Aesthetic judgment in evaluating graduation projects

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ABSTRACT

The research focuses on the importance of aesthetics as far as graduation projects are concerned, taking into consideration the fact that aesthetic judgment is the basis of the evaluation of architectural graduation projects. The research takes a look at the wider picture of the process of evaluating the academic performance of students, focusing on the background of the evaluators and the evaluative criteria involved. The theoretical framework of aesthetic judgment will be coupled with empirical research to see if specialization and experience have an effect on aesthetic judgment.

The purpose of this research is to examine the role of specialization and professional experience in forming evaluators' aesthetic judgments about architecture graduation projects, as well as the development of an adjusted scale for measuring aesthetic perceptions in the context of scientific evaluation. The problem in question refers to considerable inconsistency of judges' judgments and the absence of a theoretical model which would connect specialization, the period of experience, and aesthetic judgments. For the realization of this study a descriptive-analytical approach has been chosen, based on a survey including 21 questions based on the AESTHEMOS scale.

A total of 33 evaluators, who belong to the areas of architectural design, urban planning, and architectural technology, were included in the study based on five different experience levels. Reliability and validity of the scale were evaluated. For evaluating the impact of specialization, years of service and interaction between them, Levene's test and two-way ANOVA were used. Quality instrument tests revealed that the reliability and validity are satisfactory with the values of Cronbach's alpha = 0.746, Composite Reliability

= 0.827, and Average Variance Extracted (AVE) = 0.523, which validates the scale. Moreover, in order to identify the impact of specialization and service, one-way and two-way ANOVA were used considering the fact that the evaluation process strengthens the specialized knowledge gained from the architectural education process.

From the above results, it can be noted that the aesthetic judgments are significantly influenced by the personal aspects, including personal preferences and the situation where the services are provided rather than the specialization or years of service. This is an affirmation of the fact that the aesthetic judgment is influenced by the personal emotions of all members of the panel. It is this personal nature of the aesthetic experience that explains part of the variability of the aesthetic judgments that cannot be explained by the specialization and years of service.

Keywords: Aesthetic judgment, evaluation, graduation projects, architectural education, specialization, years of experience

1. Introduction

The aesthetics of the project is crucial, especially for fields like design and architecture. Such an evaluation is often intertwined with issues of creativity and originality as it involves numerous parameters related to the performance of buildings, such as functional, aesthetic, structural, environmental, and social, aimed at high performance of project design. Therefore, it affects the judgment of experts and discussions of project evaluation committees.

The importance of aesthetic assessment lies in its diverse nature, as it can inspire students, improve project results, and symbolize cultural values. However, it is also complicated by the issues of reliability, validity, and justice that arise during evaluation processes (Amos et al., 2024, p. 3).

The aesthetic judgment acts as an effective tool to inspire students and improve the results of projects. The graduation projects in the Department of Architectural Engineering are the final product of the educational methodology used during all previous years.

The importance of evaluating graduation projects lies in the presence of a diverse group of external evaluators, which enhances the diversity and reliability of decisions according to their experiences and even their specializations, which enhances the transition from self-evaluation to a deeper stage represented by objective evaluation based on a set of models or criteria that govern the extremes in the grades awarded to these projects (Refaat & Maher, 2018, p. 22).

This study focuses on the nature of aesthetic judgment in graduation projects, specifically due to the importance of aesthetic aspects as they address emotions and outline psychological impressions of the project. Attention and focus are essential to understanding the meaning of evaluating graduation projects, which can be discussed in several ways depending on its relationship to the subject of evaluation.

Lusoy and Zuhal (1999) proposed a classification that includes four types directly related to the subject of architectural projects evaluated by different judging panels. These types are: an evaluative opinion expressing a building or group of buildings; a judgment on future projects; a specific judgment on the quality or design of a building; and finally, projects that fall under the category of distinguished projects. (Lusoy and Zuhal, p. 12, 1999)

The relationship between specialized knowledge related to the specific academic specialization, years of service, personal factors, and individual aesthetic preferences are all factors that contribute to the formation of the aesthetic judgment that frames the outcome of evaluating graduation projects. The study proposes a model that combines these factors and their role in promoting aesthetic judgment.

Figure (1) shows the hypothetical conceptual model that assumes that personal factors act as a

partial mediator between specialized knowledge/service and aesthetic judgment.

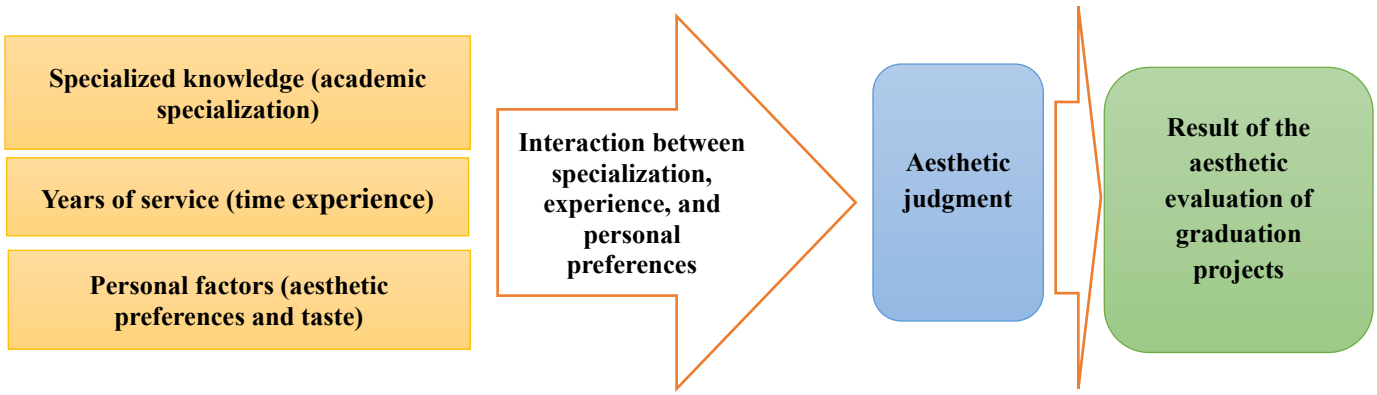


Figure (1) presents the conceptual model for studying aesthetic judgment and evaluating graduation projects.

Prepared by the researcher

Based on the above hypothetical framework, the study introduces key concepts that will be clarified as a theoretical framework defining this relationship, paving the way for its practical application.

In addition to the practical implications of the findings obtained in this study, which include the recommendations to increase the clarity of criteria for evaluating graduation projects, there is also the methodological and theoretical significance of this paper in the form of the application of the aesthetic sentiment scale to the process of assessing academic architecture and the development of the corresponding conceptual model.

2. Aesthetic Judgment and Aesthetic Preference

Dewey describes aesthetic judgment as "a function of the creative response on the part of the judging individual, and this means that it is a kind of insight or perception." Thus, the feeling of beauty and being affected by it to the point of enjoyment transforms over time into a principle of appreciation and taste, which becomes aesthetic judgment and criticism within a mechanism governed by rules that are subject to analysis and synthesis when it is intended to be a manifestation of judgment. In this way, its function is completed in forming a comprehensive experience (Mustafa, 2012, p. 45).

Numerous studies have indicated that aesthetic judgment is linked to emotions, with specific brain regions activated during aesthetic appreciation. These regions have also been highlighted in emotion studies (Kawabata & Zeki, 2004; Vartanian & Goel, 2004).

Aesthetic appreciation is not a private or subjective matter, as rules and standards regarding the quality of aesthetic judgment vary from one society to another. Aesthetic quality in architecture and design, in general, is a subjective perception because its judgment is emotionally embedded and thus influenced by the personalities of the judges.

Aesthetic perception and judgment are not merely cognitive processes; they also encompass emotions. Therefore, the empirical study of these experiences requires the conceptualization and measurement of aesthetic feelings. Despite long-standing interest in these feelings, we still lack an assessment tool capable of capturing the wide range of emotions that arise in response to the perceived aesthetic appeal of stimuli. Aesthetic stimuli are not limited to the arts in the strict sense but extend to design and built environments (Schindler et al., 2017, p. 1).

Prinz, J. (2007) indicates that aesthetic judgment is linked to emotions. Numerous studies in modern brain research have shown that

specific areas of the human brain are activated during aesthetic appreciation. Furthermore, aesthetic quality cannot be viewed objectively as an inherent property of the object itself, but rather as a characteristic we, as individuals, ascribe to it during the evaluation process (Prinz, J. (2007), p. 8).

Aesthetic judgment does not express purely personal preference, as it involves a condition of agreement. If it is collective, it represents the agreement of the members of the expert group (cognitive beauty). There are no principles of beauty unless we consider the psychological principles of perception as such. However, there is a rational basis for genuine judgments of beauty. The selfless nature of the experience of beauty is evident in the fact that pleasure is based on solving the problem of perception through perceptual and cognitive processing. McMahon, J.A. (2001).

Figure (2) illustrates the relationship of aesthetic judgment to personal preference and taste, and the resulting differences in perception from one person to another.

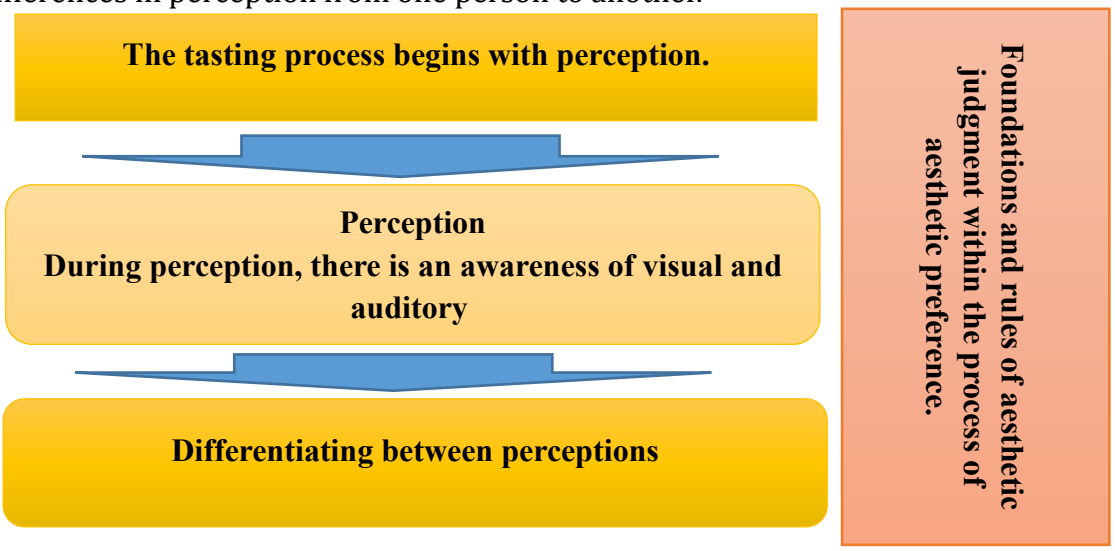


Figure (2) illustrates the relationship between aesthetic judgment and personal preference and taste, and the resulting differences in perception from one person to another.
Source: Researcher

3. Aesthetic Judgment and Graduation Projects:

Members of the evaluation committee are distinguished by their ability to interpret concepts, ensuring that the design inputs are clear and understandable to most of the judges. This is further enhanced by the presentation methods used by designers to showcase their projects, without compromising aesthetic quality or clarity. Experts evaluate the design proposals submitted by students. Judging architecture is not an easy task; it is complex, and experts have limited information to assist them. Each judge brings their own preferences and definition of quality and beauty, including a preference for a particular architectural style, which may influence their decisions and choices in the judging process. (Al-Qaysi, N. 2018, p. 203).

Judges enter the evaluation process imbued with prior experience and professional convictions about what they consider aesthetically good or attractive. These backgrounds contribute to shaping their perceptions and criteria and can very well influence the nature of the judgments they issue on architectural projects. Reviewing an

arbitrator's preferences requires understanding the backgrounds that shaped those preferences. Objectivity increases when the evaluation is based on deliberation and discussion among the arbitration panel members. Arbitrators should also be open-minded and receptive to others' opinions, as well as aware of the limitations of their roles and responsibilities. (RÖNN, M. 2009, p. 16)

Judgment in architectural design involves two fundamental types of evaluation: the first relates to cultural and aesthetic values, manifested in the level of creativity; the second relates to technical requirements and user needs. Both types are important despite their apparent contradiction, difference, and subjectivity. The nature of architectural practice necessitates combining these qualities in building design. The Roman architect Vitruvius considered a good building to be based on three fundamental pillars: solidity (artistic stability), utility (usability), and beauty (aesthetic value). Accordingly, the architect is required to integrate objectively verifiable characteristics with those based on subjective judgment. (Ezz and Elsayed 2024, p. 4)

Scruton argues that beauty is not solely about form but encompasses all aspects of the element and its material. Every meaning is connected to its form. He states that our perception of the beauty of architectural forms cannot be separated from our understanding of the building and the function it serves. The process of aesthetic judgment is based on three interconnected elements, from which a set of outcomes emerges, the basis of which varies from person to person within the framework of aesthetic judgment.

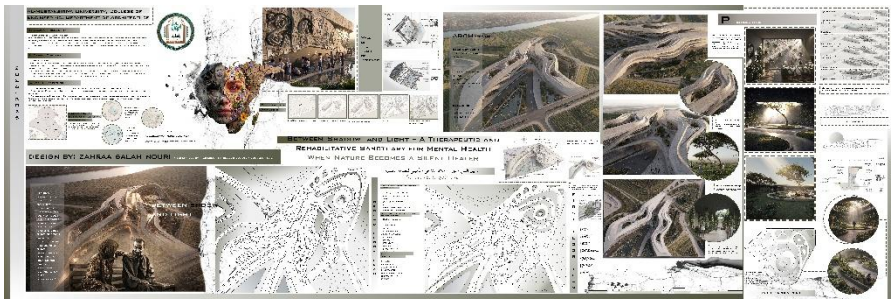
From the above, we conclude that aesthetic judgment in graduation projects is a complex process requiring a balance between personal taste and professional standards, between creativity and function, and between individual experience and collective discussion, in order to arrive at a fair evaluation that reflects the essence of architecture as both art and function.

4. Method and Procedures

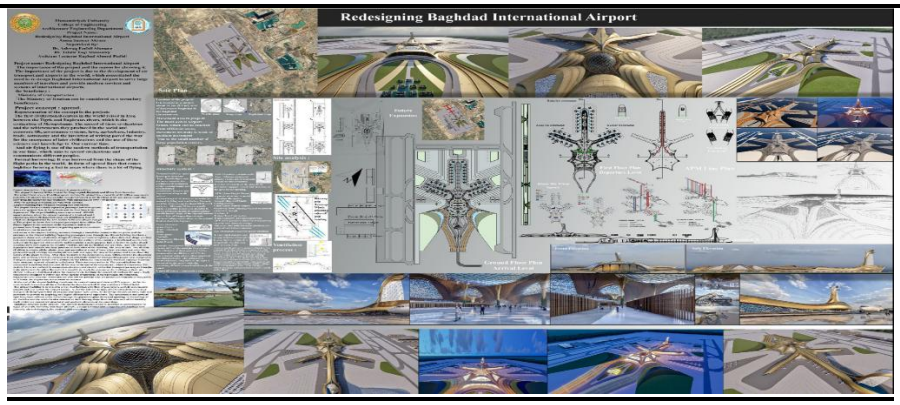
4.1. Sample and measurement Method

The research study is an analysis of the data collected using a set of 21 questions that have been used to form the AESTHEMOS scale but have been modified based on the special needs of the Department of Architectural Engineering. The total number of evaluators who had been selected for the test consisted of 33 evaluators having professional skills in architectural design, urban planning and architectural technology from three universities: Al-Mustansiriya University, Al-Nahrain University and Diyala University in five levels of experience. The projects were presented to the evaluators through the questionnaire.

A sample of graduation projects was selected, including two projects from the Department of Architectural Engineering at the College of Engineering, Al-Mustansiriyah University. The selection of the sample focused on the aesthetic nature of the projects, considering the building's form, presentation, and panoramic design. The following is a sample of the projects.



The first project (a therapeutic and rehabilitation center project)



The second project (design of Baghdad International Airport)

5. Statistical analysis of the field aspect

5.1. Validity and Reliability Tests of the Measuring Instrument

Table (1) shows the values of Cronbach's Alpha, Composite Reliability, and Extracted Average Variance (AVA), which measures convergent validity, for the respondent variable (aesthetic judgment in evaluating graduation projects). These values are used to test the reliability and quality of the measurement instrument for this variable. The results showed that the values of Cronbach's Alpha and Composite Reliability exceeded the minimum acceptable reliability threshold of (0.70), while the extracted average variance was (0.523). This indicates that convergent validity is achieved for the respondent variable (aesthetic judgment in evaluating graduation projects), thus demonstrating that the measurement instrument possesses a good degree of reliability and validity, as shown in Table (1).

Table (1) Values of reliability and validity tests for aesthetic judgment items in the evaluation of graduation projects.

Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha	Number of Items	Coefficient Estimates / Variables	
0.827	0.523	0.746	20	Aesthetic Judgment in evaluating graduation projects	AJP

Source: Prepared by the researcher based on the results of statistical analysis using the SMARTpls.4 statistical software.

5.2. Describing and diagnosing the research variables, analyzing the sample responses, and interpreting the results.

In the descriptive data analysis, the researcher relied on frequency measures for the independent variables of specialization and years of experience, as well as weighted means, standard deviations, and relative importance when analyzing the aesthetic judgment variable in evaluating graduation projects (the respondent variable). These measures were used to determine the levels of responses from the sample members through a respondent response strength matrix, which represents an estimating scale based on the seven-point Likert scale. The results of the analysis are shown in Tables (2) and (3) as follows:

Table (2) Frequencies and percentages of specialization and years of experience variables

Percentage (%)	Frequency	Category	Independent Variables
63.6	21	Architectural Design	Specialization
27.3	9	Urban Planning	
9.1	3	Architectural Technology	
100 %	33	Total	
15.2	5	From 11 to 15 years	Years of Experience
18.2	6	From 16 to 20 years	
36.4	12	From 21 to 25 years	
24.2	8	From 26 to 30 years	
6.1	2	31years and above	
100 %	33	Total	

Source: Results of statistical analysis using SPSS v.28 statistical software

Table (3) Statistical measures for the respondent variable. n = 33

Relative importance	Standard Deviation	Arithmetic Mean	Dimensions of the Variables of Research	
65.7%	0.545	4.602	Aesthetic Judgment in evaluating graduation projects	AJP

Source: Results of statistical analysis using SPSS v.28 statistical software

To verify the homogeneity of variance, Levene's test was used. The results, shown in Table 4, indicate that the error variances were homogeneous across the groups, with significance levels (Sig 0.699, 0.806, 0.696), which are greater than the significance level of 0.05. This confirms the validity of the two-way ANOVA test.

The results of the two-way ANOVA, as shown in Table (5), revealed no statistically significant main effect of the specialization variable on aesthetic judgment in evaluating graduation projects, with a value of (F=0.385) and a significance level of (0.685), which is greater than the significance level of (0.05). Similarly, the results showed no statistically significant effect of the years of experience variable on aesthetic judgment in evaluating graduation projects, with a value of (F=1.313) and a significance level of (0.298), which is greater than the significance level of (0.05).

Furthermore, the test results revealed no statistically significant effect of specialization and years of experience combined on aesthetic judgment in evaluating graduation projects, with a value of (F=1.330) and a significance level of (0.290), which is greater than the significance level of (0.05). This indicates that aesthetic judgment in evaluating graduation projects is not affected by specialization and years of experience among the research sample.

This result means rejecting the first research hypothesis and accepting the alternative hypothesis, i.e., there is no statistically significant effect. Specialization and years of experience in aesthetic judgment in evaluating graduation projects.

1.3 Testing the significant differences in the average responses of respondents to the aesthetic judgment variable in evaluating graduation projects according to differences in specialization or years of experience

This section aims to test whether there are significant differences between the mean responses of the research sample based on specialization and years of experience regarding the aesthetic judgment variable in evaluating graduation projects. A one-way ANOVA was primarily used, as it is the appropriate test for comparing the means of three or more groups. The table below shows no significant differences between the mean responses of the respondents regarding aesthetic judgment based on their specialization or years of experience.

This is demonstrated by the calculated F-test values, which reached (0.215) and (1.014) respectively, with significance levels of (0.807) and (0.417) respectively, both of which are greater than the significance level of (0.05). Therefore, these results do not support the fifth research hypothesis, which stated: "There are significant differences in the mean responses of the respondents regarding the aesthetic judgment variable in evaluating graduation projects based on specialization or years of experience."

This necessitates accepting the alternative hypothesis: "There are no significant differences in the mean responses of the respondents regarding aesthetic judgment in evaluating graduation projects." Respondents' responses to the aesthetic judgment variable in evaluating graduation projects according to differences in specialization or years of experience.

Table (6) Results of the One-Way ANOVA Test

Sig.	F-test	Mean Square	d.f	Sum of Squares		Variables
0.807	0.215	.067	2	.134	Between Groups	Specialization
		.312	30	9.353	Within Groups	
			32	9.487	Total	
0.417	1.014	.300	4	1.200	Between Groups	Years of Experience
		.296	28	8.287	Within Groups	
			32	9.487	Total	

Source: Results of statistical analysis using SPSS v.28 statistical software

6. Discussion and Conclusion:

The main finding indicates that there is no statistically significant effect of specialization on aesthetic judgment, with an F-value of 0.385 at a significance level of 0.685. Similarly, no significant effect of years of experience was found, with an F-value of 1.313 at a significance level of 0.298. Furthermore, no interaction effect between the two variables was observed, with an F-value of 1.330 at a significance level of 0.290.

From the above, we observe that the variation in the evaluation committees' judgments is not explained by their professional background or length of service but rather is more closely linked to personal preferences and individual aesthetic experience. This letter is consistent with the theory behind this study as it considers aesthetic judgment to be a process that combines perception, knowledge, and emotions. This is not a simple application of objective criteria but rather a complex combination of cognitive, affective, and perceptive factors. Thus, it is

expected that there would be variations in the judgments of committee members in this case. In addition, the evaluative character of the evaluation of architectural projects means that the judges can be swayed by professional beliefs, styles, and experience while making their judgments.

Hence, the findings must be taken with some caution due to the low sample size and lack of interdisciplinary approach. However, the tool proved itself quite valid and reliable; therefore, this research is a good contribution to the comprehension of aesthetic judgment and can become the basis for further research.

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