



To study intelligence of ADHD children and normal children in relation to their gender

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Abstract

A person must be able to see things in novel ways or from a fresh perspective in order to be creative. A person must be able to produce new possibilities or alternatives, among other things. Different assessments of creativity assess not just the quantity but also the uniqueness of the possibilities that people can generate. The ability to develop alternatives or see things in new ways is linked to other, more fundamental traits of thinking, such as flexibility, ambiguity or unpredictability tolerance, and the appreciation of previously unknown things. Academic success is crucial because it prepares students for their future careers. It also enables students to pursue careers in highly competitive industries. Academic accomplishment is generally an indication of a polished brain, which can benefit students in all aspects of their lives. Graduating from high school permits pupils to make significantly more money, and many employers will only hire graduates. As a result, academic success aids pupils in avoiding poverty. Employers are increasingly recruiting for individuals with college degrees, even in unrelated sectors, because they bring even more perks. Academic success also permits pupils to pursue careers in competitive industries. Those who want to work in medicine need a strong biology education, and those who want to work in engineering need to have the right credentials. Those wishing to pursue a career in academics must have a good academic background. Academic performance also aids in the development of pupils' minds. People with a background in history can better appreciate current events, whereas those with a background in mathematics can better understand mortgages and vehicle loans.

Keywords: Flexibility, ambiguity, unpredictability, engineering, Academic performance

Introduction

In general, people use creativity to communicate their unusual opinions. In the classroom, unusual thoughts and behaviors are not tolerated; rather, they are suppressed because teachers must complete exam syllabus on time, assessments are only done in writing, teacher student ratio, and a variety of other factors contribute to the neglect of a student's most important attribute, which plays a critical role in the child's future. In the current context, our teachers lack the ability to identify any type of learning difficulty in the classroom. Proper training and awareness are essential because these youngsters go unrecognized and suffer from low self-esteem, social withdrawal, and isolation both at school and at home. Sometimes even the parents are unaware of the situation, and their hyperactivity is punished with physical violence.

Concept of creativity

Creativity transcends gender, caste, creed, religion, and geographical boundaries. In this study, creativity is discussed from a totally different standpoint. This study is a

special attempt to assess the creativity of a specific group of youngsters in class. Darya Zebelina and colleagues discovered that real-life creative achievement is linked to the ability to broaden attention and have a "leaky" mental filter, both of which ADHD individuals excel at.

According to Scott Barry Kaufman, a cognitive psychologist and scientific director at the Imagination Institute of the Positive Psychology Center at the University of Pennsylvania, people with ADHD and those who are considered creative thinkers are very similar.

To be creative, a person must be able to see things in new ways or from diverse perspectives. Among other things, a person must be able to generate new opportunities or alternatives. Different assessments of creativity assess not only the amount of possibilities that people can generate, but also the uniqueness of those ideas. The ability to produce alternatives or see things in new ways is not caused by change; rather, it is linked to other, more fundamental aspects of thought, such as flexibility, tolerance of ambiguity or unpredictability, and appreciation of previously unknown experiences.

Common applications of the term "creativity" include

- Persons with unconventional thoughts, who are engaging and stimulating, or who appear to be exceptionally clever.
- Individuals who have unique perspectives on the world. These are (personally creative) persons with new perspectives, insightful judgments, and the potential to produce significant discoveries that only they are aware of.
- Individuals who have made significant contributions to our culture. Because their accomplishments are inherently public, writing about them is easy. (Leonardo, Edison, Picasso, Einstein, etc.)

ADHD affecting school adolescents

Adolescents with attention deficit hyperactivity disorder (ADHD) exhibit the same symptoms as children, namely inattention, hyperactivity, and impulsivity; however, during this period, adolescents encounter more serious social and scholastic challenges. Because this is a critical time for them to advance academically and meet social expectations. Adolescents with ADHD have less guidance from teachers in terms of academic performance during high school, therefore they are entirely free of constraints. Adolescents with ADHD tend to be impetuous and inattentive, which can cause problems with friends and lead to aggressiveness. Adolescents with ADHD become frustrated, which reduces social hurdles and creates an unfavorable impression among peers.

During their adolescence, individuals have close relationships with their friends; however, studies suggest that adolescents with ADHD have less friends because they are not easily accepted by their friends, suffer from more social rejection, and have difficulties making new acquaintances. ADHD Adolescents are strongly encouraged to participate in social activities such as sports teams, clubs, or school society drama clubs in order to improve their connections with friends.

Academic success in school for teenagers with ADHD is a major aspect in which either a teacher or a parent plays a vital role in the student. Adolescents with ADHD experience challenges such as bad grades, poor reading and mathematical errors, poor retention, and overall low performance in high school. As a result, in such a demanding atmosphere, the performance expected of schools places a significant burden on kids with ADHD. As they are assigned additional work, minor activities are changed to higher-level jobs that necessitate more focused and planned organisation.

Research has demonstrated that when academic success is paired with medication, behavioral therapy and classroom behavioral mediation are significantly more beneficial to adolescents with ADHD. Additionally, classroom chambers and after-school activities at the school for ADHD teenagers can help them prosper.

Both public and private schools must follow certain rules and norms regarding such youngsters

- Extended test time
- Preferential seating
- Testing in a different environment

- Asking friends for help with note-taking and classroom work.
- Regular breaks
- Daily and weekly progress updates from the school counsellor to parents
- Provide written and spoken instructions for assignments.
- Instructions were given to keep a book collection at home.

ADHD Adolescents struggle with emotional performance. Some research have shown that ADHD teenagers experience mood swings and anxiety issues. Adolescents suffering from ADHD require additional emotional support from their parents and teachers. Parents' irritating conduct towards their children frequently results in despair, higher academic pressure, and fewer social interactions. Adolescents with ADHD require the type of understanding at home that will enable them to flourish in life (Robin, 1999) ^[1].

To help their ADHD adolescent, parents should focus on their strengths, acknowledge their child's interests, communicate effectively to establish boundaries and expectations, avoid settling disagreements when angry, and engage in activities that promote success (Byles, Byrn).

During adolescence, a child goes through several transformations, which are usually accompanied by complicated conditions. Individuals with attention deficit hyperactivity disorder (ADHD) experience difficulties in their parent-child relationships. During this phase, children may experience behavioral changes that can impact their identity (Rafalovich, 2004) ^[2].

Review of Literature

According to Venkatesh et al. (2012) ^[3], ADHD is a relatively prevalent neurobehavioral illness in children with a wide range of clinical presentations. No single etiologic factor was identified to be significantly linked with this condition. Speech and language delays, particularly in preschool-aged children with normal hearing, may indicate ADHD. Learning difficulty is common in these children, as are other co-morbid mental health conditions, which may have a negative impact on their conduct. The identification of these co-morbidities would aid in developing effective and thorough treatment plans for them.

Venkatesh, C., et al. (2012) ^[3] discovered that children from nuclear homes were more likely to have ADHD. Anxiety and stress between parents in a nuclear family can affect a child's conduct, leading to increasing issues. In comparison to western community samples, the number of children with single parents, parental substance misuse, and psychiatric disease in the home was not significantly higher among children with ADHD. This needs to be investigated in population-based studies, as our study group may not be representative of society. There was no significant relationship between type of ADHD and socioeconomic status, preterm, or prenatal trauma.

Abdekhodaie, Z., et al. (2012) ^[4] explored the prevalence of attention-deficit/hyperactivity disorder (ADHD) in kindergarten children in northeast Iran, and the criterion validity of Connors' parent-teacher questionnaire was

assessed using clinical interviews. To investigate the prevalence of ADHD, cluster random sampling was employed; 1083 children were chosen as a reference, and criteria validity was determined using random sampling. Interviews were conducted with 22 children who scored below a predetermined cut-off score and 32 children who scored above the cut-off. ADHD was assessed in two stages: first, using Conners' parent-teacher questionnaire, and then with a clinical interview based on DSM-IV-TR criteria. The estimated prevalence of ADHD is $12.3\% \pm 2.12\%$. Furthermore, the test sensitivity and specificity were assessed at 90.3% and 81.2%, respectively. The high prevalence of ADHD among youngsters suggests that all children should be screened for ADHD before they reach school age. The Conners questionnaire was found to be an effective main screening tool for ADHD in kindergarten-aged children.

According to current models of attention deficit/hyperactivity disorder (ADHD) indicate that the relationship between success motivation and school performance may be higher in children with ADHD than in typically developing children. As a result, the current study investigated associations between achievement motivation and performance on language skills and mathematical thinking in children with ADHD ($n = 23$; $M = 9.4$ years, $SD = 1.1$ years; 78% boys) and two matched control groups, namely, a clinical control group (children with related disruptive behavior disorders; DBD) and a non-clinical control group (NC). The findings revealed greater relationships between achievement motivation and receptive language and mathematical reasoning abilities in ADHD children than in non-ADHD children. youngsters with ADHD performed similarly to NC for highly motivated ADHD youngsters. These findings highlight the significance of achievement motivation as a more important critical factor in the performance of children with ADHD than ordinarily developing youngsters.

According to Beaver, K.M., Nedelec, J.L., Rowland, M.W., and Schwartz, J.A. (2012) [5], a large amount of research has been conducted to investigate the etiology of attention-deficit/hyperactivity disorder (ADHD) and ADHD symptomatology. Genetic variables have repeatedly been found to account for a large part of the variance in ADHD measurements. In a study, scientists looked at whether genetic risk factors for criminality and drunkenness influence the development of ADHD symptoms. Analyses of a sample of adoptees from the National Longitudinal Study of Adolescent Health (Add Health) indicated that ADHD symptomatology were more common among adoptees whose biological moms and fathers had been arrested or were drinkers. These findings show that hereditary variables with broad impacts on a variety of maladaptive outcomes may account for some of the correlation between ADHD and antisocial behaviors.

Objective of the research

1. To study intelligence of ADHD children in relation to their gender.
2. To study intelligence of Normal children in relation to their gender.

3. To study creativity of ADHD children in relation to their gender.

Research methodology

The heart of research and scientific technique is methodology. It is a crucial technique that is carried out, and researchers go about their work describing, explaining, and forecasting phenomena. Its goal is to provide a research work plan and identify result correlations that researchers will need to design a methodology for the problem they have chosen. It is important to note that even if the considerations in two problems are the same, the methodology may differ. In this chapter, the research objective, study, and selection of the research instrument are discussed, as well as the method for collecting data and statistics for analysing the data.

Creativity, Intelligence, and Academic Achievement in ADHD and Normal Students is the topic of this study. Two hundred and forty pupils were chosen for this study by the researcher. The current study's strategy and methods, including the statement of problem, objectives, variables, method, sample, tool, data collection, statistical methodology, and so on, will be covered in this research.

The current study used a random strategy to obtain data. Initially, children were approached at their schools, and their willingness to engage in the study was confirmed by their school Principal and Parents. The parents and school were told that the data would be kept confidential, and that no pupils' names would be used in any aspect of the study. The data was collected from four schools in Ahmedabad, Gujarat. A total of 750 students took part in the study. Students were selected based on the symptoms displayed, using the Nonverbal Disability Checklists. 580 pupils were found to be in the Normal category, whereas 170 were diagnosed with ADHD symptoms. During the next step of determining their creativity and intelligence, it was discovered that students diagnosed with mild ADHD were unable to execute on the test. Getting any task from these 50 kids was challenging because they couldn't write or grasp fundamental language abilities. Thus, they were excluded from the data. At the end of the test, all students were acknowledged for their participation in the data collecting. Data collection was analyzed by appropriate statistical analysis techniques, to study influence of dependent variables under investigation in creativity, Intelligence and academic achievement. For this purpose following statistical method was used.

1. ANOVA (F test)
2. LSD (Least significance difference)
3. Correlation
4. T test

Results and data interpretation

Data analysis is defined by statistician John Tuke as "procedure for analyzing data, techniques for interpreting the results of such procedures, ways of planning the gathering of data to make its analysis easier, more precise, or more accurate, and all the machinery and results of statistics that apply to analyzing data."

Table 1: Showing the ANOVA table of creativity level related to sex, age among ADHD and normal group of students variables

Variables	Sum of squares	Df	Mean Squares	F	Sig.
A (Gender)	8.815	1	8.815	0.190	NS
B (age)	123.265	1	123.265	2.665	NS
C (Group)	183.752	1	183.752	3.970	0.05*
A*B	260.415	1	260.415	5.625	0.01*
A*C	0.265	1	0.265	0.003	NS
B*C	8.815	1	8.815	0.192	NS
A*B*C	153.600	1	153.600	3.317	NS
Error	10737.665	295	46.285	-	-
Total	49882.000	300	-	-	-
Corrected total	11476.600	299	-	-	-

Significant Level *0.01=6.63 *0.05=3.87 NS=Not significant.

Table 1 displays the f ratio of ADHD and normal students' creativity levels in relation to their age and gender. The f ratios for A (gender), B (age), A×C (Gender × Groups), B×C (Age × Groups), and A×B×C (Gender × Age × Groups) variables were not significant. The f ratios for C (Groups) and A×B (Gender × Age) are significant at the 0.05 and 0.01 levels, respectively.

Table 2: Showing the mean and the f value of the gender difference in creativity level

Sr. No	Variable	N	Mean	F	Sig
1	A1(Boys)	150	12.88	0.192	NS
2	A2 (Girls)	150	12.47		

Significant Level *0.01=6.66 *0.05=3.85 NS=Not significant.

Table 3: Showing the LSD for the gender differences in creativity level.

Sr. No	Pair	MD	Sig
1	A1 vs A2	0.37	NS

LSD Level *0.01=4.61 *0.05=3.50 NS=Not significant

Table 2 shows that the f ratio of gender difference in creativity level was.192. The boys' mean was 12.88, while the ladies' average was 12.47. The f ratio between group differences in Creativity level was not significant. So we can conclude that the HO1 has been accepted.

Table 3 displays the LSD for Creativity level among boys and girls. The mean difference between boys and girls is 0.37, which is insignificant. There was no discernible variation in creativity levels between boys and girls.

Table 4: Showing the mean and the f value of the age difference in creativity level

Sr. No	Variable	N	Mean	F	Sig
1	B1 (10-12)	150	13.33	2.665	NS
2	B2 (13-15)	150	11.96		

Significant Level *0.01=6.66 *0.05=3.85 NS=Not significant.

Table 5: Showing the LSD for age difference in creativity level

Sr. No	Pair	MD	Sig
1	B1 vs B2	1.48	NS

LSD Level *0.01=4.61 *0.05=3.50 NS=Not significant

Table 5 reveals that the f ratio of age difference in creativity level was 2.665. The mean for pupils aged 10 to 12 and 13 to 15 was 13.33 and 11.96, respectively. The f ratio between group differences in Creativity level was not significant. So

we can conclude that the HO2 has been approved.

6. Conclusion

The current study aims to investigate creativity, intelligence, and academic accomplishment among ADHD and normal kids. This study will look to investigate if there is a substantial difference between ADHD and normal pupils in terms of creativity, intelligence, and academic accomplishment.

Research is only useful if it is useful to society; if research is conducted in any area of society, it will undoubtedly be useful to society, and if research is not useful to society, it is of no benefit. There should be a goal in the form of an investigation to obtain some result and produce beneficial change to humanity; it should be supporting and valuable to society, parents, teachers, and students, as well as the general public.

Identifying creativity in ADHD students who are already failing academically will make a significant difference in the lives of both students and parents, as a new technique and method must be studied, and this will be of enormous use to society. To diagnose any learning impairment, there needs to be increased awareness among various private and public sectors. They certainly have intellectual potential in some areas, but the education system should provide sufficient guidance and support to help these pupils develop skills.

In the current study, normal kids outperformed ADHD students in terms of IQ. When comparing the two genders, male students demonstrated more IQ than female pupils.

In terms of originality, ADHD kids outperformed normal pupils. Male pupils outperformed female students in terms of creativity.

There is a considerable gap in academic achievement between normal and ADHD students. Even after comparing academic success, normal boys showed a substantial difference from ADHD males. After comparing academic success, Normal girls showed a substantial difference compared to ADHD boys. After comparing academic achievement, Normal boys demonstrated a substantial difference from ADHD girls.

The study was conducted to determine the amount of creativity, intelligence, and academic accomplishment among ADHD and normal adolescents. The results demonstrate that ADHD pupils are more creative than normal students. There was no significant difference in intelligence between ADHD and normal kids, but in academic accomplishment, normal students outperformed ADHD pupils.

According to the study, students with modest ADHD symptoms attend normal schools with some difficulty. Many times, the teacher fails to identify them. Their academic performance suffers as a result of the teacher's failure to address and utilize their hyperactivity effectively. However, they are more creative than normal students.

7. References

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