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The Interplay of Creative Imagination and Imagination Factors in Gifted Students: A Structural Equation Modeling Analysis

Abdelnasser D. Al-Jarrah[1], **Fatima Ahmed Al-Jasim**[2], **Malek N. Awawdeh**[3], and **Aysha Buhusain**[4]

1) Yarmouk University, Faculty of Educational Sciences, Jordan, ORCID: 0000-0002-3273-6130
2) Arabian Gulf University, Special Education Department, Bahrain, ORCID: 0000-0002-9691-9032
3) Arabian Gulf University, Special Education Department, Bahrain, ORCID: 0009-0007-8699-9634
4) Arabian Gulf University, Special Education Department, Bahrain, ORCID: 0009-0005-8839-866X

ABSTRACT

Creative imagination plays a crucial role in schools, enhancing students' ability to think critically and innovate. By integrating imaginative practices into the curriculum, educators can inspire a love for learning and help students develop essential skills for the future. This focus on creativity not only enriches the educational experience but also fosters a vibrant, dynamic learning environment. This study established a model using structural equation modeling (SEM) to analyze the relationship between creative imagination and imagination factors in the context of gifted students. The measurement model survives the validity and reliability test. The structural model has shown acceptable goodness of fit tests. The instruments were administered to 262 gifted students in Bahrain's schools. The study concludes that creative imagination has a significant relationship with some imagination factors, and found a positive relationship between creative imagination and Imagination and dreams, Transmission of Imaginary experiences, and Time-related imagination.

KEYWORDS:

Creative Imagination, Gifted Students, Structural Equation Modeling

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Corresponding author at:

Malek N. Awawdeh
E-MAIL: Malekaw983@gmail.com

INTRODUCTION

Talented and gifted students are considered cases with special aptitudes and specific personal characteristics and qualities that distinguish them from others. Exceptional personal traits and cognitive aptitudes contribute to creativity and talent among students; these distinguishing characteristics are crucial for identifying gifted individuals and enhancing their ability to make significant creative contributions. Recognizing and fostering these qualities is important to improve educational strategies and maximize creative potential (Sternberg & Kaufman, 2023). Defining "talented and gifted" is essential for distinguishing between innate abilities and cultivated excellence. Talent refers to a natural predisposition in specific domains, which can be nurtured through practice and education. Giftedness, meanwhile, represents exceptional performance, achieved by combining natural abilities with personal characteristics like motivation and creativity (Subotnik et al., 2023). Transformation of talent into giftedness requires not only inherent traits but also the right activities, resources, and learning environments (Gagné, 2016).

Giftedness and talent are two interconnected facets of exceptional potential, where giftedness appears as a natural innate aptitude, while talents are about how to form giftedness and bring it to reality (Sayed et al., 2021). Due to the talent extensiveness concept, some terms that converge in their meanings overlap; gifted people are classified into academically gifted and performance-gifted, where both describe giftedness as high capabilities and outstanding performance in one or several fields. Students may be described as gifted even if they have not academically succeeded, that is because they are characterized as high performers in one of the non-academic fields and have some characteristics that contributed to build their gift. Many of these characteristics are often considered to recognize them; they are active and dynamic, constantly self-pursuing, highly motivated, hypersensitive, emotional, and highly capable of using an intense and life-full imagination (Gagné, 2020; Sayed et al., 2021).

Imagination is one of the most important processes on which creative thinking is based, and it is the foundation of directed thinking. Imagination is a compound of several elements of previous experiences that are reflected in a new experience; this leads to increased opportunities to practice intellectual processes, discover oneself through various forms of creative expression, communicate with others and understand them, as well as lead to reaching more knowledge, working on developing mental skills, and addressing environmental influences (Hashem, 2019). Sarooghi et al. (2015) explore how creativity, often rooted in imaginative thinking, is crucial for innovation, especially within organizational and cultural contexts. Similarly, Moin (2022) highlights the intertwined relationship between imagination, creativity, and innovation, showing that imaginative thinking is essential for progress and meaning-making in various environments.

Imagination plays a crucial role in problem solving by allowing individuals to visualize potential solutions based on past experiences and creative scenarios. It aids in forming mental simulations of events and characters, making it easier to predict outcomes and devise strategies for current

problems (Sarooghi et al, 2015). However, imagination by itself, is not enough to produce creativity; creativity needs to stimulate reality through imaginative thinking to evoke new ideas and concepts, and to develop coherent and meaningful plans and actionable ideas (Beghetto & Schuh, 2020). The real challenge begins when a complex problem occurs, which requires openness to different ways of thinking and acceptance of new ideas to solve it; so, solving problems in creative ways works in parallel with imagination, where imagination is considered a significant contributor to creative problem solving (Mitchell & Walinga, 2017).

von Stumm & Scutt (2019) define imagination as the tendency to create mental representations of concepts, ideas, and sensations that are not perceived by the senses. Imagination refers to the ability to create new ideas based on mental images, while creativity means the ability to create something new and effective. Accordingly, the imaginative process and the creativity process are related to each other through creative problem-solving techniques, which can be applied using effective tools of imagination (Green et al., 2024). Singer (as cited in Runco, 2011), defines imagination as a special trait or image of human thinking, characterized by the ability of an individual to reproduce images or concepts originally derived from the main senses. Imagination can be understood as a mental capacity to visualize subjects or events through memory. These mental images reflect an individual's cognitive experience rather than solely the external events themselves, highlighting the interplay between internal thoughts and external stimuli (Kushnir, 2022).

Imagination encompasses the processes of integrating, synthesizing, and recombining memories of past experiences and events, as well as forming new images through innovative thought. This capacity enables individuals to explore scientific possibilities and make predictions about the future. Additionally, imagination can be described as a stream of ideas that can be visualized, auditory, tactile, or even gustatory (Lee et al, 2023). Imagination tends to be associated with the ability to generate ideas in the mind about things that cannot be perceived by the senses, including alternative or imaginary facts. Imagination is associated with various mental processes including learning, meaning-making and creativity; it is necessary to recognize the world as it is, but acquire new knowledge through the reconstruction of those ideas to understand social reality is also necessary. On the other hand, imagination acts as a form of liberation that resists the reality and this function can be achieved by using imagination as a repository for ideas that are protected from challenges posed by different forms of rationality and can lead to renewal and change (Moore & Milkoreit, 2020). Imagination can be defined as a cognitive process involving the exploration of new alternatives and the generation of original ideas, enabling individuals to engage in novel experiences and deliberately foster developmental opportunities (Renzulli et al., 2022).

The study of creative imagination is crucial because it extends beyond mere mental imagery, involving reshaping and transformation of sensory perceptions stored in memory to generate novel experiences. This complex process is influenced by a variety of sensory inputs, such as sight, sound, and touch, which integrate to form a complete sensory scene (Jankowska & Karwowski, 2015). In educational contexts, creative imagination allows students and teachers to interact with information in more dynamic and meaningful ways. It encourages cognitive flexibility, promotes

problem-solving, and fosters creativity, all of which are essential for adapting to complex educational challenges (Thompson, 2018). Furthermore, research suggests that imagination not only enhances creative abilities but also stimulates critical thinking and emotional engagement, making it a valuable asset in both teaching and learning (Dominey, 2021). Understanding how creative imagination interacts with imagination factors can therefore provide deeper insights into how individuals learn, think, and solve problems creatively.

Imaginative responses, like crafting stories or solving problems creatively, bridge the gap between our experiences and invented realities. They draw on memories, emotions, and knowledge, weaving them into something new (Oatley, 2016). This sparks innovation and allows us to explore possibilities beyond the present (Kohn, 2013a). From children's pretend play to artistic expression, imaginative responses are a cornerstone of human creativity. Daydreaming, despite seeming unproductive, influences creativity (Schilder, 2016). Imagination, a cornerstone of human ingenuity, is especially vital for young people navigating the complexities of the 21st century. As challenges mount, creative problem-solving becomes increasingly essential. By nurturing imagination, we empower students to approach obstacles with innovative solutions, fostering a mindset that values critical thinking and out-of-the-box approaches. This cultivates a generation equipped to not only respond to the demands of the present but also to shape the future (Handa, 2013). It unlocks a mental playground for free association, hence fostering novel connections. Creative minds across disciplines utilize this power. Daydreams can be emotional, processing feelings and inspiring solutions that facilitate creativity (Zedelius, 2021). Daydreams can lead to breakthroughs and by harnessing this link we can cultivate creativity in education and workplaces.

Imaginary friends, common in childhood, aren't just make-believe pals. They act as catalysts for creative imagination. Children experiment with social interactions, emotions, and storytelling through these invented companions (Singer & Singer, 1966). This imaginative play allows them to explore new ideas and practice problem-solving in a safe space, fostering creativity that can blossom into adulthood (Davis, 2020). Our imagination isn't confined to wakefulness. Dreams, with their fantastical imagery, can spark creative leaps. The subconscious mind weaves memories and emotions into dream narratives, offering fresh perspectives and unexpected solutions. Artists, writers, and inventors have long harnessed the power of dreams to fuel their creative fire (Ball, 2006). By understanding this link, we can learn to tap into the dreamscape's boundless wellspring of creative inspiration.

Creative imagination thrives on the transfer of experiences. We draw on past encounters, emotions, and knowledge to build new ideas (Beaty et al., 2014; Pelaprat & Cole, 2011). Imagine a writer weaving a story inspired by a childhood adventure, or a scientist using past experiments to fuel innovation. This transfer allows us to revisit the past, learn from it, and shape a more creative present (Barsalou, 2008). By understanding this link, we can harness past experiences to ignite the flames of creative imagination. Imagination defies the constraints of time. We can revisit cherished memories, reliving past experiences with a creative twist (Szpunar et al., 2010). This "mental time travel" allows us to learn from the past (Schacter et al., 2012). Yet, imagination also lets us propel ourselves

forward, envisioning and shaping the future (Kohn, 2013b). This paradox, existing outside of linear time, is the playground of creative imagination. By harnessing its power, we can bridge the gap between past, present, and future.

The study of creative imagination and its relationship to other imagination factors in gifted and ordinary students is crucial for understanding the cognitive processes involved in problem-solving, creativity, and emotional development. Research since 2020 has highlighted the multifaceted nature of imagination, with various components influencing individual differences in cognitive abilities. Kampa (2017) has explored the connections between imaginative transportation, the ability to immerse oneself in fictional worlds, and creative problem-solving skills.

Understanding the intricate relationship between creative imagination and its various components is crucial for comprehending the cognitive processes underlying creativity and problem-solving. Recent studies (Lee et al., 2023; March & Fleer, 2017) have demonstrated that imaginative transportation, daydreaming, and imaginary friends play significant roles in shaping creative thinking and cognitive flexibility. By examining how these factors interact and influence individual differences in imagination, researchers can gain valuable insights into the development of creative abilities in both gifted and ordinary students. Such knowledge can inform educational practices and interventions designed to foster creativity and problem-solving skills in diverse learners. Thus, any discussions of why imagination may or may not be associated with other constructs remain speculative, and future research will have to explore its biopsychological underpinnings (von Stumm & Scutt, 2019).

THEORETICAL FRAMEWORK

Research on imagination has evolved considerably since the 1960s, with growing attention to its complexity and multidimensional nature (Leikin & Sriraman, 2017). Most contemporary theories conceptualize imagination as a set of mental processes linked to perception and mental representation. Al-Jadba (2012) distinguished between distracted imagination—associated with unstructured daydreaming—and creative imagination, which results in the production of original work. A more recent addition is traditional imagination, which involves reproducing images or scenes created by others, such as those evoked during reading.

Hunter (2013) highlighted that imagination can be shaped by changes in consciousness, enabling individuals to perceive situations from novel perspectives. The author identified multiple types of imagination, including effective, intellectual (constructive), fantasy, empathetic, strategic, emotional, dream-based, and memory-reconstructive. Earlier, Coleridge (1817) differentiated between primary and secondary imagination (see Thompson, 2018), while Liang and Chia (2014) proposed three broad dimensions: construction/creation, visualization, and transformation. Building on this, Leikin and Sriraman (2017) identified key features of creative imagination: vitality, originality, and transformative ability.

More recently, von Stumm and Scott (2019) proposed seven empirically measurable dimensions of imagination: imaginary friends, daydreaming, imagination and dreams, thinking patterns, transmission of imaginary experiences, imaginative responsiveness, and visual imagination. These dimensions reflect both spontaneous and directed forms of mental imagery, and they often overlap conceptually. This overlap suggests that imagination is best studied as an interconnected set of abilities rather than isolated traits.

Talented and gifted students possess unique cognitive and personal characteristics that distinguish them from peers and support exceptional creativity and problem-solving. Recognizing and nurturing these traits is critical for educational strategies that maximize creative potential (Sternberg & Kaufman, 2023; Subotnik et al., 2023). Creative imagination, in particular, is central to innovative thinking, as it enables students to transform past experiences, emotional responses, and knowledge into novel ideas and meaningful solutions (Beaty et al., 2014; Renzulli et al., 2022).

Building on the Geneplore framework (Finke et al., 1992), creative imagination is conceptualized as the outcome of interactive generative (imaginative) and exploratory (creative) processes. Accordingly, the present study models seven dimensions of imagination—imagination and dreams, transmission of imaginary experiences, time-related imagination, imaginary friends, imaginative responsiveness, daydreaming, and emotional involvement in imagery—as predictors of creative imagination. Each dimension provides distinct cognitive or affective resources that facilitate flexibility, originality, and creative problem-solving. Empirical research demonstrates that mental imagery enhances novel idea recombination (Gu et al., 2025; Wong & Lim, 2017), daydreaming supports divergent thinking (Zedelius & Schooler, 2016), and engagement with imaginary experiences and emotional imagery strengthens originality and motivation (Abraham, 2016). These pathways collectively justify the hypothesized positive associations depicted in the model, as illustrated in Figure 1 below.

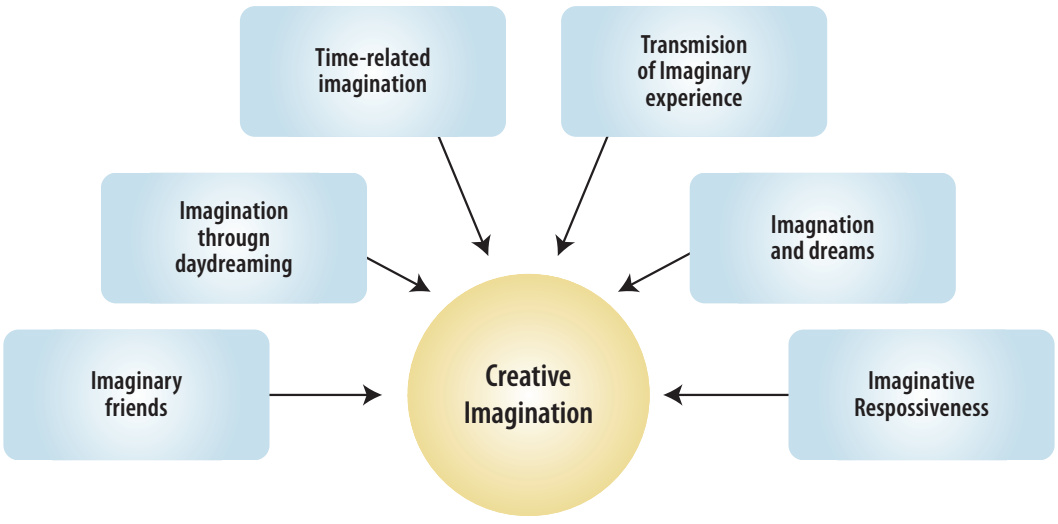


Figure 1. Theoretical framework

This model illustrates the seven dimensions of imagination and their predicted positive relationships with creative imagination. Grounded in the Geneplore framework, it emphasizes how generative and exploratory processes interact to support creative outputs. Each dimension contributes cognitive and affective resources that enhance idea generation, problem-solving, and cognitive flexibility, supported by empirical evidence from recent studies (Gu et al., 2025; Wong & Lim, 2017; Zedelius & Schooler, 2016; Abraham, 2016).

METHOD

Sample and data collection

The sample consisted of 262 Bahraini students (124 male and 138 female) identified as gifted through school nominations and standardized ability assessments administered by the Ministry of Education. Participants ranged in age from 15 to 18 years. All participants were enrolled in gifted education programs across five schools. Informed consent was obtained from both students and their parents/guardians, and the study was approved by the institutional ethics committee. Data were collected via online survey.

Instrument

The General Imagination Scale (GIS):

The general imagination scale was constructed based on a literature review. The scale aims to measure the level of imagination of gifted and ordinary students. The scale consists of 68 self-scale report items on a five-point Likert scale with 1 for never, 2 for rarely, 3 for sometimes, 4 for often, and 5 for always. It measures seven dimensions of creative imagination as follows:

1. Imaginary Friends (8 items): People or characters that exist in a person's mind and do not exist in reality (Davis, 2020; Majors & Baines, 2017).
   Examples:

- "I have one or more imaginary friends."
- "I talk out loud with my imaginary friends."

2. Imagination through Daydreaming (9 items): Mental experiences where the person temporarily disconnects from their immediate environment and reality is blurred (Zabelina & Condon, 2020).
   Examples:

- "When I am lost in daydreams, I forget the tasks I need to do."
- "I imagine the future while immersed in daydreams."

3. Time-Related Imagination (8 items): Perception of events as if they occurred in the past or might occur in the future, reflecting desires and goals; fantasies can be realistic or unrealistic (Debus, 2016; van Dijk & Rietveld, 2020).
   Examples:
- "I imagine myself several years from now."
- "I revisit ideas I imagined previously and tried to implement them."

4. Transmission of Imaginary Experiences (9 items): The transition of imagination from real experiences to a different virtual or imaginative reality, transferring personal beliefs, ideas, and desires, and vice versa (Black et al., 2017; Black et al., 2022).
   Examples:
- "I vividly imagine events as if they are scenes from a book or movie."
- "I imagine myself experiencing a different reality while performing my hobbies."

5. Imagination and Dreams (9 items): Dreams involve perceiving a series of images, thoughts, emotions, and sensations, usually occurring involuntarily during certain stages of sleep (Hafner et al., 2020; Siclari et al., 2020).
   Examples:
- "I feel sensations in my dreams as if they were real (e.g., seeing, hearing, or smelling things)."
- "My dreams continue to affect me even after I wake up (e.g., fear or joy)."

6. Imaginative Responsiveness (7 items): Strength of imaginative response and interaction with stimuli in a person's environment (Kryshtanovych et al., 2022).
   Examples:
- "When I watch an event, I immerse myself as if I am part of it."
- "When I read a story, I start thinking and feeling like the characters."

7. Creative Imagination (18 items): Refers to using imagination to demonstrate originality, fluency, flexibility, and detail in thought and problem-solving (Boltaboyev, 2023).
   Examples:
- "I imagine multiple solutions to hypothetical or imaginary problems."
- "I envision the steps to implement an idea before starting any work."

DATA ANALYSIS

Prior to the data analyses, reliability of the instruments was determined in SPSS 29. For content validity of the scale (S-CVI), the instruments were sent to a panel of 10 experts for comments and feedback. Obtained data was analyzed using SEM in Smart PLS4. To answer the study questions, data from the respondents was analyzed using the structural equation modeling (SEM) technique; structural equation modeling is a multivariate statistical analysis technique that is used to analyze structural relationships. The first step was to define the constructs and the items from the adopted instruments, and then to develop the measurement model. After data collection, both the measurement and the structural model were assessed before the testing of the hypothesis.

Table 1. Descriptive Statistics of Imagination Dimensions

Imagination Dimensions	Male		Female		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
Imaginary Friends	17.44	5.04	20.96	5.04	19.27	5.04
Daydreaming	26.28	5.19	30.96	5.19	28.74	5.25
Time-Related Imagination	29.28	4.88	32.96	4.88	31.18	4.87
Transmission of Imaginary Experiences	30.6	4.91	33.39	4.91	32.05	4.91
Imagination and Dreams	30.06	4.79	31.05	4.79	30.56	4.79
Creative Imagination	69.12	7.13	74.34	7.13	71.78	7.13
Imaginative Responsiveness	24.15	5.07	27.23	5.07	25.73	5.07

Table 1 above presents descriptive statistics for various dimensions of imagination among male, female, and combined groups. Each dimension is reported with its mean (M) and standard deviation (SD). The data indicate consistent patterns across the dimensions, with slightly higher mean scores observed in females for all imagination aspects.

Table 2. Reliability

	Composite reliability	Cronbach's alpha	*P* values
Creative imagination	0.94	0.93	0.000
Transmission of Imaginary experiences	0.88	0.84	0.000
Imaginary friends	0.93	0.92	0.000
Imagination and dreams	0.87	0.83	0.000
Imagination through daydreaming	0.89	0.86	0.000
Imaginative Responsiveness	0.87	0.82	0.000
Time-related imagination	0.88	0.84	0.000

Table 2 above shows that composite reliability was higher than 0.70 for all constructs' range (0.87–0.94). Cronbach's alpha was higher than 0.70 for all constructs' range (0.82–0.93). Reliability of the constructs was thus accepted (Hair et al., 2019).

Table 3. Average Variance Extracted (AVE)

	AVE	*P* values
Creative imagination	0.45	0.000
Transmission of Imaginary experiences	0.45	0.000
Imaginary friends	0.63	0.000
Imagination and dreams	0.43	0.000
Imagination through daydreaming	0.47	0.000
Imaginative Responsiveness	0.48	0.000
Time-related imagination	0.47	0.000

Table 3 above shows AVE for all constructs' range (0.43–0.63). The results indicate convergent validity (Hair et al., 2019).

Cross Loading

The first primary method for determining discriminant validity (the extent to which factors are distinct and uncorrelated) is to examine the pattern matrix. Variables should load significantly only on one factor. In our study, all items load strongly on their own constructs. The cross-loading results showed that each indicator had its highest loading on its corresponding latent variable, providing evidence of discriminant validity. The results of Cross loading indicate discriminant validity (Hair et al., 2019).

Model Fit

The Coefficient of Determination R2 for the Creative imagination construct shows acceptable moderate values. Construct values were 0.930. Predictive Relevance of the Model Q2 was greater than zero (0.924), supporting the claim that this study model has adequate ability to predict the endogenous variables (Creative imagination).

The Goodness of Fit (GoF) for the model was (0.758). The Standardized Root Mean Square Residual (SRMR) was also estimated for the Saturated Model (0.045) and Estimated Model (0.045). Both values were less than 0.10, which is considered a good fit measure for PLS-SEM. The Normed Fit Index (NFI) was 0.74—the closer the NFI to 1, the better the fit. It can be concluded that the GoF model of this study is large enough to be considered sufficient global PLS model validity.

RESULTS

We found significant factors that affect creative imagination in Bahrain schools. The general purpose of this study was to investigate the relationship between Creative imagination with Daydream, Imaginative response, Imaginary friends, Imagination and dreams, Transfer of experiences, and Imagination connected to time. Therefore, the following hypotheses were put out.

H1a: Imagination through daydreaming has a significant relationship with Creative imagination.
H1b: Imaginative Responsiveness has a significant relationship with Creative imagination.
H1c: Imaginary friends has a significant relationship with Creative imagination.
H1d: Imagination and dreams has a significant relationship with Creative imagination.
H1e: Transmission of Imaginary experiences has a significant relationship with Creative imagination.
H1f: Time-related imagination has a significant relationship with Creative imagination.

The relationship between creative imagination and imagination factors was analyzed using path analyses by bootstrapping in SmartPLS and using the path coefficients to determine the *P* values, *R*-value, and the Original Sample (O). The results were as follows:

Table 4. Relationship between Creative imagination and exogenous variables

	Original sample (0)	*R*	Standard deviation	*T* statistics	*P*
Imagination through daydreaming → Creative imagination	0.112	0.973	0.072	1.543	0.123
Imaginative Responsiveness → Creative imagination	0.254	0.941	0.066	3.865	0.000*
Imaginary friends → Creative imagination	0.056	0.919	0.065	0.866	0.387
Imagination and dreams → Creative imagination	0.214	0.942	0.068	3.120	0.002*
Transmission of Imaginary experiences → Creative imagination	0.181	0.933	0.064	2.825	0.005*
Time-related imagination → Creative imagination	0.175	0.938	0.062	2.809	0.005*

Table 4 above shows the relationships between Creative imagination and the exogenous variables that were significantly correlated with Imaginative response, Imagination and dreams, Transmission of Imaginary experiences, and Time-related imagination at $P \leq 0.01$. Based on the Original Sample (O) values, all significant relationships are positive. Correlation coefficients for the significant relationships between Creative imagination and exogenous variables ranged from 0.919 to 0.973.

Table 5 below shows the moderating effect of gender on the relationships between Creative imagination and the exogenous variables. Based on the *P* values gender did not have any moderating effect.

Table 5. Gender moderating effect

	Original sample (0)	*R*	Standard deviation	*T* statistics	*P*
Imagination through daydreaming ➔ Creative imagination	-0.035	0.550	0.154	0.227	0.82
Imaginative Responsiveness ➔ Creative Imagination	0.142	0.558	0.125	1.135	0.256
Imaginary friends ➔ Creative imagination	0.162	0.548	0.131	1.231	0.218
Imagination and dreams ➔ Creative imagination	-0.102	0.555	0.134	0.761	0.447
Transmission of Imaginary experiences ➔ Creative imagination	-0.154	0.547	0.134	1.149	0.251
Time-related imagination ➔ Creative imagination	0.013	0.558	0.14	0.096	0.924

DISCUSSION

This study produced a model of the relationship between creative imagination and its relations to other imagination factors in the context of gifted and ordinary students. The model has been empirically tested and major findings have been drawn. In terms of the study's goal, we discovered evidence supporting the association between creative imagination and some imagination factors. We found a positive relationship between creative imagination and Imagination and dreams, Transmission of Imaginary experiences, and Time-related imagination. There is evidence of gender differences in creativity measurements, particularly in self-scale reports (Baer & Kaufman, 2008; Matud et al., 2007). When gender was added as a moderating factor, however, we did not find any significant effect on any of the research hypotheses.

The model explained an unusually high proportion of variance in creative imagination ($R^2 = .93$). While such high predictive power is uncommon in psychological research, it is interpretable both statistically and theoretically. Statistically, diagnostic tests indicated that multicollinearity was not a major concern, as all VIF values were within the acceptable range (Hair et al., 2019) and the relatively homogeneous sample of gifted students may have amplified coherence among imagination-related predictors (Kim, 2006).

From a theoretical perspective, the high R^2 reflects the meaningful structure of the model. Each of the seven dimensions—imagination and dreams, transmission of imaginary experiences, time-related imagination, imaginary friends, imaginative responsiveness, daydreaming, and emotional involvement in imagery—represents a distinct cognitive or affective process that contributes uniquely to creative imagination. According to the Geneplore framework (Finke et al., 1992), creative imagination emerges from a dynamic interaction of generative and exploratory processes, and each dimension captures a meaningful pathway through which these processes manifest themselves. Empirical studies support these links: mental imagery and emotional involvement provide cognitive and motivational resources for novel idea generation (Gu et al., 2025; Abraham, 2016),

while daydreaming and engagement with imaginary experiences facilitate divergent thinking and flexible problem-solving (Zedelius & Schooler, 2016; Singer & Singer, 1966). Thus, the high predictive power is not due to redundancy or overfitting but reflects theoretically justified, interrelated processes underlying creative imagination.

Nonetheless, this finding should be interpreted cautiously. Meta-analytic evidence suggests that the empirical relationship between imagination and creativity is often moderate (LeBoutillier & Marks, 2003; Jankowska & Karwowski, 2015). This underscores the need for replication with more heterogeneous samples and with complementary performance-based measures of creativity.

Creative imagination is a powerful force that transcends the realm of childhood wonder. In the world of academia, it fuels groundbreaking research and fosters a deeper understanding of complex issues. For schools, it ignites a passion for learning and equips students with essential skills for the 21st century. Many studies indicate the importance of the school environment in stimulating students' imagination, which confirms the need for an educational system that supports the process of imagination with such tools as available materials, classroom activities and programs, and supervisory system. Imagination is a central component of the educational process, as it broadens students' perceptions and supports deeper engagement with learning. It also reflects learners' readiness to explore new ideas, nurture curiosity, and actively seek knowledge (von Stumm & Scott, 2019). Fostering creativity in the classroom will lead to deeper understanding and knowledge retention.

Imagination fuels the ability to ask unconventional questions that challenge existing paradigms. When students engage their imagination, they become active participants in the learning process. Imagination involves critical evaluation of possibilities and creative activities can enhance critical thinking skills in students (Kushnir, 2022). The ability to think creatively and solve problems is crucial for success in the modern world. Schools should implement differentiated training programs focused on nurturing imagination and creative problem-solving skills in gifted students. These programs should cater to various types of giftedness and incorporate exercises that enhance fluency, originality, and creative responses. Techniques like storytelling, impersonation, and imaginative stimuli can be employed to create a stimulating environment that empowers gifted students to excel in finding and solving problems in innovative ways.

The present results demonstrated that imagination subdimensions such as dreams, daydreaming, and the transmission of imaginary experiences are strong predictors of creative imagination. This finding resonates with prior theoretical accounts that emphasize the generative role of mental imagery in creativity (Finke et al., 1992; Leikin & Sriraman, 2017). At the same time, meta-analytic studies (LeBoutillier & Marks, 2003; Jankowska & Karwowski, 2015) have reported only modest correlations between general imagination and creativity. One possible explanation for the stronger relationships observed here is the gifted status of our participants, as prior research indicates that imagination and creativity are more tightly coupled in high-ability populations (Kim, 2006; Silvia, 2015).

FUTURE RESEARCH

The findings of this study have generated some interesting opportunities for further research. Personality traits have been shown to have a significant relationship with creativity, making it worthwhile to further investigate how specific traits interact with creative imagination. Traits such as openness to experience, curiosity, and risk taking may foster different aspects of creativity, from divergent thinking to problem solving. Future studies could explore whether certain personality types excel in specific creative domains—such as artistic, scientific, or entrepreneurial creativity. Additionally, examining how external factors like environment or education modify the relationship between personality and creative imagination, could provide valuable insights into how creativity can be nurtured across different contexts. Understanding these dynamics may lead to practical applications in education, business, and even therapeutic settings, where tailored approaches can enhance creative potential.

Future research should explore the multifaceted nature of giftedness by examining the links between imagination, creative problem-solving, and various cognitive abilities (Big Five, mental flexibility, alertness) in both academically and performance-gifted students across primary and preparatory stages. Additionally, studies could investigate the potential of imagination as a tool for identifying giftedness and explore differences between academic and performance-gifted students in areas like curiosity, openness to experience, and the impact of creative learning environments. Furthermore, research could delve into the relationship between creative problem-solving and artificial intelligence techniques, and explore the effectiveness of collaborative and competitive learning and brainstorming strategies in fostering creative problem-solving skills among gifted students.

Finally, the model explained an unusually high proportion of variance in creative imagination ($R^2 = .93$). While this result is consistent with the conceptual overlap of the imagination scale subdimensions and the relative homogeneity of the gifted student sample, it should be interpreted cautiously. Diagnostic checks indicated no serious multicollinearity, but replication with more diverse samples and multi-method measures is needed to confirm robustness of this finding.

LIMITATIONS

Despite these promising results, several limitations should be acknowledged. First, the study relied exclusively on self-report data, which may inflate associations due to common method bias. Second, the sample consisted of gifted students in Bahrain, which limits generalizability of findings to broader or more culturally diverse populations. Third, while the General Imagination Scale demonstrated strong internal validity, it has not yet been externally validated against established creativity measures, which should be a priority for future research. Finally, the cross-sectional design restricts conclusions about causality. Future studies should address these issues by incorporating

performance-based creativity tasks, recruiting more heterogeneous and cross-cultural samples, and employing longitudinal designs to clarify causal pathways.

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20 Swierkowa St., 15-328 Bialystok, Poland
tel. +48 857457283
e-mail: creativity@uwb.edu.pl
http://www.creativity.uwb.edu.pl