


Examination of the Interaction Process between Architecture Students and Supervisors in the Thesis Studio

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Abstract: This paper aims to criticize the current supervision process in the undergraduate thesis project in the architecture program to reveal philosophical contradiction exists in the schools of thought. The architecture programs have adopted an apprenticeship style of education as a tradition that is called learning by doing even in the thesis projects. However, new schools of education and thought are looking for more students' freedom and flexibility. A qualitative method with focus group workshops and group reporting techniques was applied in the research to discover the opinions of the thesis students about the supervisors and their own works and progress. Data was extracted from the reports of the students. The findings reveal that the students received guidance for the design process and outputs. However, they faced problems in keeping ownership of the thesis project idea, communication, interaction, and motivation with the supervisors. The power of the supervisors over the students resulted in changing the projects, crits, and outputs in the absence of clear guidelines in more personal manners. In conclusion, thesis projects include complicated processes that need clear guidelines and training for supervisors, even undergraduate theses in architecture departments. Despite the apprenticeship tradition in architecture education, new findings in education recommended a knowledge-based orientation for the supervision process.

Keywords: Architecture education, Interaction process, Students, Supervisors, Thesis project.

Introduction

A final-year undergraduate student is supposed to complete either a final-year project or a thesis project to fulfil the requirements of the program for graduation in a department of architecture. Asking for either a thesis project or a final project in the final year could reveal schools of thought in architecture education in terms of architectural training traditions, importantly *Beaux Art*, *Polytechnique*, *Bauhaus*, and *Vkhutemas* (Higher Artistic and Technical Workshops in the Soviet Union)" (Drexler, 1975; Draper, 1977; Garric, 2017; Tafahomi, 2023; Tafahomi & Chance, 2023). The selected

approach in any curriculum leads the module runs by either the supervisors' activities or the design studio coordinator (s) and technical advisors (Tafahomi, 2021a). Consequently, architecture students based on this foundation take positions whether they need to select supervisor(s) or they could continue just with the guidelines of the studio's coordinator. Seemingly, the supervision process in undergraduate programs is based on the *crit* (*Critique*) as we do in all studios in terms of effective ways of interaction for education (Goldschmidt, Hochman, & Dafni, 2010; Parnell, Sara, Doidge , & Parsons, 2007).

However, there is evidence to demonstrate that the students did not evaluate the crits effectively as instructors do (McClellan & Hourigan, 2013).

Similarities (Schon, 1987) and dissimilarities (Tafahomi, 2021a) between the supervisory and desk-crits activities in architecture education make this process more complicated for both students and staff. Particularly, both crits and supervision are widespread in the world with differences in the implementation, outputs, and outcomes in dissertations and theses (Borden & Ray, The dissertation: An architecture student's handbook, 2006). In fact, the crits in a design studio refer to an old tradition or even ritual activities (Owen, 2009; Neveu, 2009) in architecture education based on the Vitruvian approach (Proudfoot, 2000). In detail, for Vitruvius, there was a ternary logic for architecture assessments, including analysis, critics, and evaluation that represented the construction, functionality, and aesthetic aspects of the architectural projects, respectively (Tafahomi, 2022a). However, criticism has gotten more room in architecture education to fit into the design studios for leading the students based on the apprenticeship training style (Drexler, 1975; Draper, 1977; Garric, 2017; Parnell, Sara, Doidge, & Parsons, 2007). Schon (1987) advocated this style as a continuous dialogue between students and instructors in architecture design studios to improve and develop design projects based on "learning by doing" in terms of "reflection in action". It reveals another polarized aspect in the final year projects in terms of research-based projects or project-based projects.

However, there are different names for the final project of the students in architecture education. The studies listed a variety of names for the final projects (Ghonim & Eweda, 2019) such as "final year project, graduation project, or capstone project" (Tafahomi, 2021a, p. 5), final project, thesis project, and comprehensive design project (Tafahomi & Chance, 2023). These different names refer to the methodology of the final tasks based on project-based learning, research-based learning, and design-based learning that include their own epistemology to fulfil the task (Tafahomi,

2022a). Apparently, the word "doing" refers to a repeating process of drawing, redrawing, and developing the design ideas rooted deeply in the architecture education that kept the students in the design studios to reproduce the elite architect works to assimilate their knowledge (Draper, 1977; Drexler, 1975; Franz, 1994; Frayling, Research in art and design, 1993; Garric, 2017; Griffin, 2022). Nonetheless, a new critical point of view listed other ways of learning such as self-thinking, retrieval, and metacognition that imply other systems of learning in the education process such as imagination, listening, observation, critiques, implantation, revision (Marzano & Kendall, 2007; Marzanoand & Kendall, 2008).

There are some common trends for final-year projects with similarities and differentiations in departments and schools across the world. The first approach is to accomplish a final project in a capstone or final project that takes place in a studio with an emphasis on the task response as a project, prototype, or result which is common in Polytechnique style and engineering programs. The final project includes the same criteria for the evaluation of the technical aspects of the product based on detailed drawings. This kind of project take place in one semester under the leadership of the instructor of the module, which in many four-year architecture program could be observed. The final year project is a project-based activity based on a specific topic for designing a particular architecture project such as a hospital, kindergarten, school, or housing project in terms of a comprehensive project to show all lessons learned in the final product. This kind of project was developed based on the Beaux Art style of competition to develop a final design project based on specific topics. The project includes a concept, site analysis, design brief, and detailed illustration. For the evaluation of the final work of the students, two systems of evaluation are applied by the departments either a portfolio based on the exhibition for graduation, or a critical review based on the architect's visitors. The architectural thesis project is oriented toward the problem-solving process. A thesis project is

a more self-oriented project that is supposed that the students fulfil the requirement through systematic research activities on the site, context, typology of the buildings, and user specifications in an academic and scientific process. Table 1 presents some similarities and differences between the educational aspects of the three types of final projects.

In this regard, UR (the University of Rwanda) published lists of supervisor responsibilities (UR, 2015; 2018b), the guidelines referred to research activities, and some administrative responsibilities for both supervisors and students. The guidelines recommend systematic meetings between supervisors and students to discuss the studies, research, and progress during the preparation of the dissertation/thesis.

Table 1: Comparative table of Final project, Year, and Thesis

Educational Aspects	Final Project	Final Year Project	Thesis Project
Time	1 semester	2 semesters	2-3 semesters
Mode of Class	Studio	Studio	Workshops
Supervision	Instructor	Master of Studio	Supervisors
Guidelines	Instructor	Master of Studio	Thesis guideline
Projects	Thematic projects	Individual Projects	Individual Projects
Activities	Studio-based	Studio-based	Site and Context-based
Methods	Prototype	Design project	Problem solving project
Orientation	Tasks Reponse	Comprehensive Design	Design Objectives
Evaluator	Instructor	Master of Studio	Different Juries
Products	Report, Design Brief	Design Boards, Physical Models	Thesis, Design Boards, Physical Models
Presentation	Studio Pinup	Exhibition/ Portfolio	Thesis defense/Viva
Archive	No	Synopsis book of the year	Thesis in Library

Some universities and departments have developed guidelines for supervisors to harmonize activities. For example, studies listed significant factors in selecting supervisors and co-supervisors based on 1) professionalism such as familiarity with the topic, backgrounds, and experiences in the field, areas of interest, and publications, 2) attitudes such as helpfulness, leadership, supportiveness, and critical thinker, 3) personality such as calm, cool, polite, and friendly (Burkard et al., 2006; Gill & Burnard, 2008). Particularly, the study in architecture recommended punctuality, questioning, getting feedback, and drafting concepts in terms of good processes in supervising activities (Borden & Ray, The dissertation: An architecture student's handbook, 2006). Seemingly, individuals and departments could develop this list into a specific list based on their own purposes. Nonetheless, the job of the supervisor is to stay with the student(s) in the process of the preparation of the final project and presentation and graduation.

However, a major part of the guidelines has been designed for graduate and postgraduate programs rather than undergraduate (Gill & Burnard, 2008; UR, 2015; UR, 2018b). Perhaps, universities observed clarity in the supervision of undergraduate students who do not need any guidelines or specifications due to the level of education and the complexity of the project. However, some universities give the responsibility to each department to draw, specialize, and fit into the supervisory guidelines with department character and substance.

The students normally select their own supervisor based on a more self-constructed list of criteria (Borden & Ray, The dissertation: An architecture student's handbook, 2006) although sometimes the department intervenes in the selection process due to a high demand for special cases or a workload balance among the academic staff regarding the general regulation of the University of Rwanda (UR, 2018a). However, it is common to observe that

the students are not satisfied with the outputs of discussion, comment, and progress. To discover the reason behind of dysfunctionality of the supervision in the department, the research questions are designed based on what is the expectations of the students from the supervisors. In addition, what they have achieved in the process of supervision. Moreover, what are the expectations of the students from supervisors and themselves? And what they have done in the performance of the supervisory process?

The main objective of this research is to discover the perception of the thesis students in the supervisory process to see how the activities were effective from their perspective. This objective takes place through a comparative table of notes about both expectations and observations of the students about students and supervisors in the supervisory process. Through this process, the research expects to discover the anticipation of the students in architecture thesis projects from supervisors to evaluate the level of achievements in thesis projects. Seemingly, the results of this research could lead the similar cases in other architecture departments to fit either the thesis or final project based on findings of this research.

Studies on supervisory trends in architecture thesis

Gill and Burnard classified the activities of the supervisor into administrative and academic activities based on negotiations between supervisors and students about expectations in the thesis project (Gill & Burnard, 2008). They described a good relationship between supervisors and students in terms of problem searching, exchanging, and exploring ideas, whereas bad relationships will result in frailer, anxiety, and depression. However, the supervisory process is not a personal relationship, it is a professional activity based on the process and procedure in the academic context (Tafahomi, 2021a). In addition, supervisors and students need a certain level of agreement on some general issues on the project to develop the common core idea; otherwise, it results in a set of unnecessary disagreements, arguments, and challenges (Phillips & Pugh,

1994). Thomson emphasized an openness in supervisory activities between both students and supervisors (Thompson, Kirkman, Watson, & Stevart, 2005). For this reason, the study highlighted differences between the responsiveness and unresponsiveness characteristics of students and supervisors in communication when cross-cultural factors are engaged (Burkard, et al., 2006). Moreover, studies listed significant factors in selecting supervisors and co-supervisors based on 1) professionalism such as familiarity with the topic, backgrounds and experiences in the field, areas of interest, and publications, 2) attitudes such as helpfulness, leadership, supportiveness, and critical thinker, 3) personality such as calm, cool, polite, and friendly (Burkard, et al., 2006; Gill & Burnard, 2008). Furthermore, the study listed some expected characteristics by PhD students for a good supervisor that refers to availability, positivity, supportiveness, and knowledge-ability of supervisors (Gill & Burnard, 2008).

The study mentioned that the worst characteristic of a supervisor could be a dogma belief in certain methods, approaches, or points of view (Gill & Burnard, 2008). For this reason, the study highlighted the positive effects of training the supervisors on supervision activities (Ockerman, Mason, & Chen-Hayes, 2013), self-awareness of supervisors (Baker, Exum, & Tyler, 2002), and enhancement of the educational values in supervisors (Ronnerstad, Orlinsky, Parks, & Davis, 1997), and flexibility in the behavioral patterns (Watkins, 1995). However, another study pointed out that more than 90 per cent of the supervisors did not receive proper training for the supervision of students in the thesis process (Duan & Roehlke, 2001). The study detailed that the self-image of the supervisor includes a significant contribution to the supervision process such as self-love or self-critics (Ybrandt & Armelius, 2009).

Architecture education specifications for evaluating students' projects

Architecture studios have been led by the master of the atelier of the design studio or coordinator (Tafahomi, 2021b). This traditional

and powerful position of the master of the atelier was rooted in the “Acad mie d’architecture” style of education in the 17th century in France that was designed to train elite architects for the ideological buildings among noble students (Griffin, 2022) and this tradition was continued by Beaux Art (Garric, 2017) based on Hegelian philosophy (Tafahomi, 2023). While the architecture program changed occasionally, the design studio culture almost did not touch deeply (Draper, 1977; Drexler, 1975; Garric, 2017; Tafahomi & Chance, 2023). The style of master-led approach through crits could be observed in the worldwide schools of architecture (Parnell, Sara, Doidge, & Parsons, 2007; Tafahomi, 2021a; Tafahomi & Chance, 2023) which trained elite architects such as Frank Lloyd Wright and Le Corbusier were examples of this style (Proudfoot, 2000).

Nonetheless, the roles of the coordinator, supervisor, and jury have been different due to the style and approach in the architecture education referencing to the school of thought in architecture schools. The study highlighted that from Beaux Art to Polytechnique and then Bauhaus and finally then the new movement with the immigration of Gropius and Mies van der Rohe to Harvard and Illinois Institute Technology respectively, the role of the studio’s coordinator gradually reduced and the role of the supervisors increased (Tafahomi & Chance, 2023). In this respect, the role of the design studio’s coordinator was drawn by studies to provide the course syllabi and structure of courses, design handouts and thesis guidelines for both supervisors and students, arrange meetings between supervisors and students, recommend mediums for project development and illustration, and inviting juries for evaluation with reviewing and crits on the student’s projects (Parnell, Sara, Doidge, & Parsons, 2007; Tafahomi, 2021a; 2021b).

In fact, crits have been key aspects of architecture education in the whole program in terms of a standard form of reviewing (Parnell, Sara, Doidge, & Parsons, 2007) based on an apprenticeship tradition (Garric, 2017; Littmann, 2000; Madanovic, Persisting Beaux-

Arts practices in architectural education: History and theory teaching at the Auckland school of architecture, 1927–1969, 2018). However, there are differences between comments in desk-crits and the presentation of the students for juries. The desk-crits is related more to the drawing and analyzing of the different stages of the design based on the uncompleted tasks mainly based on the graphical techniques and analysis (Crowe & Laseau, 2011; Laseau, *Graphic thinking for architects and designers*, 2000). Seemingly, there is no difference between the systems of evaluation of the first-year projects in comparison with the final-year project (Tafahomi, 2021a), just scales, complexity, and research activities (Tafahomi, 2022a). There are studies that classified the architectural crits into two important aspects including “aesthetic” and “building performance evaluation” (Preiser, Davis, Salama, & Hardy, 2015) based on the Vitruvian approach. Seemingly, the first part is more related to the philosophical, epistemological, and style of the reviewer and the second part refers to the function, program, and design standards for the evaluation.

The Vitruvian approach was restructured by Franz (Franz, 1994) and Frayling (Frayling, *Research in art and design*, 1993). While they did not apply the same words such as firmness, commodity, and delight in terms of architectural aspects and analysis, criticism, and evaluation to measure the quality of the design aspects (Proudfoot, 2000), they focused on the definition of research activity and relationships with other disciplines (Tafahomi, 2022a). Franz (Franz, 1994) theorized trends of research in architecture into three major clusters based on the themes and topics, including philosophical, conceptual, and technical orientations. Apparently, the approach of Franz included similarities with the Vitruvian approach to the architectural project. The philosophical orientation was well matched to the aesthetic aspect of the Vitruvian approach that referred to the epistemological and ontological self-

thought of the researcher-designer in an architecture project. The conceptual orientation was related to social, cultural, and user aspects of the project that referred to the functionality. The technical orientation looked for technical drawing, presentation, and communication of the project for implementation that targeted the construction of an architectural project. Proudfoot (2000) drew a parallel connection between each Vitruvian aspect of design with a method of analysis, including analysis for construction, criticism for functionality, and evaluation of the aesthetic. In a similar way, Frayling used three titles for research, including In,

Through, and For art and design to lead the research activities in studies, processes, and outputs that referred to theory, design process, and technology, respectively (Frayling, Research in art and design, 1993). However, Till criticized this classification and recommended another ternary approach including research on process, performance, and product. Invalid source specified. in architecture projects based on Vitruvius classification in terms of construction, functionality, and aesthetics. Figures 1 and 2 attempt to illustrate the relationships between those aspects.

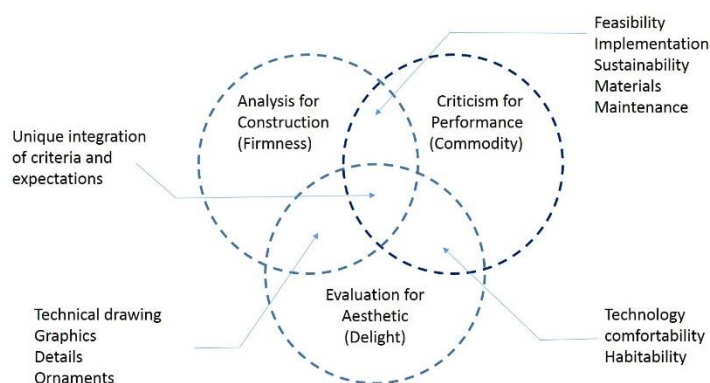


Figure 1: Vitruvian approach into architecture process and evaluation

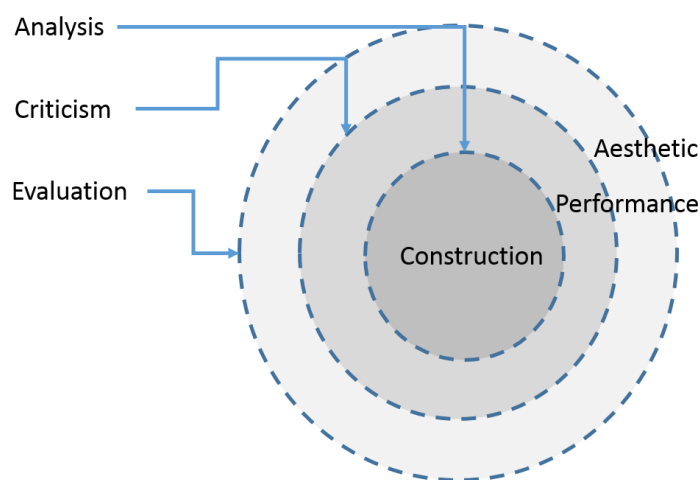


Figure 2: Overlaying of the Vitruvian approach based on scale of activity

Apparently, criticism of the functionality of design projects has been more common at the current times (Parnell, Sara, Doidge, & Parsons, 2007) than analysis and evaluation for construction and aesthetics. For example, the studies highlighted that the criticism activity in architecture was oriented toward building performance (Proudfoot, 2000; Till, 2008). Therefore, the functionality of buildings was the main target of crits based on the environmental-psychological studies and research on users' feedback and maintenance of the building in terms of habitability than other aspects (Mallory-Hill, Preiser, & Watson, 2012; Preiser & Schramm, 1997; Preiser & Vischer, 2005) where these aspects were more adapted to the criticism for assessment than techniques. This gap was also mentioned by another study to highlight a deterioration process in architecture for criticism, analysis, and evaluation in the theoretical framework of educational segments (Preiser W., Davis, Salama, & Hardy, 2015; Tafahomi, 2021b). Particularly, Webster (Webster, 2022) defines analysis, critics, and evaluation in terms of evaluation through the reasoning for judgement, detailed examination, and values and worth, respectively. Figure 3 attempts to illustrate these aspects of the criticism.

Apparently, the new movement in architecture education and project led attention to functional aspects in the design process to take into account the criticism as a whole to lead both aesthetic and construction aspects based on qualities such as sustainability, habitability, and contextual aspects that referred to the environmental, psychological, and qualitative factors in design (Franz, 1994; Groat & Wang, Architectural research methods, 2002). However, these new factors in the design have created a bulk of the knowledge that needs a continuous process of understanding, applying, and analyzing. Nonetheless, a question comes into mind that a new area of knowledge needs appropriate methods, techniques, and approaches due to being new, what about those orthodox instructors in architecture departments that advocated, "We teach as we have been taught" (Tafahomi, 2022a)?

Philosophical paradoxes in architecture education

Many orthodox approaches in education were changed in the 20th century based on John Dewey's (1859-1952) theory in education based on pragmatism (Tafahomi & Chance, 2023). Despite the commonplace Dewey's theory based on Jean Piaget (1896-1980) and Lev Vygotsky (1896-1934), based on inquiry-based learning and a progressive education model that

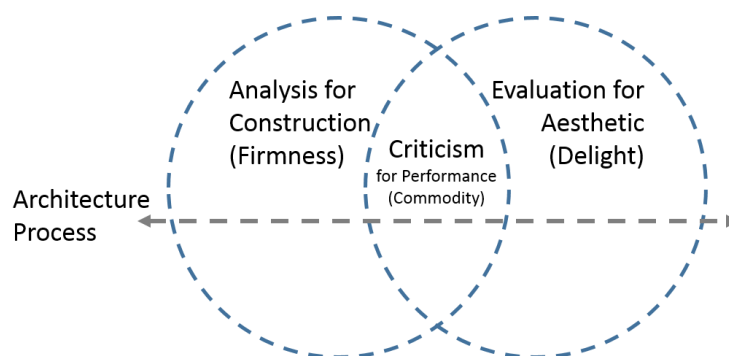


Figure 3: Criticism in terms of a connection between analysis and evaluation

advocated freedom of students in the process of learning by reducing the curriculum obligation, rote-learning, and standard teaching model (Hargraves, 2021). In addition, Walter Gropius (1883-1969) paid attention to some Marxist and socialist reflections in architecture education in Bauhaus (Tafahomi, 2023). Gropius manifested this approach in terms of new ideas in architecture education based on time and location (Gropius, 1970). Bauhaus applied this approach by changing the orthodox style of architecture atelier to introduce workshops, studios, and additional courses in relevant topics, such as art, philosophy, technology, and research (Lerner, 2005; Marttila, 2018; Tafahomi, 2023). Therefore, a thesis in this approach is a portfolio of the processes of progress.

Importantly, both philosophical and epistemological points of view changed in education, communication, and language as a tool for interaction. Thomas Kuhn (1922-1996) under the influence of Karl Popper (1902-1994) constructed the theory of knowledge in science based on an agreement between the scientific society rather than real outputs of science (Kuhn, 1962). In this theory, the progress of any body of knowledge is constructed based on a general acceptance by the scientific society rather than data, methods, and results. For this reason, he advocated that the progress of knowledge is neither linear nor progressive than a “paradigm shift” in beliefs and acceptances (Tafahomi & Chance, 2023). Wang (Wang, 2009) used the paradigm shift to explain the different styles of design in the history of architectural design neither progress nor development rather than as trends, such as neoclassicism, modernism, and postmodernism. Through new movements of questioning and skepticism in science, Foucault (1926-1984) revealed that there is a discontinuity in the history of meanings, thoughts, and human activities that makes an obvious disintegration in science (Foucault, 1972). He took into account the power in terms of the source of beliefs, expressions, and communications to advocate meaning beyond human interactions in the whole of history (Dreyfus & Rabinow, 1982). Foucault applied discourse term for the

explanation meaning of things. Foucault did not innovate the relationships between the power and discourses, hermeneutic philosophers such as Heidegger, Wittgenstein, and even Foucault agreed, “Subjects are not sources of discourses”, but on other aspects, importantly “the power of the subject” (Dreyfus & Rabinow, 1982, p. 69). Foucault highlighted that “knowledge and power imply one another” and continue, support, and regenerate each other (Foucault, 1995). In his later work, Foucault mentioned that power defines the truth, and truth is formed in the power practices (Foucault, 1980).

Foucault realized that achieving the discourse was a complicated task due to the absence of the essential foundations in the mind of subjects. For this reason, words and sentences could replace or repeat to express a single meaning and even many sentences could explain the same meaning (Foucault, 1972). He constructed his theory on the “power of sentences to act” based on John Searle’s theory that emphasized not only the meaning of the words but also the power of sentences to push people to act (Searle, 1969). Apparently, the theory of power in the work of Foucault resulted in a higher level of authority in the supervisory process than in scientific and knowledge-based activities. Dreyfus and Rabinow (Dreyfus & Rabinow, 1982, p. 110) argued that challenges of the Foucauldian concept of power are rooted in the genealogy of Nietzsche (1844-1900) who explained that rules and obligation are nothing than virtual activities that is constructed through “civic regulations, ethical codes, international laws to control norms and procedures” of a small group of powerful people to dictate orders on the general public. Despite the student-centred and constructivism theories in education, in architecture education, this authoritarian specification still is criticized by studies in relation to the apprenticeship tradition in architectural education (Littmann, 2000; Madanovic, *Persisting Beaux-Arts practices in architectural education: History and theory teaching at the Auckland school of architecture, 1927–1969*, 2018; Tafahomi, 2022a; Tafahomi & Chance, 2023).

In the same alignment, Jacques Derrida (1930-2004) constructed the deconstruction theory to explain this uncertainty in the expression of methods of science. He argued that the meaning of words, sentences, and languages is more than what is assumed to be known in a clear way. He explained words include both implicit and explicit meanings based on the chains of relative meanings and the contextual transformation in history that just deconstruction methods could reveal the common meaning to clarify the meaning of the word for users to understand correctly (Derrida, 2013). Derrida exemplified the word “marriage” to illustrate chains of related words such as wife, husband, child, family, home, and so on interrelationships that were related to explain the meaning of a single word. The word of the supervisor and supervision could be listed by some important items such as supervisor, supervisee, academic, administration, thesis project, topics, output, process, comment, critique, production, revision, edit, judgement, evaluation, analysis, and so on. Apparently, if some parts of the chain of the meaning are not clear, the supervision process faces dysfunctionality. In other words, if some parts of the meaning are absent in a discourse, who is going to interpret the whole? Here is the Lacanian theory on the signifier that could be restructured in a new format that exposes “signifiers signify significances” (Borch-Jacobsen, 1991; Žižek, 2007).

A theoretical framework

An undergraduate thesis in architecture is a self-driven project that is supposed to illustrate the knowledge, skills, and abilities of students in a comprehensive way of design, process, outputs, and approach. The theses were supposed to be led by supervisors in both academic and administrative aspects. Academic and administrative duties need communication and interaction between students and supervisors to construct their relationships in a professional way. Therefore, the supervisors and juries used the crits as tools for communication, interaction, and leading the thesis projects as common activities in architecture departments. The crits in architectural education have become a unique language for assessment and

evaluation of students' projects based on apprenticeship studio culture that theorized in terms of learning by doing that referred to the practical activities. The gap of balance in analysis, critics, and evaluation of students' project through both summative and formative assessments were obvious. For this reason, apparently, departments of architecture need clear guidelines for leading theses based on either approved guidelines or an agreement-consensus among lecturers. The lack of an agreement resulted in personalizing, changing, or confusing theses with studio projects. In addition, the power of the supervisor based on both administrative and academic positions could influence the scientific and knowledge-based interactions on the topic and process. Design processes, outputs, relationships, and discussion were mentioned by studies on supervision activities. However, the transformative generation of knowledge proposed more flexibility, creativity, and new ideas in terms of collaboration between students and supervisors.

Methods and materials

The section included methodology, research design, research process, data, time and location, and context of the research.

Methodology: Both quantitative and qualitative methods (Marshall & Rossman, 2006; Neuman L. W., 2006) have been applied in educational research importantly questionnaire, observation, focus group, and interview (Cohen, Manion, & Morrison, 2007; Creswell, 2012; Creswell & Creswell, 2018; Netshitangani & Machaisa, 2021). While a major part of the quantitative techniques was constructed on the numeric variables that are extracted from scaled questionnaires (Creswell, 2012; Tafahomi, 2021a), open-ended questionnaires are oriented with interpretations of the answers (Marshall & Rossman, 2006; Neuman L. W., 2006) based on the content analysis technique (Elo, et al., Qualitative content analysis: A focus on trustworthiness, 2014; Krippendorff, Content analysis: An introduction to its methodology, 2003; Mayring, Qualitative content analysis, 2000; Schreier, 2012). Studies also referred to the

focus group approach based on interviews, questionnaires, and storytelling activities (Edmunds, 1999; Elo, et al., *Qualitative content analysis: A focus on trustworthiness*, 2014; Langford & McDonagh, 2003; Tafahomi & Chance, 2023). It was supposed the participants in this group activity realized their courage to express themselves (Given, 2008) based on lived-experiences (Denzin & Lincoln, 2018) to discover the general beliefs of participants (LeCompte, Dorothy, & Aguilera-Black, 2012). To analyze the content of the answers by the focus group, studies used both analysis and interpretation of the texts. The analysis referred to the repeated words and sentences in terms of themes and topics, and the interpretation referred to the meaning of the words and sentences (Denzin & Lincoln, 2018; Dreyfus & Rabinow, 1982; Krippendorff, *Content analysis: An introduction to its methodology*, 2003; Given, 2008; Mugerauer, 1995; Mugerauer, 2014).

Research design: This research applied the focus group and self-reporting of the students to document their own observations and evaluation of the supervisory activities (Edmunds, 1999; Elo, et al., *Qualitative content analysis: A focus on trustworthiness*, 2014; Langford & McDonagh, 2003; Tafahomi & Chance, 2023). Despite the similarity of the method to both structured questionnaires and observation, this research applied the self-reporting of the supervisees to explain their own understanding of thesis processes (Denzin & Lincoln, 2018; Given, 2008). It was supposed that the students share their ideas about the thesis processes based on a comparative analytical report for both expectations and observations (LeCompte, Dorothy, & Aguilera-Black, 2012). The technique of data collection was constructed based on the group work of the students to report a common understanding of the supervisory processes in their discussion meetings. Two clusters of information were achieved in the research including reports of the students for the student-supervisor and expected-observed outputs to analyze themes, topics, and words (Denzin & Lincoln, 2018; Krippendorff, *Content analysis: An introduction to its methodology*, 2003; Given,

2008; Mugerauer, 1995; Tafahomi & Chance, 2023).

Research process: To find out the ideas of the students about the supervisory processes, a workshop was designed to ask the students to sit together and write down their common observations and ideas on paper sheets. The students were grouped to share their experiences with supervisory processes, activities, and achievements based on similar supervisors and panels of juries. It was supposed that the students explained their own expectations and observations in the process of supervisory through evidence-based outputs. In the workshop, first, the researcher asked the students to tell their own stories about the activities and the positive and negative aspects of the supervisory activities. This exercise clarified that the students had different experiences during the time of supervisees' activities.

For this reason, the researcher asked the students to classify the whole activities in two dimensions including expected and observed processes to document interactions, activities, and results of the supervisory processes. Some detailed spaces also were discussed such as the design process, communication, presentation, and personal attitude of the supervisors. While the same criteria could be applied to the students, the students pointed out punctuality, productivity, techniques of presentation, and life conditions as significant items in the thesis design development that could be common for the students.

Data and sampling specifications: Data were collected from the report sheets of the groups of thesis students. Four report sheets were collected based on the number of groups of students. While all the students had co-supervisors from the department and practitioners, the focus of the research was on the main supervisor. The data was based on the writing texts that were analyzed based on the themes, topics, and key issues raised by the students.

The context of the study: This study took place at the University of Rwanda; Department of Architecture located in Kigali, Rwanda. The department has one program with the title Bachelor of Architecture. The program is a five-year program that the last year is called either the thesis year or final year project with two continuous semesters for thesis I and II based on research and conceptualization, and architecture design development, respectively (DoA, 2012). The department was supposed to intake 25-35 students each year and the department currently accommodates 146 students. The curriculum expected thesis students to work under the leadership of the

thesis committee, which in the absence of a sufficient number of staff just runs with the thesis coordinator. The students spent their time in the thesis studio under the leadership of the thesis coordinator to develop their thesis project and meet weekly with their supervisors. The students are supposed to report the results of their meetings with their supervisors.

Research limitations: the scope of this research was limited to the opinions of the thesis students about the thesis and supervision processes to discover the problem from the students' lens. While the opinions of the lecturer and supervisors could be another topic to research,

Table 2: Evaluation of students about supervisors

Titles	Explanation of the students about supervisors	
	Expectations	Observations
Group 1	Project Development: ownership of ideas (by students) and to help the students to find precedents projects Communication; Effective communication by students and regular time of supervisor for students Presentation; Supervisor helps students to arrange the presentation and the supervisor defend the student in front of the panel. Personal characters; Supervisor is expected to act kindly, friendly and participatory to the student.	Ideas go to the supervisor's point of view and it was achieved. Tight schedules led to poor communication and the supervisor only reacts when students communicate. It was achieved but the supervisor acted as if he does not know you. He acted as a disrespectful employer which led to the resignation of the supervisory.
Group 2	Precedents at different stages of the design. Design suggestions according to findings and project development High level of communication and interactions. Regular meetings with the supervisor. We expected to be encouraged, and pushed mentally to move forward along the process.	We got precedents but due to the low level of communication, we didn't get enough Design suggestions were given accordingly. The level of communication was not good due to the unplanned schedule. Meeting with the supervisor was irregular and disturbed the result. There was more flexibility and discouragement due to outside life condition and the supervisor would consider it
Group 3	We expected our supervisors to give us guidance based on our ideas, as the project is ours. We expected the supervisors to respect the schedule of the studio and guide us accordingly. We expected to work together with the supervisor in a positive environment and to have a sense of encouragement from them.	Most of the time, the supervisors wanted us to go along with their thoughts which were different from the ideas and studies we made. Through the meetings we had with the supervisors, it was clear that their critiques and expectations did not align with the studio schedule. The supervisors were the first ones to drag us down.
Group 4	Meeting time regular basis. The supervision period was expected to be until the end of the Thesis. We expect effective communication and collaboration through inspiration from the supervisor. We expected the supervisor to help us to make programs; a) choosing the topic and site location of the project, b) support us to make work on the site and precedent analysis, c) Programming and conceptualization, d) On project design development.	It started well but it failed afterwards because of a lack of consistency that required outputs to be presented and his/her/our absences. Some students have changed their supervision due to some misunderstandings. It failed to some extent (misunderstanding and poor communication). a) During this period, we worked well/agreed effectively with the supervisors (expectations achieved). Some students' expectations were achieved others they did not.

the outputs of this research perhaps missed some of the parallel interactions in the comparison approach. In addition, this research has been done based on group work of the students through focus groups. Therefore, this research perhaps missed some individual explanations that could be taken into consideration through in-depth-interviews.

Results

The students wrote their expectations and observations in the thesis process in the A3 papers through a self-designed table. Each group included 5-6 students and they evaluated 2-3 supervisors due to the same experiences through sharing their stories in the group through conversations and note-taking. Table 2 shows the evaluation of the students of the supervisors.

According to table 2, there were some common points that the students highlighted for their expectations from supervisors importantly,

letting the students have the ownership of ideas for the thesis project, leading the thesis process, explanation of the thesis outputs, and increasing motivation through communication and collaboration. In addition, the students pointed out positive and negative aspects in terms of their observation of the supervisee processes. In the case of the positive aspects, the students mentioned three aspects, including they were guided in the right way to get precedents and resources for studies, design suggestions were received, and the design outputs were achieved. However, in the negative points of observation, the students mentioned the supervisors changed the students' ideas and recommended their own ideas, poor communication, and interaction, lack of guidance and consistency in the design process, supervisors changed their ideas many times, and different crits in different perspectives that were resulted in to change the supervisors. Even, some of the supervisors have been so rash in crits and dragged down the project of the students.

Table 3: *Evaluation of the students about the students*

Titles	Evaluation of the students about their activities	
	Expectations	Observations
Group 1	Punctuality deadlines; being able to deliver on time	It was not achieved 100%.
	Productivity; It was assumed to be a good master of the time.	Productivity was achieved by disregarding lateness.
	Computer devices; laptops were expected to perform better during the whole process.	Computer devices were crashing most of the time and this led to lateness.
Group 2	Life condition; They were expected to be good and allow smooth walking on the Thesis	Life conditions were not as expected.
	We expected to do an amazing project.	We lost consistency toward the expected project.
	Working on time	We were faced with disappointment for the outside disturbance.
	We expected high quality design and research.	We lost consistency due to different reasons as covid-19 and working online that could not support the design studio.
	We expected guidance in choosing the topic of research.	We were freely flexible to choose o our own without guidance.
Group 3	We expected to do high quality model	We did not achieve the desired quality of the model due to the time limit.
	We expected to work together as a team.	Time spent in the studio was reduced and collaboration was reduced.
Group 4	The students were expected to be active and involved in the studio activities	They were not active and not present in the studio.
	The students were expected to respect the studio schedule in terms of submissions (especially).	We did not respect the schedule, which resulted in spending more time at school than we were supposed to.
Group 4	Understanding of deliverables,	We clearly understood the requested deliverables.
	Being punctual for presentations and submissions	We started well with order and punctuality, but we totally failed afterwards. It went quite well. We failed to get ready and submit the requested materials on time.

In another datasheet, it was supposed that the students explain their own assessment of their own activities in terms of evaluation of students about students. The result is shown in Table 3.

Research Findings

The finding of the research identified that there is a strong link between expectations and observations of the students in the design processes and outputs. The students highlighted that they received such kinds of support in the thesis process. Apparently, some of the supervisors collaborated in the whole process of the thesis process and design outputs. However, on the opposite points, the students highlighted that they faced changing the idea of the thesis project and getting the ownership of the project by the supervisors. This attitude led the students to mention that there was no consistency in the guidance and crits. Obviously, changing the crits in the thesis process could refer to the design project development; however, changing

ownership of the ideas of the students implies the evaluation and aesthetic aspect of the project that resulted in changing the project. Obviously, the students had problems with communication, interaction, and getting motivation from the supervisors. Diagram 4 shows the relationships.

In the students' section, the students highlight contradictions in both the design process and design outputs. While the students mentioned they achieved the deliverables and design outputs, they displayed that they had problems following the design process and expectations of the supervisors and juries. This point reveals that the students have a problem understanding the thesis process. For this reason, despite their satisfaction with the design outputs and deliverables, they did not achieve the expectations of the supervisors and juries. The results also clarify that they did not meet punctuality, productivity, and teamwork

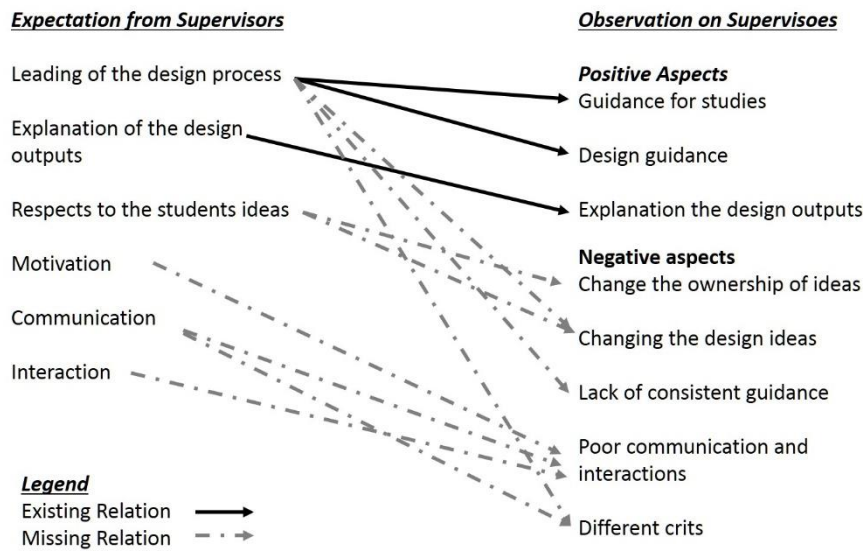


Figure 4: Expectation and Observation on Supervisors

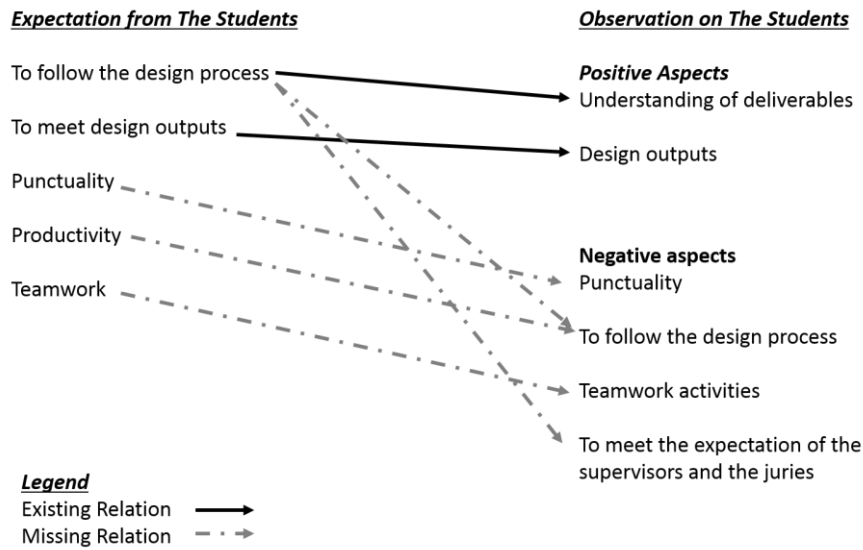


Figure 5: Expectation-observation on the Students

activities as studio culture. Diagram 5 shows the relationships.

Analysis of the Findings

Apparently, the results reveal some important aspects of the supervision process that were perceived by the students, such as the design process and outputs, power of the supervisors, meaning-interpretation of the process, communication and interaction, motivation, and crits.

According to findings, some of the students confirm that they get guidance for two critical aspects, including the design process and design outputs. However, the design outputs could not meet the expectations of the supervisors and juries. This result could refer to the unclear thesis guidelines in the department and thesis outputs in the minds of the supervisors and shows a common gap in design criteria for the final evaluation of thesis projects. This paradox puts the students in the position that while they have been satisfied with the design outputs, supervisors, and juries have not been.

The results demonstrate that the supervisors have the authority and power over the students to change the thesis project ideas and concepts, as they want. Despite the role of the supervisors

as leading the students in the process, the comments of the students reveal the supervisors were leading the projects more than the students were. Some of the students exposed that the supervisors used their position to change the projects in their own favor. This trend in the program refers to an old tradition in terms of apprenticeship that the master of atelier led both projects and students.

While the students did not point out any differentiation between analysis, crits, and evaluation with the exact words, the assessment of the students highlights that there were some differentiations and alignments between the three stages. First, the students mentioned that the supervisors introduced some precedent projects to lead them in the design process. This activity is aligned with the analysis stage which refers to the architectural elements and construction of the projects. This activity supported the students in the design process to get inspiration and an ideal model for their thesis project. Second, although the students claimed that the supervisors changed their ideas many times, this also shows that the students received crits from the supervisors even in inappropriate ways. Last, the students criticized that the supervisors were not fair in the presentation and evaluation times and they

commended them in a contradictive way. These aspects of the self-expression of the students about the activities in the supervisory processes show that there were different levels of comments and interactions in the department although stages aspects of analysis, crits, and evaluation were not covered in the supervision process consistently.

Discussion

The students revealed that the supervisors used their power to change the idea of the thesis project based on the power of the supervisors over students (Dreyfus & Rabinow, 1982). The disagreements in the thesis processes and thesis outputs resulted in changing supervisors or resigning from the position as a supervisor similar to the findings (Phillips & Pugh, 1994). Apparently, all the problems in the PhD levels (Gill & Burnard, 2008) were observed at an undergraduate level (Tafahomi & Chance, 2023), which referred to the similarity of the concept, meaning, and context (Foucault, 1980). The changing ideas of the students implied the old school of architecture education based on apprenticeships although it was criticized in terms of an unmodern style of education (Draper, 1977; Drexler, 1975; Garric, 2017; Griffin, 2022). This authoritarian approach to architecture education contradicted the idea of Gropius (1970) in terms of new ideas in architecture education, by adding new topics into courses such as art, philosophy, and research (Lerner, 2005; Marttila, 2018). Moreover, this level of power over the students contradicted the constructivism theory in education that recommended freedom of the students in the process of learning, reducing the curriculum obligation, and changing the standard teaching models (Hargraves, 2021).

The disagreement between students and supervisors highlighted a classical style in education in terms of a dogma style (Draper, 1977; Drexler, 1975; Garric, 2017; Gropius, 1970) to dictate knowledge and science, which was criticized by Popper and Kuhn (Kuhn, 1962). There was no unique agreement or consensus between staff and students in the supervisory process to achieve the expected results. There was a paradigm of

personalization, disagreement, and power. This paradigm was not a step forward due to the logic of Wang (2009), rather than it is just shifting backward. In addition, Derrida also pointed out the meaning of the words among users with different levels of explicit and implicit expressions (Derrida, 2013) that reflected different understandings of the thesis processes, outputs, communication, and interactions between supervisors and students (Tafahomi & Chance, 2023). This differentiation demonstrated the hypothesis of Dreyfus and Rabinow about the civic regulation of a small group of powerful people to control norms and procedures in a virtual way (Dreyfus & Rabinow, 1982) through the legitimization of power, laws, and orders.

Additionally, the power of the supervisors over the students resulted in changing the thesis projects, design processes, outputs, and ideas in theses that exemplified the theory of Foucault (1980) in terms of the legitimacy of knowledge through power. This self-understanding (Baker, Exum, & Tyler, 2002), arrangement, and application of the thesis process, outputs, and crits (McClellan & Hourigan, 2013) highlighted a lack of proper training, guidelines, and agreement in both administrative and academic aspects among supervisors that highlighted by (Gill & Burnard, 2008). The current guidelines of the supervision activities did not help the students in the interaction, communication, and activities in the thesis process (UR, 2015; UR, 2018a; 2018b).

Although a few positive comments from the students on communication, interaction, and motivation, a major part of the students faced problems in establishing strong relationships with supervisors to exchange and explore new ideas (Gill & Burnard, 2008). This weakness in communication, interaction, and professional relationships exemplified the theory of Phillips and Pugh (1994) in terms of unnecessary disagreement and challenges and referred to the lack of sufficient guidelines and instructions in the department to systematize and methodize processes and procedures (Tafahomi, 2022b). In addition, the level of understanding, collaboration, and communication reflected the

theory of Derrida (2013) about missing aspects of meanings words, and ideas among users that resulted in disagreement and conflict. The comparison between the opinions of the students in the observations sections based on the thesis processes and outputs and the expectations of the supervisors demonstrated that the students relied on the coordinator's support over the supervisors through the essential materials, processes, and activities (Tafahomi, 2021a; 2021b).

Apparently, the relationship between the students and supervisors did not end with the whole process of the analysis, crits, and evaluation that was highlighted by the findings (Proudfoot, 2000; Tafahomi, 2022a) based on philosophical, epistemological, and methodological aspects in architecture education (Franz, 1994; Frayling, Research in art and design, 1993; Tafahomi, 2022a). The important challenge in the thesis processes took place in the aesthetics and performance resulting in changing the topics, projects, and supervisors (Tafahomi, 2023). This problem referred to the findings (Mallory-Hill, Preiser, & Watson, 2012; Preiser & Schramm, 1997; Preiser & Vischer, 2005) in terms of the habitability of buildings and performance than aesthetics. For this reason, the students claimed that the supervisors did not get their ideas and tried to change them. However, the evidence in architecture education pointed out that architecture education tended to be more prescriptive than descriptive (Haldane, 1998; Lawson, How designers think: The design process demystified, 2005) to imply the power of supervisors in the process rather than the creativity of the students.

The behaviors of instructors in the position of supervisors had great effects on the motivation of the students (Gorham & Christophel, 1992; Tafahomi, 2021d). While the students looked for motivation from the supervisors, the thesis students were demotivated by the relationships. It showed the low level of teamwork among the students based on the same supervisors and a restricted environment for the interchange of ideas (Takase, Niitani, Imai, & Okada, 2019), and the lack of communication, interaction, and

peer learning (Tafahomi, 2021c). The students faced dissatisfaction with the supervision process in the thesis process, which certainly included some level of anxiety and stress although those psychological aspects were not measured in the research similar to the findings by Gill and Burnard (Gill & Burnard, 2008).

Conclusion

The thesis students as senior students expect some key factors from supervisors, including respect for the ideas, support in the thesis process and outputs, supporting the students to get motivation for the projects, and systematic communication and interaction to lead the thesis project progress. A thesis project is a final architectural project that should represent the knowledge, skills, and ability of students. Therefore, a thesis student should provide the idea of a thesis project rather than dictating the project by supervisors. Students expect to be informed about the thesis process, such as phases, activities, and related materials for each step, and thesis outputs, such as deliverables for each presentation, pin-up, and discussion stages, such as maps, scales, reports, or physical models in both formative and summative exams that call progress presentations in architecture programs.

Students still have problems with a thesis project in architecture programs based on the student-supervisor relationships. Students are affected by the educational environment and, importantly relationships with supervisors. Positive communication and interaction between students and supervisors could lead students to get motivation for the educational environment. An open discussion with knowledge-based orientation between students and supervisors could lead students in a thesis project than a dogma approach, administrative authority, and power of the position of supervisors.

Students cannot get a good sense when they could not meet the expectations of supervisors and juries even if they do behave in an inconsistent way in comments and crits. Students express their regrets about their failure in the design processes and design outputs by

highlighting the feedback of supervisors and juries in both the progress presentations and the evaluation of the final exam. Despite that, the four years design studios are constructed by teamwork activities and the results of weak communication and interaction in the final year products demonstrate the low level of teamwork between supervisors and supervisees.

Apparently, the department faces a lack of guidance for the thesis project and consensus of agreement among the staff on the methods, approach, and process that affect the thesis processes, outputs, and outcomes. In the absence of clear guidelines, supervisors lead students in their own way of supervisory. However, through studies, we know that different schools of thought in architecture do different projects from a final year project, a mixture, or a thesis project. In fact, departments of architecture should make decisions on either a thesis-based project or a final-year project to clarify the responsibility of students, supervisors, juries, and coordinators.

Still, it could be observed that some of the architecture departments lead the students in the old school of thought in architecture based on apprenticeship training rather than academia, knowledge, and critical thinking. Despite that, the style of teaching is not a choice, sometimes is a system, context, and ideology. However, new generations of thoughts, philosophy, epistemology, and methodology, in the architecture domain and relevant fields of studies criticize, challenge, and falsify wrong approaches in architecture education. There is evidence to illustrate the power of students' movements to change the educational system in different parts of the world based on time and location.

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References

Baker, S. B., Exum, H. A., & Tyler, R. E. (2002). The developmental process of clinical supervisors in training: An investigation of the Supervisor Complexity Model. *Counselor Education & Supervision*, 42, 15-30.

Borch-Jacobsen, M. (1991). *Lacan: The absolute master*. (D. Brick, Trans.) Stanford, California, US: Stanford University Press.

Borden, I., & Ray, K. R. (2006). *The dissertation: An architecture student's handbook*. (Second, Ed.) New York: Architectural Press, Elsevier.

Burkard, A., Johnson, A. J., Madson, M. B., Pruitt, N., Contreras-Tadych, D. A., Kozlowski, J. M., . . . Knox, S. (2006). Supervisor cultural responsiveness and unresponsiveness in cross-cultural supervision *Journal of Counseling Psychology*, Volume 53, No. 3, 53(3), 3-33. <https://doi.org/10.1037/0022-0167.53.3.288>

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.

Creswell, J. W. (2012). *Educational research planning, conducting, and evaluating quantitative and qualitative research*. New York: Pearson.

Creswell, J. W., & Creswell, D. J. (2018). *Research design, qualitative, quantitative, and mixed methods approaches*. London: SAGE Publications, Inc.

Crowe, N., & Laseau, P. (2011). *Visual notes for architects and designers* (2 ed.). Wiley.

- Denzin, N. K., & Lincoln, Y. S. (2018). *The SAGE handbook of qualitative research* (5 ed.). Los Angeles: SAGE Publications, Inc.
- Derrida, J. (2013). *Of Grammatology*. Baltimore, Maryland: Johns Hopkins University Press.
- DoA. (2012). Architecture program specification. Kigali: Department of Architecture, The University of Rwanda.
- Draper, J. (1977). The Ecole des Beaux-Arts and the architectural profession in the United States: The case of John Galen Howard. In S. Kostof, *The architect* (pp. 209–238). New York: Oxford University Press.
- Drexler, A. (1975). *The architecture of the Ecole des Beaux Arts*. New York: The Museum of Modern Art.
- Dreyfus, L. H., & Rabinow, P. (1982). *Michel Foucault; Beyond structuralism and hermeneutics*. New York: Harvester Wheatsheaf.
- Duan, C., & Roehlke, H. (2001). A descriptive “snapshot” of cross-racial supervision in university counseling center internships. *Journal of Multicultural Counseling and Development*, 29, 131-146.
- Edmunds, H. (1999). *The focus group research handbook*. NTC Contemporary.
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, 2(1), 1-10.
- Foucault, M. (1972). *The archaeology of knowledge*. New York : Pantheon Books.
- Foucault, M. (1980). *Power knowledge*. (C. Gordon, Trans.) The Harvester Press.
- Foucault, M. (1995). *Discipline and punish: The birth of the prison* (2 ed.). (A. Sheridan, Trans.) New York: Vintage Books.
- Franz, J. M. (1994). A critical framework for methodological research in architecture. *Design Studies*, 15(4), 433-447.
- Frayling, C. (1993). Research in art and design. Royal College of Art Research Paper, 1(1), 1-5.
- Garric, J.-P. (2017). The French Beaux-Arts. In M. Bressani, & C. Contandriopoulos, *The companions to the history of architecture, volume III, nineteenth century architecture, part I: Historicism, the Beaux-Arts, and the Gothic* (pp. 1-15). New York: John Wiley & Sons, Inc.
- Ghonim, M., & Eweda, N. (2019). Instructors' perspectives on the pedagogy of architectural graduation projects: A qualitative study. *Frontiers of Architectural Research*, 8, 415–427. <https://doi.org/10.1016/j.foar.2019.01.007>
- Gill, P., & Burnard, P. (2008). The student-supervisor relationship in the PhD/Doctoral process. *British Journal of Nursing*, 17(10), 668-671.
- Given, L. M. (2008). *The SAGE encyclopedia of qualitative research methods*. Thousand Oaks, CA: SAGE Publications, Inc. <https://doi.org/10.4135/9781412963909>
- Goldschmidt, G., Hochman, H., & Dafni, I. (2010). The design studio “crit”: Teacher–student communication. *Design Pedagogy: Representations and Processes*, 24(3), 285-302. <https://doi.org/10.1017/S089006041000020X>
- Gorham, J., & Christophel, D. M. (1992). Students' perceptions of teacher behaviors as motivating and demotivating factors in college classes. *Communication Quarterly*, 40(3), 239-252. <https://doi.org/10.1080/01463379209369839>
- Griffin, A. (2022). *The rise of academic architectural education: The origins and enduring influence of the Académie d'architecture*. New York: Routledge.
- Groat, L., & Wang, D. (2002). *Architectural research methods*. New York: John Wiley & Sons INC.

- Gropius, W. G. (1970). *Scope of total architecture* (4 ed.). New York: Collier.
- Haldane, J. (1998). Metaphysics in the philosophy of education. In P. H. White, *Philosophy of education: Major themes in the analytic tradition* (pp. 103-119). London: Routledge.
- Hargraves, V. (2021, 1 18). Dewey's educational philosophy. Retrieved from the education hub:
<https://theeducationhub.org.nz/deweys-educational-philosophy/>
- Krippendorff, K. H. (2003). *Content analysis: An introduction to its methodology* (2 ed.). New York: Sage Publications.
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago: Chicago Press.
- Langford, J., & McDonagh, D. (2003). *Focus groups: Supporting effective product development*. London: Taylor & Francis.
- Laseau, P. (2000). *Graphic thinking for architects and designers* (3 ed.). New York: Wiley.
- Lawson, B. (2005). *How designers think: The design process demystified* (4 ed.). Oxford: Oxford Press.
- LeCompte, M. D., Dorothy, E., & Aguilera-Black, B. (2012). Revisiting reliability and validity in higher education research and program evaluation. In C. Secolsky, & B. D. Denison (Eds.), *Handbook on measurement, assessment, and evaluation in higher education* (pp. 612-636). New York: Routledge.
- Lerner, F. (2005). Foundations for design education: Continuing the Bauhaus Vorkurs vision. *Studies in Art Education*, 46(3), 211-226.
<https://doi.org/10.1080/00393541.2005.11650075>
- Littmann, W. (2000). Assault on the Ecole: Student campaigns against the Beaux Arts, 1925–1950. *Journal of Architectural Education*, 53(3), 159–166.
- Madanovic, M. (2018). *Persisting Beaux-Arts practices in architectural education: History and theory teaching at the Auckland school of architecture, 1927–1969*. Interstices Auckland School Centenary Special Issues, 9-24.
- Mallory-Hill, S., Preiser, W. F., & Watson, G. C. (2012). *Enhancing building performance*. London. <https://doi.org/Wiley>
- Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research*. New York: SAGE Publications.
- Marttila, T. (2018). *Platform of co-creation: Learning interprofessional design practice in creative sustainability*. Espoo, Finland: Aalto University.
- Marzano, R. J., & Kendall, J. S. (2007). *The new taxonomy of educational objectives* (2 ed.). Thousand Oaks, California: Corwin Press.
- Marzanoand, R. J., & Kendall, J. S. (2008). *Designing and assessing educational objectives : applying the new taxonomy*. Thousand Oaks, California: Corwin Press.
- Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research*, 1(2).
- McClellan, D., & Hourigan, N. (2013). Critical dialogue in architecture studio: Peer interaction and feedback. *Journal for Education in the Built Environment*, 8(1), 35-57.
<https://doi.org/10.11120/jebe.2013.00004>
- Mugerauer, R. (1995). *Interpreting environments: Tradition, deconstruction, hermeneutics*. Texas: University of Texas.
- Mugerauer, R. (2014). *Interpreting nature: the emerging field of environmental hermeneutics*. Robert: Fordham University Press.
- Netshitangani, T., & Machaisa, P. R. (2021). Supervision experiences of postgraduate

students at an ODL institution in South Africa. *Cogent Social Sciences*, 7(1), 1970442. <https://doi.org/DOI:10.1080/23311886.2021.1970442>

Neuman, L. W. (2006). *Social research methods: Qualitative and quantitative approaches*. New York: Pearson Education.

Neveu, M. J. (2009). Studia l studio. 97th ACSA Annual Meeting Proceedings, The Value of Design (pp. 21-26). ACSA.

Ockerman, M. S., Mason, E. C., & Chen-Hayes, S. F. (2013). School counseling supervision in challenging times: The CAFE supervisor model. *The Journal of Counselor Preparation and Supervision*, 5(2), 44-57. <https://doi.org/10.7729/61.1087>

Owen, G. (2009). The thesis on the table: Research, pedagogy and identity. 97th ACSA Annual Meeting Proceedings, The Value of Design, (pp. 674-680).

Parnell, R., Sara, R., Doidge, C., & Parsons, M. (2007). *The crit: An architecture student's handbook*. Architectural Press.

Phillips, E. M., & Pugh, D. S. (1994). *How to get a PhD*. Open University. <https://doi.org/New york>

Preiser, W. F., & Schramm, U. (1997). Building performance evaluation. In M. J. Watson, Time-Saver Standards for Architectural Design Data (7 ed., pp. 233-238). New York: McGraw-Hill.

Preiser, W. F., & Vischer, J. C. (2005). *Assessing Building Performance*. Burlington, MA. <https://doi.org/Elsevier>

Preiser, W. F., Davis, A. T., Salama, A. M., & Hardy, A. (2015). *Architecture beyond Criticism: Expert judgment and performance*. London: Routledge.

Preiser, W., Davis, A. T., Salama, A. M., & Hardy, A. (2015). Introduction. In W. F. Preiser, A. T. Davis, A. M. Salama, & A. Hardy,

Architecture beyond criticism (pp. 3-20). London: Routledge.

Proudfoot, P. R. (2000). Structuralism, phenomenology and hermeneutics in architectural education. *International Journal of Architectural Theory*, 2, 1-17.

Ronnerstad, M. H., Orlinsky, D. E., Parks, B. K., & Davis, J. D. (1997). Supervisors of psychotherapy: Mapping experience level and supervisory confidence. *European Psychologist*, 2, 191-201.

Schon, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass Publishers.

Schreier, M. (2012). *Qualitative content analysis in practice*. Thousand Oaks, CA: SAGE.

Searle, J. R. (1969). *Speech acts: An essay in the philosophy of language*. London: Cambridge University Press.

Tafahomi, R. (2021a). Insight into a personalized procedure of design in concept generation by the students in architecture thesis projects. *Journal of Design Studio*, 3(1), 5-18. <https://doi.org/10.46474/jds.910234>

Tafahomi, R. (2021b). An attempt to fill the gap between the architectural studies and conceptualization in architectural thesis design studio. *Journal of Design Studio*, 3(2), 175-190. <https://doi.org/10.46474/jds.1012778>

Tafahomi, R. (2021c). Learning activities of the students in peer-jury practices in the architecture design studio. *AKSARA: Jurnal Ilmu Pendidikan Nonformal*, 7(3), 795-814. <https://doi.org/10.37905/aksara.7.3.795-814>

Tafahomi, R. (2021d). The behavioral patterns of the student in the position of peer-jury in landscape design studio. *EDUCATUM – Journal of Social Science*, 7(2), 57-65. <https://doi.org/10.37134/ejoss.vol7.2.6.2021>

Tafahomi, R. (2022a). Insight into research dilemma in design studios and relationships with the architecture curriculum. *Journal of Design Studio*, 4(1), 93-112. <https://doi.org/10.46474/jds.1102633>

Tafahomi, R. (2022b). Developing a design framework to methodize the architecture thesis projects with emphasis on programming and conceptualization processes. *Journal of Design Studio*, 4(2), 139-161. <https://doi.org/10.46474/jds.1176700>

Tafahomi, R. (2023). Tracing Hegelian's Philosophy and Thoughts in Educational Styles of Architecture Design Studios. *Journal of Design Studio*, 5(1), 119-144. <https://doi.org/10.46474/jds.1292904>

Tafahomi, R., & Chance, S. (2023). Comparing the meaning of 'thesis' and 'final year project' in architecture and engineering education. *European Journal of Engineering Education*, 1-26. <https://doi.org/10.1080/03043797.2023.2244441>

Takase, M., Niitani, M., Imai, T., & Okada, M. (2019). Students' perceptions of teaching factors that demotivate their learning in lectures and laboratory-based skills practice. *International Journal of Nursing Sciences*, 6(4), 414-420. <https://doi.org/10.1016/j.ijnss.2019.08.001>

Thompson, D. R., Kirkman, S., Watson, R., & Stevart, S. (2005). Improving research supervision in nursing. *Nurse Education Today*, 25(4), 283-290.

Till, J. (2008). Three myths and one model. *Building Material*, 17, 4-10.

UR. (2015). Framework and regulations for higher degree by course work and dissertation / thesis. Kigali: The University of Rwanda.

UR. (2018a). Revised general academic regulations for undergraduate programs. Kigali: the University of Rwanda.

UR. (2018b). Doctoral degree of philosophy by research. Kigali: The University of Rwanda.

Wang, D. (2009). Kuhn on architectural style. *arq*, 13(1), 49-57.

Watkins, C. E. (1995). Researching psychotherapy supervisor development: Four key considerations. *The Clinical Supervisor*, 13, 111-118.

Webster, M. (2022, 10 01). Critic. Retrieved from Merriam Webster: <https://www.merriam-webster.com/dictionary/critic>

Ybrandt, H., & Armelius, K. (2009). Changes in self-image in a psychotherapy supervisor training program. *The Clinical Supervisor*, 29, 113-123. <https://doi.org/10.1080/07325220903343819>

Zizek, S. (2007). *How to read Lacan*. New York: W W. Norton & Company, Inc.