AC 2012-3358: GENDER AND EDUCATIONAL SYSTEMS IN THE CONTINUING ARCHITECTURAL EDUCATION: APTITUDES, ATTITUDES, AND SKILLS ACQUISITION

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Gender and educational systems in Continuing Architectural Education: Aptitudes, Attitudes, and Skills Acquisition

INTRODUCTION

Increasing globalization has created more opportunities for transnational cooperation in the architectural field (Wang, 2004). As a result, every architecture department in Taiwan's universities and other educational institutions has had to face the challenge of making their courses international in scope. At present, different courses are offered, as stipulated by the Ministry of Education's core program. Although the course content for each school differs significantly, design remains overall the most important aspect of education in architecture. Design courses are often worth far higher credit points than other courses, and this prioritization is reflected in the arrangement of courses. However, some schools still use old models in their design courses and neglect to offer specialized courses. The willingness of their students to learn is subsequently low, and this is reflected in complaints by teachers. Many students are initially filled with excitement, imagination, and dreams when they enroll in design courses, but quickly become puzzled and disenchanted when they are unable to solve the problems that arise during the design process (Garrison and Kanuka, 2004). In terms of the design courses, many discussions have been held and opinions expressed over the last few years, but teaching has continued to vary amongst schools.

Therefore, this paper examines the architectural design courses offered by departments of architecture. The following factors that influence students' willingness to learn are discussed: Course Content, Commenting on design, Teachers' Teaching, and Students' Learning. An analysis of a questionnaire is used to explore significant correlations between the "education system" and "gender" in architecture design learning and teaching. The results serve as a reference for planning architecture design courses in the architecture-related departments of universities and technical colleges.

The above research raises two important questions: Which factors influence students' willingness to learn when enrolled in architectural design courses? Why and how do "gender" and "education system" influence students' learning in architecture design courses? The objective of this study is thus to identify the factors that influence students' willingness to learn in architectural design courses, with a particular focus on determining the significance of any correlation between gender and education system.

METHODOLOGY

The aim of this paper is to discuss "Reasons for the influence of Education System and Gender on Students' Willingness to Learn." It attempts to identify the influences and

differences between different “gender” and “education systems” regarding the willingness of students to learn when enrolled in architectural design courses. “Educational Connotation of Architecture Design” and “Teaching Model of Architecture Design Course” are first discussed via a literature review. The factors that influence students’ willingness to learn in architectural design courses are then identified. A questionnaire is designed in order to explore the factors “Course Content,” “Design Comment Making,” “Teachers’ Teaching”, and “Students’ Learning.” After the questionnaire statistics have been collected and analyzed, the research outcomes and findings are reported.

The content of the research design is as follows:

（1） Questionnaire Design： This questionnaire is designed to investigate, under different gender and education systems, the main factors and differences that influence students’ willingness to learn when enrolled in architectural design courses.

First Part：Background Information－Investigate subjects’ gender and the previous and current education systems they have been enrolled in; this should make it possible to understand the hierarchical distribution of students in the architectural design course.

Second Part：Questionnaire Content Explanation－The questionnaire design is a “Closed Questionnaire.” A 5-point Likert Scale is used to conduct the design and edition. This type of questionnaire design allows the target to use a five-equaled scale to answer the questions. The five points on scales are: Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree. They are numbered as 5, 4, 3, 2, and 1, respectively. The targets can then express the degree to which they agree with each statement. A higher number indicates that the target identifies more with that particular influence.

Third Part：Investigate the degree to which these factors influence learning willingness for targets in “Architecture Design Course”－A. Course Content ；B. Design comment making ；C. Teachers’ Teaching；D. Students’ Learning

（2） Questionnaire Delivery： This paper selects students from the Department of Architecture of OOOO University as research targets. Questionnaires will be sent to different education systems （University, Advanced Studies Department, and Advanced Studies Institute） and for different years. Nine classes will complete the questionnaires. The total number of students in the class should be 364 (students will be absent from some classes). Therefore, the total number of actual targets is 252, of which 13 questionnaires are considered ineffective. The total number of effective questionnaires is 239 and the return rate is 69.2%.

A. Course Content－There are 10 factors in total: The teaching content is too large and invariable. Course content is too practical. Course content is too theoretical. After-school activity is inadequate. Foundation course is insufficient. The training in esthetics

accomplishment is underdeveloped. The content for Spatial composition training is lacking. The content for Spatial modeling training is lacking. The course objective is uncertain.

B. Design comment making—There are 11 factors in total: Teachers hold different opinions. Vocabulary used in comments is too harsh. Grades would affect willingness to learn. Grade given is indefinite. Hand-in rule is unclear. Teachers are unenthusiastic listeners . There is not enough time for summary explanation. Judges' suggestions are not specific. Commenting time is too long overall. Overall commenting time is insufficient. The location in which Design comments are made is not well chosen.

C. Teachers' Teaching—There are 8 factors in total: A final decision is made too late. Time for modification is not enough. Criticism is too excessive. There is a lack of constructive suggestions. Patience is lacking. The guidance process is repetitive. Subjective consciousness is too strong. Only results are valued and not the process.

D. Students' Learning—There are 13 factors in total: The design idea cannot be practiced. Assignment production time cannot be controlled. Techniques for composing designs are either unknown or unavailable. Other coursework commitments are too excessive and cannot be managed properly. The design process takes too long. Grades are unappealing. Ideas are often rejected. Paper and other required materials are too expensive. There is not enough competiveness among classmates. There is an absence of learning interaction among classmates. There is a lack of group work among classmates. Classmates copy from one another. Students rely too much on teachers' suggestions.

RESEARCH DESIGN PROCESS AND ANALYSIS

After the questionnaires are returned and sorted, the basic information from the samples is used to discuss the main factors and differences that influence students' willingness to learn when enrolled in architectural design courses, with reference to gender differences and different systems of education. The statistical software SPSS 10.5 is used. Descriptive statistics, an independent samples t-test, a one-way ANOVA, and Scheffé method are used as the statistical methods for information analysis.

（1）Analysis for Basic Information of Samples: Statistical software is used to carry out an analysis according to the frequency distribution and percentage for the returned samples. The total number of males is 139, which is 58.1%. The total number of female is 100, which is 41.9%. Of the 239 targets, 107 are from a university, 86 are from the Advanced Studies Department, and 46 are from the Advanced Studies Institute. As for previously studied education system, 95 are from higher vocational education, 22 are from senior high school, and 122 are from college.

（2） Reasons for “Gender” to Influence Students’ Learning in an Architectural Design Course: A discussion of whether different genders would make any difference to the reasons that influence students’ learning in an architectural design course. An independent samples t-test is used to explore the differences between male targets and female targets in terms of the reasons for their willingness to learn when enrolled in an “architectural design course.” If $p < 0.05$, the reason is significant (as in Table 1).

As for the influence of the “course content” factor, the difference is most significant for “Space modeling training content is lacking” ($P = 0.033 < 0.05$，$t = -2.98$). This means that in the teaching of course content, teachers should pay more attention to enhancing female students’ space modeling concept training. For the influence factor of “Design Comment Making,” only “Design Comment Making location is not well chosen” has a significant difference ($p = 0.048 < 0.05$，$t = -1.992$). This finding indicates that female targets believed it would influence their willingness to learn. Therefore, when choosing a design comment making location, teachers should pay more attention to female students’ suggestions and opinions. As for the influence factor of “Teacher’s Teaching,” the reasons that significantly differ for male targets and female targets are “a lack of patience” ($P = 0.033 < 0.05$，$t = -2.148$) and “Guidance process is repetitive” ($P = 0.036 < 0.05$，$t = -2.109$). These indicate that when teaching, teachers should interact and discuss with female students more, and display patience while guiding them during the design process. As for the influence factor of “Students’ Learning,” the difference is insignificant after further analysis. Therefore, the influence reasons are identical for both genders.

Table 1 Analysis of Significant Differences for "Gender" Regarding Architectural Design Course

Architectural Design Program	Male		Female		t-test	
A. Course content	Mean	SD	Mean	SD	Significance	t-value
Lack of aesthetic Accomplishment Training Content	3.77	0.85	4.03	0.77	0.016	–2.434
Lack of Spatial Composition Training Content	3.68	0.89	4.01	0.82	0.004	–2.881
Lack of Spatial Modeling Training Content	3.68	0.84	4.00	0.82	0.003	–2.982
B. Design Jury Making						
Design Jury Selection location is not well chosen	3.49	0.85	3.71	0.84	0.048	–1.992
C. Teachers’ teaching						
There is a lack of patience	3.00	0.87	3.25	0.91	0.033	–2.148
Guidance process is repetitive	3.22	0.88	3.47	0.92	0.036	–2.109

（3）Reasons for “Education System Before Learning” to Influence Students’ Learning in Architectural Design Course: A discussion of whether the implementation of different education systems prior to learning would make any difference to the reasons that influence students’ learning in an architectural design course. After a one-way ANOVA is performed, if the difference is significant ($p < 0.05$), the Scheffé method is applied to carry out a post-hoc comparison to analyze the significant difference. An F-value is then used to determine the variance within the comparison. A larger F-value indicates a smaller internal variance (as shown in Table 2).

Table 2 Analysis of Significant Differences for “Different Education Systems before Learning" Regarding Architectural Design Course

Architecture Design Program		Educational System	Number	Mean	F-value	Significance
Course Content	Quantity of the teaching content is too large	Vocational High School	95	3.46	3.929	0.021
		High School	22	2.86		
		College	122	3.40		
	Course content is too practical	Vocational High School	95	3.24	6.963	0.001
		High School	22	3.09		
		College	122	2.75		
Design jury-making	Hand-in rule is unclear	Vocational High School	95	3.08	4.056	0.019
		High School	22	3.36		
		College	122	2.86		
	Listeners are unenthusiastic	Vocational High School	95	3.28	6.318	0.002
		High School	22	3.41		
		College	122	2.97		
	Time for summary explanation is insufficient	Vocational High School	95	3.08	3.693	0.026
		High School	22	2.95		
		College	122	3.31		
Students’ Learning	Assignment production time cannot be controlled	Vocational High School	95	4.00	3.113	0.046
		High School	22	3.73		
		College	122	3.75		
	Grades are unappealing	Vocational High School	95	3.63	4.436	0.013
		High School	22	3.32		
		College	122	3.31		
	Paper and other materials are too expensive	Vocational High School	95	3.85	8.912	0.000
		High School	22	3.77		
		College	122	3.35		
	A lack of competiveness among classmates	Vocational High School	95	3.38	7.720	0.001
		High School	22	3.27		
		College	122	2.94		
	A lack of learning interaction	Vocational High School	95	3.43	4.989	0.008
		High School	22	3.55		
		College	122	3.08		

	among classmates					
	A lack of group work among classmates	Vocational High School	95	3.58	3.906	0.021
		High School	22	3.55		
		College	122	3.25		

From the one-way ANOVA, we can see that under “Course Content,” the differences for “Quantity of the teaching content is too large” and “Course content is too practical” for targets of different education systems are significant. Further application of the Scheffé method showed that for “Quantity of the teaching content is too large,” the difference between higher vocational education and senior high school is significant (average difference I-J＝0.600、p＝0.023). The difference between senior high school and college is significant (average difference I-J＝0.538、p＝0.042). This reflects that in regards to education system, higher vocational education, and college, students have both had a basic architectural education, whereas senior high school students do not have any background education in architecture. This has caused high school students to feel estranged from architectural education and feel that there is too much teaching content. As for “Course content is too practical,” the difference between higher vocational education and college is significant (average difference I-J＝0.469、p＝0.135). This means college students have a more professional practical education foundation than higher vocational students.

As for “Design Comment Making,” the three reasons with significant differences for targets of different education systems before learning are “Hand-in rule is unclear,” “Listeners are unenthusiastic” and “There is not enough time for summary explanation.” After the Scheffé method is applied, we found that in terms of “Hand-in rule is unclear,” the difference for high school and college students is significant (average difference I-J＝0.503、p＝0.042). This means college students have an architectural education background and already have hand-in knowledge to a certain extent. Senior high school students in contrast do not have any architectural education background and are unfamiliar with the hand-in rules. In terms of “Listeners are unenthusiastic,” the difference for higher vocational education and college is significant (average difference I-J＝0.317、p＝0.010). Moreover, the difference between high school and college is significant (average difference I-J＝0.442、p＝0.043). This means college graduates are different from higher vocational students and senior high school students. One feasible explanation is that college students have already taken an architectural design course; higher vocational students had only undertaken basic architecture-related courses, rather than architectural design courses. Senior high school students, on the other hand, had not attempted any architecture design courses, resulting in the difference in “Listeners are unenthusiastic.” In terms of “There was not enough time for summary explanation,” the result was unclear after applying the Scheffé method.

As for “Students’ Learning,” the reasons for the significant differences among the targets of the different education systems prior to learning were “Grades are unappealing,” “Paper and other materials are too expensive,” “A lack of competiveness among classmates” and “A lack of group work among classmates.” After using the Scheffé method, it became apparent that the reasons for significant differences between higher vocational education and college are “Grades are unappealing” (average difference I-J＝0.320、p＝0.111), “Paper and other materials are too expensive” (average difference I-J＝0.500、p＝0.122), “A lack of competiveness among classmates” (average difference I-J＝0.436、p＝0.002), “A lack of learning interaction among classmates” (average difference I-J＝0.350、p＝0.023) and “A lack of group work among classmates” (average difference I-J＝0.333、p＝0.028). After using the Scheffé method, it became clear that the difference for “Assignment production time cannot be controlled” is insignificant. It requires other research methods (for example, an interview method and an observation method) for clarification. Based on this information, we know that students who had been through college education systems have an architectural background, whereas students from the senior high school education system have no architectural background. The outcome is that, when learning architectural design, the factors that influence learning are significantly different for students of these two distinct education systems.

（4）Reasons for “Different Current Education Systems” to Influence Students’ Learning of Architecture Design Course: A discussion of whether different education systems would make any difference to the reasons that influence students’ learning in architectural design courses. After a one-way ANOVA is performed, if the difference is significant ($p < 0.05$), the Scheffé method is applied to carry out a post-comparison to analyze the significant difference (as shown in Table 3). After a one-way ANOVA is performed, we found two reasons for the differences: “Course content is too practical” and “After-school activity is not enough”—under the factor “Course Content” for targets of different education systems—are significant. After applying the Scheffé method to “Course content is too practical,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.427、p＝0.012). The difference between university and the Advanced Studies Institute is also significant (average difference I-J＝0.644、p＝0.001). This demonstrates that university is different from the Advanced Studies Department and the Advanced Studies Institute. The reason may be that the targets of the Advanced Studies Department and the Advanced Studies Institute are mostly office workers with an architectural engineering background. However, targets in university are mainly students who have not worked yet and who pay more attention to learning architectural theory. Therefore, the difference for “Course content is too practical” for the targets of different education

systems is significant. In terms of “After-school activity is not enough,” the difference for university and the Advanced Studies Department is significant (average difference I-J＝0.322、p＝0.042).

Table 3 Analysis of Significant Differences for "Different Current Education Systems" Regarding Architectural Design Course

Architecture Design Program		Education System	Number	Mean	F-value	Significance
Program Content	Course content is too practical	University	107	3.25	8.540	0.000
		Advanced Studies Department	86	2.83		
		Advanced Studies Institute	46	2.61		
	After-school activity is not enough	University	107	4.16	4.290	0.015
		Advanced Studies Department	86	3.84		
		Advanced Studies Institute	46	3.80		
Design Comment Making	Hand-in rule is unclear	University	107	3.17	3.932	0.021
		Advanced Studies Department	86	2.85		
		Advanced Studies Institute	46	2.87		
	Listeners are unenthusiastic	University	107	3.35	7.719	0.001
		Advanced Studies Department	86	2.97		
		Advanced Studies Institute	46	2.96		
	Not enough time for summary explanation	University	107	3.09	3.922	0.021
		Advanced Studies Department	86	3.16		
		Advanced Studies Institute	46	3.46		
	Overall commenting time is not enough	University	107	2.92	3.910	0.021
		Advanced Studies Department	86	3.06		
		Advanced Studies Institute	46	3.35		
Teachers’Teaching	Final decision is made too late	University	107	3.89	4.735	0.010
		Advanced	86	3.69		

		Studies Department				
		Advanced Studies Institute	46	3.43		
Students'Learning	Assignment production time cannot be controlled	University	107	4.00	4.528	0.012
		Advanced Studies Department	86	3.66		
		Advanced Studies Institute	46	3.83		
	Other coursework is too excessive and cannot be managed properly	University	107	3.85	9.222	0.000
		Advanced Studies Department	86	3.55		
		Advanced Studies Institute	46	4.20		
	Grades are unappealing	University	107	3.60	3.888	0.022
		Advanced Studies Department	86	3.28		
		Advanced Studies Institute	46	3.37		
	Paper and other materials are too expensive	University	107	3.86	8.869	0.000
		Advanced Studies Department	86	3.37		
		Advanced Studies Institute	46	3.37		
	A lack of competiveness among classmates	University	107	3.40	9.574	0.000
		Advanced Studies Department	86	2.91		
		Advanced Studies Institute	46	3.00		
	A lack of learning interaction among classmates	University	107	3.48	6.470	0.002
		Advanced Studies Department	86	3.00		
		Advanced Studies Institute	46	3.26		
	A lack of group work among classmates	University	107	3.58	3.584	0.029
		Advanced Studies Department	86	3.28		
		Advanced Studies Institute	46	3.24		

As for "Design Comment Making," a one-way ANOVA is used to test targets with

different current education systems. The four reasons that differed significantly are “Hand-in rule is unclear,” “Listeners are unenthusiastic,” “Not enough time for summary explanation” and “Overall commenting time is not enough.” After applying the Scheffé method, we discovered that in terms of “Hand-in rule is unclear,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.319、p＝0.038). This implies that as the class time for university is five days a week (whereas it is two days a week for the Advanced Studies Department) the in-school learning time for university students is longer and it is thus easier for them to make consultations.

Perhaps this accounts for the difference between these two systems of education. In terms of “Listeners are unenthusiastic,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.381、p＝0.003). The difference between university and the Advanced Studies Institute is also significant (average difference I-J＝0.389、p＝0.014). This shows that university is different to the Advanced Studies Department and the Advanced Studies Institute. Therefore, when commenting on design, teachers should request that students attend class and not leave during class. Teachers should establish a break time and class dismissal time. Finally, the influence reasons shared between university and the Advanced Studies Institute are “Not enough time for summary explanation” (average difference I-J＝0. .363、p＝0.023) and “Overall commenting time is not enough” (average difference I-J＝0.432、p＝0.021). This shows that there are more opportunities for commenting on design in university than there are in the Advanced Studies Institute. There are more design teachers in university than in the Advanced Studies Institute. Furthermore, there are more groups commenting on design in university than there are in the Advanced Studies Institute. These may cause the discrepancies between different education systems.

As for “Teachers’ Teaching,” among all the reasons, only the difference for “Final decision is made too late” is significant. After applying the Scheffé method, we found that the difference between university and the Advanced Studies Institute is significant. This implies that the students of the Advanced Studies Department only attend class two days a week, and that most of them are office workers who do not have much time for an architectural design course. This may be the reason for the difference.

As for “Students’ Learning,” the seven reasons that are significantly different are “Assignment production time cannot be controlled,” “Other schoolwork is too excessive and cannot be managed properly,” “Grades are unappealing,” “Paper and other materials are too expensive,” “A lack of competiveness between classmates,” “A lack of learning interaction among classmates,” and “A lack of group work among classmates.” After applying the

Scheffé method, we know that in terms of “Assignment production time cannot be controlled,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.337、p＝0.012). It implies most students of the Advanced Studies Department have an architectural background and practical experience, whereas students of university do not have any practical experience. This may be the reason for the difference. In terms of “Other schoolwork is too excessive and cannot be managed properly,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.304、p＝0.046). The difference between the Advanced Studies Department and Advanced Studies Institute is also significant (average difference I-J ＝0.649、p＝0.000).

This shows that the coursework for university students is too excessive and that the students of the Advanced Studies Department and the Advanced Studies Institute have to work whilst studying. This may be the reason for the difference regarding targets of different education systems. In terms of “Grades are unappealing,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.319、p＝ 0.027). It implies that university students pay more attention to their grades than the students of the Advanced Studies Department do. In terms of “Paper and other materials are too expensive,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.488、p＝0.001). The difference between university and the Advanced Studies Institute is also significant (average difference I-J＝0.490、p＝0.009).

It shows that the students of the Advanced Studies Department and the Advanced Studies Institute are mostly officer workers with economic abilities, and that university students are all full-time. This may be the reason for the difference. In terms of “A lack of competiveness between classmates” and “A lack of interactive learning interaction between classmates,” the difference between university and the Advanced Studies Department is significant (average difference I-J＝0.495、p＝0.000, average difference I-J＝0.477、p＝ 0.002). The implication here is that university students spend more time together, which gives them more opportunities to discuss their studies. Conversely, students at the Advanced Studies Department do not have much time for such discussions. This may be the reason for the difference. In terms of “A lack of group work between classmates,” the result is unclear after applying the Scheffé method; an interview and observation are therefore required for clarification.

DISCUSSION

In view of the above analysis, the “Gender” factor that influence students’ learning in architectural design courses can be summarized as follows. We found that in terms of “Course

Content," teachers should pay more attention to female students' training in spatial modeling concepts. In terms of "Design Comment Making," when deciding the location, female students' suggestions and ideas should be valued.

In regards to "Teachers' Teaching," teachers should interact and discuss more with female students, and be patient when guiding them as they design. In terms of "Students' Learning," the difference is insignificant regarding gender. This means that reasons that influence the learning of female and male students in architectural programs are the same. As for factors of "Education System before Learning" that influence students' learning of architectural design courses, they can be summarized as follows. Regarding "Course Content," the context of students' learning should be understood in terms of the differences between those who have a background education in architecture, and those who do not. It can be used as a reference for adjusting the course's degree of difficulty. In terms of "Design Comment Making," students' opinions of the design comment-making rule regarding different education systems should be used as a reference for later design comment arrangements. In regards to "Students' Learning," the differences between the learning behavior of students that graduated from senior high school, higher vocational education, and college should be understood; they can be used as a reference to guide students.

Moreover, as for factors of "Current Education System" that influence students' learning in architectural design courses, they can be summarized as follows. We found that, in terms of "Course Content," the jobs for most students in the Advanced Studies Department and the Advanced Studies Institute are architecture-related and that they have more knowledge regarding architectural practice than their university counterparts. Therefore, regarding the arrangement of course in universities, practical architecture courses should be added. In contrast, the arrangement of courses for the Advanced Studies Department and the Advanced Studies Institute should emphasize architecture-related theory courses. In terms of "Design Comment Making," the class time for university students is five days a week, whereas it is two days a week for students at the Advanced Studies Department. Therefore the in-school time for university students is longer, which makes it more convenient for them to have consultations. This may be the reason for the differences between these two education systems. Therefore when collecting assignments, the rules should be explained in detail. In terms of "Teachers' Teaching," only "Final decision is made too late" currently causes significant discrepancies between the different education systems. In terms of "Students' Learning," we know that the factors which influence learning are different for each distinct, current system of education. University students have more time at school to discuss coursework among themselves, in contrast to their counterparts of the Advanced Studies Department.

CONCLUSIONS AND SUGGESTIONS

This research has used related literature, such as the Educational Connotations of Architectural Design and the Teaching Model of Architectural Design Courses, as a theoretical foundation to determine the factors that influence students' willingness to learn in an architectural design course, and to edit the content of the questionnaire. In terms of architectural design courses, there are 42 influence reasons under the factors of "Course Content," "Design Comment Making," "Teachers' Teaching," and "Students' Learning."

After performing statistical analyses, we indentified the factors that influence students' willingness to learn in an architectural design course that were related to "gender" differences. As for "Course Content," we know that male students have a better understanding of aesthetics and spatial concepts than their female counterparts. In regards to "Design Comment Making," male students are more capable of receiving criticism from teachers than female students. As for "Teachers' Teaching," the teachers should try to communicate and interact more with the female students. Regarding "Students' Learning," we know that the reasons that influence the willingness to learn of female students and male students are the same.

As for the differences in the factors that influence students' willingness to learn in an architectural design course, with regard to different systems of education prior to learning, we know that the factors that influence the willingness to learn of high school students, higher vocational students, and college students, are all different. The reasons under "Students' Learning" have the most significant differences. Therefore, teachers should pay more attention to the students' learning situation. As for high school students learning architecture, they encounter more difficulties than students of higher vocational education and colleges do, because they do not have a background in architecture. As for the differences in the factors that influence students' willingness to learn in architectural design courses, in terms of the current systems of education, we know there are significant differences relating to "Course Content," "Design Comment Making," "Teachers' Teaching" and "Students' Learning" which distinguish the students of universities, the Advanced Studies Institute, and the Advanced Studies Department. Therefore, when planning architectural design courses, different arrangements should be considered for the respective systems of education. The teachers should teach according to the aptitude of their students.

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