

## Research Article

# Teaching strategies for gifted students in interior design program

Gamal Elsayed Ali Elsamanoudy <sup>1</sup>, Naglaa Sami Abdelaziz <sup>2\*</sup>

Ajman University, College of Architecture, Interior Design Department, United Arab Emirates

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### Abstract

The study aims to identify the gifted students in basic interior design courses by utilizing new teaching strategies to support their capabilities and their intellectual growth within the interior design program. This research used a descriptive correlational study design to recruit the gifted students studying at Ajman University during the academic year 2018-2019, where the female students were 77% and 23%, male students – percentages based on a total of 130 students - with no statistically significant difference for teaching strategies based on gender variable. The results also showed that 66% of these students joined the interior design program due to their passion, and 95% had learned how to determine the requirements of a successful interior design project effectively. The findings have shown a significant and positive difference for teaching strategies based on 3rd level students ( $F=11.895, p=.007$ ). The study concluded that the use of creative and critical thinking strategies needs the exclusion of conventional teaching methods, which include monocratic and memorizing techniques to aid, precisely the gifted students' GS, to reach the same motivational level as their counterparts.

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## Introduction

The interior design stands as broad incorporation of the fields of visual and functional design along with fundamental scientific knowledge that pertains to building materials and constructional processes (Ching, & Binggeli, 2018). The concept of interior design revolves around the creation of interior environments that actively support and enhance the aesthetic appeal, functionality, and cultural sentiments of those individuals, who inhabit the interior spaces. Therefore, the interior design stands as a strong representation of how humans interact with their surroundings by creating interior spaces that are both appropriate and enjoyable to live in (Piotrowski, 2011).

The multiple facets of the field of interior design highly illustrated through the amalgamation of art, psychology, and science, with all these components acting synchronously to ensure that the stylistic needs of the consumers are catered (Kilmer & Kilmer, 2014). Thus, individuals who choose this field as a profession must be highly skilled in the art of visualization and design.

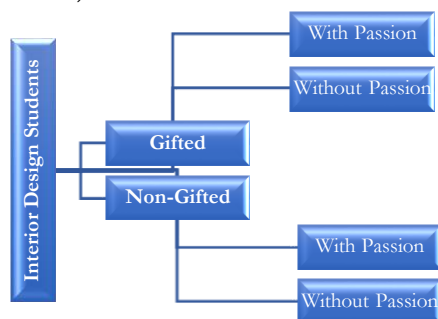
Accordingly, a good interior designer can enjoy the problem-solving process and has a good perception of details. Moreover, he/she should be an active team player to possess creative talents and skills (Piotrowski, 2011). Hence, individuals must aspire to pursue this profession get appropriate training to have expertise in all the spheres mentioned above of interior design.

<sup>1</sup> Associate Professor, Interior Design Department, College of Architecture, Art, and Design, Ajman University, United Arab Emirates, ([g.elsamanoudy@ajman.ac.ae](mailto:g.elsamanoudy@ajman.ac.ae)), Orcid no: 0000-0001-6931-4858

<sup>2</sup> Assistant Professor, Interior Design Department, College of Architecture, Art, and Design, Ajman University, United Arab Emirates, ([n.abdelaziz@ajman.ac.ae](mailto:n.abdelaziz@ajman.ac.ae)), Orcid no: 0000-0001-5495-1037

## Interior Design Education

Nevertheless, the literature on the complexities in the field of interior design study has remarked upon the amorphous and unstructured form of the subject and its nascent emergence as a professional discipline (Banham, 1997). The indication that the issue of interior design broadly encompasses a large variety of components that form its basis (Kilmer & Kilmer, 2014). The rigorous nature of this subject means that educational institutions have fixed standard criteria for acceptance into the interior design program, through the incorporation of entrance examinations and the requirement of a technical drawing's portfolio. Students classified into four main categories based on their creative talents (Ankerson & Pable, 2008), as in;



**Figure 1.**

*Classification of Interior Design Students*

Additional studies have commented upon the importance of self-determination theory in instilling students with confidence in their capabilities and galvanizing them to perform at the same level of creative output as their talented counterparts (Deci et al. 1991). Furthermore, the learning disabilities faced by students might overcome with self-determination teaching models and skill instructions (Field, Sarver & Shaw, 2003). Therefore, it is relevant to question the exclusive selection of gifted students in the field of interior design and investigate the induction of non-gifted into interior design programs, who possess the passion and determination to improve their abilities to flourish.

Several interior design programs accept applicants without any restrictions nor selection criteria (Robins, 2016). The matter of open acceptance depicts clarifying that majority of the non-gifted students can gain admission in interior design fields, resulting in students with learning disabilities due to the lack of their abilities in succeeding in the art of interior design (Piotrowski, 2011). Therefore, arguments discuss the pursuit of this field is best for students with the creative potential and skills needed to succeed in this field.

Educators of the interior design field should be aware of the cognitive, social, and emotional responses of the gifted students when engaged in an art program (Sevinç & Kanli, 2019). Some instructors may not have the pedagogical expertise for offering the types of learning activities required for high achievers (Mackey & Wright, 2016). Educators should emphasize on improving student competence using insights, knowledge, learning, and skills dispositions. Precisely, an instructor needs to be aware of substantial differences among the students and to react to them by using a wide variety of teaching strategies applicable at small groups, individual levels, and whole class. The learning procedures should continuously be under modifications, the products from efforts of students, and curriculum content (Tortop, 2013).

It is of significant interest that university instructors should be capable of treating gifted students appropriately, for instance, open-minded, high level of capacity in teaching, developing a better relationship with their communities. The competent for managing emotions of students, making knowledge applicable, creating a sense of responsibility, being warm and accessible, adopting high expectations for the students, and encouraging students to be active during lectures, is necessary (Benny & Blonder, 2016). Gifted students might prefer some proficiencies of their instructors to others; for instance, they will seek personal characteristics over intellectual characteristics. The selection was highly evident among young students when gender was not a predictive factor for the preference of students (Laine & Tirri, 2016). Besides, gifted students perceive high-qualified instructors as active facilitators for achieving high academic performance.

One of the significant identified problems is the flawed understanding or incomplete knowledge of instructors toward gifted students. This study challenged the unsatisfactory condition in which a discrepancy presented between what GS needs to know about the lack of proficiencies of instructors and what the interior design programs set for gifted students as standard knowledge. A more comprehensive understanding of why research shows that gifted students do not receive appropriate teaching strategies in an interior design course is essential. No policies are allowing

gifted students to foster in interior design study or artwork fields. These strategies need adequate development to be ready for utilization or under specific planning in the teaching process. The public education system does not well-serve gifted students in the country.

Developing effective teaching strategies in the classroom is a hard task, especially in terms of gifted students who need an advanced strategy. Since the authors of this study are educators for interior design, they assume that no specific attention is taking forth to gifted students within the teaching process in the university. It is assumed that the requirements of gifted students currently are still being unmet; therefore, this study sheds light on the teaching strategies preferred by gifted students. This study anticipates improving the educational outcomes by providing a positive change in inadequate teaching strategies for gifted students in the university setting.

### **Students Classification**

It is essential to be aware of the relevance of suitable teaching strategies to inform the intellectual foundation of a student. Thus, this part of the research aimed to conduct a proper identification of the students' creative talent in basic design courses and utilize recently developed teaching strategies to support the intellectual growth of the gifted ones within the interior design program.

Following, an analytical and comparative study of modern teaching strategies and psychological studies to measure the cognitive and visual abilities of the Gifted Students (GS). The study has utilized a questionnaire-based approach to track the strength of GS to follow the devised teaching strategies. Through their anticipation, that reformed teaching strategies would provide all students with the capability to perform at the same level as their talented counterparts and enable their growth and proliferation in the interior design employment sector and community service.

It is essential to elaborate on the effective teaching strategies for teaching the students of interior designing with positive feelings and optimal human functioning (Huppert & So, 2013). This vision is likely to incorporate interior designing as an activating and dynamic platform to facilitate meaningful activities for its inhabitants (Lahti et al. 2016). The present study tends to reflect on the teaching strategies affecting the process of interior designing environments.

### **Gifted Students**

Mostly, countries such as the United States are investing many efforts to qualify instructors of universities to deal with gifted students and developing staff understandings of needs of dominant students in higher education (Besnoy et al. 2016). For instance, developed countries qualify their educators to deal effectively with dominant students as a high profession economically and socially, which may correspondingly escalate productivity. The teaching process is one of the essential factors that make learning meaningful and attractive. Appropriate use of teaching strategies by the instructors can result in ease in comprehending the modules. However, it is likely that teaching strategies either stimulate students or discourage them (Galustov, Glukhov & Galustov, 2016). Therefore, it is a significant responsibility of instructors to identify the needs and characteristics of gifted students, when delivering lectures to them.

It is imperative to differentiate gifted learners. Most gifted students now find themselves in standard settings as compared to particular classes or groups (Tortop, 2018). However, the prescribed mainstream curriculum in regular schools usually tends to lack appropriate complexity and depth for gifted students (Olszewski-Kubilius, Subotnik & Worrell, 2018). They also require an adequate level of challenge to keep them completely involved avoiding them from feeling unmotivated and bored in class. Gifted students will be able to achieve their full potentials if learners are capable of personalizing and taking ownership of their learning (Kitsantas, Bland & Chirinos, 2017).

### **Problem of Study**

This study attempts to address the following questions:

- What teaching strategies do gifted students in an interior design course, prefer?
- Are there statistically significant differences in preferred teaching strategies according to the studying year of gifted students?
- Are there any significant differences in preferred teaching strategies based on gifted students' gender?

## **Method**

### **Research Design**

The study has followed an analytical and comparative approach to modern teaching strategies to measure the cognitive and visual abilities of students. The methodology basis for this study is through the extensive literature study to gather relevant information for analysing the research problem (Mills & Gay, 2016). The methodology further depends on

several studies that are required to obtain a database and information from specialists and researchers. The data collected helps analyse the research problem accordingly.

Additionally, the literature search was done to identify the approaches for dealing with the students who do not have the talent but to be motivated and desire to learn the program of interior design. The determination was pertaining to the initial decision on the way of tackling students with passion. Through the literature study, an investigation was done highlighting the importance of multiple strategies for learning and the role of the instructor in the students' learning process.

The researchers carried out a questionnaire survey among a group of students from the interior design department (Ajman University) to extract a real case study for the first part of the research problem. The questionnaire is crucial to track the students' levels for reaching the useful teaching strategies that would be appropriate for the students to increase their abilities.

The researchers used a descriptive correlational study design to identify the preferred teaching strategies for gifted students in the interior design course. In this regard, the study developed quantitatively and analyzed the instrument to address the questions. Furthermore, university students studying at Ajman University enrolled in the interior design program during the academic year 2018-2019, were the target students. The researchers contacted the registrar office in the university to select students for the research.

### Participants

A questionnaire survey carried out among 130 students, where their structures is in Table 1 from the interior design department – Ajman University – to extract a real case study for the research problem. The questionnaire is crucial to track the students' levels for reaching the useful teaching strategies that would be appropriate for the students to increase their abilities. Ethical approvals obtained prior to the conduction of this study. The acquirement of the psychological specialists in the field of education' opinions was crucial to identify the classification and scientific diagnosis of a whole learning process of students and the learning process of those students who face difficulties in learning and perceiving information due to varying intelligence levels.

**Table 1.**

*Structures of Participants*

Variables	Categories	f	%
<b>Gender</b>	<b>Male</b>	72	55
	<b>Female</b>	58	45
<b>Grade</b>	<b>1st Year</b>	34	25.8
	<b>2nd Year</b>	34	25.8
	<b>3rd Year</b>	33	25.4
	<b>4th Year</b>	29	22.9

### Data Collection

The 130 students obtained correct responses analysis based on the significance of teaching strategies and passion in the intellectual development of a student. Besides, it contributes to discovering the ways to gain an understanding of the student's recognition of the research problem. Through the literature review, it was additionally determined whether talent is relatively more important than passion.

The research outlined the interior design program and useful teaching criteria. It was necessary to identify multiple strategies for learning and the role of the instructor in the learning process, the importance of diagnosing learning problems, and about the instructor's role to help the student in acquiring the skills to qualify for practical life. Moreover, it was also necessary to collect different opinions of physiological specialists in the field of education to identify the classification and the scientific diagnosis of a typical student's learning process.

The next step was to detect different opinions through articles and published literature, which dealt with the topic. Afterward, it was necessary to explain the interior design program, valid teaching criteria for the student, and the most prestigious courses of the program. This analysis aims to explore the weaknesses of several physiological aspects to stimulate and develop the learning process in the interior design student. Characterization of perception is one of the most critical mental and physiological skills that must be available for the student to learn any design program.

Development of a close-ended questionnaire set that undertakes demographic variables (age, gender, and educational levels) and questions related to teaching strategies preferred (Presentations, accommodations for

individual differences, critical thinking strategies, and creative thinking strategies) for gifted students. The questionnaire distributed among students, after taking permission from the registrar office, to collect data. Initially, 240 questionnaires were distributed among students, but only 139 questionnaires were returned. However, nine survey answers were excluded from the final sample due to incomplete responses. In this case, 130 was considered as the final sample size based on the complete and appropriate responses.

The questionnaire was validated for its reliability from two researchers, which was later revised, after receiving comments on the survey. Cronbach alpha was measured for individual variables (teaching strategies), presented in Table 2. Based on the standard Cronbach value, the questionnaire satisfied its standard benchmark of 0.70.

**Table 2.**

*Reliability Statistics*

Variable	No of Items	Cronbach Alpha
Presentations	5	0.71
Accommodations for Individual differences	5	0.75
Critical thinking strategies	5	0.89
Creative thinking strategies	5	0.91
Teaching Strategies	5	0.73

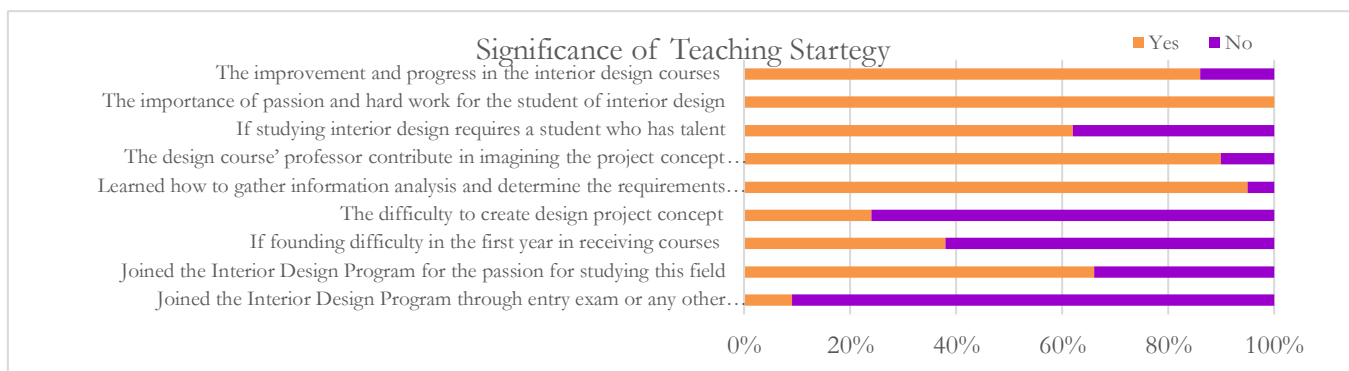
The data analysis was carried out with the Statistical Package for Social Sciences (SPSS) version 20.0, where the Demographics were shown using descriptive statistics, including frequencies, percentages, and mean & SD. One-Way ANOVA was used for identifying statistically significant differences in teaching strategies based on educational years. An Independent T-test was used to determine statistically significant differences between teaching strategies and gender variable.

## Results and Discussion

### Results Related to Sub-problem 1: Teaching Strategies/Gifted Students

This section answers all the questions related to teaching strategies and gifted students enrolled in an interior design course. First, the questionnaire-based approach revealed the responses of interior design students about the role of passion and effective teaching strategies in the growth and development of students. As seen in Figure 2, it was found that the majority of students (91%) joined the interior program without any selection criteria or entrance examinations. Furthermore, only 66% of these students joined the interior design program due to their passion for pursuing this field. It was found that 62% of the investigated students did not face any difficulty in the first semester of study. Additionally, 28% of the students obtained high grades in their initial years, 67% achieved average percentage, and 5% scored low grades.

The final year grading was seen to have improved, with 50% of the students earning high grades, 45% getting moderate grades, and 5% scoring low grades. A vast majority of the participants (95%) had learned how to effectively gather and analyze information and determine the requirements of a successful interior design project. It was found that 72% of the students did not face difficulties in creating their design concepts. The majority of the students (90%) agreed with the critical role of the design instructor in enabling them to visualize and conceptualize the different stages of their project designs and confirmed the active participation of their design instructor in overseeing their projects.



**Figure 2.**

*Significance of the Teaching Strategies*

Moreover, 86% stated that their proficiency level in the design courses had improved in the last year of study. Opinions regarding the significance of talent in the study of interior design were divided, with 43% agreeing to its importance and 38% expressing disagreement. It was found that all the students believed in the importance of passion and hard work in the study of interior design.

The demographic characteristics of gifted students are presented in Table 3 based on gender, age, and educational levels. The majority of the talented students who participated in this study were male (55%), whereas 45% of the gifted students were female. Among 130 participating students, the age of 37.5% of students was between 21-23 years, followed by 33.1% of students' age between 24-26 years. 41.4% of students were studying in 2<sup>nd</sup> year of the interior design course; whereas, 27.1% gifted students were studying in 3<sup>rd</sup> year of the interior design course.

Table 4 presents descriptive statistics (mean & SD) for teaching strategies. Presentations show the highest mean (2.55) followed by critical thinking strategies and creative thinking strategies (2.51), accommodations for individual differences (2.49), and teaching strategies (2.28).

**Table 3.**

*Students' Demographic Data Analysis*

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	138	55.0	55.0	55.0
Female	113	45.0	45.0	100.0
Age				
	Frequency	Percent	Valid Percent	Cumulative Percent
18-20	57	22.7	22.7	22.7
21-23	94	37.5	37.5	60.2
24-26	83	33.1	33.1	93.2
27+	17	6.8	6.8	100.0
Education Level				
	Frequency	Percent	Valid Percent	Cumulative Percent
1 <sup>st</sup> Year	63	25.1	25.1	25.1
2 <sup>nd</sup> Year	104	41.4	41.4	66.5
3 <sup>rd</sup> Year	68	27.1	27.1	93.6
4 <sup>th</sup> Year	16	6.4	6.4	100.0

**Table 4.**

*Descriptive Statistics*

	Mean	Std. Deviation
Presentations	2.55	.925
Accommodations for individual differences	2.49	.944
Critical thinking strategies	2.51	.961
Creative thinking strategies	2.51	1.001
Teaching Strategies	2.28	.840
Valid N (listwise)		

### Results Related to Sub-problem 2: Teaching Strategies/Educational Level

To address the second question, one-way ANOVA has been used to determine statistically significant differences for teaching strategies based on educational levels of students (Table 5). The results have shown an individual difference between the educational levels for teaching strategies. The findings have shown a significant and positive difference in teaching strategies based on 3<sup>rd</sup> level students. The results imply that 3<sup>rd</sup> level gifted students significantly prefer these teaching strategies as compared to students at other educational levels.

**Table 5.**

*One-Way ANOVA for Teaching Strategies based on Education Year*

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
1 <sup>st</sup> Year	Between Groups	1.511	3	.504	.562	.640
	Within Groups	221.214	247	.896		
	Total	222.725	250			
2 <sup>nd</sup> Year	Between Groups	.962	3	.321	.345	.793
	Within Groups	229.779	247	.930		
	Total	230.741	250			
3 <sup>rd</sup> Year	Between Groups	11.895	3	3.965	4.101	.007
	Within Groups	238.830	247	.967		
	Total	250.725	250			
4 <sup>th</sup> Year	Between Groups	4.377	3	1.459	2.094	.102
	Within Groups	172.101	247	.697		
	Total	176.478	250			

### Results Related to Sub-problem 3: Teaching Strategies/Gender

Similarly, Table 6 presents a T-test for teaching strategies based on the gender variable to address question 3. Based on the findings, it is observed that there was no statistically significant difference in teaching strategies based on the gender variable.

**Table 6.**

*t-Test for Teaching Strategies Based on Gender*

	F	Sig.	t
Presentations	.026	.872	.977
Accommodations for individual differences	.518	.472	.319
Critical thinking strategies	.487	.486	-.769
Creative thinking strategies	.738	.091	1.476

This finding implies that students' gender has no significant effect on teaching strategies implemented by instructors in an interior design course.

### Discussion and Conclusion

From a broad perspective, teaching strategies make the active learning process and; therefore, students' comprehension is mainly depending on teaching methods used by the teachers (Dinçer, 2019). The matter is particularly proven when instructors deal with gifted students (Mullet, Kettler & Sabatini, 2017). These students require teaching strategies for achieving their cognitive and intellectual abilities, which make their learning process more enough (Avcu, 2020). For instance, gifted students are supported by creative thinking strategies for developing their cognitive and developing skills (Mofield & Peters, 2019).

For example, using a creative thinking strategy encourages gifted students to develop their academic and cognitive skills (Lin & Wu, 2016). However, this finding contradicts the present study findings, as there was no significant effect found on creative thinking strategies for the gifted students in the interior design course. These missing might be due to the requirement of high order creative skills needed in such a course, which comprehensively lack among gifted students, especially in both male and female students (Hajjat, 2017). However, at the same time, 3<sup>rd</sup>-year students preferred all teaching strategies used by instructors in the interior design course. This preference might be due to the support and encouragement of instructors throughout their university life, which enables them to develop high order thinking skills to compete with other regular students (Katirci & Gür Erdoğan, 2020). Therefore, it is suggested for

instructors to possess enough cognitive skills, exchange experiences between new students, and closely supervise their performance while resolving academic problems.

In another context, previous studies have shown that gifted students prefer several studies (Aflatoony, Wakkary & Neustaedter, 2018). For instance, open-ended questions are preferred by gifted students as these help in encouraging their expectations and escalate brainstorming to improve their cognitive abilities (Mrayyan, 2016). The use of creative and critical thinking strategies needs the exclusion of conventional teaching methods, which include autocratic, prompting, and memorizing techniques (Demirhan, Elmali & Beşoluk, 2017). New methods must be employed, such as establishing a democratic relationship between teachers and students, challenging students' abilities, reinforcing problem-solving, collaborative learning, and stimulating students for asking questions and showing new concepts (Al-Khayat, AL-Hrout & Hyassat, 2017). Critical thinking strategy is another essential strategy preferred by gifted students, as claimed by AL-Khayat, AL-Hrout & Hyassat, (2017). However, such a claim was not supported by the findings of this study. The focus of this strategy is comprehensively to boost the abilities of students to solve problems and making the appropriate decisions (Kutlu-Abu, Akkanat & Gokdere, 2017). Gifted students might prefer a critical thinking strategy due to its influence to improve their cognitive skills and to avoid a feeling of disappointment and monotony (Türkman, 2020).

As discussed earlier, talent is the innate ability to perform at a relatively higher level than other individuals are. However, consistent and persistent passion and perseverance play an essential role in the intellectual development of an individual. Passion enables them to develop a more competitive skill set, as compared to individuals relying on talent alone. Therefore, it is the instructors' role to motivate the students (Şenol & Akdağ 2018). The motivation that fuels their passion and their self-determination to achieve their control over their surroundings. At the same time, to enable the growth intellectually and creatively in the interior design field. The instructor should consciously adopt instructional strategies that aid learners to develop self-esteem and confidence in their abilities to resolve challenging tasks. It is his role to guide the learning process of the student effectively. It is additionally crucial that instructors dismiss the notion of intelligence being a fixed aspect, rather than as something subject to change and improvement through persistent hard work (Ogurlu, Yalin & Birben, 2017).

The instructor needs to devise teaching strategies that cater to the intellectual capabilities of the students about the concept of intelligence (Çildir, 2017). According to the theory of multiple knowledge, there are nine different types of information; naturalist intelligence, musical intelligence, logical-mathematical intelligence, existential intelligence, interpersonal intelligence, bodily-kinesthetic intelligence, linguistic intelligence, intra-personal intelligence, and spatial intelligence (Tortop, 2015). Therefore, instructors need to consider different types of knowledge in students and devise learning strategies that would best suit their intellectual development (Yıldırım & Akcayoglu, 2018). Such as visual perception may be helpful to utilize dedicated cognitive programs that aid in visual perception enhancement. These programs consist of interactive brain games, where the user automatically receives a detailed graph highlighting cognitive progress at the end of each game. These programs can improve the visual perception of gifted students having passion at the same level as their talented counterparts.

Gifted students in this study, irrespective of their academic level or gender, are comparatively similar in their preference for teaching strategies. This comparison implies the requirement of using appropriate methods for teaching all gifted students. Gifted students tend to be more benefitted and enjoy when their instructors implement teaching strategies based on their preferred teaching approaches (Akkaş & Tortop, 2015). Modules in the university can be presented based on these teaching strategies, which consequently make the learning process more enjoyable and beneficial and therefore enhance the performance of students during their working lives (Tortop, 2013). Furthermore, gifted students have shown a higher level of preference to creative thinking strategy, which might be due to the nature of their program and needs to develop intellectual skills that allow them to deal with different social issues and conditions.

## Recommendations

### For Further Studies

This research identified the teaching strategies for gifted students yet categorized the students in a classification that need many efforts from the interior design educators in collaboration with the education department to reach solutions for all students sorting in terms of gifting aspects.

The factors are the ones that influence the talents, passion, and the skills of the interior design students. This study recommends the need for further research for this study. Further expected studies to identify other factors of how to



deal with non-gifted students is necessary. It suggests, as well, that future research broadens the scope of the study into cross-country and cultural comparisons to understand better the best ways to support the interior design students.

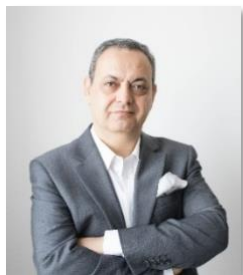
### For Applicants

As the results of this study, educators of the interior design field must embrace teaching strategies dealing with the students' classification, as mentioned within the paper core. Furthermore, the interior design program, mainly where no entry exam occurs, for classifying the students' talents, must create a supportive environment for Gifted and Non-Gifted Students.

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### Biodata of the Author



**Gamal ELSAYED ALI ELSAMANOUDY** was born on August 26, 1960, in Cairo, Egypt. He graduated from the Department of Interior Architecture, Faculty of Fine Arts, Helwan University, Egypt, in 1983. He has worked as a Lecturer, Assistant, Associate, and Full Professor since 1986. He completed his Ph.D. degree in Interior Architecture, Faculty of Fine Arts, Helwan University & Ecole D'Architecture de Versailles, Scientific Channel France & Egypt, in 2000. Currently, he is Associate Professor, College of Architecture, Art, and Design, Ajman University, UAE. He has published many articles in the field of Interior Design' Education. As a Consultant for exhibition design provided many designs of the university events and exhibitions. **Affiliation:** Ajman University **E-mail:** [g.elsamanoudy@ajman.ac.ae](mailto:g.elsamanoudy@ajman.ac.ae) **ORCID ID:** 0000-0001-6931-4858 **Phone:** (+971)508904331 **SCOPUS ID:** - **WoS Researcher ID:** AAQ-7120-2020



**Naglaa SAMI ABDELAZIZ**, Ph.D. FA, is born in Giza-Cairo, Egypt, on June 02, 1967. She obtained a Bachelor's degree in Interior Architecture in 1990, Masters of Fine Arts – Interior Architecture in 1995, and a Philosophy of Doctorate of Fine Arts – Interior Architecture in Conference Halls in 2002 from Faculty of Fine Arts - Cairo / Helwan University, Egypt and Ecole d'Architecture d' Interieure Camondo (scientific channel), France. Since 1991, she taught at FA – Helwan University. In spring, 2004–2005, she got the opportunity to teach at Ajman University, UAE. One semester before she taught in the College of Maritime Transport & Technology, Arab Academy for Science and Technology and Maritime Transport, Egypt. She is currently the Head of the Interior Design Department, College of Architecture, Art, and Design, Ajman University. **Affiliation:** Ajman University, UAE **E-mail:** [n.abdelaziz@ajman.ac.ae](mailto:n.abdelaziz@ajman.ac.ae) **ORCID number:** 0000-0001-5495-1037 **Phone:** (+971)508966941 **SCOPUS ID:** - **WoS Researcher ID:** A-1326-2019

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