

# The Efficacy of Using Critical Pedagogy as a Teaching Method in Master's Architectural Design Course (1) on Graduate Students' Motivation

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Received 06 June 2017;

Revised 18 May 2018;

Accepted 22 July 2018;

Available Online 18 March 2020

## ABSTRACT

Choosing the optimal teaching method appropriate to the purpose and field of the subject is one of the issues that have been discussed by many researchers of various fields over the past few decades. Critical pedagogy is one of the most learner-centered teaching method, according to which the relationship between the professor and students is not made based on the one-sided transfer of information, but also on changes in the power-sharing and the mutual exchange of information. Consistency of this problem-based teaching method with the essence of learning environments of architectural workshops made it possible to apply this teaching method in master's architectural design course (1). Accordingly, the present study aims to evaluate students' intrinsic motivation under the circumstances of the critical education method. To this end, 24 graduate students of Islamic Azad University of Gorgan attending the architectural design course (1) are chosen as samples. The research hypothesis is that the critical pedagogy significantly affects the internal motivation of architectural students attending the design courses. This study is descriptive research carried out using inferential statistics. To compare the effectiveness of the two conventional teaching method and critical pedagogy on students' intrinsic motivation, Deci & Ryan's learning climate questionnaire is used. This questionnaire is based on Deci and Ryan's "Self-Determination Theory", which knows the three criteria of "autonomy", "competence" and "relatedness" necessary in the development of intrinsic motivation. Moreover, the research conceptual model is designed and developed based on these criteria. Then, the data are analyzed using independent sample t-test and SPSS software. The results showed that the critical pedagogy produced a higher level of intrinsic motivation in students than the conventional teacher-centered educational method.

**Keywords:** Critical Pedagogy, Intrinsic Motivation, Autonomy, Architectural Design Course.

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## 1. INTRODUCTION

Architecture is inherently different from many other common academic fields and thus requires different and special teaching methods. The close relationship of architecture to art and philosophy as well as technical disciplines on the one hand, and the need to engender motivation and creativity in architecture students, alongside the official curriculum, on the other hand, have created more challenges for this academic field.

Teaching architecture is one of the most important aspects of modern architecture in Iran. The reason lies in the fact that we are in an era in which a great variety of issues and facilities have been introduced in this field and we deal with them in practice without any thoughtful or even conscious goal or plan about them (Mozaffar, 2009). The significance and sensitivity of teaching architecture, as compared to other specialties, is that the transfer of one's knowledge and professional experience to other people cannot be as simple as that in natural sciences or engineering and technical disciplines, because that there is no single correct solution in this field (architecture) and an individual's opinion can complement the ideas proposed by others in a project (Mozaffar, 2009).

In Iranian universities, the dominant teaching method of architectural design is still the workshop approach: the student does the exercise and the instructor comments on it to correct it. In fact, architectural design is developed through cooperation between the student and the teacher. Throughout this cooperation, the student might use the ideas of his/her classmates, but their ideas are often applied sporadically and based on personal preferences (Karimi Moshaver, 2008).

Benefiting from other students' ideas and opinions, as latent human capital, has long been considered by researchers. In a joint study on the role of peer conversation and interaction in the feedback process and the value attached to this factors in the learning process by students, which was carried out by Robert Gordon University, University of Aberdeen and Queen University's Belfast, it was found that informal social interactions –which characterize the interactional atmosphere of architecture studios– complement the learning which occurs through the teacher (Mc Clean & Hourigan, 2013).

Recent phenomenological and anthropological studies have indicated that direct transfer of knowledge is not a proper method for learning (Prosser & Trigwell, 1999). As a result, new theories focusing on the student's performance rather than the teacher's one have become more popular (Biggs, 2003; Ramsden, 2003). These theories propose new roles such as "facilitator", "critical friend" and "liminal servant" for the teacher (Webster, 2004). Although the design studio has long been considered an exemplar environment of learning in general (Boyer & Mitang, 1996), especially for vocational learnings (Schon, 1985), it could be an unpredictable educational environment due to

including complex interactions between teachers and students. However, there are few academic discussions or works on the exact nature of such interactions and how the presence of the teacher affects students' learning (Quinlan, 2007).

One of the interactive teaching methods, which seems compatible with the diversity of modern life, the different nature of architecture and the workshop teaching system, is critical pedagogy developed by Brazilian philosopher "Paulo Freire". Against conventional teacher-centered methods, in critical pedagogy, education is accompanied by the analysis of realities because education is an essential step for decision-making and power distribution in the society (Freire, 1972).

Freire's critical pedagogy model mostly involves critical dialogue in which students (the whole classroom) present their viewpoints and examine evaluations and critiques. Students participate in evaluating one another's ideas, and through combining viewpoints and analyzing arguments, they look at the subject more precisely and comprehensively to discover effective solutions (Bryzzheva, 2002). From Freire's point of view, the requirement for this type of education is those classrooms that are free from teacher domination but replete with the dialogues that students hold with one another and the teacher in their attempts to cooperatively build knowledge (Freire, 2009). Through this dialogue, the teacher learns from students as much as they learn from him (Fritze, 2004).

On the other hand, according to "Self-determination theory"<sup>1</sup>, teachers who favor independence and autonomy (as opposed to controllers) increase students' inclination toward challenges and enhance their curiosity and intrinsic motivation (Deci & Sheinman, 1981; Grolnick & Ryan, 1986). Therefore, considering its specific features such as the distribution of power in the classroom which leads to students' more independence and autonomy as compared to traditional methods, it is deduced that critical pedagogy seems to have a great potential for increasing intrinsic motivation in architecture students. In attempting to find out whether it is possible to apply critical pedagogy in architecture learning or not and what the results might be, the present research was conducted by analyzing a sample consisted of the students who took the architectural design course (1) offered at the Islamic Azad University, Gorgan Branch, and were instructed and evaluated by two different education methods (traditional and critical). The "Learning climate" questionnaire<sup>2</sup> was given to the students at two different stages so that the effectiveness of critical pedagogy in increasing their intrinsic motivation could be evaluated. In addition to the questionnaire, all students were interviewed. The results of the interviews and evaluations based on critical pedagogy will be presented in other papers.

## 2. ARCHITECTURAL DESIGN STUDIO

Today's architecture studio model is derived from both Beaux-Arts and Bauhaus styles (Broadfoot & Bennett, 2003). Beaux-Arts studios (1914-1919), known as the "Atelier", established an education method that is still the focus of architecture education. Broadfoot & Bennett (2003) describe how students were guided by teachers or senior students in a learning process during practice.

The physical structure of the studio has remained unchanged for decades, in spite of the increasing diversity of student groups, students' unpreparedness for studying architecture when entering university, the arrival of computers and technology, and many changes in the architectural profession (Kuhn, 2001). Today's architecture studio, which characterized by being problem-centered, working on complex and endless problems, rapid iterations of design solutions, formal and informal critiques, consideration of a heterogeneous range of issues, the use of samples and holism, a creative approach to the limitations, and importance of design media (Kuhn, 2001), doesn't significantly differ from its historical models (Morkel, 2011).

The special structure of the design studio provides numerous opportunities for education, many of which require more attention. Creating a learning environment rich in social relationships, where peer interactions and collective learning can be developed, forms the core of the studio-based teaching of architectural design education (Cuff, 1991; Nicol & Pilling, 2000). The social dimensions of the studio and the opportunities it provides for collaboration and sharing, serve as a stimulus for learning (Parnell, 2001), and it is the culture of the studio that means durability for students (Koch, Schwennsen, Dutton, & Smith, 2002).

It is strange, however, that architecture education through the workshop system was not theorized until the 1970s, when Donald Schon derived the concept of "learning in design studio through the simulation of real professional practice" from his studies on design studios. He immediately presented the model of architecture education as a model for teaching all professions (Schon, 1987).

Schon's definition of teaching, i.e. teaching and learning by direct knowledge transfer, is arguably close to teacher-centered methods (Ramsden, 2003). Those who teach architecture know that teaching a student to become an architect involves more than just the induction of knowledge, skills, and abilities expressed in the course description. Although less talked about, architecture education undoubtedly has a powerful "hidden curriculum" that makes students pay attention to social (aesthetics, motivation, and ethical values) and cultural (including language, clothing, etc.) values (Dutton, 1991). While Schon's theory does not see the existence of this effective body (also not its importance) in architecture education.

Bourdieu states that people have a "habitus" that is defined as follows:

"A sequence of tendencies, permanent ways of observing, practicing and thinking, or a sequence of schemata or long-lasting structure (rather than permanent) perception, understanding and practice" (Bourdieu, 2005).

Bourdieu's concept of "habitus" is very interesting because it shows how a combination of an individual's epistemology, ontology, and physical qualities determine his actions in real life. This theory is of importance from another point of view, it replaces concepts such as nature or inherited genetics with the notion that "people continually expand their habitus in their experiences (including education) during their lives". Slow. This concept is notable in the description of the process during which students bring their habitus to an architecture school, and their habitus slowly aligns with their discipline infrastructure by engaging in formal and informal learning programs. Bourdieu's concept of habitus provides a comprehensive definition of the individual that is not in Schon's theory. Consequently, a new challenge for professors will be to redefine students (as a person with a unique habitus) and consider how formal education affects all aspects of a student's habitus (Webster, 2008).

Following the changes in the late twentieth century, i.e. the age of Enlightenment onward, the concepts of "truth" and "knowledge" have been revised and analyzed. Today, we adopt a kind of relativism in which "truth" is made by cultural groups, and moreover, these groups are in permanent conflict with other groups over power to prove the superiority of a particular truth. This conflict over power also occurs in the field of architecture, and especially in the field of aesthetics (definition of the quality in architecture).

Contemporary studies on the role of power in teaching and learning suggest that education can be designed with maximum or minimum freedom for students. To achieve maximum freedom, educational designers must first perform preliminary studies to identify what is going on and then apply those educational models promoting students' freedom so that they can critically develop their own habitus, while simultaneously expanding the dynamic infrastructure of their discipline. Therefore, power management through the education process is critical to optimizing the impact of critical dialogue (McClean & Hourigan, 2013).

## 3. ARCHITECTURAL DESIGN STUDIO IN IRAN

In Iran, up to now, the way of presenting an architectural design course has not changed much since the establishment of the College of Fine Arts and the Beaux-Arts style atelier (studio) teaching system has been used. In our architectural studios, the usual practice is to determine the design topic at the beginning of the semester and provide students with information

about it. In the next step, after examining similar examples and analyzing the design site, the students begin designing and reach their designs through a part-to-whole or whole-to-part process according to the professor's interest. After sequential corrections and converting the initial concept to a design favorable from the professor's point of view (a good design is defined according to the professor's taste), students prepare the architectural documents required for the end-of-semester presentation. In the final delivery, a professor or group of professors will judge the tasks and determine the student's score (which usually reflects the quality of his/her design compared to other students' designs).

At most Iranian universities, design education is done by a workshop system, in which students present their designs and professors correct them. In fact, architectural design is formed through student-professor collaboration. Students may also use their classmates' opinions, but these opinions are applied tastefully and sporadically, which finally may not help improve a project in the right direction and it is a student who makes the final decision. As such, it becomes clear that in the production of design knowledge, the design workshop and the people involved- including professors and students- are of great importance, and if not considered, the foundation of architectural design- which is the same design knowledge- gets into trouble (Karimi Moshaver, 2008).

#### **4.IMPLEMENTATION OF CRITICAL PEDAGOGY IN MASTER'S ARCHITECTURAL DESIGN COURSE (1)**

The first step is to determine the number of participants. There is a direct relationship between the number of students and the number of opinions, but the relationship between the number of students and the amount of participation in class discussions is inverse. As the number of students increases, the number of opinions and ideas increase, while the participation of each student in class discussions will decrease. Usually, shy students or those with low self-confidence are left out of discussions more than other students. If the number of students decreases in a classroom, each student would have more time and consequently more participation, but the overall number of opinions and critiques presented on a subject decreases. Therefore, the number of students for a class should be selected carefully so that students participate in discussion optimally. Considering the high number of students in the course (24 students), they divided into two 12-member groups.

In the first session, students became familiar with the new role of the teacher as "Facilitator", not the one who make all the decisions, and also their new role as an active part of a class and a critic. Then, the physical arrangement of the classroom was changed (big square

tables were formed by attaching four studio tables to each other so that the instructor and the students could sit around the square table in equal positions). The instructor did not have any specific or fixed place and regularly changed his position in each session to emphasize the idea that he was one of the learners.

In critical pedagogy, the subject should be chosen by students in a democratic procedure so as to be derived from the context of the community. In this specific case, to properly compare the first and the second sections of the semester, the chosen subject was the following part of the subject selected in the first section (designing a theme park around a cultural center). At the beginning of the class, the students were informed that they were not required to implement the group's ideas or even the instructor's ideas in their designs. Each student individually developed his/her design throughout the week and each design got assessed and criticized by students. Critic sessions were held in the round table manner.

As it was mentioned, the role of the teacher in critical pedagogy is to lead discussions in the class which happened in the following manner:

- (1) The instructor asks a student to present his/her design to the class.
- (2) The instructor wants the group to assess the presenter's design.
- (3) The instructor interferes in a case where the assessment derails toward destructive criticism or inappropriate reaction to prevent hostilities and return the session to its proper process.
- (4) The instructor personally asks shy students or those with low self-confidence for their ideas and opinions.
- (5) The instructor stimulates students mentioned in (4) to be active by encouraging them at proper times (preserving class balance).
- (6) The instructor wraps up the discussion of the design by summarizing the assessments and criticisms and moves on to the next student.

Although it is the instructor who should interfere and return the critic session to its proper process, but the amount of this interference should be kept at least possible and only when there is no other choice. Students will gradually learn to keep their class on track and away from unnecessary debates and discussions, so the teacher should be patient and give them time to find it on their own.

#### **5. SELF-DETERMINATION THEORY**

Self-determination theory was initially developed by Edward L. Deci and Richard M. Ryan (1985) and has been elaborated and refined by scholars from many countries. The results have led to the formation of the hypothesis that if the three basic psychological needs, namely competence, autonomy, and relatedness, were satisfactorily met, they would lead to an increase of self-determination and mental health; however, if they are impeded, motivation or sense of well-being



may decline.

Individuals may do an action because of its intrinsic value, external coercion or necessity, allurements, personal interests, sense of personal obligation or fear of evaluation. This interaction between intrinsic motivation and external forces is tangible for any person. Comparison of those people whose motivation is genuine and emanates from intrinsic inclinations with those act under the force of external factors has indicated that the former have more interest, excitement and self-confidence which appear as increased endurance and creativity (Deci & Ryan, 1991; Sheldon, 1997), vitality (Nix, 1999) and self-esteem (Grolnick, 1995). The concept of intrinsic motivation conforms to White's (1959) theory implying that people often take part in activities to prove their competence. Behaviors originating from intrinsic motivation are those in which people take part willingly and without being forced by the necessity of possible consequences. It can be said that no phenomenon reveals the positive potential of mankind's nature, i.e. inclination toward seeking new things, challenge seeking tendency, development of individual capabilities as well as exploration and learning, as much as the intrinsic motivation.

Events such as threats (Deci, 1972), control and supervision (Lepper & Greene, 1975), evaluation (Harackiewicz, 1984) and deadlines (Amabile, 1976) are also able to decrease intrinsic motivation. The reason is believed to be the change of perceived internal locus of causality to external perceived locus. On the contrary, having the ability to choose (Zuckerman, 1984) enhances the perceived internal locus of causality and increases people's intrinsic motivation and confidence in their performance (Tafarodi, 1999).

Field studies have doubly indicated that those teachers supporting students' independence and autonomy (as opposed to controllers) facilitate the increase of challenge seeking tendencies, curiosity and intrinsic motivation in their students (Deci & Sheinman, 1981; Grolnick & Ryan, 1986). On the other hand,

those students taught by controlling methods lose their creativity and their ability to learn might be less effective especially when conceptual and creative processes are involved (Amabile, 1987).

Intrinsic motivation flourishes in conditions characterized by feelings of secure and comforting connections and links (Ryan & LaGuardia, 2000). For example, Ryan and Grolnick (1986) and Ryan, Stiller, and Lynch (1994) have reported that those students, who evaluated their teacher as warm and caring, enjoyed more intrinsic motivation. In other words, positive feedbacks have direct effects on intrinsic motivation. At the same time, many studies on the relationship between performance and positive feedback have revealed that positive feedback increases intrinsic motivation only when individuals feel responsible for having good practice (Fisher, 1978) or when they somehow gain and maintain a sense of autonomy. The effects of positive feedbacks are not noticeable when students feel no independence in learning. Therefore, among the three mentioned needs, "sense of autonomy" or "independence" in learning is the most basic and fundamental one. The positive effects of the other two needs, namely sense of competence and sense of relatedness, depend on the presence of autonomy.

## 6. CONCEPTUAL MODEL OF THE EFFECTS OF CRITICAL PEDAGOGY ON ACADEMIC MOTIVATION

Considering what discussed in the previous section about the nature of "critical pedagogy" and "self-determination theory", the conceptual model of the study can be formed as Figure 1. According to this model, a hypothesis can be proposed based on which critical pedagogy has a direct significant effect on autonomy and an indirect effect on the intrinsic motivation of the students attending the architectural design course (1) class via affecting the indices which result from autonomy, namely sense of competence and sense of relatedness.

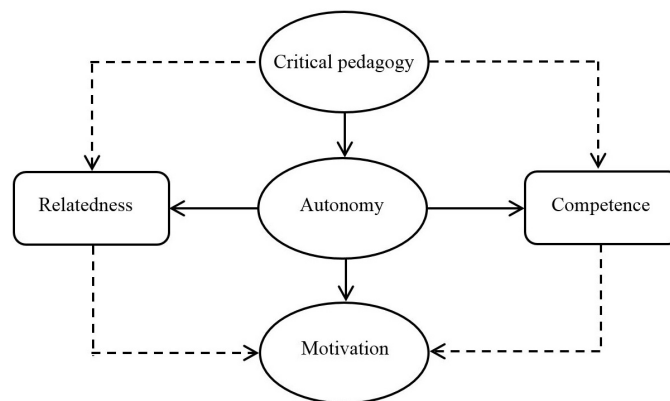


Fig. 1. The Mechanism by which Critical Pedagogy Affects Intrinsic Motivation

In fact, the theory of autonomy does not deal with the signs of intrinsic motivation; rather, it analyzes the conditions which give rise to and maintain this inclination. Critical pedagogy is one of the teaching methods which can create the required supportive conditions to this end.

## 7. STUDYING THE CONCEPTUAL MODEL IN THE SAMPLE

To test the research hypothesis, a sample was considered and the research model was applied on it. In following, first, the research sample is introduced and the findings are discussed..

### 7.1. Research Sample

Considering that the statistical population of this study includes all architectural students who are taking the applied or designing courses, 24 graduate students of Islamic Azad University of Gorgan, who were attending the architectural design course in the academic year

2015-2016, were selected as the sample. Studying demographic variables of students showed that there was no significant difference between them in terms of and education level. The discipline of all students was architecture at the undergraduate level. Statistical analysis of the academic scores of the sample members at the undergraduate level indicated that the categories have a normal range. About the gender factor, 16 and 8 students were male and female, respectively. Figures 1 and 2 are pictures taken from the class under study. In order to implement critical pedagogy, they were divided into two 12-member groups.

In order to eliminate confounding variables as much as possible, a bipartite subject was selected (designing a cultural center in a theme park) so that the students could perform the first part, namely designing the cultural center, in the first section of the semester through the traditional workshop approach and the second part, namely designing the theme park, in the second section of the semester through critical pedagogy. At the end of each part, students were tested using the “learning climate” questionnaire.



Figs. 2 & 3. Photos of Studied Design Studios

## 8. FINDINGS

As mentioned before, the theoretical foundation of this study on academic motivation is based on the “self-determination” theory. In this regard, a detailed review of the theory indicated that it is possible to analyze the indices of autonomy, sense of relatedness

and sense of competence in architecture learning using 15 questions. It should be noted that the reliability of these questions has been proved and they have been standardized. In fact, these 15 questions are applied to measure the indices studied. Therefore, the same 15 questions were chosen to form the questionnaire

for this research (Appendix 1). It was attempted to translate the questions into the Persian language precisely as much as possible to avoid any data inaccuracy.

Considering the author's approach and the main research hypothesis, i.e. "analysis of the effect of critical pedagogy on architecture students' academic motivation in design courses", 24 students were selected as the research sample over two timespans of a semester with different conditions. During the first two-month period, the traditional teacher-based education method was used for designing a cultural center. At the end of this period, the students were asked to fill out the learning climate questionnaire. During the second two-month period, the education method was changed to critical pedagogy for designing a park around the previously designed cultural center. At the end of the second period, the students were asked to answer the questionnaire again. As the present study aimed to analyze the difference between the two periods during which two different

education methods were utilized, the independent sample t-test was used to analyze the significance of the difference between the two timespans.

This test compares the mean values of the two groups of respondents. It is used to calculate the confidence interval or to assess the hypothesis of significant difference between the mean values of two populations. In other words, the mean values obtained from random samples are evaluated. From two populations with different conditions, various samples are randomly selected regardless of whether the number of samples are equal or not. Then, the mean values of the two populations are compared (Mansourfar, 2005). The assumptions of the independent sample t-test were found to be consistent with the variables of this research because the "question score" variable was a quantitative dependent variable at the ordinal level and the "education method" variable was a qualitative dependent variable at the nominal level. Furthermore, the values of the two variables were independent and belonged to two populations.

**Table 1. Statistical Groups**

Period	Number of Members	Mean Score	Standard Deviation
1st (Traditional Method)	24	4.34	0.882
2nd (Critical Pedagogy)	24	5.52	0.791

As observed in Table 1, in the first and the second periods, the mean score was obtained 4.34 and 5.52,

respectively and the standard deviation was estimated 0.882 and 0.791, respectively.

**Table 2. Results of Independent Sample T-Test**

	Levene's Statistic		T-statistic				Difference in Means at 95% Confidence Interval	
	F Value	Significance Level	T Value	Degree of Freedom	Significance Level (Two-tailed)	Mean Difference	Lower Limit	Upper Limit
Acceptance of "Equality of Variances" Assumption	0.650	0.425	-4.621	46	0.000	-1.178	-1.692	-0.663
Rejection of "Equality of Variances Assumption"	-	-	-4.668	46.475	0.000	-1.178	-1.687	-0.668

To interpret the results of the independent sample t-test, the first step is to check the equality or inequality of variances between the two groups studied. As seen in Table 2, in Levene's test, the significance level was obtained higher than 0.05, so the "equality of variances" assumption was confirmed.

In the interpretation of the independent sample t-test's results, the second step deals with the difference between the respondents' scores regarding academic

motivation in two different periods. The results of the t-test (sig=0.000, t=-4.621) indicate that the means of academic motivation in the two education methods are significantly different and the groups have different academic motivation levels at the 95% confidence level ( $H_0$  (which suggests that the difference between the scores is not significant) is proven). Furthermore, as seen in the last few columns of the table, at the 95% confidence interval, the difference in means is placed

on the one side of zero and this proves the claim that the difference between the two education methods has led to a significant difference between the students' scores of academic motivation.

## 9. CONCLUSION

Architecture is inherently different from many other common academic fields and thus requires different and special teaching methods. The close relationship of architecture to art and philosophy as well as technical disciplines on the one hand, and the need to engender motivation and creativity in architecture students alongside the official curriculum, on the other hand, have created more challenges for this academic field. One of the important aspects in this regard is using "critical pedagogy" introduced by "Paulo Freire" as a method based on Power-sharing and mutual exchange of information between teacher and students rather than the one-sided mere transfer of information. According to Freire, education must break the old-age patriarchal teacher-student relationship and raise humans who look at the world critically in their dialogues with others. On the other hand, via "Self-Determination Theory" we know that three needs of competence, autonomy, and relatedness, if satisfied properly in a learning environment, could cause intrinsic motivation. Among them, "autonomy" plays a basic role and the other two need are effective only in the presence of autonomy. The conceptual model of this study assumes that critical pedagogy, because of its Learner-centered nature, has the ability to increase autonomy and thereby intrinsic motivation. In this regard, the present research aimed to compare the traditional education method (teacher-centered) and critical pedagogy regarding their effectiveness in engendering intrinsic motivation in architecture students in the architectural design course. For this

purpose, a number of graduate students of Islamic Azad University of Gorgan attending the architectural design course (1) were chosen as the sample. In order to eliminate confounding variables as much as possible, a bipartite subject was defined (designing a cultural center in a theme park) so that the students could perform the first part, namely designing the cultural center, in the first section of the semester by the traditional workshop approach and the second part, namely designing the theme park, in the second section of the semester by critical pedagogy. At the end of each part, students were tested using the learning climate questionnaire. After entering the quantified data into the SPSS software, which were collected by Likert-type scale, and considering the nature of the study, which dealt with the comparison of two groups with a different trait, the independent sample t-test was selected as the appropriate test for the study. The results of data analysis indicated that critical pedagogy had significantly engendered more academic motivation in the students attending the architectural design course (1) as compared to the traditional approach. It can be proposed that critical pedagogy has a notable effect on the three influential factors of academic motivation, namely autonomy, competence, and relatedness, through its internal mechanisms, the most important of which is the alteration of the power structure in the classroom and placing the teacher at the level same as the students' one. Overall, it seems that critical pedagogy grants more authority to students and involves them in the process of student-to-student criticism and correction and, at the next level, in choosing session topics and running the classroom. Therefore, it strengthens the sense of autonomy and independence in students in a manner that gradually leads to the increase in intrinsic motivation.

## END NOTE

1. Developed by Edward L. Deci and Richard M. Ryan.
2. Accessible on <http://selfdeterminationtheory.org/>.



## REFERENCES

- Amabile, T.M., DeJong, W., & Lepper, M.R. (1976). Effects of Externally Imposed Deadlines on Subsequent Intrinsic Motivation. *Journal of Personality and Social Psychology*, 34(1), 92–98. <https://doi.org/10.1037/0022-3514.34.1.92>
- Biggs, J. (2003). Teaching for Quality Learning at University. Maidenhead, Berkshire: Open University Press. <http://www.educatejournal.org/index.php/educate/article/viewFile/81/78>
- Bourdieu, P. (2005). Habitus. In Hillier, J., & Rooksby, E. (Eds.). *Habitus: A Sense of Place*. London: Ashgate. 43-49. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2427.2007.00734.1.x>
- Boyer, E., & Mitang, L. (1996). Building Community: A New Future for Architecture Education and Practice, Carnegie Foundation for the Advancement of Teaching, Princeton, New Jersey. <https://www.amazon.com/Building-Community-Architecture-Education-Practice/dp/0931050596>
- Broadfoot, O., & Bennett, R. (2003). Design Studios: Online? Apple University Consortium Academic and Developers Conference Proceedings. Wollongong: Apple University Consortium Academic and Developers, 9-21. <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.124.3548>
- Bryzheva, A.L. (2002). Toward a Philosophy of the Liberating Act: Implications of Bakhtin, Freire, and Vygotsky for Bilingual and Multicultural Education, a Dissertation Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy, Pennsylvania State University. <https://harrisburg.psu.edu/>
- Cuff, D. (1991). Architecture: the Story of Practice. Cambridge, MA: MIT Press. [www.fen-om.com/theory/theory149.pdf](http://www.fen-om.com/theory/theory149.pdf)
- Deci, E.L. (1972). Intrinsic Motivation, Extrinsic Reinforcement, and Inequity. *Journal of Personality and Social Psychology*, 22(1), 113–120. [https://doi.org/10.1016/0030-5073\(72\)90047-5](https://doi.org/10.1016/0030-5073(72)90047-5)
- Deci, E.L., & Ryan, R.M. (1985). Intrinsic Motivation and Self-determination in Human Behavior. Berlin: Springer Science & Business Media. <https://doi.org/10.1007/978-1-4899-2271-7>
- Deci, E.L., & Ryan, R.M. (1991). A Motivational Approach to Self: Integration in Personality. In R. Dienstbier (Ed.), Nebraska Symposium on Motivation. Perspectives on motivation, 38, 237–288. Lincoln: University of Nebraska Press. <https://selfdeterminationtheory.org/theory/>
- Deci, E., Nezelek, J., & Sheinman, L. (1981). Characteristics of the Rewarder and Intrinsic Motivation of the Rewardee. *Journal of Personality and Social Psychology*, 40. 1975. Cognitive Evaluation Theory, Which Distinguishes Between the Controlling and Informational Aspects of Rewards. 10.1037/0022-3514.40.1.1. <https://selfdeterminationtheory.org/theory/>
- Dutton, T.A. (Ed.). (1991). Voices in Architectural Education: Cultural Politics and Pedagogy. New York, London: Bergin and Garvey. <http://www.aias.org/>
- Fisher, C.D. (1978). The Effects of Personal Control, Competence, and Extrinsic Reward Systems on Intrinsic Motivation. *Organizational Behavior and Human Performance*, 21, 273–288. [https://doi.org/10.1016/0030-5073\(78\)90054-5](https://doi.org/10.1016/0030-5073(78)90054-5)
- Freire, P. (1972). Pedagogy of the Oppressed, tr. Myra Bergman Ramos, Harmondsworth: Penguin Books. <https://www.amazon.com/Pedagogy-Oppressed-Penguin-Education-Freire/dp/014025403X>
- Freire, P. (2009). Education for Critical Consciousness, New York, Continuum.
- Fritze, C. (2004). The Theory of Paulo Freire, in <http://www.community-work-training.org.uk/freire>
- Grolnick, W.S., & Ryan, R.M. (1987). Autonomy in Children's Learning: An Experimental and Individual Difference Investigation. *Journal of Personality and Social Psychology*, 52, 890–898. <https://doi.org/10.1037/0022-3514.52.5.890>
- Harackiewicz, J.M., Manderlink, G., & Sansone, C. (1984). Rewarding Pinball Wizardry: The Effects of Evaluation on Intrinsic Interest. *Journal of Personality and Social Psychology*, 47, 287–300. <https://doi.org/10.1037/0022-3514.47.2.287>
- Hennessey, B.A., & Amabile, T.M. (1987). Creativity and Learning: What Research Says to the Teacher? Washington DC: National Education Association, Professional Library. <https://doi.org/10.1037/0003-066X.53.6.674>
- Karimi Moshaver, M. (2008). Student Position in Architectural Design Education Process; by Producing Design Knowledge Approach. The 3rd Conference of Architecture Education. 399. [https://www.civilica.com/PdfExport-MEMARIEDU03\\_023=%D8%AC%D8%A7%DB%8C%DA%AF%D8%A7%D9%87-%D8%AF%D8%A7%D9%86%D8%B4%D8%AC%D9%88%DB%8C%D8%A7%D9%86-%D8%AF%D8%B1-%D9%81%D8%B1%D8%A7%DB%8C%D9%86%D8%AF-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%B7%D8%B1%D8%A7%D8%AD%DB%8C-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-%D8%A8%D8%A7-%D8%B1%D9%88%DB%8C%DA%A9%D8%B1%D8%AF%DB%8C-%D8%A8%D9%87-%D8%AA%D9%88%D9%84%D8%B8%D8%AF-%D8%AF%D8%A7%D9%86%D8%B4-%D8%B7%D8%B1%D8%A7%D8%AD%DB%8C.pdf](https://www.civilica.com/PdfExport-MEMARIEDU03_023=%D8%AC%D8%A7%DB%8C%DA%AF%D8%A7%D9%87-%D8%AF%D8%A7%D9%86%D8%B4%D8%AC%D9%88%DB%8C%D8%A7%D9%86-%D8%AF%D8%B1-%D9%81%D8%B1%D8%A7%DB%8C%D9%86%D8%AF-%D8%A2%D9%85%D9%88%D8%B2%D8%B4-%D8%B7%D8%B1%D8%A7%D8%AD%DB%8C-%D9%85%D8%B9%D9%85%D8%A7%D8%B1%DB%8C-%D8%A8%D8%A7-%D8%B1%D9%88%DB%8C%DA%A9%D8%B1%D8%AF%DB%8C-%D8%A8%D9%87-%D8%AA%D9%88%D9%84%D8%B8%D8%AF-%D8%AF%D8%A7%D9%86%D8%B4-%D8%B7%D8%B1%D8%A7%D8%AD%DB%8C.pdf)

- Koch, A., Schwennsen, K., Dutton, T.A., & Smith, D. (2002). AIAS Studio Culture Task Force Report. Washington DC: AIAS. <http://www.aias.org/>
- Kuhn, S. (2001). Learning from the Architecture Studio: Implications for Project-Based Pedagogy. *International Journal of Engineering Education*, 17(4, 5), 349-352. Great Britain. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.500.2729&rep=rep1&type=pdf>
- Lepper, M. R., & Greene, D. (1975). Turning Play into Work: Effects of Adult Surveillance and Extrinsic Rewards on Children's Intrinsic Motivation. *Journal of Personality and Social Psychology*, 31, 479-486. <https://doi.org/10.1037/h0076484>
- Mansurfar, K. (2003). Statistical Methods. Tehran: University of Tehran. 3 -3908-03-964.
- McClean, D., & Hourigan, N. (2013). Critical Dialogue in Architecture Studio: Peer Interaction and Feedback, the Higher Education Academy. *JEBE*, 8(1). <https://www.tandfonline.com/doi/abs/10.11120/jebe.2013.00004>
- Morkel, J. (2011). Facebook-Enhanced Face to Face Learning: The Architecture Studio, 5th International Computer & Instructional Technologies Symposium, 22-24, September 2011 Firat University, ELAZIĞ- TURKEY. <http://web.firat.edu.tr/icits2011/papers/27718.pdf>
- Mozaffar, F., Khakzand, M., Changiz, F., & Farshadfar, F. (2009). Teamwork Design: Missing Link in Educating Architecture Design. *Journal of Education Technology*, (3)4. <https://www.sid.ir/fa/journal/ViewPaper.aspx?id=109555>
- Nicol, D., & Pilling, S. (eds.) (2000). Changing Architectural Education: Towards a New Professionalism. London: E & F Spon Press. <https://www.amazon.com/Changing-Architectural-Education-Towards-Professionalism/dp/0419259201>
- Nix, G., Ryan, R.M., Manly, J.B., & Deci, E.L. (1999). Revitalization through Self-regulation: The Effects of Autonomous and Controlled Motivation on Happiness and Vitality. *Journal of Experimental Social Psychology*, 35, 266-284. <https://doi.org/10.1006/jesp.1999.1382>
- Parnell, R. (2001). It's Good to Talk: Managing Disjunction through Peer Discussion. Architectural Education Exchange (AEE) Conference, Cardiff University, Cardiff. <http://cebe.cf.ac.uk/aee/papers.html>
- Prosser, M., & Trigwell, T. (1999). Understanding Learning and Teaching: The Experience in Higher Education. Buckinghamshire: Open University Press. <https://www.amazon.com/Understanding-Learning-Teaching-Research-Education/dp/0335198317>
- Quinlan, A., Corkery, L., & Marshall, N. (2007). Positioning the Design Tutor's Presence in the Design Studio for Successful Student Design Learning, Connected 2007 International Conference on Design Education 9 – 12 July 2007, University of New South Wales, Sydney, Australia. [unsw.unsw.edu.au/fapi/datastream/unsworks:4237/SOURCE1](http://unsw.unsw.edu.au/fapi/datastream/unsworks:4237/SOURCE1)
- Ramsden, P. (2003). Learning to Teach in Higher Education. London & New York: Routledge Falmer. <https://www.amazon.com/Learning-Teach-Higher-Education-Ramsden/dp/0415303451>
- Ryan, R.M., & Grolnick, W.S. (1986). Origins and Pawns in the Classroom: Self-report and Projective Assessments of Individual Differences in Children's Perceptions. *Journal of Personality and Social Psychology*, 50, 550-558. <https://doi.org/10.1037/0022-3514.50.3.550>
- Ryan, R.M., & La Guardia, J.G. (2000). What is being optimized over Development: A Self-Determination Theory Perspective on Basic Psychological Needs across the Life Span in S. Qualls & R. Abeles (Eds.), *Dialogues on Psychology and Aging*, 145-172. Washington, DC: American Psychological Association. <https://doi.org/10.1037/10363-008>
- Ryan, R.M., Stiller, J., & Lynch, J.H. (1994). Representations of Relationships to Teachers, Parents, and Friends as Predictors of Academic Motivation and Self-Esteem. *Journal of Early Adolescence*, 14, 226-249. <http://dx.doi.org/10.1177/027243169401400207>
- Schön, D.A. (1984). *The Reflective Practitioner*. New York: Basic Books. [https://www.scirp.org/\(S\(351jmbntvns-jt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=1132209](https://www.scirp.org/(S(351jmbntvns-jt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=1132209)
- Schön, D.A. (1985). *Architecture and the Higher Learning; the Design Studio, an Exploration of its Traditions and Potentials*. London: RIBA Publications. <https://www.bookdepository.com/Design-Studio-Donald-Schon/9780947877453>
- Schön, D.A. (1987). *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. San Francisco: Jossey-Bass. <https://onlinelibrary.wiley.com/doi/abs/10.1002/chp.4750090207>
- Sheldon, K.M., Ryan, R.M., Rawsthorne, L., & Ilardi, B. (1997). Trait Self and True Self: Cross-Role Variation in the Big Five Traits and Its Relations with Authenticity and Subjective Well-Being. *Journal of Personality and Social Psychology*, 73, 1380-1393. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=204569](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=204569) doi:10.1037/0022-3514.73.6.1380
- Tafari, R.W., Milne, A.B., & Smith, A.J. (1999). The Confidence of Choice: Evidence for an Augmentation Effect on Self-perceived Performance. *Personality and Social Psychology Bulletin*, 25, 1405-1416. <https://doi.org/10.1177/0146167299259006>

- Webster, H. (2004). Facilitating Reflective Learning: Excavating the Role of the Design Tutor. *Journal of Art, Design and Communication in Higher Education*, 2 (3), 101-111. [https://www.researchgate.net/profile/Helena-Webster/publication/250968064\\_Facilitating\\_critically\\_reflective\\_learningexcavating\\_the\\_role\\_of\\_the\\_design\\_tutor/links/56e2938308ae3328e0786965/Facilitating-critically-reflective-learning-excavating-the-role-of-the-design-tutor.pdf](https://www.researchgate.net/profile/Helena-Webster/publication/250968064_Facilitating_critically_reflective_learningexcavating_the_role_of_the_design_tutor/links/56e2938308ae3328e0786965/Facilitating-critically-reflective-learning-excavating-the-role-of-the-design-tutor.pdf)
- Webster, H. (2008). Architectural Education after Schön: Cracks, Blurs, Boundaries and Beyond. *Journal for Education in the Built Environment*, 3(2), 63-74 (12) ISSN: 1747-4205. <https://www.tandfonline.com/doi/abs/10.11120/jebe.2008.03020063>
- White, R.W. (1959). Motivation Reconsidered: The Concept of Competence. *Psychological Review*, 66, 297-333. <https://doi.org/10.1037/h0040934>
- Zuckerman, M., Porac, J., Lathin, D., Smith, R., & Deci, E.L. (1978). On the Importance of Self-Determination for Intrinsically Motivated Behavior. *Personality and Social Psychology Bulletin*, 4, 443-446. <https://doi.org/10.1177/001698629403800403>

#### HOW TO CITE THIS ARTICLE

Sardashti, S., Mozaffar, F., & Shafaie, M. (2020). The Efficacy of Using Critical Pedagogy as a Teaching Method in Master's Architectural Design Course (1) on Graduate Students' Motivation. *Armanshahr Architecture & Urban Development Journal*. 12(29), 27-38.

DOI: 10.22034/AAUD.2020.102362

URL: [http://www.armanshahrjournal.com/article\\_102362.html](http://www.armanshahrjournal.com/article_102362.html)



## APPENDIX

## Learning Climate Questionnaire

This questionnaire contains items that are related to your experience with your instructor in this class. Instructors have different styles in dealing with students, and we would like to know more about

how you have felt about your encounters with your instructor. Your responses are confidential. Please be honest and candid.

NO	Question
1	I feel that my instructor provides me choices and options
2	I feel understood by my instructor.
3	I am able to be open with my instructor during class.
4	My instructor conveyed confidence in my ability to do well in the course.
5	I feel that my instructor accepts me.
6	My instructor made sure I really understood the goals of the course and what I need to do.
7	My instructor encouraged me to ask questions.
8	I feel a lot of trust in my instructor.
9	My instructor answers my questions fully and carefully.
10	My instructor listens to how I would like to do things.
11	My instructor handles people's emotions very well.
12	I feel that my instructor cares about me as a person.
13	I don't feel very good about the way my instructor talks to me.
14	My instructor tries to understand how I see things before suggesting a new way to do things.
15	I feel able to share my feelings with my instructor.