

A Review of Learning Disabilities and Creativity

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Abstract--*The present research discusses articles and studies on learning disabilities and creativity. According to a widespread point of view, people with learning disabilities are particularly creative. The basic purpose of this research is to explore the relationship between individuals who have learning disabilities and creativity by presenting some evidence, facts, and results of studies done in this area. This study also examines the people with this kind of disabilities whether they can achieve in their life or they cannot because they are facing difficulties with their disabilities. The literature review revealed (with some exception) that individuals with learning disabilities have a creative potential, which is expressed especially in the form of visual and intuitive thinking. This study includes data gathered from Google scholar and library. Based on the information obtain from the literature review, some studies claim that there is a significant relationship between the variables of learning disabilities and creativity.*

Keywords--*Disabilities; Creativity; Learning; Creative Potential*

I. INTRODUCTION

Learning disabilities are very famous all over the world even in Arab countries, and it is known that it has a very bad effect on many aspects of life. Learning disabilities defined as a general term that refers to a heterogeneous group of disorders exhibited by significant difficulties in the acquisition and use of speaking, writing, reading, listening, reasoning or even mathematical abilities. These disorders are believed to be due to major nervous system dysfunction. Even though a learning disability may occur with other handicapping conditions such as mental retardation, sensory impairment, social and emotional disturbance or it could be also environmental influences like cultural differences, inappropriate instruction, and psychogenic factors [1]. A learning disability doesn't have anything to do with a person's intelligence after all, successful people such as Walt Disney, Alexander Graham Bell, and Winston Churchill all had learning disabilities [2]. Children with learning disabilities aren't lazy or stupid. In fact, most are just as smart as everyone else. Their brains are simply wired differently [1]. This difference affects how they receive and process information.

Learning disabilities generally show up when an individual facing difficulty with speaking, reading, writing, figuring out a math problem, communication, or even paying attention in school. Researchers categorized learning disabilities in two categories: verbal and nonverbal. Individuals with verbal learning disabilities they face difficulty with words, both spoken and written while individuals with nonverbal learning disabilities may face

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difficulty processing what they see. Individuals with a nonverbal disability they have impair in perception and imagery, and therefore constitute a more fundamental distortion of the whole perceptual experience.

Presumably, nonverbal learning disabilities probably more handicapping than verbal learning disabilities, as verbal deficits have little effect on nonverbal experience but nonverbal deficits may make big contributions to the misreading of verbalizations [3]. Many researchers have found support for the relation between nonverbal learning disabilities and deficits in the social perception of self and others, interpretation of emotion and visual-spatial tasks, and deficits in differentiating and interpreting facial expressions [4, 5].

There are many types of learning disabilities such as dyslexia, dyscalculia, dysgraphia, dyspraxia, dysphasia, auditory processing disorder, and visual processing disorder. The most common and best known learning disability in the world is dyslexia, which makes people face trouble recognizing or processing letters and the sounds related to them. This is the reason why someone with dyslexia will have trouble with reading and writing tasks or assignments.

Sometimes, parents or teachers, they are not aware of the fact that this child is disabled and because of their ignorance they punish these children or accuse them that they are lazy or dumb. It should bring in the notice of the parents and teachers that learning disabilities can cause lacking behind the academic achievement and they have to be aware of that. In general, individuals with learning disabilities are of average or above average intelligence. There often seem to be a gap between the individual's potential and actual achievement. This is why learning disabilities are referred to as "hidden disabilities" because the person looks totally normal and seems to be a very bright and intelligent person, yet may be unable to demonstrate the skill level expected from someone of a similar age. A learning disability cannot be cured; it is a lifelong challenge. However, with appropriate support and intervention, people with learning disabilities can achieve success in school, at work, in relationships, and in the society [6].

Creativity characterized by the ability to produce original and unusual ideas that are task appropriate and high in quality. Creativity is to perceive the world in new ways, to find hidden ways, to make connections between unrelated things, and to create solutions. In addition, creativity is connected somehow to intelligence and wisdom. Wise people recognize the need to balance intelligence with creativity to achieve both stability and change within a societal context [7]. Some psychologists and some people find an association between creativity and learning disability. They observed that people who have less knowledge just because of their disability can do a remarkable contribution in different fields. According to some researcher's point of view, people with developmental dyslexia are particularly creative [8, 9]. A study was carried out in 2016 which was done on high school students with dyslexia disability on a sample of 19 students were taken. Results revealed that dyslexic students performed better in the connecting task. Another study was examined the success of students in exceptional education in Tennessee Virtual Academy. Students participating in this study are in grades 5 to 8, have a diagnosis of specific learning disabilities. The results of this study revealed that eighth graders diagnosed with specific learning disabilities were likely to be significantly successful in the virtual learning environment [10]. Learning disability and creativity are two different things but in many researchers, it's indicated that people who are disabled can do a good performance in many abilities [10].

Learning disability and creativity is very popular topic and has attention of many researchers in various countries but unfortunately, very few works have been done in the Middle East especially in Saudi Arabia. The aim of this study is to explore the association between creativity and learning disability to highlight this issue and to bring in the notice of researchers so that they can work on it. It is often argued that people who have provided original contributions in various domains probably had different disabilities [11]. The link between learning disabilities and creativity has been the topic of many theoretical speculations [12], but it has been a little experimental investigation in this field. This study will help individuals with learning disabilities to discover and reconsider their abilities and strengths to achieve in life.

II. LITERATURE REVIEW

The Life of People with Learning Disabilities

Agatha Christie, the prolific and popular author, had a learning disability. In spite of her excellent reading and problem-solving skills, she had difficulty with spelling, arithmetic, the mechanical aspects of writing, and foreign language learning [13]. It may seem something unbelievable that a woman who was one of the most popular and prolific writers in the English language had a learning problem. This disability called dysgraphia, writing backwardness, or arithmetic/writing disability, obviously did not prevent her from becoming one of the most popular writers in the English language. Her older sister Madge tried to help her with spelling and writing. She encouraged Agatha to practice her writing, ruling a copybook with penciled lines and writing out sentences for her sister to follow. However, the writing was not as easy as reading for young Agatha Christie. Also, the treatment that was recommended for her learning disability is the use of a tape recorder so that the mechanics of putting words down on paper does not interfere with the imagination and creativity of the person with this learning disability [14, 15]. The reason behind the story of Agatha Christie's learning difficulties and her ability to overcome them is because it may serve as an inspiration to other individuals who suffer from the same problems and may help parents and teachers understand this disability.

Hearne and Stone [16] analysis suggested that students with learning disabilities might possess talents that do not conform to deficit-driven systems endorsed by traditional conceptualizations of education, highlighting the dire need to address strengths and talents that fall beyond linguistic knowledge. In examining the association between creativity and the criteria used to differentiate children with learning disabilities and average academic-achieving students, despite prompting by researchers and clinicians alike to respond otherwise, research still seems largely deficit-focused. Rewarding creative thinking in children is important to promote the tendency to explore unknown situations and seek challenges in order to enhance skills [17]. The recognition of abilities in creative thinking can help transform the perception of school as a failure experience to one contributing to positive feelings of self-worth.

In another study, Eisen [18] assessed the nonverbal and verbal creative abilities of sixteen learning disabled and sixteen non-learning disabled children. The nonverbal measure of creativity aimed to tap spatial skills, with little use of verbal or analytic skills. As hypothesized, children with learning disabilities scored higher on the nonverbal

but not the verbal task compared to children without learning disabilities, lending further 36 supports for differentiation of learning disabled and normally performing children based on an asset. Research does not necessarily indicate that learning disabled youth possess greater creative potential or actualization. For instance, students with learning disabilities do not necessarily have creative capabilities equivalent to average peers. Graham and Sheinker[19] used two nonverbal measures, the Torrance Tests and Sounds and Images, to assess creativity. Students identified with learning disabilities, more so than non-learning disabled peers, typically affiliate traditional educational curriculums with frustration and failure. Many learning disabled students have developed an intense loathing for the traditional learning environment, as evidenced by a poor self-concept and a lack of confidence. Research has suggested that students with a learning disability tend to get relatively lower social status among peers, a finding likely influenced by social deficit skill. The authors asserted that programs designed to use and enhance creativity, particularly as indexed by creative fluency might also improve certain aspects of interpersonal problem solving in students with learning disabilities. In the present study was a group of adolescent students, identified with a primary learning disability, who attended a specialized residential boarding school. Though these students may not receive critical acclaim, engaging in visual arts can afford students with learning disabilities a successful experience in developing technical expertise and creating purposeful work. The link between creativity and adolescence may bear even greater practical significance in the lives of adolescents with learning disabilities, with creativity potentially performing especially vital functions in the identity development of such youth. However, comprehensive exploration of the connection between creativity and identity constructs within the realm of learning disabilities has not yet occurred. The effective direction and enhancement of creative proclivities can produce beneficial health effects and may enhance everyday problem solving and adaptation to change. In addition, the provision of challenging creative tasks may lead to increased intrinsic motivation in students with learning difficulties [20].

Learning disabled children have been shown to have a variety of academic, behavioral, and social deficits that differentiate them from normally achieving children and impede the learning process in school [21, 22]. One of the deficits areas for these children is communicative ability. Some particular aspects of the communication abilities of learning disabled children have been studied through the referential communication situation [23, 24], in which a pre-specified set of materials with pre-specified attributes must be communicated to another person who is naive about the relevant attributes.

Inactive Learners

Learning disabled children have some deficits in their ability to perform on referential communication tasks. In one study done by Donahue, Pearl, and Bryan [25] on the differences between learning disabled and normal children's competence as a listener were assessed. The children, who ranged from first through eighth grade, were asked to choose a target picture from a set of four pictures based on the verbal description given by an adult confederate. The children were told to ask for clarification when they felt the message was unclear. The results showed that all children were able to pick the correct picture when the message was fully adequate. However, Learning disabled children were just as able to detect inadequate messages, but were less likely than normal children

to ask for more information under the inadequate condition and thus were less likely to pick the correct picture. Spekman[26] examined not only listening skills but also speaking skills. She used two types of fifth graded ads; a learning disabled students and normal students as well as two normal students. The speaker in this task was required to communicate information about 16 blocks so that the listener could arrange the blocks in designated geometric designs. For three designs, the children played the role of the speaker, and for three designs they assumed the listener role. There were no group differences in the listener role, and she did not find differences in the ability of the listener to ask questions of the speaker, as the Donahue study did [25].

This may be due to the different ages involved or the possible lower difficulty level of the task in this study. However, striking group differences enable the ability to communicate effectively. Learning disabled speakers gave less task-relevant information and dyads involving learning disabled children had less overall task success. Another study done by Noel [27] used 9 to 11 year old learning disabled children and normally progressing peers who were asked to describe to each other a set of six pictures. The accuracy of these descriptions was evaluated in a subsequent listener task. Support for the Spekman[26] and Donahue [25] findings was obtained, in that learning disabled and normal children did not differ in the ability to select the correct picture from the learning disabled and normal children's initial descriptions. However, the descriptions generated by normal children yielded more correct responses by all children than the descriptions generated by learning disabled children. Thus, all these studies support the finding that learning disabled and normal children do not differ in detecting and understanding accurate messages, but they do differ in the ability to communicate messages accurately or to ask for information from others, with this difference favoring the normal children. This pattern of behavior has led researchers to describe learning disabled children as "inactive learners" [28]. Many of the listener tasks require the children to point to the correct picture or to choose the correct message from a group of limited alternatives, whereas the speaker tasks demand that the child verbally communicate the information without a group of limited alternatives.

Nonconformity and Heuristic Behavior

Learning disabilities as any other handicaps appear to play a pivotal role in the research on human giftedness and creativity. As for the meaning of giftedness or genius in our society, a lot of people find it hard to understand that a child or an adult can be both gifted and learning disabled. Children such as Helen Keller, Franklin Roosevelt, Winston Churchill, Ray Charles, Thomas Edison, Albert Einstein, and William Butler Yeats became famous, creative, and highly able adults [29]. Creativity has always been a common characteristic of those people who have made memorable artistic, scientific, and creative contributions, social improvements or technological development. The conceptualization of learning disabilities is a complex issue due to many different definitions and terms that are used by learning disabilities researchers. Problems in self-regulatory behaviors, social perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. The occurrence of learning disabilities can be observed in the developmental relationships between listening, reading, spelling, speaking, writing, and mathematics. In order to understand what creative potential is, we should also consider the meanings of the words creativity and potential. Creativity "is the interplay between ability and process by which an individual or group produces an outcome or product that is both novel and useful as defined within

some social and psychological context[30]. On the other hand, the potential is often used as a shortened form of potentiality. It is a present set of circumstances that are used to understand that some property and gift that are not currently appeared will develop or be learned. Creative potential may refer to every creative act that is possible but not yet realized or that is capable of being, but not yet in existence. A total of 99 students of Maria Curie-Skłodowska University in Lublin participated in a comparative study [31]. They were assessed based on creative potential measures by popek and alternative uses task by Guilford as well as on a learning disabilities self-reported measure (Rating Scale for Intensity of LD Symptoms). The age of the university students ranged between 21 and 25 years. The students included both men and women who majored in special education. The empirical study was conducted collectively. Every participant received a copy of the answer sheet. No one identified problems concerning the comprehension of the questionnaire or test content. They divided the university students into two groups learning disabled students and normal students.

The results revealed that the mean differences between the LD and NLD groups were statistically significant with regard to two variables for the Nonconformity and Heuristic Behavior [31]. These variables accounted for creative potential. The university students with self-reported LD were lower than their counterparts in the NLD group in nonconformity and heuristic Behavior. Its howed that the creative potential of the university students who self-reported LD symptoms were lower in comparison with the NLD group. The mean differences between the LD and NLD groups were not statistically significant for the two remaining variables of Conformity and Algorithmic Behavior. Both of the variables pertained to noncreative attitude. Researchers stated that if the sample comprised more men or an equal number of men and women, they might have obtained different results on the creative potential measures. Irrespective of the lack of clinical diagnosis of LD in the sample, the findings of the research do not suggest that the LD and NLD students are alike in terms of creativity or giftedness. Researchers concluded that the future search on the human creative potential and learning disability should focus more on a series of complex issues such as giftedness, twice exceptionality, gender, age, special education, conformity, nonconformity, creativity, and reconstructive behavior [31].

Developmental Differences

A journal of developmental differences in 2016 discussed dyslexia and success, looking at the motivations and processes that dyslexic individuals have been through in school, turning childhood school oppression into adulthood workplace success. Scott [32], and Alexander [12] noticed that dyslexics often experience distress since childhood, in school, and in their social life through exclusion and bullying by peers because of their learning differences. A recent report in 2013 found that teachers lack the skills to effectively differentiate for dyslexic and other different learners in their classes. They also underline the lack of special educational needs in general. The researchers identified low self-esteem in dyslexics, particularly school-aged dyslexics, and Scott [32] and Alexander [12] have debated that bullying by both teachers by their lack of differentiation and peers by exclusion can lead to depression, withdrawal, Post-Traumatic Stress Disorder, and self-harming. In the case of dyslexics, success has been the main focus recently, however very few empirical researches have been done in this area. Logan [33, 34] conducted an investigation into dyslexic entrepreneurs in both the UK and the USA and he found a higher number

percentage of dyslexics were self-employed entrepreneurs than worked in large organizations. Logan found that a lot of dyslexic's people felt unable to be in organizations and they face difficulty following strict working rules prohibited advancement. There have been a lot of interviews of famous dyslexics, for example, Sir Richard Branson (UK-music and airline entrepreneur), Charles Schwab (USA-financial entrepreneur), Lord Richard Rogers (UK-architect), and Tom Cruise/Whoopi Goldberg (USA-film stars) etc.

These have focused on particular examples of successful dyslexics however they have not isolated common trends apart from troubled schooling. Not all dyslexics are successful and it is argued that many of them choose careers that do not fit with their abilities such as administration[35] which is causing a low self-esteem/self-concept. Hewitt [36] stated that the lack of such success happens for different unknown reasons, while a lack of early identification and intervention seems obvious. Researchers have recently become questioning why many people in spite of having disabilities they still enjoy a good standard of living and have become successful. Instead of withdrawing from society and be ashamed of their disabilities like being in a wheelchair, having depression, suffering from a life-threatening illness, despite all of this they are still thriving. The research revealed that after their first shock of disability; the ability to bounce back came from looking at positive sides only, reassessing their life goals, and searching for religious faith. Albrecht and Devlieger[37] stated that those individuals who are perceiving a high quality of life found a 'secondary gain' occurring with individuals with disabilities which is adapting to their new conditions, try to accept them, and reinterpret their lives and reconstitute personal meaning in their social roles.

An online survey study is used to investigate the perceptions of many successful dyslexics towards success and whether school oppression was a motivation for their success or not. This online survey consists of many items investigated a wide range of views concerning the dyslexic school experience, along with motivations for success, coping strategies used for success, traits of a successful dyslexic, and lastly the motivations for dyslexic success. Results showed that short-term memory, slow reading, problem-recalling names/facts, and disorganization are major problems still affecting adults with dyslexia. Majority of them use spellcheckers, use of a computer and assisted technology to help them cope with modern life. The most successful dyslexics did not like school, they felt unsupported as children at school and they said that school was traumatic for them. The results also indicated that over-whelming participants thought that failure was something essential for success in dyslexics even though interestingly most recognized that others would consider themselves as successful. Apparently, the school was found to be a harsh place for dyslexics to exist with many unsupported feeling. Eventually, they survived school and continued to succeed in both bachelors and master's degrees. Individuals with reading difficulties realized that they had become familiar with failure and used it as a positive learning tool in life, noting that they often failed in school emotionally separating them from it. The results seem to indicate that the suffering of the school was an essential element, but there are other important factors such as supportive parents and experiencing childhood success. The researcher Alexander at Middlesex University in London was looking at the experience of dyslexics at school and how these experiences can either positively drive them to success or negatively drive them into helplessness and failure. It is often been argued that some teachers have perceived children with dyslexia as lazy and stupid due to the lack of dyslexia awareness.

The Role of the Education Sector

The lack of training teachers or specialists to identify and differentiate to engage all learners in their classrooms creates a lack of educational opportunity. If success breeds success, then failure must also breed failure, thus successful dyslexics are a product of using failure in a positive way and more success reinforces this positivity. On the other hand, unsuccessful dyslexics are a product of using failure in a negative way and more failure reinforces this negativity [38, 39]. Two studies were investigated by Alexander [38, 39], (1) A study of N=20 successful dyslexics, many in business and the charity sectors, (2) A study of N=29 dyslexic adults, many indicating depressive symptoms. The first study of dyslexia and success, intended to investigate a sample of 20 dyslexic adults (diagnosed by educational psychologists or specialist teachers), who identify themselves as successful. They provided an evidence of their success by being: mainly self-employed, degree-educated, some with master degrees, professionals, senior managers, entrepreneurs and business leaders in their chosen fields. An investigative interview script was used to draw themes of motivation, leadership qualities, attitudes towards risk and failure, entrepreneurship. Questions were looking at their school experiences as a means to understand their motivation to succeed post school. In the second study, Alexander investigated a sample of 29 dyslexia adults (diagnosed by educational psychologists or specialist teachers), some of them with and without a diagnosis of depression. An investigative interview script was used to go over childhood trauma and adult coping strategies both negative and positive. While equal numbers of depressed to non-depressed were selected as a sample, the majority N=22 indicated depressive symptoms such as self-harm, avoidance, risk behaviors, withdrawal, and attempted suicide. Results revealed that school trauma was found in both studies. Successful individuals enjoyed higher parental-child support, sports, and non-academic subject success. As adults they were more willing to take risks, saw failure in a positive way, and very often were self-employed, they focus on strengths rather than weaknesses. While unsuccessful adults doubted their own abilities, self-blaming, pessimistic and they get upset when things go wrong. School is a crucial environment for young dyslexic's children, they learn from it how society works and whether they can succeed or not. Both successful and unsuccessful dyslexics agree that their school experiences were mostly terrible and in most cases traumatic, but all of them have taken different lessons from their experiences at school. Every person has the ability to be creative and that can be seen in all areas of human activity, people just need to create a creative school environment in order to allow the creative potentials of students to arise. When we interpret the analysis of the creative product, it is very important to consider two things, the major achievements of geniuses or known individuals, but also small everyday creative activities of ordinary individuals [40]. Teachers have a significant role in the process of creative teaching by teaching in unusual ways. For all the students who have specific learning disabilities or not, it is very important to find various forms of inclusive education that can make it possible for all of them to develop their creativity. It is important to know that the emergence of the world's intelligence people had difficulties in writing and reading, in spite of their intellectual potential. With all the difficulties they had in education, they still have reached a peak in their fields. It is likely that creativity is what allows student with dyslexia, despite their learning difficulty, to develop alternative strategies, which lead to the realization of established goals in their academic activities [40].

Recently, there are some opinions that dyslexia itself has a particular learning style, which is identified by global perception, thinking in images, intuitive and multidimensional thought and curiosity, which has a significant effect on the frequent occurrence of innovative and creative solutions in all scientific and artistic areas [41]. Thus, it appears that creativity is more noticeable in individuals with dyslexia than in those without it. The traditional way of teaching is not helpful for students with dyslexia or any other specific learning disabilities. This explains why there are many multisensory programs for students with dyslexia in the last years and a space for the creative use of technology in their education. The multisensory program basically refers to any learning activity that provides simultaneous input or output through two or more sensory channels. The material taught in this way is easier to remember.

This program is considered to be very suitable for individuals with dyslexia and bilingual persons who may face difficulty in understanding verbal instructions. Development of a creative school environment for students with specific learning disabilities is based on the teacher's personal engagement and competence, and that will happen through the cooperation with psychological and pedagogical services in the school. Teachers have to change goals of the teaching process and move the focus from the acquisition of knowledge to the development of student's personality and competence [41]. Taking into account the theoretical association between creativity and learning, it seems reasonable to suppose that there would be a positive relationship between creativity and academic achievement. The empirical work that has been done to examine this association has yielded unclear picture after all. Some researchers have reported a positive association [42]. However, others have reported little or no association [43]. Creativity scholars mostly agree that is creativity represent a combination of many things such as originality, usefulness, novelty, meeting task constraints, or meaningfulness as explained within a specific sociocultural and historical context. In the regard of the academic learning context, creativity can be thought of as occurring at both a subjective and an inter-subjective level. At the subjective level, students develop their creativity by acquiring new and personally meaningful ideas, insights, and understandings within the context of specific academic constraints. On the other hand, academic achievement is an outcome of learning, which is typically measured by things like grades, assessments, and external achievement tests.

Education in general, is intended to provide all students with the skills and competencies needed to enhance their lives. This involves assessment practices that will make teachers able to identify student's level of skills, their strength, and weaknesses, observe student learning progress, conduct adjustments in instruction, and assess the extent to which students have met instructional goals [44,63]. A study was carried out aimed to discover, describe, and compare the assessment practices of teachers and administrators who are working with students with learning disabilities in Lebanese private schools by the context, input, process, and product (CIPP) evaluation model [45]. The responses of the study were compared and contrasted between administrators and teachers related to the ethical component of assessment practices, likewise teacher and administrator's training and preparation for student assessment, and their assessment practices for students with learning disabilities. The results detected that Lebanese context is marked by a critical gender imbalance with a very high female dominance and a significant inaccuracy in ethical standards. Input evaluation detected that most of the teachers and administrators expressed being less prepared in assessing student performance due to their teacher education program and that administrators are

significantly more involved in student assessment than teachers. Process evaluation detected that even though special education teachers thought that alternative assessments were very important. Product evaluation detected that teachers and administrator's perceived effect of student assessment was positive on the different aspects of the school [46].

Personal Behavior and Other Factors

Researchers who have examined correlates of academic achievement have set a vast of factors, which is including individual, social, and socio-cultural impacts. Of these, student characteristics play one of the keys and most effective roles in explaining variance in academic achievement. Student characteristics include personality, cognitive and mental abilities, type of motivation, self-esteem and academic self-concept, and socioeconomic factors. Creativity is also another student characteristic that shares a conceptual, albeit equivocal; connect with academic achievement [43].

The number of students with learning disabilities is increasing in general science classrooms, even though they continue to underperform in subjects like science, engineering, technology, and mathematics due to their cognitive impediments. At the same time, research on students with learning disabilities and their learning in science is very limited. Some studies have looked at the influence of science interventions on students with learning disabilities, and they suggest that these students participate actively in collaborative inquiry-based activities, show sustained engagement, and show gains in their understanding and achievement. Inquiry-based learning experiences in science subjects also tend to reinforce favorable behaviors toward science in these students. Researchers stated that future studies are needed to explore the impacts of particular interventions in improving these students' scientific reasoning and problem-solving abilities in the context of science education [47, 48].

Although some treatment studies for learning disabled children involve behavioral adjustment as an outcome, and although some interventions for adults include dependent variables of school performance, most reports contain outcome assessments that are focused rather narrowly. Moreover, there are surprisingly few controlled intervention studies that address children with co morbid underachievement and disruptive behavior disorders. One of the factors that taking part to the lack of such investigations is may be the difficulty of finding externalizing subject with severe discrepancy-based learning disabilities [49]. Apparently, reducing problem behavior is not a sufficient intervention for adults with overlapping achievement and behavior problems; the promotion of academic success is very critical for these children.

Children with co morbid achievement and behavior problems require intervention that incorporates the best of behavioral programming and educational instruction [50]. Many researchers have reported that a child's behavior directly influences decisions in diagnosing learning difficulties. A previous research suggested that teachers 'attitudes and the criteria applied in diagnosing learning difficulties are determined by ethnic background, regardless of a child's behavior [51-54]. According to the informants in the educational system, Southeast Asian parents tend to react to a diagnosis of learning difficulties by punishing the child, while Central American parents attach little attention to such labeling; thus, teachers may underreport problems among Southeast Asian children to avoid eliciting a disciplinary reaction from their parents [55,61].

Genius with Learning Disabilities

The reading comprehension is the process of understanding automatically as we read, is the extraction of meaning from written material. This extraction of meaning by reading is not possible in children with learning disorders, especially reading disorder (dyslexia). While, listening comprehension is very excellent in children with learning disorders, though they cannot read and understand, they can answer the teacher's question orally, but cannot write the same. Therefore, the axiom of the learning disabled child would be the smartest student in the whole school if instruction were entirely oral. In the regard of the neural findings, there is a current consensus among researchers that the main issue in learning disorders reflects a core deficit in the language system [56].

Associating learning disabilities with legendary genius represents the embodiment of the hopes related to it. Historically, the emergence of a learning disabled Einstein among others correlation coincided with a period of intense codification of learning disability discourse. The first published claim of posthumous learning disability diagnosis of certain exceptional historical figures was a turning point for White middle and upper-middle class parents of children facing the same academic struggles. It offered support, hope, and increased the attractiveness of a learning disability explanation for their children's failures [57,62]. Thompson [58] was the first to publish a claim that learning disability demonstrated the extraordinary abilities of some specific eminent historical figures such as Thomas Edison, Woodrow Wilson, Albert Einstein. Also, Chakravarty [59] claimed that, through posthumous examinations of Einstein's brain, he was able to confirm Einstein's legendary creativity and visual thinking abilities and his learning disability diagnosis as well. There are many lists of famous dyslexic individuals.

Einstein is one of them and he had many traits to that seem like dyslexia. However, maybe he just had talents in other areas that he preferred to explore, making it look like literacy difficulties rather than actual difficulties and that are what makes him creative. Another example is Tom cruise he is dyslexic and actor as well and performing art is part of creativity. People who are dyslexic are limited in their potential to improve their literacy abilities, and therefore have time to develop alternative skills as well as a desire to shine in another area. They explore new areas not seen by others; find new solutions to the problem and finding a new solution to a given problem is a good definition of creativity [60].

III. CONCLUSION

Learning disability and creativity are two different things but in many researchers indicated that people who are disabled can do a good performance in many abilities after obtaining evidence and empirical data of the association between learning disabilities and creativity. Some studies said that there is a significant relationship between these two variables. For the future study, it must consider the number of the male and female participants to be equal also do more studies on adults because most of the studies focused on children. In addition, they have to use different scales to assess the creativity. Finally, there is a need to do more research on this topic for the reason that very few works has been done in this area especially in the Middle East.

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