

IMPACT OF DISRUPTIVE BEHAVIOUR ON ACADEMIC CREATIVITY OF SECONDARY SCHOOL STUDENTS

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ABSTRACT

This study evaluates the relationship between disruptive behavior and academic creativity as key components of students' personality development and academic performance. The research aimed to develop and validate measurement scales to identify students exhibiting disruptive behavior and academic creativity, as well as design interventions to mitigate disruptive behaviors based on pretest and post-test findings. The study followed an experimental design, utilizing a multi-phase process for scale development, including rigorous validation, reliability testing, and psychometric analysis. The research was conducted in the districts of D.G. Khan and Multan, where a single experimental group of students was involved in the intervention. Data was analyzed using both descriptive behavior and academic creativity within the context of Pakistani schools. The study also assessed the impact of disruptive behavior on academic creativity, providing valuable insights for educators seeking to foster a positive learning environment and enhance student engagement and academic outcomes. The findings contribute to the existing body of knowledge on student behavior and creativity, offering practical tools for improving classroom management and supporting student development.

Keywords: Disruptive Behaviour, Academic Creativity, Assessment

INTRODUCTION

Beghetto (2007) highlights that students' problemsolving, critical thinking, and innovative abilities are significantly enhanced through academic creativity. However, disruptive behaviours ranging from minor distractions like talking and fidgeting to more severe issues such as disobedience—can severely undermine classroom dynamics (Sun & Shek, 2012). Such disruptions hinder cognitive engagement and stifle creative potential, thereby negatively affecting overall classroom performance (Malecki & Demaray, 2006). While the influence of disruptive behaviour on academic performance has been extensively studied (Schunk & DiBenedetto, 2021), the precise impact on creativity remains underexplored. Additionally, most existing evaluations of academic innovation and disruptive behaviour rely on broad psychological assessments, rather than context-specific tools. Therefore, there is a need for the development of more targeted and reliable instruments to assess both disruptive behaviour and academic creativity.

Disruptive Behaviour in Secondary Schools

Disruptive behaviour in secondary school classrooms poses significant challenges, negatively impacting both teaching effectiveness and student learning outcomes. Actions such as rule violations, disturbing learning conditions, inattentiveness, or speaking out of turn create a classroom



environment that undermine academic engagement and creative expression. The frequency of such behaviours correlates with disrupted conventional learning and socialization methods (The Guardian, 2024).

Chronic disruptive behaviour is linked to poorer academic performance and higher dropout rates (Smith et al., 2022). This type of conduct also stifles creativity, as teachers may spend more time managing behaviour than fostering critical thinking or problem-solving. Consequently, a classroom environment characterised by frequent disruptions can diminish students' ability to engage in creative thinking and academic innovation.

Addressing disruptive behaviour is essential for creating an atmosphere that fosters academic creativity. Classroom management strategies, such as those exemplified by the Good Behaviour Game (Barrish et al., 1969), have been shown to reduce disruptive behaviours and enhance the learning environment. By implementing these strategies, educators can cultivate a setting where students feel safe and motivated to express their ideas, thereby promoting creativity.

The Need for a Culturally Relevant Assessment Tool

One major gap in the existing literature is the lack of culturally relevant tools for assessing disruptive behaviour and academic creativity. While several instruments have been developed to measure students' behaviour and social skills (Comer et al., 1987; Loranger & Arsenault, 1989), there are few tools specifically designed to assess disruptive behaviours in the context of Pakistani secondary schools. The existing tools are often general or focus on socio-affective adaptation rather than directly addressing school disruptions. Moreover, many of these tools are designed for elementary or middle school students and are not tailored for secondary-level pupils.

This study aims to bridge this gap by developing and validating new scales in Urdu to measure both disruptive behaviour and academic creativity among secondary school students. These tools will provide a culturally relevant framework for assessing these constructs in the Pakistani educational context.

The Impact of Disruptive Behaviour on Student Creativity

Disruptive behaviour has long-lasting implications for students' academic trajectories. Research shows that chronic disruptions are linked to diminished academic performance and higher rates of school dropout (Smith et al., 2022). In a classroom where disruptive behaviour is prevalent, teachers often shift their focus from delivering instruction to managing classroom conduct, thus limiting opportunities for students to engage in creative problem-solving and innovative thinking. Effective classroom management is therefore crucial not only for maintaining discipline but also for creating an environment conducive to creativity. Interventions like the Good Behaviour Game have shown promise in reducing disruptive behaviour and creating an environment where students can freely express themselves and engage in creative tasks (Barrish et al., 1969).

Cultural Context and the Need for Context-Specific Instruments

In Pakistan, the term "disruptive behaviour" is often viewed through a local lens, reflecting the violation of school rules and disturbances in the teaching environment or student-teacher relationships. The use of Western-designed tools in non-Western educational contexts can lead to assessments and ineffective inaccurate interventions (Muna, 2019). This underscores the importance of developing culturally appropriate instruments for assessing disruptive behaviour in Pakistani schools. Understanding how cultural, familial, and societal values shape students' behaviour is essential for creating effective intervention strategies.

This study's goal is to develop valid and reliable scales of disruptive behaviour and academic creativity tailored for secondary school students in Pakistan. By doing so, it will provide educators and school administrators with the tools they need to effectively assess and address disruptive behaviour in the classroom.

Therefore, the current research is being conducted with the objective of developing instruments in Urdu language for measuring disruptive behavioural problems and academic creativity of school students. Items are developed in Urdu language which makes it easily apprehensible and intelligible for school students. Further the impact of disruptive behaviour on academic creativity of



students is being assessed. Strategies are developed to refine the disruptive behaviour of the students through experimental study interventions.

Statement of the Problem

The problem under this study is to see the impact of disruptive behaviour on academic creativity of school students. It includes development and validation of standardized tests. Strategies have been designed and practiced as interventions to refine the disruptive behaviours of the students in the light of pre-test & post-test through experimental study in Pakistani educational settings.

Research Gap

While numerous studies have examined the impact of disruptive behaviour on instructors' stress levels and students' academic performance, there is limited research on how such behaviour affects students' ability to think creatively (Sutherland et al., 2008). Even in well-organised and flexible learning environments, disruptive behaviour can inhibit students' capacity to engage in divergent thinking-a key component of creative production (Runco, 2014). According to Sawyer (2012), no existing scale effectively measures the interaction between creativity and behavioural issues in the classroom, though there are tools that assess these elements separately. A comprehensive and psychometrically valid scale for measuring both academic creativity and disruptive behaviour would offer valuable tools for researchers and educators alike.

Despite numerous strategies available for managing disruptive behaviour, few focus on promoting creativity and curiosity (Schunk & DiBenedetto, 2021). Many current interventions have not been tested in real-world classroom settings, highlighting the need for evidence-based programs that simultaneously reduce disruptive behaviour and nurture students' creative potential. This study seeks to address these gaps by developing and validating standardised scales to measure academic creativity and disruptive behaviour, designing an intervention to reduce disruptive behaviour, and experimentally testing the efficacy of this intervention.

In the past decade, there has been a notable increase in the development of tools for universal school-based screening of emotional and behavioural issues in the United States (Ardin.,

2020). However, supporting and sustaining these screening programs has become an increasingly critical topic of study. Notably, earlier research by Stork and Saunders (2002) revealed that students who scored higher on creativity tests—those who generated more ideas and provided greater detail were more likely to engage in misbehaviour. This is because creative activities often involve selfexpression, challenging norms, and questioning authority—behaviours that are sometimes seen as disruptive in a classroom setting. As a result, some teachers have even labelled creative students as "disactive" or as having Attention Deficit Hyperactivity Disorder (ADHD) (Baer, & McKool, 2014).

Given these challenges, this study aims to develop culturally appropriate instruments in the Urdu language to assess both disruptive behaviour and academic creativity among Pakistani school students. The items developed in Urdu will make the tools more accessible and comprehensible for the target population. Additionally, the study will assess how disruptive behaviour impacts academic creativity and will propose strategies for improving student behaviour through experimental interventions.

This research will provide educators, psychologists, school managers, and policymakers with valuable insights to address and modify the disruptive behaviour in the classroom. By filling the gaps in current knowledge, the study will contribute to the development of a more organized and creative learning environment, enabling better educational outcomes for students.

Research Objectives

Following will be the research objectives of the study:

- 1. To develop and validate a scale to identify the students with disruptive behaviour.
- 2. To develop and validate a scale to measure the academic creativity of students.
- 3. To find the impact of students' disruptive behaviour on their academic creativity.
- 4. To find the difference with respect to demographic variables (e.g. gender & parental qualification).
- 5. To develop strategies to refine students' disruptive behaviours in the light of pretest & post-test study findings.



- 6. To find the effect of interventions and strategies on students' disruptive behaviour.
- 7. To establish psychometric properties of the newly developed scales for measuring disruptive behaviours and academic creativity of students.

Research Questions

Following research questions are posed in the light of the research objectives:

- 1. How can a culturally sensitive scale be developed and validated to identify students in Pakistani educational settings, exhibiting disruptive behaviour?
- 2. How can a scale be developed to find the academic creativity of students?
- 3. What is the impact of students' disruptive behaviour on their academic creativity?
- 4. What is the difference with respect to demographic variables (e.g. gender & parental qualification).
- 5. What type of strategies can be developed to refine disruptive behaviours of the students in the light of pre-test & post-test study?
- 6. What is the effect of interventions and strategies on students' disruptive behaviour?

7. What are the psychometric qualities of newly constructed scales?

Delimitations of the Study

A significant number of public secondary schools operate within the public sector in Punjab. Owing to constraints in time and resources, it was practically infeasible for the researcher to gather data from the entire population. This study was limited to two districts in Punjab: Multan and Dera Ghazi Khan. It was restricted to secondary school teachers and students (both male and female) from these two districts.

Conceptual Framework

The following is a conceptual framework: Here are some key elements to consider:

Disruptive Behaviour

The disruptive behaviour concept has been discussed scientifically (Bean, 200s6; Coulby & Harper, 1985; Estrela & Ferreira, 2002; Veiga, 1996; 2007; Woolfolk, 2006) and, although

largely mentioned in specific literature, the concept school disruption is considered as the transgression of school rules, troubling learning conditions, teaching environment or relationship with school.

The specific dimensions of disruptive behaviour:

- Distraction-Transgression
- Schoolmates Aggression

• Teachers and Other Symbols of School Authority Aggression

Academic Creativity

Sternberg (1999) defined creativity as the capacity to find a solution that is both novel and appropriate. Appropriate adult support can help children develop their creativity and imagination. This allows students to solve their own problems while maintaining the flow of inspiration (Kiewra & Veselack, 2016).

The specific dimensions of Academic Creativity: It included five indicators:

- Curiosity and innovative skills
- Meta-cognition
- Brainstorming
- Cognitive Flexibility
- Thinking out of Box

METHODS AND PROCEDURES

The research was quantitative in nature, with an emphasis on systematic measurement and analysis of numerical data to address the objectives. Two different research designs were used in the application of its objectives to provide a complete and systematic view. Development and validation of the scales to measure disruptive behaviour and academic creativity were first carried out in the initial phase using survey design. This design enabled the collection of data from a representative sample, which was very important to the devising of the psychometric properties of the newly developed tools. Validity, reliability and factor structure of these properties were optimised, as the scales exhibited robust and valid ways for accurately measuring the intended constructs. The survey method established a structure to tool development which is followed by the phases of the study. In the second phase of the research, a single group, A-B-A experimental design was used to test the effects of interventions and strategies. It was constituted of three phases: baseline phase (A) for taking initial measurements on disruptive behaviour; intervention phase (B) of the strategies



that aim at refining disruptive behaviour; and repetition with post test phase (A), measurements were repeated at the post test to evaluate the intervention. The dual design of this study was designed to achieve both the advantages of survey and experimental methodologies. It allowed for the design of reliable instruments to measure critical variables, and the experimental design demonstrated the empirical evidence of the efficiency of the implemented interventions. Taken together, these designs were a rigorous and holistic framework to answer the research questions and systematically complete the study.

Population of the study

The population of this study comprised all students enrolled in grades 9 and 10 in public secondary schools across Punjab, as well as all secondary school teachers employed in these schools. According to the School Education Department Census (2024), there are 8,083 government high schools in Punjab, with a total student enrolment of 1,423,195 and 46,120 secondary school teachers currently in position. This population was selected to comprehensively address the study's objectives within the context of public secondary education in Punjab.

Sample of the Study

The study utilized a multi-stage cluster sampling technique to select the sample from the population of public secondary schools in Punjab. The sampling process began with the random selection of two districts, Multan and D.G. Khan, out of the 41 districts in Punjab. The total number of government secondary schools in these districts is 213 in Multan and 146 in D.G. Khan, making a combined total of 359 schools.

In the first stage, each school was considered a cluster. A total of 50 school clusters were randomly selected from the two districts using the balloting method, ensuring an equal representation of boys' and girls' schools. In the second stage, all secondary school teachers from the selected schools were involved to identify students exhibiting disruptive behaviour. From each selected school, 21 students were randomly chosen, resulting in a sample of 1050 students for the study. In the final stage, a purposive sampling method was used to select a single experimental group comprising 20 students with the highest levels of disruptive behaviour, as identified through validated tools. This experimental group was further divided by gender, with male students from Government Boys High School, Taunsa and female students from Government Girls High School, Taunsa forming separate groups. This structured sampling framework ensured a representative and comprehensive selection of participants while aligning with the study's objectives.

Sampling Framework

Total number of Divisions in Punjab: 10 Total no. of districts in Punjab: 41

Total number of Govt. schools in Punjab: 42950

Total number of enrolled students in Punjab: 10,585,944

Total number of enrolled Male students in Punjab: 5,098,569

Total number of enrolled Female students in Punjab: 5,487,001

Total number of secondary-level students in Punjab: 1,423,195

The total number of secondary school teachers (SST) in Punjab: 46120

Randomly selected districts----Multan & D.G.Khan

Total number of government secondary schools in Multan district: 213

Total number of secondary school teachers in Multan district: 1417

Total number of secondary school students in Multan district: 35082

Total number of government secondary schools in D.G Khan District: 146

Total number of secondary school teachers in D.G Khan District: 991

Total number of secondary school students in D.G Khan District: 27506

The sample size for this study was established with the Krejcie and Morgan (1970) sample size determination table, a recognised statistical approach for estimating an acceptable sample size based on a specified population. Krejcie and Morgan's table indicates that for a population of 62,588, the suggested sample size is 382, assuming a 95% confidence level and a 5% margin of error. This guarantees that the chosen sample accurately reflects the total population while preserving statistical validity. Here the sample size has been determined as 1050 which would reduce the margin of error, increase the confidence in findings and lead to more precise and a higher



statistical power for detecting effects. It would help to perform detailed analyses within subgroups (e.g., by gender and age) and improve generalizability of the findings, increasing the external validity of the study. Hence, increased sample size would enhance the study's overall validity, reliability, and the depth of analysis.

Instrumentation

An extensive literature survey was made. Two separate questionnaires were developed: one to identify the disruptive behaviour of the students; and the second to identify the academic creativity of the students. The Disruptive Behaviour focused questionnaire on: Distraction-Transgression; Schoolmates Aggression; teachers and Other Symbols of School Authority Aggression. The Academic Creativity Scale focussed on: Curiosity and Innovative Skills; Brainstorming; Meta-Cognition; Cognitive Flexibility; Thinking out of the Box. A panel of five experts was requested to verify the content and face validity of the instruments.

Brief Description of the Instruments

The demographic form includes the demographic data of institution type, namely: gender, and age. Disruptive Behaviour Scale and Academic Creativity Scale were used to identify behavioural problems and creativity of secondary level students. The assessment utilised a five-point Likert scale.

Instrument Development and Validation

Disruptive Behaviour Scale Development Phases In Phase I, Disruptive Behaviour Scale was developed reviewing the previous developed scales for identification of disruptive behaviour.

In phase II, items were developed by reviewing existing previous literature.

In phase III, Items were evaluated by experts.

In phase IV, a try-out study by students was conducted.

In phase V, reliability of the developed scale was measured through Split-half method of reliability.

In phase VI, concurrent and construct validity was be measured.

In Phase VII, the recently created scales' psychometric characteristics were validated.

In phase VIII, the same developed scale of disruptive behaviour was utilized to identify students with high disruptive behaviour.

In phase IX, one experimental group will be formed comprising twenty students based on highly disruptive behaviour dimensions (through purposive sampling). That single group was formed separately of male and female students; Government Boys High School & Government Girls High School Taunsa.

In phase X, the same developed scales of disruptive behaviour were utilized as pre-test for that single group.

In phase XI, that single experimental group was dealt and taught through remedial activities on daily basis to modify their behaviour in order to bring it to moderate level.

Phase XII: The intervention duration was of three months.

In phase XIII, the effect of interventions and strategies on students' disruptive behaviour was examined through post-test, after three months.

In phase XIV, strategies were validated though applying t test (t-independent for gender & tdependent for pre-test & post-test).

Academic Creativity Scale Development Phases

In Phase I, Academic Creativity Scale was developed, reviewing the previous developed scales to measure the academic creativity.

In phase II, items were generated on the basis of review of previous literature.

In phase III, expert evaluation of items was done through pilot testing.

In phase IV, a try-out study by students was conducted.

In phase V, reliability of the developed test was measured through Split-half method of reliability.

In phase VI, concurrent and construct validity was measured.

In Phase VII, psychometric properties of the newly developed scales were established.

Data Collection

Data for the study was collected through scheduled visits to the targeted schools in the districts of Multan and D.G. Khan. The researcher employed a systematic and structured approach to ensure accuracy and efficiency in the data collection process. Prior to initiating the data collection, the researcher invested considerable time in building a positive rapport with the key stakeholders. Multiple meetings were held with principals and head teachers of the selected secondary schools to establish trust and



communicate the purpose, significance, and scope of the study. It was very important to this phase of rapport building so as to get the cooperation and support of both school administration and staff. This was also done through organising meetings with secondary school teachers, explaining the objectives of the research as well as its role in the data collection process. By so doing, it made for their active participation and willingness to help in the process of identifying disruptive student and in making suitable response to these students. The formal permission was obtained from the administrative heads of any of the chosen school concerning conducting the study and collecting data from the teachers and students. After permission, data collection was done in welldefined manner. Teachers and selected students were given a copy of the research instrument. The clear instructions were given to make sure that the able respondents were to complete the questionnaires correctly.

There was adequate time to fill out the forms without rushing and the potential for errors was minimized. The researcher ensured high response rate and data reliability by frequent visits during school trips checking up on the research subjects. Finally, this proactive approach enabled a 100% response rate in all cases; the process attests both to the researcher's strategy and the cooperation of the participants. Data collection process observed all ethical research work. The researcher made sure that all the responses remained confidential and that the participants are being kept anonymous throughout the study. This was an allaround approach which not only contributed to a successful data collection but allowed space for meaningful and acceptable analysis as well.

Data Analysis

Using the developed scales, factor analysis was run on the data to assess the underlying structure of the data. The first purpose of this analysis was to determine the component factors responsible for the variance in responses across items in the scales. A varimax rotation which is orthogonal rotation method, which maximizes the variance of the factor loadings, was used in this factor analysis. Thus, the scales were robust in measuring relevant dimensions of the constructs, and the results shown a significant portion of the variance explained by the extracted factors. The scales were validated through this process and the items were deemed to be related to the factors in question (disruptive behaviour and academic creativity). Summary describing and giving general idea about the data were made through descriptive statistics. This included calculating the mean score, that is, an aver score per item, factor and overall scale, in order to understand the central tendency in responses. Also, the standard deviation (SD) was calculated to estimate the variability or dispersion of the data around the mean to gain an understanding of how much variation exists among participants' responses. The standard deviation measures more variability if the number is higher, and it provides more consistency if the number is lower. Finally, the frequency and per cent of response for each item were determined to see how often the respondents reported certain behaviour or traits, like disruptive behaviour or academic creativity.

These descriptive measures worked as a whole to give a clear picture of the data, patterns and trends that could be used for further analysis. Inferential statistics, which is Paired Sample t test and Analysis of Variance (ANOVA), were used to answer the research questions. In particular, the means of two related groups were compared by means of the paired sample t test to examine if there were any significant changes in their disruptive behaviour and academic creativity before and after the intervention. The purpose of this test was to determine whether or not the intervention statistically altered the targeted behaviour and creativity, and so provided crucial onto whether the strategies information implemented were effective or not. However, for comparing the means of three or more groups to investigate the differences among different demographic categories like gender or school type, ANOVA was employed. This analysis turned out to be particularly important in ascertaining whether the demographic factors explained disruptive behaviour and academic creativity.

If there were found to be differences, post-hoc tests such as the Bonferroni test were conducted to determine where between groups these differences lie. Together, these inferential statistical techniques permitted the researcher to make inference about data and to assess the influence of the various constants – demographic variables or interventions – on students' disruptive behaviour and academic creativity. Finally the data analysis process included factor



analysis for the scales being validated, to summarize the data, descriptive statistics, inferential statistics (paired sample t-test and ANOVA) to make comparisons between groups. With these analyses, we had a full understanding of the data and their nexus with the disruptive behaviour and academic creativity relationship as well as the effect of the targeted interventions.

Ethical Considerations

The research process was followed by the researcher according to some key ethical guidelines. Before data collection, all participants gave permission for data collection; in doing this, it confirmed that they were willing to participate. Parental consent in the form of assent was also obtained from students in the experimental group, to ensure ethical compliance. The researcher kept the participants' information strictly confidential, on the condition that there is no revealing their identities in all records, reports, newsletters, and so on. The researcher made sure the data files were well prepared for verification to ensure the accuracy and reliability of the data. The involvement of those that assisted in the investigation, partook in data analysis on;, or helped prepare research reports was also acknowledged, so that their contribution was duly Developing acknowledged. such ethical considerations helped in doing justice to the research integrity and ensures that the rights and privacy of the participants are protected.

Results and Findings

Correlations	among	the fact	ors of D	Disruptive	Behaviour	Scale
Table 1						

	C	Correlations			
Factors		DT	SA	TOSSAA	Total DB
DT	Pearson Correlation	1	.833(**)	.476(**)	.943(**)
	Sig. (2-tailed)		.000	.000	.000
	N		1011	1011	1011
SA	Pearson Correlation		1	.534(**)	.953(**)
	Sig. (2-tailed)			.000	.000
	Ν			1011	1011
TOSSAA	Pearson Correlation			1	.641(**)
	Sig. (2-tailed)				.000
	Ν				1011
Total DB	Pearson Correlation				1
	Sig. (2-tailed)				
	Ν				

** Correlation is significant at the 0.01 level (2-tailed).

DT-Distraction-Transgression

SA-Schoolmates Aggression

TOSSAA-Teachers and Other Symbols of School Authority

The value of r in DT and SA is .083 which implies a strong positive correlation. Higher values of DT are related with higher values of SA. P value of the correlations is 0.000 which means that they are statistically significant at this level. The chance of random relationships cannot be considered. N=1011 which implies large sample having reliability of the analysis.

The value of r in DT and Total DB is 0.943 which implies a strong positive correlation. Higher values of DT are related with higher values of Total DB. P value of the correlations is 0.000 which means that they are statistically significant at this level. The chance of random relationships cannot be considered. N=1011 which implies large sample having reliability of the analysis.

The value of r in SA and Total DB is .953 which implies a strong positive correlation. Higher values of Total DB are related with higher values of SA. P value of the correlations is 0.000 which means that they are statistically significant at this level. The chance of random relationships cannot be considered. N=1011 which implies large sample having reliability of the analysis. It means SA is closely related to Total DB.

The value of r in TOSSAA and DT is 0.476 which implies a moderate positive correlation.

The value of r in TOSSAA and SA is 0.534 which implies a moderate positive correlation between the two.



The value of r in TOSSAA and Total DB is 0.641s which implies a moderate-to- strong positive correlation between the two. **Correlations among the factors of Academic Creativity Scale Table 2**

Factors		Curiosity	Metacognition	Brainstorming	Cognitive Flexibility	Thinking	Total Creativity
Curiosity	Pearson Correlation	1	.676(**)	.576(**)	.545(**)	.383(**)	.610(**)
	Sig. (2-tailed) N		.000 1012	.000 1012	.000 1012	.000 1012	.000 1012
Metacognition	Pearson Correlation		1	.705(**)	.717(**)	.613(**)	.785(**)
	Sig. (2-tailed) N			.000 1012	.000 1012	.000 1012	.000 1012
Brainstorming	Pearson Correlation			1	.814(**)	.742(**)	.861(**)
	Sig. (2-tailed) N				.000 1012	.000 1012	.000 1012
Cognitive Flexibility	Pearson Correlation				1	.855(**)	.937(**)
1101101110	Sig. (2-tailed) N					.000 1012	.000 1012
Thinking out of Box	Pearson Correlation					1	.948(**)
	Sig. (2-tailed) N						.000 1012
Total Creativity	Pearson Correlation Sig. (2-tailed) N						1

** Correlation is significant at the 0.01 level (2-tailed).

This table correlation presents Pearson coefficients to examine the relationships between various cognitive factors and total creativity. The first factor, Curiosity, shows positive and significant correlations with all other factors: Metacognition (.676), Brainstorming (.576), Cognitive Flexibility (.545), Thinking out of Box (.383), and Total Creativity (.610), all at the 0.01 significance level. This suggests that as curiosity increases, so do the levels of metacognition, brainstorming, cognitive flexibility, thinking, and overall creativity. The relationships are all moderate to strong, indicating that curiosity plays a crucial role in enhancing creative thinking processes.

The second factor, **Metacognition**, displays the strongest correlations across the table. It is positively correlated with **Brainstorming** (.705), **Cognitive Flexibility** (.717), **Thinking out of Box** (.613), and **Total Creativity** (.785), all significant at the 0.01 level. These high correlation values

suggest that individuals who eng in reflective thinking (metacognition) are more likely to exhibit strong brainstorming abilities, cognitive flexibility, and creative thinking. The consistent strength of these correlations highlights the importance of metacognitive skills in fostering creativity.

Finally, the Brainstorming, Cognitive Flexibility, and Thinking out of Box factors all show strong and highly significant positive correlations with Total Creativity, with values of .861, .937, and .948, respectively. The strongest correlation is observed between Thinking and Total Creativity. underscore These results the direct and skills substantial impact that related to brainstorming, flexible thinking, and cognitive adaptability have on overall creativity. In summary, the table illustrates that curiosity, meta-cognition, brainstorming, cognitive flexibility, and thinking are all highly interrelated and collectively contribute to the development of creative potential.



Gender wise difference on disruptive behaviour scale Table 3

	Gender	N	Mean	Std. Deviation	t	р
DT	Male	500	3.1795	.69528	-2.338	.804
	Female	511	3.2834	.71694		
SA	Male	500	3.1555	.70473	-4.302	.961
	Female	511	3.3473	.71218		
TOSSAA	Male	500	3.0991	.89470	-4.302	.875
	Female	511	3.3037	.91843		
Total DB	Male	500	3.1594	.64648	-3.727	.570
	Female	511	3.3139	.67150		

Distraction-Transgression (DT), Schoolmates Aggression (SA), Teachers and Other Symbols of School Authority Aggression (TOSSAA), and the Total Disruptive Behaviour (DB) score. For Disruptive Thoughts, males had a mean score of 3.1795 with a standard deviation of 0.69528, while females scored slightly higher with a mean of 3.2834 and a standard deviation of 0.71694. The t-test result of -2.338 and a p-value of 0.804 indicate that the difference in means is not statistically significant, suggesting no meaningful gender difference in this dimension.

In the case of Social Aggression, males had a mean score of 3.1555 with a standard deviation of 0.70473, whereas females had a higher mean score of 3.3473 with a standard deviation of 0.71218. Despite this difference, the t-test value of .4.302 and the p-value of 0.961 confirm that the observed difference is not statistically significant. Similarly, for Teachers and Other Symbols of School Authority Aggression (TOSSAA), males

scored a mean of 3.0991 with a standard deviation of 0.89470, and females had a mean of 3.3037 with a standard deviation of 0.91843. Again, the ttest result of -4.302 and a p-value of 0.875 indicate no statistically significant difference between genders.

For the Total Disruptive Behaviour score, males had a mean of 3.1594 with a standard deviation of 0.64648, and females scored a slightly higher mean of 3.3139 with a standard deviation of 0.67150. The t-test value of -3.727 and a p-value of 0.570 suggest that this difference is also not statistically significant.

Overall, while females showed slightly higher mean scores across all dimensions of disruptive behaviour, none of these differences were statistically significant as indicated by the consistently high p-values across the analyses. This suggests that gender does not play a significant role in determining scores on the disruptive behaviour scale.

Table 4						
	Gender	Ν	Mean	Std. Deviation	t	р
Curiosity	Male	500	3.1948	.78818	-3.708	.162
	Female	512	3.3872	.86024		
Metacognition	Male	500	3.1243	.78836	-3.843	.417
	Female	512	3.3273	.88798		
Brainstorming	Male	500	3.0460	.81949	-5.788	.404
Ŭ	Female	512	3.3890	1.04871		
Cognitive Flexibility	Male	500	3.1231	.75126	-4.102	.024
	Female	512	3.3958	1.28817		
Thinking	Male	500	3.0606	.70404	-4.642	.202
Ū.	Female	512	3.4587	1.78690		
Total Creativity	Male	500	3.1005	.65590	-5.099	.130
	Female	512	3.4093	1.18889		

Gender-wise difference on academic creativity scale Table 4

The data presented reveals the differences in and females, with statistical values provided for various creativity-related measures between males each.



Looking at **Curiosity**, females have a higher mean (3.3872) than males (3.1948), indicating that women report slightly more curiosity than men. However, the p-value of 0.162 suggests that this difference is not statistically significant, meaning the difference could be due to chance rather than an actual gender difference in curiosity.

For **Metacognition**, females again have a higher mean score (3.3273) compared to males (3.1243). However, with a p-value of 0.417, the difference between the genders is not statistically significant. This suggests that the gender difference in metacognition scores is likely not meaningful from a statistical perspective.

In the case of **Brainstorming**, females score higher (3.3890) than males (3.0460), but like the previous measures, the p-value of 0.404 indicates no significant difference between the two groups. Thus, while females appear to perform better in brainstorming tasks, this difference is not statistically supported. When it comes to **Cognitive Flexibility**, females have a higher mean score (3.3958) than males (3.1231), and the p-value of 0.024 indicates a statistically significant difference. This suggests that females may have better cognitive flexibility than males in this sample, and this difference is unlikely to be due to random variation.

For **Thinking out of Box**, females again outperform males with a higher mean score (3.4587) compared to males (3.0606). However, the p-value of 0.202 shows that this difference is not statistically significant, indicating that the observed difference might not be meaningful.

Finally, for **Total Creativity**, females have a higher mean (3.4093) than males (3.1005), but with a pvalue of 0.130, this difference is not statistically significant. While the raw scores suggest that females are more creative overall, the statistical analysis does not support this as a significant finding.

Tab	le	5	
Luo	10	_	

	Gender	Ν	Mean	Std. Deviation	Std. Error Mean	
TotalPre	Male	20	3.0080	.46807	.10466	
	Female	20	3.2860	.44755	.10007	_

Both the male and female groups comprise 20 participants each. Males' mean score is 3.0080 and females' mean score is 3.2860. This entails that females scored comparatively higher than those of males on the Total Pre measure.

The standard deviation of males is 0.46807 and for females is 0.44755. This indicates that the variability of scores within each group is similar and small and scores of most participants are clustered around their respective group means. Males have standard error of the mean as 0.10466 and females have 0.10007 (SEM). Both the groups have low SEM values which reflect that the sample means are likely to be reliable estimates of their respective population means.

A noticeable difference between males and females in Total Pre scores is found. The values of standard deviation and standard error are low indicating that the results are consistent and reliable for both groups. Table 6

		Tabl	eo						
	Levene's	Test	for	Equality	of	t-test	for	Equality	of
	Variances	3			-	Mean	s		
	F		Sig			t		df	
Total Pre- Equal variances assumed	.060		.80)8		-1.920)	38	
test Equal variances not						-1.920)	37.924	
assumed									

In Levene's test, F = 0.060 and Sig. = 0.808. The significance value is much greater than that of conventional value of threshold that is 0.05. It means that the assumption of equal variance has not been violated.

The t-value (-1.920) reflects the difference in mean scores relative to the variability within the groups.

The degrees of freedom (**df** = 38) are based on the total sample size (N = 40) and account for the number of groups compared. The "Equal variances assumed" row is valid, the test statistic suggests that there is some difference in **Total Pre** scores between males and females, with females having higher mean scores.



Table 7 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Total Post	2.3980	40	.38006	.06009
	Total Pre	3.1470	40	.47343	.07486

The table gives descriptive statistics for Total Post and Total Pre scores that have been measured for the same group of 40 participants. This engages a paired samples design, where each participant contributes data to both conditions. The mean score for Total Pre is 3.1470, while the mean score for Total Post is 2.3980. This indicates a decrease in scores from Total Pre to Total Post, with a mean difference of approximately -0.749. This decrease reflects the impact of the intervention, between the two measurements.

The sample size for both Total Pre and Total Post is 40; meaning data was collected for all 40 participants in both conditions. This ensures the comparison is balanced and based on the same individuals, reducing variability due to individual differences. The standard deviation for Total Pre is 0.47343, and for Total Post, it is 0.38006. These values indicate the variability in scores around the mean for each condition. The larger standard deviation for Total Pre suggests that participants' scores were more spread out during the pre-measurement compared to the post-measurement, where scores were more consistent.

The SEM for Total Pre is 0.07486, and for Total Post, it is 0.06009. The smaller SEM for Total Post suggests that the post-measurement mean is estimated with slightly greater precision than the pre-measurement mean.

Table 8

Table 8					
		Paired Dif	ferences		
					95% Confidence
					Interval of the
					Difference
		Mean	Std. Deviation	Std. Error Mean	Lower
Pair 1	Total Post – Total Pre	74900	.39745	.06284	87611

The mean decrease of 0.749 points between Total interval gives the impression that a consistent Pre and Total Post shows that participants decline in scores, which points to a shift away showed a decrease in scores. The decrease in from disruptive behaviour. It also reflects that scores indicates that the intervention successfully participants are no longer engaging in disruptive led to a reduction in disruptive actions. The behaviour that previously interfered with their confidence interval of (-0.876, -0.622) implies work or the task at hand. This decrease puts that the observed difference is statistically forward that the intervention likely achieved its significant, and the range does not include zero. goal of reducing disruptive behaviour in This reflects the decrease in performance is not participants. The fact that the confidence interval is entirely negative (indicating consistent declines) likely to have occurred by chance, supporting the idea that the intervention had a genuine effect on also indicated that disruptive behaviour were participants' behaviour. The negative confidence consistently reduced.

Table 9 Paired Samples Test

Faired	Samples Test					
		Upper 05% Confi	lanca			
		9570 Conn	lence			
		Interval of	the			
Paired Differences		Difference				
			t	df	sig	
Pair 1	TotalPost - TotalPre	62189	-11.919	39	.000	
The mean difference between Total Post and Total			suggests that pa	rticipants, o	on average, scored lower	
Pre is -0.62189. This negative mean difference			on the Total P	ost measure	ement compared to the	<u>.</u>



Total Pre measurement. In the context of an intervention to reduce disruptive behaviour, this result reflected that participants became less disruptive. A t-value of -11.919 is quite large, indicating a strong effect and that the difference between the Total Pre and Total Post scores is highly significant. This result indicates that the change observed is not likely due to chance, meaning that the intervention likely had a real and meaningful impact on the participants' behaviour. The p-value (0.000) is less than 0.05, indicating that the difference between Total Pre and Total Post is statistically significant. This result suggests that the observed change in performance is highly unlikely to be due to random chance.

In the context of the intervention, the statistical significance supports the idea that the intervention had a meaningful effect, likely resulting in a reduction in disruptive behaviour among participants. The 95% confidence interval for the mean difference is (-0.87611, -0.62189), which does not include zero. This further confirms that the negative change in scores is statistically significant and that the true mean difference in the population is likely to fall within this range. In the context of the intervention, this suggests that the reduction in disruptive behaviour is consistent across participants, and the intervention likely had a real, measurable effect on reducing disruptive actions.

The paired samples test results indicate a statistically significant decrease in scores from Total Pre to Total Post, with a mean decrease of -0.62189. This suggests that participants, on average, performed worse in the postmeasurement, which can be interpreted as a disruptive behaviour. reduction in The statistically significant t-value of -11.919 and the confidence interval that does not include zero support the conclusion that the intervention successfully modified behaviour. The reduction in disruptive behaviour indicates that the intervention had a positive effect in addressing the primary goal of behaviour modification.

Discussion

This study had two parts. In first part of the study two scales were developed-Disruptive Behaviour Scale and Academic Creativity Scale. The second part was of experimental nature where strategies were validated through intervention to modify the disruptive behaviour of the students. The study investigated the relationship among the factors of both the developed scales among secondary school students with a focus on identifying patterns, correlations, and implications for educational practices. The findings revealed nuanced interconnections between disruptive behaviour and its components with academic creativity, offering substantial insights into the behavioural and creativity development of adolescents, applying intervention to validate the strategies.

The study's first objective was to develop and validate a scale to identify the students with disruptive behaviour.

The results demonstrated that three factors of disruptive behaviour are strongly and closely related: distraction-transgression, schoolmate's aggression and teachers and other symbols of school authority aggression. These results provide evidence that secondary school students exhibit a consistent level of disruption in these. The findings also reveal variations within the demographic group, including differences influenced by gender and age, which enrich the understanding of how these factors shape behaviour during adolescence.

Disruptive Behaviour scale plays a pivotal role in identifying level and strength of disruptive behaviour among secondary students. The observed consistency across factors of disruptive behaviour scale suggests a baseline potential for adaptability regarding desired behaviours among students, but the variations highlight areas where targeted interventions may further enhance the flow and frequency of desired modification of behaviours. The results effectively address the first research question by providing a comprehensive assessment and identification of disruptive behaviour among the sample population, demonstrating its relative strengths and identifying areas for growth.

The second and third objectives were to develop and validate a scale to measure the academic creativity of students and to find the impact of students' disruptive behaviour on their academic creativity. The detailed findings point to a complex relationship between cognitive abilities, creativity, and aggression-related behaviours, with **thinking out of box** and **total creativity** having the most pronounced effects. The test's overall reliability and validity, however, were established,



confirming its effectiveness in measuring general creativity-oriented abilities. These findings not only address the corresponding research questions but also contribute to the methodological rigor of future academic creativity assessments.

The study's fourth objective found the difference with respect to demographic. These findings indicate that it may not be a strong determinant of disruptive behaviour levels in this dataset. Total creativity tends to be higher in younger students, particularly those aged 10 and 12, and declines as students grow older. These findings suggest a developmental trend in creativity, emphasizing the importance of fostering and maintaining creative abilities during adolescence to counteract this decline. Schools and educators can play a crucial role in providing environments and opportunities that encourage creativity throughout students' academic journeys.

Regarding the study's fifth objective, strategies were developed to refine students' disruptive behaviours in the light of pre-test & post-test study strategies findings. The were: Positive reinforcement, Negative reinforcement, "Extinction" or "Ignore" technique, Punishment, Systematic desensitization, Over-correction, Response cost, Shaping and Precision requests. Study's sixth objective was to find the effect of and on students' interventions strategies disruptive behaviour. In table 9, the paired samples test results indicate a statistically significant decrease in scores from Total Pre to Total Post, with a mean decrease of -0.62189. This suggests that participants, on average, performed worse in the post-measurement, which can be interpreted as a reduction in disruptive behaviour. The statistically significant t-value of -11.919 and the confidence interval that does not include zero---support the conclusion that the intervention successfully modified behaviour. The reduction in disruptive behaviour indicates that the intervention had a positive effect in addressing the primary goal of behaviour modification.

Study's seventh objective was to establish psychometric properties of the newly developed scales for measuring disruptive behaviours and academic creativity of students. Descriptive statistics provided an overview of the respondents' demographics, their approach and performance. Inferential statistics, including factor analysis, independent sample t-tests and Pearson's correlation, partial correlation and ANOVA, were used to assess and evaluate differences by gender and the relationship among factors and variables.

The study results, nonetheless, show that triggers previously thought to be inhibitors of creativity, such as constraints and rule-deviating behaviour, can lead people to be more creative (Salcescu, 2014).

Similar to response inhibition and temperament analysis, we first examined associations of creativity score with the two broad scales as well as the total problems scale of CBCL. For externalizing problems, controlling for starting grade, we observed a significant positive association with the TTCT-F average scores (Spearman's *rho* = 0.30, *p* = 0.034; Fig. 4B). This finding suggests that higher externalizing behaviour is positively associated with creativity (Saggar et al, 2019).

Trait-level rule-breaking positively related to daylevel creativity, providing support to Hypothesis 1b. Although not hypothesized, day level problemsolving demands were also positively related to day-level creativity. When breaking the rules relates to creativity (Petrou et al., 2020).

In clinical settings, oppositional and aggressive children have been observed to have less creativity in their play than children with average levels of disruptive behaviour. Additionally, research has shown that children with high levels of disruptive behaviour have difficulty using creative processes to generate multiple solutions to problems (Shure, 2000).

In addition, it was predicted that creativity would significantly negatively relate to expression of negative affect and significantly positively relate to affect regulation. That is, higher levels of creativity would be associated with less frequent expression of negative affect and higher levels of affect regulation. Finally, it was predicted that disruptive behaviour would significantly negatively relate to creativity and that negative affect expression and affect regulation would mediate this relationship. The results suggest that there is a relationship between disruptive behaviour and creativity such that higher levels of disruptive behaviour are related to lower levels of creativity as assessed both by children's divergent thinking and caregiver report of creativity. (Jennifer et al., 2011).

Affective processes such as the expression of negative affect and affect regulation may also have implications for creative ability. Children with



disruptive behaviour problems express negative affect more frequently than other children and display higher levels of behaviour such as aggression and defiance that are related to negative affect states (Merrell, 1999). In addition, children with disruptive behaviour have been shown to display more negative affect in their play and during creative tasks (D'Angelo, 1995; Singer & Singer, 1990).

There has been some research support for the relationship between creative play and disruptive behaviour. D'Angelo (1995) found that children labelled by their teachers as displaying high levels of disruptive behaviour had a significantly lower quality of fantasy during a pretend play task than children with average levels of disruptive behaviour. Gardner (1987) also found differences in the creative play between children with disruptive behaviour and their peers. Children with disruptive behaviour problems spent less time in constructive play and more time in aimless activity than children with average behaviour.

Children with disruptive behaviour problems consistently demonstrate deficits in their ability to generate multiple solutions on problem solving tasks (Shure, 2000). This study suggests that one mechanism responsible for that deficit may be divergent thinking. Parent-reported poor disruptive behaviour were negatively related to children's performance on a task that required transformational (i.e., flexibility) and divergent thinking (i.e., fluency) capability. Disruptive behaviour also negatively related to parent report of children's creativity. It is noteworthy that disruptive behaviour related negatively to both a behavioural measure of creative ability and parent report of creativity, which measure two different aspects of children's creativity.

According to Butler (2003) and Whiteneck (2005) prevention and intervention strategies should be used for improving the students' classroom Robert, (2008) behaviour. conducted an exploratory study for determining the nature and the underlying causes of adult students' disruptive classroom behaviour. Moreover, he tried to develop the prevention, and intervention strategies for the management of disruptive classroom behaviour. He conducted a survey on pre-service adult educators at a college in New York State to explore their opinions and experiences about classroom disruption. He emphasized on the need to identify effective

prevention and intervention strategies for dealing with students' disruptive behaviour in university classrooms.

The findings of this study have significant implications for educational practices and policies. The developed scales of disruptive behaviour and academic creativity can be utilized to measure the disruptive behaviour and academic creativity of the secondary level students. First, the strong correlations between disruptive behaviour factors and academic creativity factors suggest the potential for targeted interventions to modify students' disruptive behaviour. For instance, strategies like Positive reinforcement, Negative reinforcement, "Extinction" or "Ignore" technique, Punishment, Systematic desensitization, Overcorrection, Response cost, Shaping and Precision requests can be practised to modify the disruptive behaviour of the students.

Gender dynamics in disruptive behaviour and academic creativity warrant attention. These demographic factors may influence the observed patterns of both the disruptive behaviour and academic creativity, underscoring the importance of designing age-appropriate and gender-sensitive interventions. For instance, programs that cater to the developmental needs of younger adolescents or that address gender-specific disruptive behaviour and academic creativity could foster more equitable educational outcomes.

Additionally, the study underscores the importance of balancing foundational disruptive behaviour and academic creativity activities in the classroom. Curricula should aim to integrate problem-solving and creative thinking exercises with traditional academic content, thereby equipping students with the skills to adapt and thrive in diverse contexts. Teacher training programs can also play a pivotal role by equipping educators with strategies to modify disruptive behaviour and foster academic creativity, such as encouraging open-ended problem-solving and facilitating collaborative learning experience.

CONCLUSION

This study focussed on developing and validating two scales: Disruptive Behaviour Scale and Academic Creativity Scale for secondary school students. By delving into interplay of dimensions such as distraction-transgression, school-mates aggression, teachers and other symbols of school authority aggression, curiosity and innovative



skills, meta-cognition, brainstorming, cognitive flexibility and thinking out of box, the research provided valuable insights into students' behavioural and creativity profiles. These findings hold significant implications for educational practices and policies aimed at fostering wellrounded behavioural modification and growth as well as creative development. The focus was chained with intervention protocol that resulted in behaviour modification of the secondary school students as well as the validation of the intervention.

The Disruptive Behaviour Scale designed to measure disruptive behaviour and Academic Creativity Scale designed to measure academic creativity of the secondary school students. Both the scales proved reliable and valid, offering a robust tool to assess diverse behavioural and creative faculties.

These findings underscore the importance of fostering these skills to enhance student s' capacity to address academic and real-world challenges. Curiosity and innovative skills, meta-cognition, brainstorming, cognitive flexibility and thinking out of box are vital for equipping students to succeed in increasingly dynamic and complex environments.

The demographic analysis revealed that in secondary school students all dimensions of disruptive behaviour are significantly dissimilar to age. This entails that disruptive behaviour may be consistently present in all groups. The behaviour like aggression towards teachers or other school authorities remains changing with the passing of time whereas the behaviours like Distraction-Transgression and aggression among school mates are not influenced by the age. The metacognition, brainstorming, cognitive flexibility, thinking and total creativity reflect significant differences across groups. It means that these dimensions of creativity are affected by whereas curiosity is not influenced by age. Females showed slightly higher mean scores across all dimensions of disruptive behaviour. This suggests that gender does not play a significant role in determining scores on the disruptive behaviour scale, suggesting that there are no significant differences in disruptive behaviour across the groups.

Total creativity tends to be higher in younger students, particularly those aged 10 and 12, and declines as students grow older. These findings suggest a developmental trend in creativity, emphasizing the importance of fostering and maintaining creative abilities during adolescence to counteract this decline. Schools and educators can play a crucial role in providing environments and opportunities that encourage creativity throughout students' academic journeys.

Correlation analysis further illuminated that the cognitive factors like thinking out of box and all other dimensions of creativity are consistently linked to various forms of aggression, especially teachers and authority aggression and other dimensions of disruptive behaviour. Curiosity, metacognition and brainstorming show mixed and weaker associations, with stronger links to teachers and other symbols of school authority aggression and other dimensions of disruptive behaviour. This points to a complex relationship between cognitive abilities, creativity, and aggression-related behaviour, with thinking out of box and total creativity, having the most pronounced effects.

The paired sample test results revealed that participants became less disruptive. This result indicates that the change observed is not likely due to chance, meaning that the intervention likely had a real and meaningful impact on the participants' behaviour which can be interpreted as a reduction in disruptive behaviour. The reduction in disruptive behaviour indicates that the intervention had a positive effect in addressing the primary goal of behaviour modification.

These findings underline the need for a holistic approach to education, where behaviour and creativity are addressed simultaneously. Educational practices must move beyond repeated versions of teaching and learning and focus on fostering creativity and refined behaviour. From a policy perspective, these results emphasize the importance of aligning educational initiatives with Sustainable Development Goal 4 (SDG4), which advocates for inclusive, equitable, and quality education. Policymakers should allocate resources for professional development programs that train educators to incorporate creativity-enhancing strategies into their teaching that would help grow refined behaviour. Additionally, the the integration of creativity-focused assessments can provide actionable insights into students' strengths and areas for improvement, enabling a more tailored and effective educational experience. This should be paralleled with activities and



strategies to develop and shape the refined behaviour.

In conclusion, this study has demonstrated that desired refined behaviours and academic creativity are integral to students' social, intellectual and practical success. By fostering desired refined behaviours alongside foundational creativity skills, educators and policymakers can prepare students to thrive in a rapidly changing world. The correlations observed between these constructs suggest opportunities for leveraging one to strengthen the other. Strategies and activities must be employed and practised as this practice proves to be helpful to modify the disruptive behaviour of the students. Moreover, the study's emphasis on equity across gender and the developmental needs of younger adolescents underscores the importance of inclusive and adaptive educational practices. Ultimately, this research reaffirms the critical role of welldeveloped behaviour and academic creativity in shaping future-ready learners and highlights the need for continued exploration into its development and applications in education.

Recommendations

In the light of the results and discussion, following are the recommendations of the study: 1. Educators may be provided training on the strategies to integrate behaviour-modificationfocused activities, such as Positive reinforcement, Negative reinforcement, "Extinction" or "Ignore" technique, Punishment, Systematic desensitization, Over-correction, Response cost, Shaping and Precision requests, into traditional content delivery.

2. Educators may be provided training on the activities to integrate Curiosity and Innovative Skills; Meta-Cognition; Brainstorming; Cognitive Flexibility; Thinking out of the Box into traditional content delivery.

3. The curriculum developers may incorporate exercises focused on Curiosity and Innovative Skills; Meta-Cognition; Brainstorming; Cognitive Flexibility; Thinking out of the Box to strengthen and foster creativity.

4. In classrooms, teachers may encourage open-ended problem-solving activities and collaborative learning to foster creativity.

5. School educators may arrange workshops/seminars and target younger adolescents to support their behavioural

developmental growth and academic creativity skills.

6. Advocate for policies emphasizing the inclusion of behaviour-modification-oriented course work and creativity-oriented activities in educational frameworks, aligning with the Sustainable Development Goal 4 (SDG4) of providing quality education.

Implications for the Future Researchers

Following may be the implications for the future researchers:

1. The sample was drawn from three districts in Punjab, which may limit the generalizability of the findings to other regions or populations. Future research should expand the sample to include diverse geographic and socioeconomic groups to enhance the robustness of the findings.

2. The study primarily employed crosssectional data, which limits the ability to examine developmental changes in disruptive behaviour and academic creativity over time.

3. Longitudinal studies could provide deeper insights into how these constructs evolve during adolescence and how targeted interventions influence their trajectories.

4. The weak correlation observed between certain constructs, such as thinking out of box and curiosity factors; teachers and other symbols of school authority and distraction-transgression factors having moderate correlation; teachers and other symbols of school authority and schoolmates aggression having moderate correlation, highlight areas for further investigation, including the potential moderating effects of environmental or instructional variables.

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