


Interview with Chat GPT to Define Architectural Design Studio Work: Possibilities, Conflicts and Limits

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Abstract: Design studio forms the backbone of architectural education. It is the first-place students encounter complex design problems that they should understand the context, search for the reasons, structure the demands, and develop creative solutions in the design process. The continuity and integrity of design studios are important, so the instructors have great effort to define and explore the project subjects and themes for each grade to make the environment more productive, creative, and collaborative. The meetings, web and literature surveys, and thoughts and experience of instructors enable the definition of an architectural design studio work. This research is to seek another knowledge source that could have possible contributions to this process. Chat CPT is a newly released artificial intelligence project that people can experience for months. It is a language model the training and learning continue. By the objective of the research, an interview with chat GPT is structured and executed to define and explore possible issues and valuable knowledge for third-year architectural design studio work as a case study. The recordings are presented, and an evaluation survey, Delphi technique among experts, is held to emphasize artificial intelligence's possibilities, conflict, and limits in taking the stakeholder role. Prominent findings are that AI continuously responds and presents important issues for requirements and concepts. It has limits on reaching the maps and conflicts in distinguishing the countries and institutions.

Keywords: Architectural design education, Defining studio, Artificial intelligence, Chat GPT, Delphi technique

Introduction

Design studio for architectural education is an important part of the architecture department's curriculum. These studios form architectural education's backbone, where students synthesize and use the technical and theoretical knowledge gained in other courses (Ozorhon & Lekesiz, 2021; Tuztasi & Koc, 2022). It is the first place where students are posed with complex problems regarding understanding the problem, searching for the reasons, managing contextual influences, and negotiating

programmatic demands (Caglar & Uludag, 2006). The projects start with the architectural education first years, and they have diverse scales and contexts until the end of the undergraduate education. The way they handle any design problem is improved, and creativity in their process is shaped by this continuous studio education method. In architectural design education, students develop drawing, conceptual, and critical skills that are informed by their ability to reflect upon the production of ideas in design processes and in the urban,

environmental, social, historical, and cultural contexts that define the architecture and the built environment (Rawes, 2007). Besides, the learning environment in the studio is for sharing experiences and ideas of the instructors and students where diverse variables should be initiated (Yurtsever & Polatoğlu, 2020). For these reasons, every studio semester, the studio subject, theme, features, and evaluation criteria are explored and defined by the instructors.

Research, discussions, and meetings are scheduled among instructors to define and elaborate for every new studio semester to maintain a design problem and context for students. Project subjects, requirements, location, and criteria are explored with diverse sources and methods within the curriculum. A proper in-depth exploration is needed to understand and instruct any architectural design process (Hettithanthri, Hansen, & Munasinghe, 2022). It is increasingly important for researchers and educators to find effective ways to stimulate students' creativity with open-ended problems (Park & Lee, 2022). This study stands at an inquisitive point that artificial intelligence (AI) can have any contribution to this searching and defining process of studio projects. The value and importance of the instructor's experience and knowledge of running a studio with the definition are obvious; however, the possible benefits, limitations, and conflicts of AI were examined through interviews with it/he/she. Chat GPT ('ChatGPT', 2023), one of the latest released language models, was used to have experiment. The third-year architectural design studio project is selected to be explored. In the paper, first the knowledge of architectural design studio and contemporary studies about Chat GP are presented, then the methodology is given to state the structure of interview. The record of conversation with AI is reported in the section, Delphi technique among is conducted to evaluate findings of interview.

Architectural Design Studio

In architectural education, design studio starts with a discovery of seeing design as a process of creativity within a contextual framework (Caglar & Uludag, 2006). Instructors decide

this framework within the objectives of the semester. The project subject, scale, studio activities, and context should be arranged due to the intended flow and earnings of the studio. The teaching process in architectural education is viewed from two aspects, the aspects of teaching and assessment (Utaberta, Hassanpour, Bahar, & Che Ani, 2013). A well-designed studio framework makes instructors and students take a proper role within the studio process. Thus, studio works are explored and defined for every semester with continuity and integrity.

Architectural design education is a process that revolves around studio courses, and design studios require an environment that fosters creativity and experiential learning (Yurtkuran, Kırılı, & Taneli, 2013). An architecture design studio, as the core module in each semester, leads the training process in the architecture program through a project-oriented activity. This process starts from the first year of study and continues until the graduation day based on precedents studies and design projects (Tafahomi, 2022). A design studio environment is a creative place that gives diverse opportunities for utilizing cases from real life or experiments without limitations.

Artificial Intelligence and Chat GPT

Chat GPT (Chat Generative Pre-trained Transformer), a large language model developed by OpenAI, is a form of artificial intelligence that can be used as a chatbot (S. Biswas, 2023; S. S. Biswas, 2023; 'ChatGPT', 2023; Mcgee, 2023a). A sufficient body of training data must be available in the form of tuples of input and output data (Landgrebe & Smith, 2021). Deep language algorithms and training sets were used to develop Chat GPT, which could interact in a conversational way (Caucheteux, Gramfort, & King, 2022; 'OpenAI', 2023). For years, the company has worked for research and made AI develop by training with the involvement of users free from the platform. The last released version was the 3.5th generation at the time of this research started; however, the fourth generation was released on 14.03.2023, which had the ancestors of Chat Gpt 2.0 and 3.0

(‘ChatGPT’, 2023; Floridi & Chiriatti, 2020). The chat box from web explorer is used to enrich freely with registration. An example of the user interface is shown in Figure 1. Talking to AI with a basic chat box is possible, and the answers are written within a while. The continuity of conversation could be maintained by giving references in user’s talk related to earlier subjects. At the left the menu could be seen to reach and manage recorded conversations. An upgrade purchase is available to use limitless, get faster response and priority access to new features.

Experiments with Chat GPT are increasing after the first announcement in November 2022. Some working and research articles seek possible capabilities and limitations over diverse subjects and methods. Asking it to write three stories (Mcgee, 2023a), asking about the best and worst U.S. Presidents (Mcgee, 2023b), or asking about the role of Chat GPT are some examples of seeking the

possibilities. Besides the scope, limits, and consequences of AI (Floridi & Chiriatti, 2020; Yang, Li, Zhang, Chen, & Cheng, 2023), playing games with GPT (Sobieszek & Price, 2022) and the potential use of Chat GPT in global warming (S. S. Biswas, 2023) could be found in the literature. Since the utilization of this kind of AI release started new, the amount of developed studies within the frameworks is limited. However, studies for diverse disciplines and methods seeking possibilities and limitations are expected.

With the developments, experiments, and training, AI will contribute more to all industries and scientific areas. Landgrebe (2021) listed some important issues that learning activities should accomplish to initiate AI: sufficient training data, storing data digitally, consistency, and variance. Thus, the released AI project like Chat GPT makes people participate in training by asking them to use it freely.

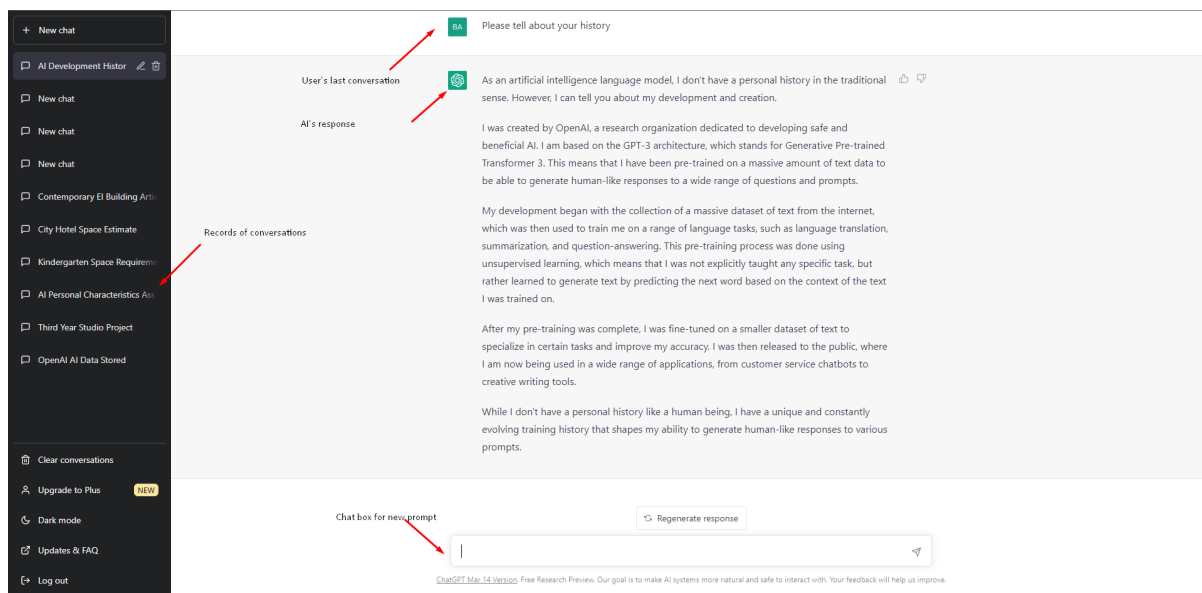


Figure 1: Chat CPT User Interface (‘ChatGPT’, 2023)

Methodology

The research is about the preliminary exploration of AI – Chat GPT considering capturing the knowledge for shaping the design studio works for architectural students. The third-year architectural studio is chosen for the examination since it is between the basic design, introduction to architectural design studios, and last year, final project studios. The research flow is presented in Figure 2. First, the framework of the semi-structured interview was defined in terms of the layout of the questions' themes, then registry to Chat GPT was done. The interview was executed with Chat GPT, and recordings were presented. Delphi Technique was executed among experts from universities to evaluate interview findings. It uses specialists to create present and future scenarios focused on particular problems (Renzi & Freitas, 2015). In order to analyze, produce, or validate knowledge from many experiences and points of view by establishing a shared scenario, a technique has been widely utilized and recognized since the 1960s (Renzi & Freitas, 2015; Şahin, 2001; Turoff & Linstone, 2002). Delphi technique has the advantages of allowing participants to express their opinions

on a research issue, connecting existing knowledge and areas of agreement, not requiring proximity or face-to-face meetings, reducing the impact of noise on communication, and collecting individual feedback for evaluation by groups of experts (Fink-Hafner, Dagen, Dousak, Novak, & Hafner-Fink, 2019).

The samples are surveyed through questionnaires or interviews, and surveys can vary from highly structured questionnaires to unstructured interviews (Ghosh & Robson, 2015). Interviews are one of the methods for collecting data from respondents. The focus group of interviews is decided according to research objectives. One respondent is capable of responding as a language model for this research. Besides, the semi-structured interview is decided to execute the experiment. The themes of questions are designed to explore the requirements and knowledge for defining third-year design studio work as follows:

- 1- Possible subjects and properties for a third-year design studio besides Turkey
- 2- Architectural program and concepts

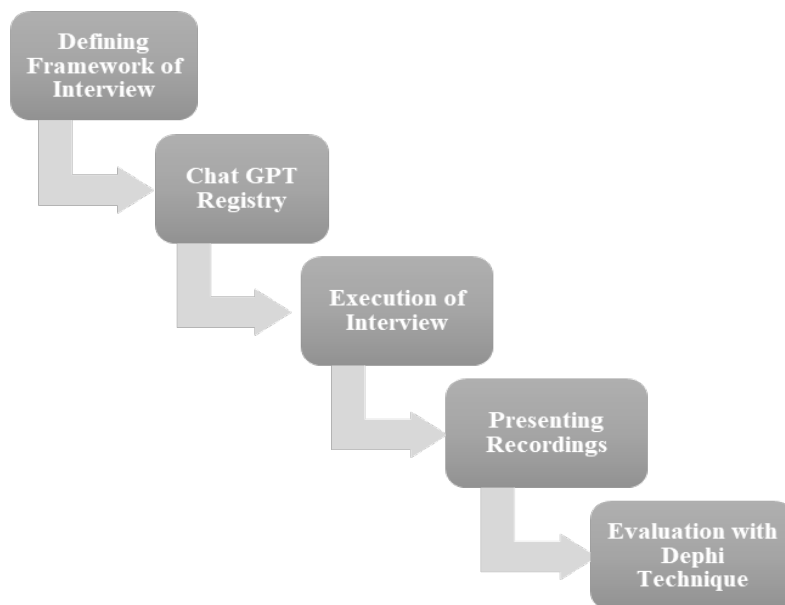


Figure 2: Research Flow

- for contemporary problems
- 3- Possible lands and proper student numbers for the studio
 - 4- Studio schedule and projects in the continuation

The semi-structured interviews are executed considering pre-decided questions subjects; however, it is known that the interviewer should be capable of arranging, expanding, and narrowing the issues due to the interviewee's response. Theme 2,3 and 4 questions will be asked after selecting a project subject from responses.

Findings: Interview with AI

This section presents the interview records with chat GPT which was made on 29.01.2023. It should be noted that sometimes the author re-asked the same question by adding the context of former ones to keep the interview continuity. The final questions were shaped due to the interview flow within the limits of structured themes. Questions 1,2,3, and 4 are for theme 1, 5 and 6 are for theme 2, 7,8 and 9 are for theme 3, and questions 10 and 11 are for theme 4.

(Q1) Author: What are the possible subjects for a third year studio project for architectural education?

Chat GPT:

- Designing a mixed-use development or urban infill project
- Creating a master plan for a campus or community
- Designing a housing project for a specific population or income group
- Developing a proposal for a sustainable or resilient building or community
- Investigating the preservation and adaptive reuse of a historic building or district
- Designing a transportation hub or other infrastructure project
- Creating a proposal for a public space or park
- Examining the design of a specific building type, such as a school or hospital

- Investigating the relationship between architecture and landscape or the environment
- Examining the role of architecture in addressing social or cultural issues
- Designing a community center or cultural facility
- Developing a proposal for an eco-tourism resort
- Designing a green roof or urban agriculture project
- Examining the relationship between architecture and technology, such as designing a smart building
- Investigating the design of disaster-resistant building
- Designing a co-living or co-working space
- Examining the design of a specific building type, such as a data center or laboratory facility
- Investigating the relationship between architecture and urbanism, such as designing a pedestrian-friendly street or neighborhood
- Examining the role of architecture in addressing issues related to accessibility and universal design
- Investigating the design of an urban renewal project or a brownfield redevelopment

(Q2) Author: Does it change due to country or university?

Chat GPT: The specific subjects for a third-year studio project in architectural education can vary depending on the country and university. Different countries and universities may place different emphasis on certain issues, such as sustainability, preservation, or urban design. Additionally, the resources and expertise available at a particular university can also influence the subjects that are offered. Some universities may have a strong focus on design and technology, while others may place more emphasis on research and theory. Additionally, some universities may offer studio projects that are focused on local issues and challenges, such as designing for a specific

climate or addressing the needs of a particular community.

(Q3) Author: How about the architectural education in Turkey?

Chat GPT: Architectural education in Turkey is provided by universities that have a Faculty of Architecture. The curriculum generally includes courses in design, history and theory of architecture, building technology, urban design, and professional practice. The architectural education in Turkey usually takes five years to complete, with the third year being the first year of studio projects. The curriculum of architecture education in Turkey has been changing in recent years to adapt to the changing demands of the industry and the profession. The focus is on providing students with a strong foundation in design and technology while also addressing issues such as sustainability and urbanism. The studio projects are also designed to reflect these changing demands, and they may include subjects such as sustainable urban design, smart building design, and adaptive reuse of historical buildings. Additionally, the architectural education in Turkey is also influenced by the country's history, culture, and context. For example, the curriculum may include courses on traditional Turkish architecture and the design of buildings for specific uses and functions, such as mosques or hammams.

(Q4) Author: What are the properties of 3rd year studio projects of architectural education in Turkey?

Chat GPT:

- Design-oriented: Third-year studio projects are typically focused on the design process and involve the development of architectural solutions to a specific problem or challenge.
- Integrated approach: Studio projects often integrate various aspects of architectural education, such as design, history and theory, building technology, and urban design.
- Site-specific: Studio projects are often site-specific and may involve the design

of a building or development for a specific location or community.

- Research-oriented: Third-year studio projects often require students to conduct research on a specific topic or issue related to architecture, such as sustainable design or urban renewal.
- Teamwork: Studio projects are often done in teams, which allows students to collaborate and learn from each other.
- Critique and feedback: Studio projects often involve regular critiques and feedback from instructors and peers, which helps students to improve their design skills.
- Hands-on learning: Studio projects provide a hands-on learning experience, allowing students to apply the knowledge and skills they have acquired in their coursework to real-world design challenges.
- Context-sensitive: Studio projects in Turkey are context-sensitive, which means they take into account the cultural, social and environmental context of the country.
- Problem-solving: Third-year studio projects in Turkey aim to teach students how to solve architectural problems and how to generate alternatives.
- Professional development: Studio projects also aim to prepare students for professional practice by providing experience in project management, teamwork, and communication skills.

(Q5) Author: Can you arrange the architectural program of community center for third year architectural students?

Chat GPT:

1. Multi-Purpose Room: A space of around 200 square meters, with a flexible layout that can be used for a variety of activities such as events, meetings, classes, and performances.
2. Gymnasium: A space of around 150 square meters, with a standard basketball court and equipment for sports and physical activities, such as weightlifting and cardio machines.

3. Kitchen and Dining Area: A space of around 100 square meters, with a commercial kitchen and a dining area for events and gatherings.
4. Library: A space of around 50 square meters, with a collection of books, magazines, and other resources.
5. Arts and Crafts Room: A space of around 40 square meters, with room for creative activities, such as painting, drawing, and pottery.
6. Computer Room: A space of around 40 square meters, with a variety of computer stations and software for use by the community.
7. Meeting Rooms: A variety of smaller rooms of around 25 square meters each, for meetings, classes, and other activities.
8. Childcare Room: A space of around 30 square meters, with age-appropriate activities and toys.
9. Offices: Space of around 50 square meters for staff, volunteers and administration.
10. Reception and lobby: Space of around 20 square meters for welcoming 7h y 77yy visitors and providing information.
11. Outdoor spaces: Outdoor spaces such as a playground, gardens, and terraces can be designed to provide additional space for activities and socializing.
12. Parking and Accessibility: Parking and accessibility should also be considered in the design of the building, to ensure that the community center is easily accessible to all members of the community.

The total area for a third-year architectural studio project for students will depend on the specific project and the requirements of the university or program. However, it is not uncommon for third-year studio projects to have a total area of around 1000-2000 square meters. This allows for a relatively large and complex project that can accommodate a variety of spaces and functions, while still being manageable for students who are still developing their design and technical skills.

(Q6) Author: What are possible concepts for community center project as third year design studio?

Chat GPT:

1. Community engagement and participation: This concept is focused on involving the local community in the design process, and designing a community center that reflects the needs, values, and aspirations of the community. This can include holding workshops, meetings, and surveys to gather feedback and input from community members.
2. Accessibility and inclusivity: This concept is focused on designing a community center that is accessible and inclusive for all members of the community, regardless of age, ability, or socio-economic status. This can include features such as ramps, elevators, and wide doorways to accommodate wheelchairs, as well as a variety of spaces and activities to cater to different needs and interests.
3. Adaptability and flexibility: This concept is focused on designing a community center that is flexible and adaptable to changing needs and uses over time. This can include using modular or prefabricated building systems, and designing spaces that can be easily reconfigured to accommodate different activities and events.
4. Sustainability: This concept is focused on designing a community center that is environmentally friendly, uses resources efficiently, and minimizes its impact on the natural environment. This can include features such as solar panels, rainwater harvesting systems, and green roofs.
5. Community health and well-being: This concept is focused on designing a community center that promotes physical and mental health and well-being. This can include features such as a gym, a library, and a childcare room, as well as green spaces and outdoor areas for recreation and socializing.

6. Cultural identity: This concept is focused on designing a community center that reflects the cultural identity and heritage of the local community. This can include using traditional materials, forms, and motifs in the design, and incorporating art and artifacts from the community in the center.
7. Climate change and resiliency: This concept is focused on designing a community center that is resilient to the impacts of climate change, such as sea-level rise, extreme weather events, and heatwaves.

(Q7) Author: Do you have any real recommendation for the land in Turkey for this project?

Chat GPT: I am sorry, as a language model, I do not have the capability to provide specific recommendations for land in Turkey for a community center project as it would require knowledge of current available land, regulations, and community specific demographics. However, I can suggest that when searching for a suitable land, it would be beneficial to consult with local authorities and community leaders to understand the specific needs and opportunities of the community.

(Q8) Author: Do you have access to maps?

Chat GPT: As a language model, I do not have direct access to maps or the internet to provide you with specific location. However, I can try to provide you with general information on a specific location or address if you provide me with it. Additionally, I can give you suggestions on how to find maps and information on locations

(Q9) Author: How many students are proper for this studio?

Chat GPT: The number of students that would be appropriate for a third-year architectural studio project depends on a variety of factors such as the size and complexity of the project, the resources available to the students, and the teaching style of the instructor. In general, a third-year architectural studio project is usually designed for a small group of students, usually

between 4 to 8 students. This allows for individualized attention and guidance from the instructor, and allows for more in-depth exploration of the design concepts and issues related to the project.

(Q10) Author: Which project is proper to give after this project?

Chat GPT: A common progression for architectural education is to move from smaller scale projects such as single-family homes or small-scale community centers in the early years to larger scale projects such as multi-unit housing, mixed-use buildings or urban design projects in the later years. A fourth-year architectural studio project could be focused on a larger-scale community center, a mixed-use development, or an urban design project. This would allow students to apply the skills and knowledge they have gained in the previous studio in a more complex and challenging context. Another option could be to focus on a different typology, such as a healthcare facility, a hotel, or an office building. This would allow students to explore different design considerations and building systems while applying the skills they gained in the previous studio. Alternatively, the students could be given the opportunity to work on a real-world project, either by participating in a design competition or by working on a project in collaboration with a local community organization or developer. This would provide students with valuable experience in working with real-world constraints and clients and give them an understanding of the practical aspects of the profession.

(Q11) Author: What is schedule of work for third-year architectural studio project focused on a community center?

Chat GPT:

- Initial research and site analysis: This phase would involve researching the community and the site to understand the needs of the community, the context of the site, and any constraints or opportunities that may impact the design.
- Programming and conceptual design: Students would develop a program of

spaces and requirements for the community center, and would begin to explore different design concepts and solutions.

- Schematic design: Students would develop and refine their chosen design concept, and would begin to develop detailed plans, elevations, and sections.
- Design development: Students would continue to refine their design, and would begin to consider building systems and materials, as well as any necessary permits or approvals.
- Construction documents: Students would finalize their plans, elevations, and sections, and would begin to prepare the necessary construction documents.
- Modeling and presentation: Students would create physical or digital models of their design, and would present their design to a panel of faculty members and/or industry professionals.
- Final review and critique: The students would receive feedback and critiques on their designs, and would make any necessary revisions before final submission.

Evaluation with Delphi Technique

The phases for the Delphi process used in this study are shown in Figure 3, and its goal is to have professionals with experience in instructing architectural design studios for

evaluating the interview with chat GPT. Five educators responded to the survey with an experience of seven years on average. At the beginning of the process, they were informed of the survey study, the research goal, and the testing protocol. Each stage was carried out independently, without prior knowledge of the others. The interview, including the question of the author and responses of AI was sent to them and asked for their comments/statements about sections separately. The statements and criticisms were then listed and distributed to experts for evaluation. The response scale is organized in a likert scale commonly used in questionnaires between 1-7 (1-definitely disagree, 2- disagree, 3- partially disagree, 4- indecisive, 5- partially agree, 6- agree, 7- agree). The collected responses were examined through statistical calculations commonly used for descriptive evaluation in Delphi technique. Median (MD) is a value that shows an average of responses, quarter 1(Q1) is value that takes the 25% of responses at the left and 75% of responses, quarter 3(Q3) is value that takes the 75% of responses at the left and 25% of responses the right, and range \mathbb{R} is the distance between quarters (Şahin, 2001). Smaller range value shows the consensus of respondents on objected items; higher values of the range show the opposite. At the last round, experts were informed about the common results of

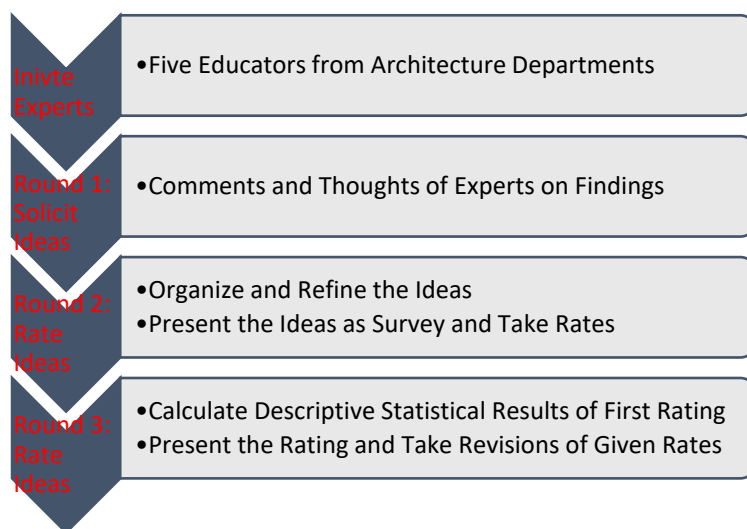


Figure 3: Evaluation via Delphi technique

rates, including the explanation about MD, Q1, Q3, and R. They were asked to examine the results and revise their previous rating if they wanted to. It is possible to continue on rounds in Delphi technique to obtain more consensus or in the situation that the revision of ratings is

high. Three rounds are decided to be adequate for this research. However, the possibility of other rounds stands if the rating revision is high.

Table 1: Results of the evaluation for question 1(theme 1)

Responses for "What are the possible subjects for a third-year studio project for architectural education?"					
ID	Statement/Comment	Md	Q1	Q2	R
1.1	Transportation hub and infrastructure projects are not suitable for third year	4,00	1,50	7,00	5,50
1.2	Answers are more related to urban design studio than architectural design	5,00	2,50	6,00	3,50
1.3	Third year education differs due to country. Question should be more specific	6,00	4,50	7,00	2,50
1.4	Responses are so general, some topics are not related to architectural design	6,00	4,00	7,00	3,00
1.5	Examination for different studio years should be done for evaluation	4,50	4,00	5,75	1,75
1.6	The proposals starting with designing, creating and developing are related to third year	5,00	3,50	7,00	3,50
1.7	The proposals starting with examining, and investigating are much related to graduates	5,00	3,50	7,00	3,50

Table 2: Results of the evaluation for question 4 (theme 2)

Responses for "What are the properties of 3rd year studio projects of architectural education in Turkey?"					
ID	Statement/Comment	Md	Q1	Q2	R
2.1	Responses are so general, they are also valid for other studios	7,00	6,00	7,00	1,00
2.2	Computer science should also be underlined in responses	5,00	3,00	6,00	3,00
2.3	Responses are mixture of statements applicable for architectural education, but they are not specific for Turkey	7,00	5,50	7,00	1,50
2.4	Reaching this kind of knowledge without endeavor on research is problematic	5,00	4,00	6,75	2,75
2.5	Question should have some specific statement for methods, outcomes or planned objectives	6,00	5,00	6,50	1,50

Table 3: Results of the evaluation for question 5 (theme 2)

Responses for "Can you arrange the architectural program of community center for third year architectural students?"					
ID	Statement/Comment	Md	Q1	Q2	R
3.1	The answers are only based on spaces and functional needs	6,00	6,00	7,00	1,00
3.2	The total area of project is not proper for third year studio	6,00	4,50	7,00	2,50
3.3	It is good a have a idea about the program to develop	5,50	4,25	6,75	2,50
3.4	Responses may be generated in more detailed version if the question has some statements	5,00	4,00	6,00	2,00
3.5	This approach can be used by students if the program has not been given	6,00	5,00	6,50	1,50
3.6	Some areas for spaces are not true. For example; for kitchen or dining hall	6,00	6,00	7,00	1,00

Table 4: Results of the evaluation for question 6 (theme 2)

Responses for "What are possible concepts for community center project as third year design studio?"					
ID	Statement/Comment	Md	Q1	Q2	R
4.1	Contemporary popular subjects are offered	7,00	3,50	7,00	3,50
4.2	These are related to important aspects to be considered, not specific for asked question	6,50	6,00	7,00	1,00
4.3	It could be better if a hierarchy between them would be suggested specific for third year	5,50	5,00	6,75	1,75
4.4	It focuses on functional, environmental and technical generic concepts, sustainability, accessibility and inclusiveness are principles which should be followed and achieved in every type of project	6,00	5,50	7,00	1,50
4.5	Philosophical, abstract, symbolic, and even configurative architectural concepts are excluded from the answer	7,00	5,50	7,00	1,50

Table 5: Results of the evaluation for question 9 (theme 3)

Responses for "How many students are proper for this studio?"					
ID	Statement/Comment	Md	Q1	Q2	R
5.1	It seems that still the system can not have this logical and analytical thinking which links the different topics and whole chat together	7,00	5,50	7,00	1,50
5.2	This is the optimum range (which is still general for this less number) for individualized attention and guidance, which is concluded from general group works independent from architectural education or 3rd year design studio	6,00	5,00	6,50	1,50
5.3	Answer of Chat GPT may be for optimal studios but not reflecting Turkey specific facts	6,00	6,00	7,00	1,00

Table 6: Results of the evaluation for question 10 (theme 4)

Responses for "Which project is proper to give after this project?"					
ID	Statement/Comment	Md	Q1	Q2	R
6.1	Since AI bots are still weak in education management and control, it will be better to give some hints to lead the suggestions	6,50	6,00	7,00	1,00
6.2	For someone who has no idea about architectural education this can be helpful	6,00	4,00	7,00	3,00
6.3	The answers show some valuable recommendations	6,00	5,00	7,00	2,00
6.4	The approach of Chat CPT is acceptable	6,00	2,50	7,00	4,50

Table 7: Results of the evaluation for question 11 (theme 4)

Responses for "What is schedule of work for third-year architectural studio project focused on a community center?"					
ID	Statement/Comment	Md	Q1	Q2	R
7.1	It is interesting to give schedule with the details of building system, material and construction	7,00	3,50	7,00	3,50
7.2	The work schedule presented by Chat GPT reflects a project delivery process rather than studio project submission	6,00	5,50	7,00	1,50
7.3	Chat GPT is successful in general to arrange the order of work schedule for practitioners	7,00	3,50	7,00	3,50
7.4	This is really too general independent from community center project and 3rd year	6,00	5,50	7,00	1,50
7.5	It should also be criticized to constitute a base for a studio design work regarding ethic and academic/professional knowledge as a method	6,00	3,50	7,00	3,50
7.6	It should also introduce and suggest durations of every task and the relation between them to create the sequence and final total time	7,00	5,00	7,00	2,00
7.7	Jury after final submission should be considered as part of the schedule, and it is missing in the answer here	6,00	5,50	7,00	1,50

The findings section presents eleven questions and their responses to 4 different themes. These are revealing records of the interview. Some questions are to make the interview in continuity, and some have no responses to be evaluated by the experts in terms of contents, such as having no access to real map data. Thus, the relevant questions are used for Delphi sessions, and the rest are evaluated in the discussion section. The results of Delphi session are presented in Table 1-7. The questions are expressed in the heading, Id numbers are assigned, and rate calculations are presented in the tables.

Discussions on Evaluations

The interview recordings are accurately presented in the time sequence of the

conversion with chat GPT. It can be stated that the knowledge and explanations for the author's questions are valuable to evaluate. It is hard to understand this issue with any basic web survey or literature survey at a baseline level. However, some approaches and responses of AI have so general perspectives and conflicts. Experts' evaluations are significant for exploring the possibilities, conflicts, limits, and utilization of chat GPT.

Some issues must be underlined for the possibilities and benefits of capturing knowledge and elaborating the third-year architectural design studio work. Chat GPT offers many projects, including mixed-use development to community centers, which should be further examined in detail. Looking

at Id 1.3 and 1.4, it could be stated that responses are too general and not specified for Turkey. Detail explanation should be added to the question to have intended answers. Besides, for the comparison, it is better to try getting answers for other design studio levels (1.5). The properties of a third-year studio are listed as design-oriented, site-specific, research-oriented, teamwork, critique and feedback, hands-on learning, context-sensitive, problem-solving, and professional development. These are valid articles for defining a third-year studio but are also important for other design studios and other countries. It seems that the statements are not specific enough and are generic (2.1, 2.3). Besides, experts stated that reaching this knowledge without endeavor research is problematic at a level (2.4). However, by asking specified questions, outcomes will benefit from planned objectives (2.5). AI generates an architectural program for a community center project for a third-year studio, which needs more detail and explanation. Besides, the scale and context are proper for the studio level (3.3, 3.5). The architectural program is based on spaces and functional needs, some of which are not true (3.1, 3.6).

The possible concepts that may be embedded in the project subject are asked. The opportunities with detailed explanations are listed as Community engagement and participation, accessibility and inclusivity, adaptability and flexibility, sustainability, community health and well-being, cultural identity, and climate change. Chat GPT is more successful in generating concepts for studio subjects than design education properties to address general contemporary issues (4.1, 4.4). However, the responses do not express the concept for only third year studio and need improvement (4.2, 4.3). The team number of the studio is also asked for AI, it recommends 4 to 8 students with some general statements. The answers do not reflect the Turkey conditions, stating the optimum range independent from third year architectural design studio (5.2, 5.3).

Chat GPT is asked to offer the following studio work, which could be handled after the community center project. The offers are so general; however, it also presents an amount of the possible project subject. This part's significance is evidence that AI could maintain the continuity of the conversation. Since there are no specific words for the community center in the question, the response is related. The offers may not be used directly; however, they have a good value to be used as a hint and research base for defining the next studio (6.1, 6.3). It can be easily understood from the schedule response that it generates and presents a general layout for any architectural design studio rather than a community center in the third year (7.4). Chat GPT successfully shapes the general schedule layout, like project delivery in vocational practice (7.2). Some parts related to time, final jury, and task relations are not stated and needs to ask detailed question to get better answers (7.6, 7.7)

Although it should be noted that chat GPT pays attention to creating conflict for responses, some conflicts related to the surveyed area are noticed. First, the duration explanations for Turkey's architectural education are almost completely wrong. The undergraduate education is not five years, and the studio education start before the third year. Another example is recommending a larger-scale community center project in the fourth studio after the community center project at the third-year studio. Changing only scale is meaningless for arranging studio works. 4-8 students per instructor in an architectural studio is nearly impossible to provide for Turkey and many countries.

From the interview recordings, there are some limitations stated. First, for some questions chat, GPT responds in a generic approach, not context and subject-specific. Users should re-ask by narrowing the issue with details to get the answers in scope. Thus, the questions and conversation's flow always need attention and repetition to ensure the integrity and stay in context. The next issue is being unable to reach map or satellite data. Normal users can

easily reach the data; however, this language model cannot. It seems there needs to be some progress in enriching this level. The AI has no specific separation or evaluation between diverse countries or universities considering the architectural education, except stating Turkey's historical context, like mosques and hammams.

Conclusion

Any process for defining an architectural design studio could not be done only considering the knowledge from one resource. Collaborative workings, web and literature surveys and discussion on design studio works, experience and background of the instructors, curriculum, and department statement shape issues and facts for defining and executing any design studio. Obviously, the experience of instructors, the execution of scientific surveys, and research with framework result in more valuable and validated outcomes for defining an architectural design studio, like capturing and creating any knowledge. However, the contribution of AI cannot be denied in generating and creating any type of knowledge. Over time, scientific research and examinations in practice will improve the methods and frameworks for better interaction with artificial intelligence tools. In the previous sections, the recordings and discussion on the interview are presented and then evaluated with experts from architectural departments by Delphi techniques. The rated statements and comments are valuable to explore the possibilities, conflicts, and limits of the chat GPT at the research date. AI, like Chat GPT, is a new player that develops continuously. By that time, it will participate with different degrees in various areas, disciplines, educational life, research, and commercial business. This study mainly underlines that it can also be an actor in creating knowledge or a framework for a process of education like an architectural design studio. The findings, with evaluation by experts and discussions, are expected to expand the view on using AI with presenting possibilities, conflict, and limits and enable further research and experiments on artificial intelligence as a party

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