, semi-private of community organizations can supply it to their gifted members or their children.

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Introduction

Gifted education has been practiced for hundreds of years in dozens of countries in many ways. In most cases, systems have been initiated by parents of gifted children and further developed by governmental, private, or non-profit organizations. However, until the third decade of the 21st century, many prejudices, half-truths, and even lies have been widespread. One of those non-true beliefs is that education of the gifted is unnecessary once the basic education is effective, when participation in primary and high school education is high, and the rate of illiteracy is low. The truth is the opposite: when public, free education is accessible, it means that the economic situation of the county is satisfactory, that good education is supplied to a high percentage of the population – if not for all of it, and that gifted education is wither a part of the general high educational level, as is the situation in Finland, for example, or that private, semi-private of community organizations can supply it to their gifted members or their children. The opposite problem is when the country is a third world, the illiteracy level is high, the resources – both private and public are meager, and those who suffer predominantly are gifted, who, in most cases, do not get access to good education, and if they do – it costs much money – money the budget of their families cannot afford.

When a country can earn so much through its development, its need for talented people who will serve as leaders, entrepreneurs, inventors, scientists, engineers, doctors, and teachers is priceless. Thus, it promises that children must receive the best possible education to fill all economic, social, scientific, and leadership positions and achieve their aims.

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The program suggested here might be the beginning of the road toward the growing mass of people who will contribute to the country through their abilities, motivation, and diligence.

In all populations worldwide, there are gifted people: brilliant, talented, with various expertise and exceptional abilities. All countries need these people for economic, social, scientific, and educational development. They are the potential leaders in all these and all creative domains. The country's need increases as it requires rapid development, which can be achieved by nurturing those who can contribute most to its growth. Unfortunately, when the country needs such leaders, limiting educational circumstances prevents many children and adolescents from realizing their high ability. As a result, they do not join the circle of contributors. I hereby offer a program that can be the basis for the identification of those with the highest potential at age 8-9 to start as soon as possible to enlarge, enrich, and deepen their education in all possible fields to facilitate their joining the professionals, the leaders, and the creators who help the country's development.

Theoretical aspects of nurturing the gifted in developing countries

The main argument against gifted education is its damage to the value of equality (e.g., Merry, 2008; Wagner, 2022), but in the 21st century, the movement towards implementing gifted education, even in the most egalitarian countries, is increasing (e.g., Tirri & Kuusisto, 2013). Some studies bring both sides of the coin, describing how gifted education can either increase or decrease egalitarian in education (e.g., Mazie, 2009) and some focus on the fact that gifted education is a vehicle for social mobility, serving children from underprivileged backgrounds (e.g., Cross, 2013; David, 2021; Peters et al., 2023).

Another argument against gifted education in developing countries is: "First solve the real problem, then you can start helping the gifted who are to succeed anyway." "This argument might be valid in Indonesia, a country where 4.3 million of its 7-18-year-old children and adolescents are still out of school" (The challenge: Children in Indonesia stand a better chance of being in school than ever before, 2024).

However, as vital as they are, these arguments do not appear relevant for developing countries. Such countries resemble, in some aspects, Israel of the 50ies and 60ies – a new country in severe need of teachers to educate both children and adolescents, and illiterate, or with no knowledge of Hebrew, the official language. At the same time, the country needed to provide adequate food for everybody, develop public institutions for economics, health, transportation, etc., and deal with vast waves of immigration of holocaust survivors, mostly from European countries and Arab countries, whose immigrants were, in most cases, forced to leave because of the continuing war between their origin countries and Israel.

Literature Review

Many hundreds, if not thousands, of books, scientific and non-scientific journal articles, as well as online sources, have summarized different aspects of gifted education. Thus, it would be beyond the scope of this article to mention even a small part of them. The main issues they have been dealing with were mainly defined between identifying the gifted and nurturing them, as well as between teaching the gifted and taking care of their well-being, socially and emotionally. Thus, when reviewing the literature already published on giftedness, the focus must be on the specific sub-subject to be discussed. For example: when reviewing an issue connected to the History of giftedness, such as the past role models: Leta S. Hollingworth (1886-1939), Lweis Terman (1877-1956), Robert Richardson Sears (1908-1989), Julian Cecil Stanley (1918-2005) or Erika Landau (1931-2013), thousands of items must be included. This article mentions two of Hollingworth studies (Hollingworth 1926, 1942); 34 that were either written by Terman or about his work in David's article (2024)(Beauvais, 2016; Burks et al., 1930; Cherry, 2023; Cox, 1926; Goleman, 1995; Gupta, 2022; Hilgard, 1957; Hodges et al., 2021a, b; Holahan, 2021; Janos, 1987; Jolly, 2005, 2008, 2010; Kaufman, 2009; Kern et al., 2014; Leslie, 2000a, b; Minton, 1988; Oden, 1968; Paddock, 1995; Seago, 1975; Shurkin, 1992; Simonton, 2019; Terman, 1924, 1925, 1953, 1954, 1959; Terman, & Oden, 1947, 1951; Warne, 2019; Winkler & Bernel, 2020; Winkler & Jolly, 2013), as well as a few dozens of Landau's and works about her and her institute (e.g. David, 2006, 2018a, 2025; David & Landau, 2013; Heller, 2015; The Erika Landau Institute's team, 2024; The Erika Landau Institute of Creativity and Excellence, founded by Erika Landau – NPO, 2024; Landau, 1969, 1974, 1976, 1979a, b, 1981, 1984, 1987, 1990, 1997,

1998, 2000, 2001, Landau & Weissler, 1991, 1993, 1998; Landau et al., 1996, 2001; Landau & David, 2005a, b; Reichenberg & Landau, 2009; Vidergor, 2014; Wesisler & Landau, 1993). Suppose the review is to focus on one subject matter. In that case, its bibliography might exceed hundreds of items when concentrating on just one program, for example, the works of Camilla Benbow, her students, co-workers, and predecessor (see: Study of Mathematically Precocious Youth, 2025).

Thus, in this work, the relevant works will be introduced in separate sectors, according to their necessity, rather than according to another criterion.

Methodology

I have been involved in three programs for gifted education in developing countries: two in Africa and one in Southern Europe. My proposal for gifted education in Indonesia is to draw on principles from all relevant sources, including those applied in my country, Israel. Due to confidentiality obligations with the European Commission, I am unable to disclose the name of the European country where I worked on planning its gifted education system. Therefore, I will summarize my work in the two African countries, Nigeria and Angola, as well as in Israel.

Findings

The example of Angola

I proposed this system to a private organization operating in Angola's economic sector, which recognized the need for the country, endowed with natural resources, to optimize its human potential. Despite its richness, Angola must overcome its status as a third-world country struggling with supplying the basic needs of its citizens in matters as nutrition security, accessible medical care, housing, public and private safe transportation, and attracting its young educated population to settle and contribute to their country's development when they complete their higher education abroad.

The example of Nigeria

The second example is Nigeria. In my *"Starting from the beginning: On building a school and community-based system supporting the gifted in Nigeria"* (David, 2021) article, I outlined the steps required to establish such a system. In addition, I described the existing systems in many other countries and continents, highlighting the main elements that should be adopted from them. At this stage, the necessity of gifted education in Indonesia is accepted by Indonesian parents, educators, other professionals, and policymakers; we can focus on the elements that should be adopted from the suggested Nigerian program.

Special education for the gifted has become necessary as more countries and societies have "joined the club" as believers in compulsory schooling and as actively practicing it. This process has been accelerated as the population strata increasingly understand the importance of basic and post-elementary education, showing a willingness to postpone the financial benefits of the younger generation entering the workforce. The result has been rewarding, as it has led to greater social and political education, alongside an increasing salary gap between the more and less educated. At this point, it was clear that the time for special education for the abler had come.

The distribution of intellectual abilities, areas of interest, inner motivation, and persistence to "make it" despite outer and inner difficulties is equal among all nations and societies. Thus, it is of special importance in less-advantaged countries to have the double-edged benefit of those who are more talented. First, such people are the most valued asset of society; they can contribute to the welfare of many others and the country's economy. Second, gifted children and youths must fulfill their high potential to become highly qualified adults for their physical, mental, and financial well-being, completeness, and satisfaction. Education for the gifted is indeed a win-win situation.

The preliminary stages needed for starting a whole system of gifted education are:

- *Awareness of the necessity of gifted education being available to all suitable students;*
- *Reasons for the special importance of having gifted education;*

- Compulsory education is spreading
- The Gaussian distribution is a mathematical statistical fact, valid everywhere and at all times.
- *Adopting an identification-of-giftedness system with minimal cost and maximal effectiveness;*
- The need to learn from history
- The need to learn the main existing programs
- The need to learn the basic giftedness models
- The need to learn basic giftedness models from around the world. For example, North America (Marland, 1972), Europe, e.g., Heller (2005), Heller & Schofield (2000); Heller et al. (2005); Mönks & Pflüger (2005), Persson et al. (2000), Ziegler (2005); Ziegler & Phillipson (2012); Ziegler et al. (2013).
- *4. Starting teacher education courses in all aspects of giftedness for kindergarten, elementary, junior high school, and high school teachers;*
- *5. Offer health and education experts to participate in various activities for identifying and nurturing the gifted. These experts will include psychologists, school counselors, principals and headmistresses, nurses, and pediatricians;*
- *6. Building a dynamic evaluation system that will produce and supply advancement reports at every stage of the work in order to be able to make the needed changes immediately if the results or outcomes do not reach the highest possible levels.*

These stages are to be described at length.

Awareness of the necessity of gifted education being available to all suitable students

One of the main problems of establishing gifted education is the comparatively low awareness of its needs. The tendency to ignore the needs of those who “will make it anyway” – namely, the gifted – has deep roots in the history of giftedness. Linzer Schwartz (1994) has dedicated a whole book to presenting evidence that investing time, energy, and money in suitable educational opportunities for the gifted is not undemocratic. Linzer Schwartz has shown that a small initial commitment will yield exceptional future leaders. Everyone will benefit from the rich return on such an investment. She describes the types of giftedness and gives nine categories of options available for enhancing the educational experiences of gifted students and how these options can be modified to meet individual needs. Some options cost virtually nothing, while others fly in the face of current practices.

Australian teachers have also been found to lack awareness of the needs of the gifted (Chessman, 2005). This study found that teacher training is essential to identifying and catering to the gifted and talented. The first stage Chessman suggested was raising awareness of the needs of the gifted in order to nurture them emotionally and academically.

Reasons for the special importance of having gifted education in Nigeria

Compulsory education is spreading

The need for special education for the gifted started in the 20th century, when an increasing number of children joined the growing public education system that eventually became free and compulsory. Special education for the gifted becomes necessary when a country or society adopts compulsory education and actively implements it. Nigeria has reached that point. The literacy rate in Nigeria is accelerating amazingly: while among people over 80, only 13% are literate, among persons aged 15 to 19 years – those of primary school age in the 1990s – the literacy rate is 70% (CIA Report, 2010). In just a few years, the literacy rate in Nigeria will close the gap with that of most developed countries. By preparing the infrastructure of gifted education in the immediate future, the more educated and talented will be rewarded socially and financially, and the country will benefit from their fulfilled abilities in all areas.

From the psychological point of view of the individual child, the benefit of gifted education is multifocal. Vondráková & Palková (2007) mentioned that in many cases, a gifted child, who before the law of compulsory education could have studied at their own pace, must adjust to the relatively slow learning in class. Boredom might cause them to lose interest, hindering the ability to activate the potential to its full power. Cooper & Sureau (2007), in their article that defends homeschooling, mention that parents of the gifted often have difficulties finding suitable public education for their children and thus feel they have no choice but to transfer to homeschooling. The other side of compulsory

education is that, before its implementation, many slow learners, children with disabilities of all kinds, and those who were not particularly interested in learning had a choice of not learning, and thus, children who did attend school were usually of suitable ability and highly motivated. This enabled more gifted children to participate in class activities that were often more challenging (Barrington, 1968). Since implementing the compulsory education law, more gifted children have found school more boring and less challenging, and need special classes.

The Gaussian distribution is a mathematical statistical fact, valid everywhere and at all times. Thus, Nigeria's gifted should benefit from special education, as has been the case in many other countries for up to 10 years.

About 15 years ago, I taught a course on gifted education in a teachers' college located in the Israeli periphery, where the vast majority of the population was nonprofessionals, the parents had low aspirations for their children, and the teachers were mostly those who could not find a teaching position in a more desirable region. I started the course by asking all students to sit in a large circle, and then I approached the one sitting at my right and asked: "Tell me about a gifted child you have met". She answered immediately: "I have never met any gifted child". "Would you care to think a little bit?". I asked. "No", was the answer. "Maybe I will get back to you later", I said. I approached the student sitting to her right and asked the same question; the answer was the same. A slight change came when I got to the seventh student: "Does it have to be a student of mine?" "No", I said. "Any gifted child will do". And then finally came the first short description – of a 7-year-old girl who was singing beautifully, already an expert belly-dancer who was invited to all weddings, engagement parties, and bar-mitzvahs of her relatives and neighbors, and an extremely friendly person, whom everybody loved, who had a "heart of gold" and was admired by the young and the old alike. When the student finished the description, student number 3 asked shyly: "Can I tell about my gifted child now?". Moreover, he told us about his 3-year-old son, who has already started reading! That class helped everybody realize that gifted children were everywhere. A lot of them. Of all ages, in all neighborhoods, but it required a loving, caring, and understanding adult to notice them, let alone nurture them!

The example of Israel: the beginning of gifted education

In Israel, gifted education for underprivileged children has preceded the beginning of the governmental and municipal systems of general gifted education. Gifted education for the whole population started in 1973 (e.g., David, 2008, 2014, 2016; David & Wu, 2012) and has not succeeded (see, for example, David, 2012, 2013, 2018b, 2023a). This initiative started in the 70ies by academics from a variety of areas: the late philosopher Yosef Ben Shlomo (1992), who also served between 1979 and 1980 as the chief manager of the pedagogical secretariat of the Israeli Ministry of Education; Dan Bitan (1992), who established and was the first director of programs for Gifted Children at the Israeli Ministry of Education, and was a founder and first President of the World Council for Gifted and Talented Children (WCGTC) (1975-1977) (Executive Committee History (2025), Blanca Burg, who served as the chief manager of the department of gifted, talented, and Science Oriented Youths in the Israeli Ministry of Education (Burg, 1992; see, for example, also Burg, 1989).

One, if not the most crucial cause, is that in Israel, there is no qualified program for teacher training for the gifted (Reichman, 2020; Vidergor, 2010). On the other hand, special gifted classes for talented students from the periphery, from economically challenged families, and with limited backgrounds of parental socio-economic status resulted in various outcomes. Some of the studies done on the graduates of these programs, such as "The project of gifted disadvantaged" [literally: gifted who need to be nurtured], that started in 1960 (e.g., Shoshana, 2006; Smilansky & Nevo, 1970, 1979), focused on the negative feelings of graduates who had to be ripped off their families to get a good education (e.g., Shoshana, 2006), others – such as Smilansky & Nevo (1979) had come to opposite conclusions, namely, that these dormitories were of great success. As to other projects for advancing gifted, underprivileged students, the most well-known is "Teachers Training in the Negev" (Shehory-Rubin, 2011). This project started even earlier, in 1954, and was aimed at raising the teachers' level in the southern part of Israel and recruiting good students from all over the country who had no opportunity to get higher education, in most cases – not even to complete high school, to build a

cadre of teachers who would teach either in their original homes villages or MA'ABAROT.² As Shehory-Rubin describes, this project was highly successful, as it helped the new villages and developing towns to get good teachers who were part of the community, rather than 18- and 19-year-old women who did their 2-year compulsory service as soldiers-teachers (e.g., Grossman, 2006; Schely-Newman, 2010). In the first two decades since the independence of Israel, young female soldiers, though unqualified, served in many cases as teachers because of a severe lack of teachers and the need to open many classes not only for school-age children but also for older, illiterate people, mainly women, who immigrated to Israel from Arab countries (ibid). According to Grossman (2006), about one-quarter of a million Israelis were illiterate in 1961; according to Neuman (1999), "69 percent of the Asian and African immigrants were literate" (ibid., p. 19), which means 31% were not. In 1960, when the whole Israeli population was but 2.09 million, 1.86 million were Jews (The population of Israel is 2.09 million, 1960), and about one-quarter of a million adults were illiterate. To change the situation in the next generation, the "Underprivileged Gifted" project was initiated:

The primer was intended primarily for use during the literacy campaign "Operation for Eradicating Ignorance" (1964–76). The teachers were female soldiers living in assigned communities who taught adults basic education and Hebrew literacy (Schely-Newman, 2010, p. 201).

Many MA theses were written about the unique project of high-level education for promising students from the periphery, calling them "gifted" based on their good grades, high motivation, and wish to learn more than was offered in their villages, developing towns, or underprivileged neighborhoods of big cities. These children were chosen by their teachers; no intelligence tests were applied, and with their parents' consent, they sometimes moved quite far from their home cities to live in dormitories and learn in some of the best Israeli schools (e.g., Lahav, 1988). The project was considered a great success, though when meeting their new school peers, its participants found that they did not "deserve" the "gifted" title (e.g., Shoshana, 2011). As for long-term influences, it was pretty interesting that the most successful graduates of this project had claimed, years after leaving school, that the project estranged them from their background, family, and friends, and "it was not worth the high price (e.g., Katz, 2001).

A Summary of the suggested program:

A System for nurturing gifted and talented students in Indonesia

The need

Indonesia has the fourth-largest population in the world (Explore all countries: Indonesia, 2025), the world's third-most-populous democracy, and the world's largest Muslim-majority nation (ibid). However, its economic and educational situation is far from satisfactory. It scores very low in international examinations—unlike its geographic neighbors (e.g., Japan, China, Singapore, and Hong Kong) (Mullis et al., 2020; OECD, 2023; *PISA 2022 Results (Volume I): The State of Learning and Equity in Education*). According to international studies, even Malaysia and Thailand, which are not the best scorers in the world, have done much better than Indonesia in TIMSS and PISA (e.g., Fenanlampir et al., 2019). The need to nurture the gifted in Indonesia is obvious. Its birthrate is 2.2 times higher than that of its neighbors, while the educational level does not meet the standards required in the modern world. The country's children are its treasure: they are to lead the population to an improving economy, better housing, advancement in education, increasing life expectancy, while improving health, and much more. To accomplish all these aims, the country needs a hundred thousand, if not millions, of high-level professionals soon, and this need can be met by the new generation of more educated children by nurturing those with the potential to be good doctors, scientists, industrials, high-tech developers, entrepreneurs, and programmers. Many high-level professionals in Indonesia received high qualifications abroad; some

² Ma'abarot (Hebrew: מעברות) were immigrant and refugee absorption camps established in Israel in the 1950s, constituting one of the largest public projects planned by the state to implement its housing policies. The ma'abarot were meant to provide accommodation for the large influx of Jewish refugees and new Jewish immigrants (*olim*) arriving to the newly independent State of Israel, replacing the less habitable immigrant camps or tent cities. In 1951 there were 127 Ma'abarot housing 250,000 Jews. The last ma'abara was dismantled in 1963.

had learned in probate schools to help them be accepted to higher education abroad. Many teachers lack enough pre- and in-service training and support to help their students achieve the highest possible grades. Thus, gifted, talented, and creative Indonesian students are hardly the priority of those teachers, even when acknowledging that they should do more for them.

The suggested solution

We suggest that talented, high-ability, and identified-as-gifted students would be nurtured from age 9 to 15. During these 6 years, a special effort is to be made to qualify teachers trained and knowledgeable in gifted education, as teachers are key success of every gifted program (e.g., David, 2011, 2015, 2023b; Maree, 2006, 2018b; Tirri, 2017; teachers who are qualified to teach the gifted will participate in special classes in all areas – such as scientific, fine arts, the humanities, or music – depending both on the availability of teachers and instructors as well as the students' talent in each of these domains. The teachers will broaden their students' horizons, help them engage in deep learning, and provide them with learning materials that are not part of their daily school routine. This kind of nurturing will encourage curiosity and persistence, serving as a stimulus to future learning programs. Students demonstrating high learning motivation during the first 3 years will be eligible to learn in gifted classes from grade 9 onward. They will be able to get the highest grades in the Matriculation examinations, and the gates of higher education will be open for them in their country or elsewhere.

Explanation of the solution

Gifted education in Indonesia is to be implemented gradually.

The first stage will commence once the government has adopted the program, either by the local authority or a parent organization. At this stage, about 5% of each class population has the highest abilities, according to their teachers' opinions or school grades (which might not always be identical). This stage is not to be dependent on valid and reliable tests due to two main reasons: there are still no such tests in Indonesian, and due to the results of comparative studies of IQ, the Indonesian IQ is lower than that of practically all its neighboring countries (Average IQ of Indonesian kids low: BKKBN, 2022). To start the program as quickly as possible, a giftedness identification program must be created from the beginning. However, it takes too much time, and Indonesia lacks the resources. In addition, any such test needs the number of psychologists Indonesia lacks (Togas et al., 2020). As education for the gifted must start in Indonesia immediately, there is no time to wait until enough psychologists are qualified.

The second stage will start in the semester following the identification process. About 10 enrichment centers will be opened in the capital, Jakarta, and, in addition, in each local municipality that receives public support from the government, city hall, or a large enough number of local families seeking gifted education for their children. The chosen children will participate in a pull-out program once a week, during which they will take three different 90-minute courses every semester. The courses are to be both in subjects that are not taught in the regular school, e.g., history of art, medicine, or robotics, and acceleration in the three main learning areas: languages – English and Indonesia, Mathematics, and science – which is to include the basic subjects of physics, chemistry, and biology, as well as computers science, AI, and brain sciences. The English language is to be taught during the 6 years of the program to help the children learn independently from books, videos, and online courses, and prepare them to be accepted to higher degrees in good universities abroad.

The third stage is the selection of participants. In the first year, only children in the 95th percentile of grade 4 who were 9 years old when selected will be included. Each year, an additional age group will be added.

More cities will join the program every year, depending on the number of teachers available and the city's financial situation. Rural children can join the program at any stage if their families have the means for transportation to the closest cities that offer it. If the government supports establishing dozens—even hundreds—of such centers, rural and peripheral settlements can gather to start such a center in one of them. At the same time, transportation is organized for children from the area.

The parents of the children participating in the program are to be involved in all teams: the educational, administrative, financial, and policymaking.

Following 5 years of successful program operation, which includes establishing a university track for training teachers and counselors for the gifted, gifted classes will operate 6 days a week.

Conclusion

The suggested program for identifying and nurturing gifted students in Indonesia should include the following:

Learning the history of giftedness and from it

The Terman Studies of Giftedness are the most famous longitudinal study of giftedness. Terman had screened 1444 “original Terman children” in California in 1921 and an “additional” 84 (altogether: 856 males and 672 females), whose average age was 10, and that group had been studied until the end of the 20th century (Burks et al., 1930; Holahan, Sears, 1995; Janos, 1987; Oden, 1968; Seagoe, 1975; Sears, 1977, 1984; Sears, Barbee, 1975; Terman, 1925, 1930, 1954a, 1954b, 1959; Terman, Oden, 1935, 1947, 1951, 1954; Terman et al., 1990). Even though their IQ had been 135, they had not fulfilled their giftedness; they had inferior achievements compared to what could have been expected from their high inborn abilities and nurturing. For example, not even one of the Terman children received the Nobel Prize. However, two of the children who had not made it in the Terman screening process did: the late William Shockley, who shared the 1956 Physics Prize for helping invent the transistor, and the late Luis W. Alvarez, who won the 1968 Physics Prize for his work that proved the existence of some subatomic particles (Shurkin, 1992). There has not been even one political or social leader who was a part of the Terman research, a Pulitzer Prize winner, or a Picasso (Paddock, 1995). The vast majority of the Terman Kids are already dead – had they been alive, their mean age would have been 100. However, whether the cause of the limited achievements is mainly the problematic identification process, or it is just that the way of “real” success is not always closely connected to the IQ, we must be more modest about our expectations for gifted children, whatever our preferred screening method is.

Leta S. Hollingworth opened the first class for gifted children in New York in 1922 (e.g., Hollingworth, 1926, 1942; Robinson et al., 1990; Stanley & Robinson, 1990). In 1916, she accepted a teaching position in educational psychology at Columbia Teachers College and held that position for the rest of her life. Hollingworth also served as the principal of what had later become the New York School for Exceptional Children.

Adopting an identification-of-giftedness system with minimal cost and maximal effectiveness

As identifying giftedness has been one of the main problems in gifted education since the beginning of the 20th century, in order to create a good identification of giftedness system in Indonesia is of three steps: *learning about the history of giftedness* in order to apply the most efficient ways to have the whole pupil population to have access to it; *the need to learn the existing already applied systems* in order to choose the most suitable for Indonesia, and *the need to learn all giftedness theories and models from around the world*.

To reach a friendly interface for identifying and selecting gifted students, several stages are involved. *An appropriate screening program should be chosen*. Such a program must take into consideration variables such as the population size, the language/s of the screening tests, the financial investment available, as well as additional future resources, the availability of professionals required for the screening process, and the public opinion regarding the investment of public money in nurturing but a small minority of the children.

The gifted must be identified, tested, and selected initially. They should then be nourished, guided, and counseled. The current project proposes developing a process by integrating qualitative and quantitative elements for the identification and selection of gifted students within the educational system in Nigeria. It proposes a method capable of going through such a program's identification/selection stage. The basic proper program, tailored as “Haute couture” rather than “one size fits all”, must be chosen from the existing programs. However, it should be implemented after making all necessary changes: linguistic, financial, and cultural.

The need to learn basic models for nurturing the gifted from around the world

As gifted education has many forms and procedures in many parts of the world, let us survey the most widespread, discussed in the literature, and perceived as effective.

Even though the first series of intelligence tests, the Binet-Simon tests, were translated into English from French, the development of gifted education in Europe had lagged behind that of the US (Wolf, 1969). However, some of the best identification systems for giftedness have been developed in Europe (e.g., Heller, 2005; Heller & Schofield, 2000; Heller et al., 2005; Mönks & Pflüger, 2005; Persson et al., 2000), as well as programs for talented students in a variety of other areas (e.g., Reichert, 2007). Until now, sociological factors and small budgets have not allowed such services to develop for gifted and talented students. Instead, special attention has been given to the disadvantaged, the disabled, and the less gifted. Only recently have societies started to appreciate the benefits of gifted and talented child development, achievements, and leadership. Therefore, society must find the appropriate methods of helping such children to reach their full potential.

Let us review some of the main existing programs.

There are many models for identifying and nurturing the gifted. We shall hereby describe three of the most well-known American ones.

Renzulli's Schoolwide Enrichment Model (SEM) (Renzulli, 1978, 1986; Renzulli & Reis, 1985, 1994, 1997). Here is the Three-Ring Model describing it:

Renzulli's Three-Ring Model (Renzulli, 1978)

Renzulli's definition affirmed the now widely accepted assumption that giftedness was multi-dimensional and could be cited in any area of human ability:

Giftedness consists of an interaction among three basic clusters of human traits – above-average general abilities, high levels of task commitment, and high levels of creativity. Gifted and talented children are those possessing or capable of possessing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities or services that are not ordinarily provided through regular instructional programs (Renzulli, 1978, p. 261).

However:

“Above average” meant among the top 15-20% of people in any area of human endeavor (Renzulli, 1986).

“Task commitment” – “perseverance, endurance, hard work, dedicated practice, self-confidence and a belief in one's ability to carry out important work” (Renzulli, 1986, p. 69). Task commitment is a particular form of motivation focused on the task at hand.

None of the three “clusters” of traits noted above is by itself sufficient to define a child as gifted:

It is the interaction among the three clusters that research has shown to be the necessary ingredient for creative/productive accomplishment (Renzulli, 1978, p. 82). Based on the characteristics of creative and productive adults, the Renzulli model might not accurately identify the potential for high achievements. The model emphasizes task commitment and does not consider children with a lesser level of motivation or ambition. It might also leave “out of the gifted circle” children who have not yet encountered challenges that might make them “stretch their limits”. In addition, the Renzulli model might exclude students with a comparatively low level of creativity or students whose creativity has not yet flourished.

Tannenbaum's “sea star” model of giftedness (1983) addresses the relationships between ability and achievement – “the links between promise and fulfillment” (Tannenbaum, 1983) – and identifies the roles of both the child's personality and the environment in which he or she is brought up and educated.

- Relationship between ability and achievement
- Identifies the role of personality and environment
- Based on highly able children and teenagers
- Giftedness of children is a potential for adult activity
- Five internal & external variables (points on a star)
- All five must be present for the ability to translate into achievement

- Producers (develop) Performers (interpret/recreate)
- Creativity or proficiency
- General ability: testable general intelligence, different levels for different accomplishments
- Special ability: capacity/affinity for particular work, plus capacity to think
- Non-intellective factors: motivation, self-concept, persistence, mental health, etc.
- Environmental: societal choices, family, peers, school, community, economic, social, legal, political institutions
- Chance: unpredictable events, teachers, job market
- Static and dynamic elements.

In Canada

Gagné's Differentiated Model of Giftedness and Talent (Gagné, 2004, 2009) model differentiates between giftedness and talent. According to him, giftedness is the possession and use of inborn abilities, in at least one ability domain, which places a child in the percentile 85 of his or her peers. Talent is the superior mastery of developed abilities and knowledge in at least one field that places a child's achievement at percentile 85 of his or her peers.

The attached diagram shows the five aptitude domains of the Gagné model: Intellectual, creative, socio-affective, sensorimotor, and "others." These natural abilities are easily observed in young children, and are needed for all tasks children have to accomplish – academic and creative, technological, artistic, social and emotional, as well as athletic

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