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Framing Research Assistants’ Pedagogical Roles in Design Studio Courses: Initial Findings

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Participants of a design studio regardless of the titles and responsibilities apparently influence both teaching and learning processes. Even though it is possible to find several studies focusing on design teachers and design students, scholars have been silent to investigate the teaching activities of research/teaching assistants in a design studio course context. This study is an attempt to understand and frame the perceived pedagogical roles of research assistants in design studio courses. In this sense, we designed a survey addressing in-studio roles and responsibilities, the relations with the instructors, the effects on the student learning process, the factors shaping pedagogical roles, and the administrative responsibilities. As a result, we consider research/teaching assistants as change agents with their intermediary roles and practical impacts in design studio courses.

Keywords: design pedagogy; pedagogical roles; research assistant; design studio course

Design Studio Courses: A Meeting Point

The center of teaching and learning designing activity is undoubtedly grounded on the design studio courses (Attoe & Mugerauer, 1991; Dutton, 1987; Oh et al., 2013). Specifically, the design studio course relies on “practice and imitation” (Utberta et al., 2013). The instructional strategies used in the design studio are inherent to the “atelier model” of apprenticeship tradition (Oh et al., 2013). Thus, a design studio course “including its own culture, language, and rituals” (Schön, 1988, 6) focuses on teaching models stemming from “a form of applied art and craft skills” (Friedman, 2002), design language, and designerly thinking (Cross, 1982; Ledewitz, 1985). The instructional strategy primarily depends on the “learning by doing” approach that enables the learning processes of students in a particular studio environment. As widely known, Schön (1988) describes the design student’s activity as a reflective learning experience “through the simulation of the professional practice of design” (Tovey, 2015, 17) coming out of the implementation of studio-based techniques. “The studio,” in this sense, hosting the designing and learning activities is regarded as a social setting, where interactions arise between the instructor and student or peers (Ferreira, 2018). Drawing attention to the effects of social interaction, language, and culture on the learning process (Vygotsky, 1978), design learning is conditioned as “a social and interactive process in which children are active participants rather than passive recipients” (Bowles, Radford, & Bakopoulou, 2017). Broadly, through its social and participatory nature (Verenikina, 2008), learning is regarded as an activity of making sense of individual experiences (Wheatley, 1991) through interaction (Wilson, 1997).

These interactions are up to the roles that design teachers perform to advance learning (Attoe & Mugerauer, 1991; Lueth, 2008). Therefore, it is important to understand their roles in the context of design studio courses (Grasha, 1996; Goldschmidt, Hochman & Dafni, 2010). When we zoom into the participants of design studio courses, we clearly see that supporting staff are significant stakeholders taking part as design teachers. The supporting staff in academia here refers to the research assistants, who are also postgraduate-level students, and participates in design studio courses together with the instructors.

The relevant literature points out the struggle stemming from the job definition of research assistants. The notation of research assistantship varies across the country, institution, and disciplines. Some prefer the title...
as 'teaching assistant' (Webster et al., 2011) or 'graduate teaching assistant' (Kendall & Schussler, 2012) who primarily assist during the teaching process, some use the title of 'research assistants' which is highly related to involvement in academic studies. Some professions employ the term 'graduate assistantship' (Gülmez & Kozan, 2017) that embraces both teaching and research activities, or the 'graduate assistant' (Flora, 2007) being responsible for instruction, research, and administration. In short, the literature underlines that the job definition of the assistantship is vague in terms of research and teaching.

Design studio as a physical environment and a "reflective practicum" (Schön, 1988) is a hub where the students and teacher(s) meet. The design conversations and interactions, which are the heart of design studio education (Ferreira, 2018), occur in the design studio. Despite the significant studies related to pedagogical roles and teaching activities in design curricula (see Ledewitz, 1985; Shreeve & Batchelor, 2012), there seems to be a research gap to examine the pedagogical roles and approaches of research assistants in design education literature.

Depending on this, we address this research question in this study: How do research assistants perceive their pedagogical roles in design studio courses?

The Study
To understand the perceived roles of research assistants in design studio courses, we conducted a comprehensive survey, which will be explained in the following sections.

The Structure of the Survey
The survey includes both open-ended questions like ‘how would you describe your pedagogical role in the design studio course?’ and multiple-choice Likert-scale questions. Likert questions contain a five-point scale from strongly agree to strongly disagree. The questions of the survey study were prepared in regard to the outputs of a preliminary study.

The survey includes questions on demographic information (e.g., age, educational background), affiliations, and experience (e.g., university, department, staff-type). Besides, the questions consist of five sections; (1) in-studio roles and responsibilities, (2) the relations with the instructors, (3) the impact on the student learning process, (4) the factors shaping pedagogical roles, and (5) the administrative responsibilities.

Data Collection and Participants
The sample of the study is research assistants staffed in higher education institutions in Turkey, offering design education. The departments, which center on practice-based design studio courses, are specified as in the following: Architecture, Interior Architecture (and Environmental Design), Industrial (Product) Design, Urban and Regional Planning, and Landscape Architecture.

The number of research assistants staffed in these departments was extracted from the information management system of The Council of Higher Education in Turkey. Then, to check this data and find the email addresses of the research assistants, the official websites of these departments in each university were scrutinized. In December 2020, in total 1357 research assistants were specified as staff of the above-mentioned departments in Turkey; 763 research assistants are staffed in Architecture, 224 of them in Interior Architecture (and Environmental Design), 120 of them in Industrial (Product) Design, 176 of them in Urban and Regional Planning, and 114 of them in Landscape Architecture departments.

The survey was sent to all of these 1357 research assistants’ email addresses. While 599 people accessed the survey, 205 of them completed it. Besides, the answers of two participants, who did not have prior teaching experience in design studio courses were excluded. Thus, the answers of 203 respondents, who were working in seventy-three different universities were included for data analysis. The average age of respondents was approximately 30 within an age range of 23-41. 138 of respondents (68%) were PhD students and 42 of them (20,7%) were master students. 16 of the participants (7,9%) graduated with a PhD and 7 of them (3,4%) graduated with a master’s. The ninety-seven research assistants (47,8%) have been working in the Architecture departments, 25 of them (17,2%) in Industrial (Product) Design, 28 (13,8%) in Urban and Regional Planning, 26 (12,8%) in Interior Architecture (and Environmental Design), and 17 respondents (8,4%) in Landscape Architecture. The experience of respondents has varied from less than one year to more than 10 years, so the number of terms that they attended the design studio also varies from one semester to twenty semesters (see Table 1).
Table 1. Demographic information of respondent-research assistants.

<table>
<thead>
<tr>
<th>Sample Information</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Status</td>
<td></td>
<td></td>
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<tr>
<td>Master student</td>
<td>42</td>
<td>20,7%</td>
</tr>
<tr>
<td>Master graduate</td>
<td>7</td>
<td>3,4%</td>
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<tr>
<td>Doctoral student</td>
<td>138</td>
<td>68,0%</td>
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<tr>
<td>Doctoral graduate</td>
<td>16</td>
<td>7,9%</td>
</tr>
<tr>
<td>Department</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>97</td>
<td>47,8%</td>
</tr>
<tr>
<td>Interior Architecture (and Environment Design)</td>
<td>26</td>
<td>12,8%</td>
</tr>
<tr>
<td>Industrial (Product) Design</td>
<td>35</td>
<td>17,2%</td>
</tr>
<tr>
<td>Urban and Regional Planning</td>
<td>28</td>
<td>13,8%</td>
</tr>
<tr>
<td>Landscape Architecture</td>
<td>17</td>
<td>8,4%</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 1 year</td>
<td>7</td>
<td>3,4%</td>
</tr>
<tr>
<td>1 year</td>
<td>30</td>
<td>14,8%</td>
</tr>
<tr>
<td>2 years</td>
<td>12</td>
<td>5,9%</td>
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<tr>
<td>3 years</td>
<td>29</td>
<td>14,3%</td>
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</tr>
<tr>
<td>9 years</td>
<td>11</td>
<td>5,4%</td>
</tr>
<tr>
<td>10 years and more</td>
<td>11</td>
<td>5,4%</td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>100%</td>
</tr>
</tbody>
</table>

Initial Findings

This section includes initial findings of the survey focusing on in-studio roles, in-studio responsibilities, in-studio activities, relations with the instructor, pedagogical approaches, effects on the student learning process, factors shaping roles and administrative duties.

In-studio Roles

Research assistants were asked to describe their roles in the design studio courses in their own words, so the responses to this question were listed. The findings show that the respondents often describe their roles as “an equivalent role with the instructors”. Following it, the role descriptions such as “tracker for in-studio duties”, “assistant for instructors”, “supporter for studio needs”, “front contact for students”, “communication channel and bridge between instructors and students”, “organizer for studio needs”, and “promoter for students”, have been frequently mentioned. The contributor, facilitator, tutor, secretary, decision-maker, motivator, psychologist, guide, student, completer, etc. are also mentioned.

In this part of the survey, roles, responsibilities, and activities of research assistants in the design studio courses were investigated. Regarding this part, factors such as the relationship between the instructor and the research assistant, the project topic, the class level, and the students were taken into consideration.

Concerning the statements related to the relationship between instructor and research assistants, most of the participants (75%) state that their roles in the design studio course vary according to the attitude of the instructor while a high number (60%) stated that they see their roles close to the instructor's. The results also indicate that the attitude of the instructor is the major determinant of the communication between research assistants and the students (52%). It is important to note that the majority of the research assistants (73%) think that the attitude of the instructor in the design studio course has a strong influence on students' tendencies to whether they take the research assistants seriously or not.

51% of the participants declared negative opinions to the question of whether their roles in the design studio course vary according to the design project topic. This may suggest that the project topic has a relatively low
effect on the role assumed by research assistants. Similarly, only 22% of the participants think that their roles in design studio courses differ according to the design students, while 53% of them disagree, suggesting that the group of students taking the course had no direct effect on shaping the roles of research assistants (Figure 1).

Figure 1. In-studio roles.

In-studio Responsibilities
This part of the survey consists of questions about understanding the in-studio responsibilities of the research assistants that they carry out in the design studio. In the context of this study the following in-studio responsibilities are specified: taking attendance, carrying and mounting equipment, preparing the physical studio environment, organization of events and activities, organization of online studio courses. Overall results show that all identified in-studio responsibilities are carried out mostly by research assistants in design studio courses. For example, 81% of the participants agreed to the question if they take attendance at the design studio. This result reveals the idea that taking attendance and tracing the participation of the students are among the prominent responsibilities of the research assistants. Similarly, research assistants were asked whether they carry and mount the equipment such as computers, projectors needed for design studio courses. More than 70% of the participants indicated that they agree while only %3 strongly disagree. Again, most of the research assistants (65%) stated that they are responsible for organizing the physical studio environment in which the course is conducted. Another question to understand the in-studio responsibilities of research assistants is whether they organize studio course-related activities such as exhibitions or field excursions. Almost three-quarters (70%) of the participants agreed. More than half of the research assistants (65%) expressed their agreement to the question asking whether they organized online platforms in distance education (Figure 2).
In-studio Activities

Understanding the research assistants’ studio activities is another part of the survey. Again, participants were asked to indicate to what extent they agreed with the statements given. Statements about in-studio activities are related to perceived contribution to specifying project topic, preparing a project summary, critiquing, taking part in design juries, grading, and supporting the instructor.

According to the survey, 53% of the participants responded positively to the statement about the contribution of the research assistants to the project topic specification. 28% of participant-research assistants stated that they did not take a role in determining the project topic. It can be said that determining the project topic is among research assistants’ in-studio activities.

On the other hand, almost three-quarters of the participants (68%) answered positively to the question of whether they contributed to the preparation of the content of the project brief. It is noteworthy that research assistants take a more active role in the preparation of the content of the project brief compared to determining the project topic.

Moreover, almost all of the research assistants (93%) agreed to the statement whether they give design crits in the design studio course. The high rate of this ratio indicates that design critiquing seems to be a major in-studio activity of research assistants. However, a relatively low percentage of research assistants (65%) stated that they take an active role in design juries. This percentage difference between critiquing (%93) and taking an active role in the design jury (%65) is worth examining thoroughly.

Similarly, most of the participants (79%) expressed their agreement to the question asking if they take an active role in the evaluation process (grading) of the project. Lastly, a high number of research assistants (81%) stated that they have an active role in the subjects or practices that the instructor is insufficient in a design studio course (Figure 3).
Figure 3. In-studio activities.

Relations With the Instructor
This section of the survey was dedicated to investigating the relationship between the research assistants and the other instructors in charge of the design studio. As an initial implication, although the participants generally accepted (68%) that a hierarchical structure within the instructor team is present, there was no specific distribution among the answers when they were asked whether they are in a role equivalent to the other instructors’ in the decision making process in the design studio (Figure 4). On the other hand, this situation does not seem to be influential on the motivation of the respondents to participate in the decision-making processes, since most of them (72%) indicated they do not have any trouble in expressing their
opinions about studio-related decisions. Moreover, the findings demonstrate that almost two out of three participants implied they somehow have an impact on these decision-making processes. Yet, more than half of the participants implement the studio-related decisions taken by the instructors as they are, even though they do not agree. Research assistants generally agree (51%) that they have the role of communication facilitator among the instructors, while their role in the design studio may change according to the project phases (58%). Finally, 39% of the research assistants agreed that their role in the studio changes if the studio instructors are coming from out of the institution.

**Figure 4. Relations with the instructor.**

**Pedagogical Approaches**

The survey also contained questions that examine the attitudes of the research assistants related to pedagogical issues in the design studio courses. When the participants were asked about whether they are actively taking part in the design studio or not, almost three out of four respondents implied that they have an active role in the studio.

The survey reveals that the research assistants take the responses of the students as valuable feedback for the assessment and development of their pedagogical approaches in the design studio. Overall, 98% of the participants replied positively to the question that asks whether they observe the reactions of the students to the methods used in the design studio courses. Again, the majority of research assistants (85%) stated that they develop their own methods in the design studio according to the reaction of the students (Figure 5). More than half of the participants (58%) think they somehow get involved with the approaches of the instructors in the design studio. However, the answers to the questions regarding the effects of the approaches of the instructors on the pedagogical approach of the research assistants do not show a strong pattern as it does in the impact of students’ responses on the pedagogical approach of the research assistants (Figure 5).

For example, only 57% of the participants responded positively when they were asked if they shape their methods according to the approach of the instructor. A valid implication cannot be made regarding their opinions on the methods of the instructors, since the answers are equally distributed and clustered on the “Neither agree nor disagree” option. For instance, almost 39% of the respondents are indecisive on whether they take the methods that the instructor uses as an example and imitate them or not. A similar pattern is apparent in the statement of “I criticize the methods that instructors use and avoid to implement them.” Here, one out of each three participants neither agrees nor disagree with this statement while 40% of them expressed their disagreement.

The possible effects of other research assistants were also indicated in the survey. According to the answers, 45% of the participants think their individual approach is not affected by the other research assistants in charge of the studio.
Participants were asked about their thoughts and solutions in the cases when the instructor does not show up in the studio (Figure 6). More than 70% of the research assistants expressed they would feel that their responsibility increases in these cases. As a result, they would proceed to the studio according to the methods and approach of the instructor. Similarly, 62% of them stated they become the instructor in charge of the studio in the absence of the course instructor. On the other hand, a very small number of respondents said the instructor would cancel the class (15%), and only 6 respondents said that they would take initiative to cancel the class at all.

Mark all of the statements that apply, in the case of the instructor not showing up for the studio.

In the final step, a couple of questions were asked regarding the tendency of the research assistants to openly
express their opinions in the challenging situations encountered in the studio. The answers demonstrated that the research assistants generally do not have reservations about stating their genuine thoughts while project topic selection (68%), giving design crits to the students (79%), in the design jury (63%), and the grading process (81%).

Effects on the Student Learning Process
Effects on student learning processes were another subject of interest of the study. First of all, the overwhelming majority of the participants (91%) think that they influence the students’ learning processes in design studio classes. Also, as stated before, a similar proportion of the participants (93%) implied that they give design crits to the students in these courses. Besides, almost all of the participants (99%) implied that they guide students to sources where they can reach beneficial information related to the project subjects. Participants also implied that they play a crucial role in connecting students’ design studio courses with other courses. According to the survey results, 84% of the participants establish the link between the theoretical courses (such as manufacturing methods, research courses) and the studio course. When it comes to practice-based courses (such as 3D modeling, model making courses), this rate drops slightly to 78%. 9 out of 10 participants implied that they closely monitor the students’ learning process in the design studio classes. Also, the survey results showed that approximately the same rate of participants play an active role in making the students' projects suitable for the project brief (84%) and encourage students to apply their own design decisions (%92).

However, this ratio dropped when asked whether the participants help to direct the students’ projects according to the instructor’s expectations. While 66% of the participants agreed with the statement that they ensure students act according to the instructor’s approach, 13% did not. One of the 5 participants stated that they were indecisive on this. The participants’ positive response rate about getting students to develop their projects in line with the instructor’s expectations has dropped even more. Only half of the participants (50%) agreed with this statement, while 1 out of 3 participants stated that they are undecided.

It was also observed that there was a great variety in the tactics/tips the participants give to the students. More than 86% of the participants stated that they give the students clues about students’ jury presentations and projects, while only 36% stated that they give tactics about what to say to instructors.

One of the other interests of the survey was about the communication of the research assistants with the students. It can be said that there is a wide variety in the answers given by the participants in general. More than 87% of the participants stated that they effectively establish the communication between the student and the instructors. Also, to the statement that the participants try to establish a peer/friend relationship with students, 39% of the participants disagree, 30% agree, and 30% are indecisive. Parallel to that, it was observed that the proportion of those trying to form a formal relationship with students was 42%. Nevertheless, 2 out of 3 participants think that their age being close to the students positively affects their communication with the students.

75% of the participants stated that they provide psychological support to the students, and 81% of them stated that they motivate the students emotionally. According to 59% of the participants, students share their personal cases with them. Also, 83% of the participants think that students see themselves as more accessible than instructors, and 60% state that students get their ideas before meeting with the instructors. While only half of the participants (51%) think that their designer identities affect students, the overwhelming majority of the participants (89%) stated that they give examples from their experiences while they were students, only 23% think students take them as role models.

Finally, some questions were asked about the role performed by the participants in the communication between the instructors and students in the design studio courses. The majority of the participants (75%) think that they create a positive interaction between students and instructors. However, this rate drops to 55% when it comes to resolving a dispute between students and instructors. Also, less than half of the participants (46%) implied that they would try to tone down the communication if a hierarchical relationship occurs between a student and the instructor (Figure 7).
Factors Shaping Roles
In this part of the survey, factors shaping participants' pedagogical approaches were asked. Almost all participants (98%) stated that their teaching approaches were shaped by more than one factor. Also, a large proportion of the participants stated that their pedagogical approaches were shaped by their own studentship experiences (90%) and what they have learned from the other instructors with whom they attended courses together (87%). Apart from this, it was stated that their readings about design education (80%), their research subjects (77%), and their postgraduate experiences (67%) were also effective. Moreover, more than half of the participants (55%) stated that their professional experiences also shaped their pedagogical approaches (Figure 8).
Administrative Duties

Another subject of interest in the survey was the administrative responsibilities of research assistants. According to the survey results, 78% of the participants take part in the administrative affairs of the design studio (petition, grade objection, correspondences, etc.), and 92% in the administrative affairs of the department or dean office (commission memberships, invigilation, etc.) (Figure 9).

Conclusion

Participants of a design studio regardless of the titles and responsibilities apparently influence both teaching and learning processes. Even though it is possible to find several studies focusing on design teachers and design students, scholars have been silent to investigate the teaching activities of research/teaching assistants in a design studio course context.

This study is an attempt to understand and frame the perceived pedagogical roles of research assistants in design studio courses. In this sense, we designed a survey addressing in-studio roles and responsibilities, the relations with the instructors, the impact on the student learning process, the factors shaping pedagogical roles, and the administrative responsibilities.

Broadly, the results show that participant-research assistants perceive themselves as active stakeholders in design studio courses, which are highly influenced by design instructors pedagogical-wise. They also believe that they have a substantial impact on design students’ learning processes.
As the future of design instructors, research assistants are in a critical position whose pedagogical approaches are in the development process. As a result, we consider research/teaching assistants as change agents with their intermediary roles and practical impact on the design learning process. In this sense, this study can be considered important for the ignored participants of design studio courses.

Further studies are needed to support and extend our current discussion to enhance pedagogical practice and nurture the design education literature. Moreover, a discipline-based analysis can be conducted to extend the discussion. Statistical analysis can be accomplished to make a deeper analysis. Also, the impact of research/teaching assistant on learning process can further be detailed and studied especially from the students’ viewpoints.

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