


Tracing Hegel's Philosophy and Thoughts in Educational Styles of Architecture Design Studios

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Abstract: This paper aims to trace the influences of Hegel's philosophical thoughts and ideas on the architecture design studios' activities. Hegel is a key figure in the modern history of philosophy that lived in the time of establishing Beaux Art on the skeleton of Academie d'Architecture. Despite the many developments in different areas of education, seemingly, there are still some common grounds between Hegelian philosophy and architecture design studio activities that need to be highlighted and criticized. Content analysis and storytelling based on the structured observation applied in this research to compare two foundations. The results reveal four connections between Hegelian philosophy and architecture design studio activities, including precedents studies and historical dialectic, learning by doing and self-consciousness, crits (critiques) and idealism, and master-apprentice and master-slave theories, respectively. The findings highlight that activities in architecture design studios regenerate through studios, which run based on traditions, disciplines, and styles under the influences of Hegel's philosophy. In conclusion, while Hegelian thoughts spread through successor philosophers in phenomenology, hermeneutics, existentialism, Marxism, and structuralism, education in architecture design studios has continued without the regeneration of ideas.

Keywords: Architecture, Design Studio, Hegel, Philosophy, Education

Introduction

Hegel mentioned that architecture is the most complete form of expression in art that not only represents art as itself such as buildings but also it compasses all arts by providing buildings, such as museums, galleries, and theatres for the presentation and performance of arts (Fields, 2000; Karatani, 1995). Karatani (1995) explained "will to architecture" as a message from Hegel to demonstrate his impressions on the history of art, architecture, and philosophy. Briefly, we know, Georg Wilhelm Friedrich Hegel (1770-1831) is one of the key figures in Western philosophy after the Enlightenment movement in Europe (Dupre, 2004; Eddy, 2013) and his philosophy affected the whole of the world deeply. His lifetime

coincided with some great events in the world such as France's Revelation, the establishment of Beaux-Arts based on the skeleton of "Académie d'Architecture" (Griffin, 2022), and the raising the power of the empire Napoleon (Fritzman, 2014). Hegel deeply was affected by the historical events in his life, thoughts, and philosophy. Hegel's works were classified into different categories by researchers including phenomenology, consciousness, history, logic, aesthetics, and political and social rights (Pippin, 2010). Hegel was a professional academician that inherited the Enlightenment era legacy. However, to know Hegel's philosophy first needs to review on the Enlightenment era and the birth of the first school of architecture in the world.

Enlightenment was the result of the Renaissance era that boosted new movements. This movement in philosophy and science resulted in the discovery of new laws, knowledge, and ideas to explain the world. This era included great philosophers such as Edmond Bacon (1561-1626), René Descartes (1596-1650), Baruch de Spinoza (1632-1677), John Locke (1632-1704), Isaac Newton (1642-1726), Emmanuel Kant (1724-180), and other philosophers who revolutionized the history of science and believed in common sets of principles. Those values constructed 1) empiricism such as experimental activities to discover natural laws, 2) rationalism, such as the application of methods in science, reasons, facts, evidence, and data, 3) skepticism to criticize all aspects of knowledge, and 4) humanism to acknowledge relationships between the individuals and the state through contract, institutionalization, and legitimacy (Schmidt, 1996; Dupre, 2004; Fleischacker, 2013).

Enlightenment movements also resulted in open discussions widely on academia, scholar, and the teaching process in northern parts of Europe universities based on the ideas of Locke, importantly was led by Edinburgh, and Jean-Jacques Rousseau's (1712-1778) ideas in Switzerland (Eddy, 2013). The main objective was to change the process of learning and teaching in schools that was organized based on memorizing theory and fact through oral style, and graphical methods to represent lessons grounded in the Renaissance period thoughts (Hotson, 2007).

Through the Enlightenment movement for institutionalization, the Academy of Science (Académie des Sciences) was established in Paris in 1635 by order of Louis XIV (1638-1715), who was the person to order to establish officially the first school of architecture "Académie d'Architecture on 3rd December

1671" in Paris, France (Griffin, 2022, p. 1). However, the states' academies accepted just aristocratic, noble people, bourgeois, and Parisian scholars (Crosland, 1992). It was a belief among bureaucratic scholars that they were the main source of knowledge to translate and interpret for people and the public (Roche, 2000).

Through the movements, Hegel absorbed deeply the progress of philosophy in the era. Hegel's points on education were classified into four major components, including the philosophy of education, the structure of courses, the pedagogy of teaching, and the paradoxical position of teachers (Tubbs, 1996) that apparently was a self-attempt to draw his educational matters through some personal letters (Tubbs, 2015). Nonetheless, the focal point of Hegel's ideas that connected philosophy to architecture and art locates in the processes of understanding and evaluating of aesthetics through self-consciousness. In fact, the understating of aesthetics is the joint point between art, architecture, and philosophy to discuss, apply, and criticize by each profession, respectively.

Aesthetics have been the common ground in the history of art, architecture, and philosophy to be created, evaluated, and commoditized. For this reason, aesthetics was one of the key items in Vitruvius's perspective to evaluate the quality of architectural projects (Proudfoot, 2000; Tafahomi, 2022a). To achieve aesthetics, both art and architecture schools applied philosophical concepts to educate students directly and indirectly. In a direct way, the course was part of the curricula, and in an indirect way, the philosophical themes and matters have been part of the course to discuss and learn, and apply. Diagram 1 illustrates this relationship.

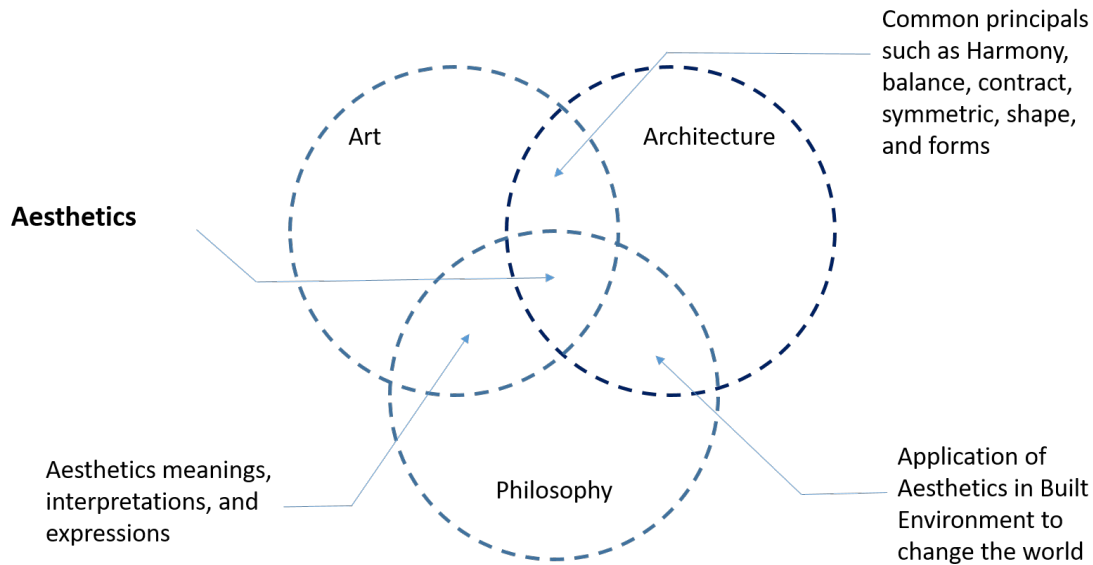


Figure 1: Aesthetics as a key point in art, architecture, and philosophy

Apparently, not only Hegel's philosophy and thoughts did a great effect on the philosophy and education in the world, but also deep analysis and imagination of Hegel about art, perception, architecture, and aesthetics designed a system of thinking among intelligentsia groups of educated people. Architects, historically, have been engaged with art, literature, history, science, and philosophy. This interaction between influencers and influenced people by Hegelian philosophy and thoughts resulted in changes in education, activities, and expected results in many fields of education, particularly architecture. Therefore, architects borrowed some ideas from philosophy to apply in architecture design studios to teach students that even sometimes we (as instructors) never know it. These unknown aspects lead us to the current condition of philosophy and ideology in the mind of people in the world that was formulated by Zizek below (Zizek, 2006):

"There are things we know that we know".

"There are things we know that we do not know".

"There are things we do not know that we do not know".

"There are things we do not know that we know".

According to the interpretation of Zizek, the last part of the quotation is referred to the ideology

that we do not have awareness of it; however, we do some behaviors, attitudes, and activities based on beliefs through history, context, and culture. The problem locates in the norms that have been constructed based on ideology rather than knowledge. Despite the existence of norms as a common form of activity, when a belief become part of the educational system (Williams & Robert, 1997) such as architecture, it could create a style of teaching and learning in studios (Tafahomi, 2021a) even instructors do not aware about that.

Therefore, the motivation of this paper is to bring to the attention of architects, architecture instructors, and students to understand the activities we do in design studios in relation to Hegelian thoughts even if they are celebrated or rejected, regenerated or outdated, and transformed or criticized (Borchert, 2005). However, this style of teaching in architecture design studios was spread out mainly through the tradition of Beaux Art with both positive (Craven, 2019; Armstrong, 2016) and negative effects (Littmann, 2000; Madanovic, 2018). It is significant to know that Hegel's philosophy and thoughts were a great foundation for successor philosophies, such as phenomenology and hermeneutics, existentialism, Marxism, critical theory, and deconstructionism (Sinnerbrink, 2007). In this logic, the main objective of this

paper is oriented toward comparing the key aspects of Hegel's philosophy and the activities in design studios to highlight specifications, attitudes, and styles of education, teaching, learning, and activities in architecture training to discover the root, logic, and philosophy of what we do in architecture design studios.

Methods and Materials

Methodology

Studies applied content analysis for historical and comparative studies (Drisko & Maschi, 2016; Given, 2008) such as the biographic and historic books on architecture buildings and design (Benevolo, 1980; French, 1983; Kostof, 1995; Morris, 1979). The content analysis technique referred to documented evidence (Mayring, 2000; Silverman, 2010) through writing, mapping, or drawing, based on themes, topics, and meanings (Krippendorff, 2003; Schreier, 2012). The content analysis technique always was interlocked by some level of interpretation (Krippendorff, 2003) and three styles of interpretation were mentioned, including structuralism, de-constructivism, and hermeneutics (Mugerauer, 1995). However, Foucault criticized this method as an unclear process in the history of knowledge that included a tendency to generalize ideas without concrete evidence (Foucault, 1972). Nonetheless, content analysis with different approaches still applies in research such as architectural history and theory (Groat & Wang, 2002; Wang & Ilhan, 2009).

As an example, Lang (Lang, 2005) analyzed urban design projects to discover the similarities and dissimilarities to formulate a proper logic for the design process in urban design projects. The study applied content analysis to evaluate the contents of the projects through texts and graphics. Another study (Carmona, 2001), analyzed the quality of the housing projects through documents of the projects and observations. In addition, some of the historical studies applied content analysis through hermeneutic (Gomez, 2003; Hancock, 1995; Seamon, 2015) and phenomenology (Norberg-Schulz, 2019; Proudfoot, 2000), ethnographic (Tafahomi & Nadi, 2020; 2021) techniques to discover the ideas, themes, and the meanings (Krippendorff, 2003).

There are also sets of methods and techniques to study educational processes such as used focus groups, structured observation (Borden & Ray, 2006; Evans et al., 2014), interviews, and questionnaires (Creswell, 2012; Denzin & Lincoln, 2018; Neuman, 2006). For example, studies applied different techniques such as focus groups for class and education (Given, 2008), storytelling and description (Denzin & Lincoln, 2018; LeCompte et al., 2012; Schon, 1987; Schon, 1984), and logical arguments to explain activities (Groat & Wang, 2002; Wang, 2009), content analysis for documents (Langford & McDonagh, 2003). In fact, each educational school applied different methods and techniques based on curricula, methods, and approaches to deliver educational materials (Williams & Robert, 1997). While in architecture research methodology, historical research was classified as an independent strategy in research (Groat & Wang, 2002); current research recommended a multidisciplinary approach to architecture (Tafahomi, 2022a).

Despite the debate on the application of project-based design or problem-based design, there is a tendency to apply project-based design in design studios (Tafahomi, 2022a). In addition, there is a differentiation between the architecture design studios on a big scale of design and engineering, graphic, and industrial design that work based on the client's request, user's interview, and prototypes tests (Cross, 2005; Ertas & Jones, 1996). In fact, in other design studios, the request and order of clients provide a linear system for design to be ended at the prototypes stage for the either products or for critics. Prince and Felder called this process as a specific task for the final output (Prince & Felder, 2006). This differentiation in the architecture design process takes place in the survey and site analysis that includes interactions with users and client (Niezabitowska, 2018). Nonetheless, to draw a proper research design on the effects of Hegel's philosophy and thoughts on design studios, particularly in architecture, the content analysis was recognized as more appropriate way to discover Hegel's theories, biography, and critics. Moreover, observation of activities in design studios was one of the techniques to document and explain it through documentation, reporting, and storytelling.

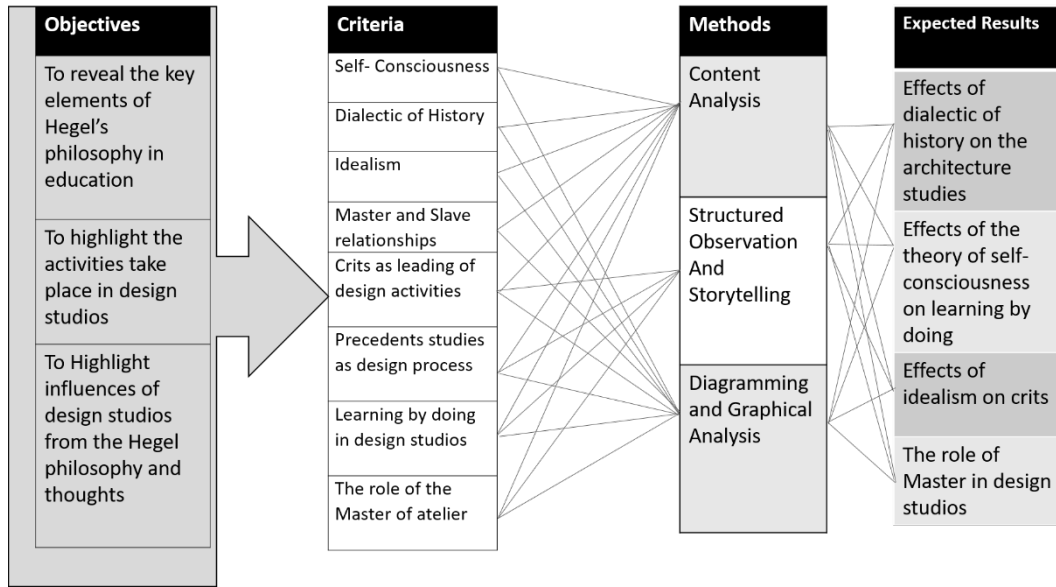


Figure 2: Methodology and research design

Research design

This research applied content analysis (Drisko & Maschi, 2016; Krippendorff, 2003; Schreier, 2012) to examine Hegel's theory and storytelling about activities in design studios based on structured observation (Creswell, 2012; Denzin & Lincoln, 2018) with a qualitative method approach (Given, 2008; Neuman, 2006; Silverman, 2010). The qualitative methods were used to get the information in the situated context of the research and deal with the phenomena in the real setting (Groat & Wang, 2002). This research attempted to draw some links between activities in design studios and the theories of Hegel (Krippendorff, 2003). In detail, on one hand, the content analysis technique was applied to discover the logic of theories and thoughts of Hegel in his works or other researchers,

biographer, or critical texts (Given, 2008; Gomez, 2003). On the other hand, systematic activities in architecture design studios were explained based on the observation of the researcher in the design studios (Neuman, 2006; Niezabitowska, 2018). The storytelling technique was a way to formulate the structured observations in design studios including the position of the master of atelier, the crits, learning by doing in design studios, and precedents studies as models of design projects. Figure 2 illustrates these factors.

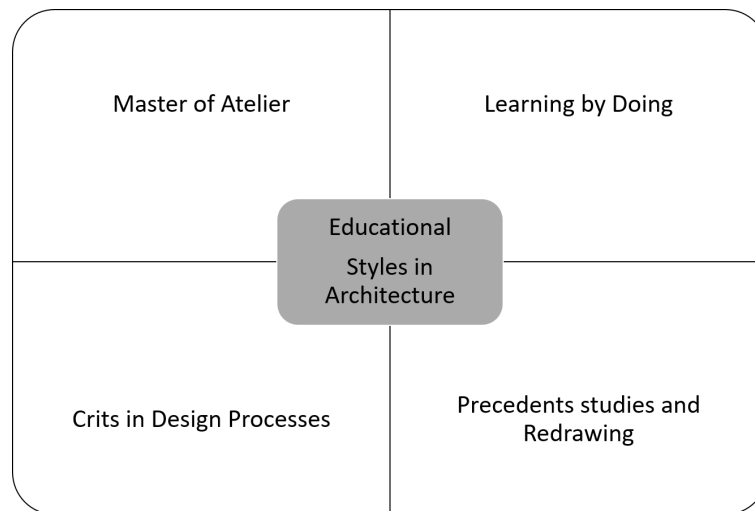


Figure 3: Educational elements and styles in design studios

To design this research, four critical steps in design studios were explained including precedents studies, design process, crits (desk crits, pinup crits, and final exam crits), and relationships between studios leader and students. On another side, Hegel's thoughts were recognized particularly and paralleled including the dialectic of the history of self-consciousness, idealism, and progress, and master-slave relationships (Figure 3).

Research process

This research drew a comparative study on the activities in the design studios and the related logic and thoughts in Hegel's philosophy to discover the logic behind the activities in design

studios. These stages included four steps, including precedents studies and the dialectic of the history, the design process as learning by doing and self-consciousness, crits (desk crits, pinup crits, and final exam crits) and idealism and progress, and relationships between design studio leaders and students and master-slave relationships in the philosophy of Hegel. This research attempted to explain the similarity of activities in design studios with Hegel's thoughts either his writings or other authors who criticized Hegel's ideas. For the writing documents, the address of the ideas and thoughts were explained through citations and references. Figure 3 attempts to illustrate this comparative study.

Context of the Research

Architecture design studios (similar to other design studios in landscape architecture, urban planning, and design, interior and industrial) included a wide-open area with drawing tables, chairs, shelves for archive materials, black-white boards for notes, and nowadays projection area for PowerPoint slides presentation. Some of the design studios included partitions to allocate individual space for each student, particularly in the final year or thesis studios. All the design studios have included a studio leader that in French tradition is called Master of Atelier (Atelier-master), in Italy as “Docente Responsabile del Laboratorio” and in other countries calls as studio coordinator, leader, or instructor. There are two or three assistants to help the studio coordinator dependent on the structure of the department and the budget of each university. Students are the key elements of design studios that all of them are in the same year and semesters although sometimes there are other students who repeat the year or the

studio, or other students from other programs have to pass the design studio.

Analysis of design studios activities with Hegel’s thoughts

The analysis of the activities in the design studios and tracing of the logic in the philosophy of Hegel included four sections as illustrated in Figure 4:

Architecture precedent studies and dialectic of history in Hegel’s philosophy

The design activities in many design studios are started either with site analysis or precedents studies. The studio’s coordinator takes the decision based on the themes and topics of the project for each year (Schon, 1984). Despite the tendency to work on real projects on real sites by many studios nowadays, it is common to observe that studios have an inclination to work inside of design studios and work on conceptual projects. In this respect, one of the important activities in design studios is to study analogous

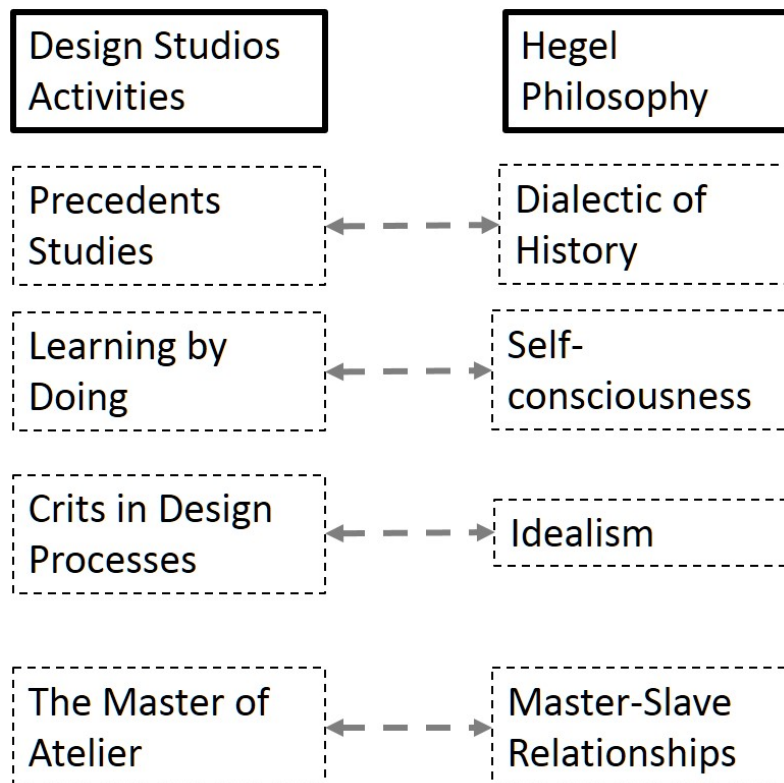


Figure 4: the parallel connections between studios and Hegel’s philosophy

projects by the students either to learn lessons from previous projects or to be inspired by the design ideas (Tafahomi, 2021a). The logic was constructed in this way that there is something in the previous projects that could be learned, assimilated, accumulated, conceptualized, vitalized, or criticized (Clark & Pause, 1996). For example, Garric (Garric, 2017) mentioned that students in Beaux Art should spend some years in Rome to draw architecture projects as their portfolio to present to juries, alongside the findings of (Draper, 1977; Drexler, 1975). The key point of this activity was located in the reason that there are some aspects of history that could learn, inspire, and thrive. Despite the nostalgic sense of this approach, the advocators believed that history was so rich to be repeated through design. This rationale could be observed in the traditional styles of education in the history of architecture importantly Beaux Art, Polytechniques, and Bauhaus (Tafahomi, 2021a; 2022a) although the level of both application and modification of this approach was different in each school (Lupton & Miller, 1993; Mindrup, 2014). Even, there is a trend in some architecture departments to lead the students just with the projects that were recommended by studio leaders rather than students' selection or search (Tafahomi, 2021a). This process specifically in the first year is highlighted through redrawing the other projects in courses such as visual studies, drawing techniques, and buildings technology modules. Even, in other programs also such kind of redrawing of the projects is recommended particularly in painting due to the similarity in art and architecture.

For Hegel, history is a retrospective topic with a trichotomy character (Fritzman, 2014). It means everything has started from the past, has been related to the past, or has a root in the past with three stages, phases, or compartments (Hegel, 2011). These three components work together as an engine of history to move forwards. For Hegel, history is a movement of progress for the freedom of humans through events. Despite the common understanding of "thesis, antithesis, and synthesis" as the main source of the Hegelian dialectic, Hegel never used this terminology for the dialectic of history. Johann Gottlieb Fichte (1726-1814) innovated the terminology (Fichte, 1993) to demonstrate the meaning of dialectical processes in his works

that were celebrated by successors, such as Marx to revise the dialectical foundations in history. For Hegel history is divided into three categorical themes, times, and names including "Symbolic, Classical, and Romantic" which referred to the history of three locations, including first, Mesopotamia, Persia, and Egypt, second, Greece and Roman, and third European counties, respectively. This classification was not based on time and chronological logic, but rather on a geographical preference (Hegel, 2011).

Hegel advocated that all historical elements and events are transformed into new forms through regenerations based on a transcendental process (Magee, 2010). In this logic, symbolic elements were transformed into classical forms, and classical elements were transformed into romantic forms. This logic explained relationships between predecessors and successors through the dialectic of history. Hegel categorized history into "original history, reflective history, and philosophical history" which represented a direct observation of events by the author, a general explanation of the world through logic, and explanations of humanity and thoughts through reasoning, respectively (Inwood, 1999). Hegel believed history is an encounter between contradictive elements and the result is a new version of a phenomenon. Therefore, the phenomenon is not very new, rather than a hybrid phenomenon that included some aspects of both contradictive compartments. In this logic, for the study of a phenomenon, we should return to its origin and history to find the detailed aspects of components. All phenomena have a strong foundation in the past and the results appear in new phenomena through the dialectic of history.

For Hegel, history moves through historical figures importantly individuals who lead the army, philosophy, and religion. It is quite alike what we do in design studios to select projects from key figure architects. History through these figures changed the periodical eras toward a new form of human life that headed for ideal forms (Magee, 2010). He mentioned three eras in history in terms concrete, abstract, and absolute. The concrete referred to the Kantian real that represents the objectivity and reality of the world. The abstract referred to the human

mind, subjectivity, and creativity (Fleischacker, 2013). The results of the reflection of the real in the mind of the observer will result in a new form of the world through self-consciousness. It is a process of progress and the creation of new ideas in the minds of individuals to change the world into an ideal form.

The Hegelian retrospective thoughts were reflected deeply in architecture education in terms of learning through precedents projects importantly from elite architects as figurative samples of picks of history in architecture (Clark & Pause, 1996). Particularly, those precedent projects should be selected from Europe and North America (even when you teach in Africa) to inspire the students to produce something in the same alignment with the precedents projects as a new form of Hegelian idealism. Figure 5 illustrates my interpretation of those connections.

Learning by doing in architecture and self-consciousness theory by Hegel

Design studios in architecture have followed a clear process through Beaux Art (France), Polytechnique (Italy), and Bauhaus (German) traditions based on art, science, and craft, respectively (Tafahomi, 2022a). Despite traces of apprenticeships in all schools of architecture, some of them were more conservative to continue apprenticeships styles, such as Beaux Art and Polytechniques. However, Bauhaus and “Vkhutemas (Higher Artistic and Technical Workshops in the Soviet Union)” both were under the influence of Marxist and socialist

theorists to make a revolution in art, architecture, and aesthetics education based on reciprocal methods of learning between instructors and students (Adaskina, 1992; Bokov, 2021). However, one of them was closed under the pressure of Nazi Fascism, and another one was disoriented under communist Fascism. Based on three traditions, somehow, three styles of architecture education were spread around the world differently based on time and location (Armstrong, 2016; Craven, 2019; Draper, 1977; Drexler, 1975; Garric, 2017; Littmann, 2000; Madanovic, 2018; Tafahomi, 2022a).

The skeleton of the education in the design studios was constructed on curricula that give responsibility to a studio’s coordinator to draft the syllabi. Either the curricula recommended topic-based studios, such as housing, school, hospital, and so on, or thematic-based studios, such as environmental design, social design, ecological design, and so on. The common stages of the studios are based on tasks and activities as a road map for design processes, such as precedents studies, analysis, site visiting, conceptualization, and design development. This process could be summarized in study, concept, and design (Tafahomi, 2021a) or analysis, programming, and design (Tafahomi, 2022b) that have roots in the Vitruvian trichotomy of design. However, the trichotomy of Vitruvius was based on aspects of design including firmness, commodity, and delight (Proudfoot, 2000) than processes (Fields, 2000). It is supposed students in studios

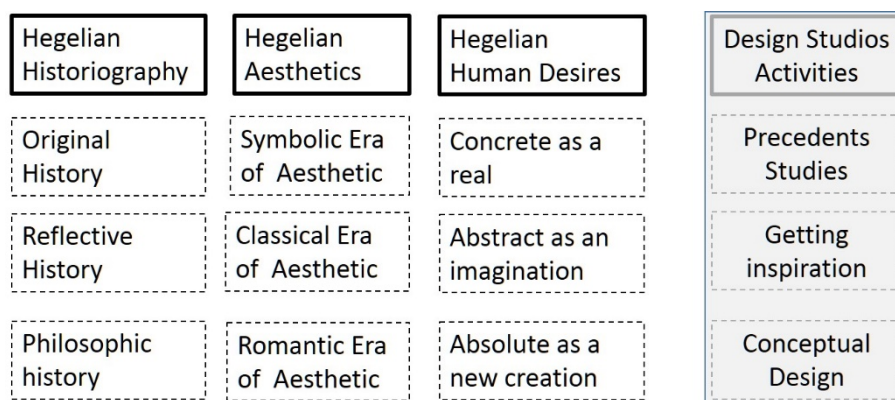


Figure 5: Hegelian retrospective thoughts and design studios

understand the design process activities to start studying, analyzing, drawing, conceptualizing, and mapping their own ideas, assumptions, and concepts through textual, visual, and graphical outputs (Tafahomi & Nadi, 2021b) in terms of conceptual, figurative, and diagrammatic design (Goldschmidt, 1991; Laseau, 2000; Trancik, 1986; Tschumi, 2014).

As a concrete example, some of the masters of ateliers are happy with topic-based projects such as single-family housing or kinder gardens. The project is started by introducing some great projects, from fashionista architects (normally big firms), to redraw the structure, and modify some elements and spaces, to fit into the given site as a new style of design that normally they call composition style in design (Taura & Nagai, 2013). It is supposed that this process of redrawing creates a self-exploration for the students. Schon (Schon, 1984; 1987) explained the processes of design studios in terms of reflection of “learning by doing” through a continuous dialogue between instructors and students in daily activities gradually to achieve the results. It means that students draw their ideas, show them to the studio’s leader, get feedback, and go for revision on sketches, drawing, and redrawing (Ching, 2015; Laseau, 2000). This process sometimes includes juries, and visiting lectures to lead students. This process of drawing, editing, and redrawing continue to the end of the design studio that it was supposed students produced the final outputs of the projects as final boards design (Tafahomi, 2021b). In some of the studios, the students work as a group or peer which is resulted in criticizing other groups’ projects (Tafahomi, 2021b; 2021c). In addition, in design studios are asked students to make physical models, which students should assemble, disassemble, and re-assemble architectural elements based on the comments, evaluations, and processes (Borden & Ray, 2006; Ching, 1996). It is supposed that students assimilate and accumulate architectural lessons through processes of trial and error (Tafahomi, 2022a), to do self-learning (Tafahomi, 2021a), self-experience to develop their own understanding of architectural design (Crowe & Laseau, 2011).

Hegel formulated self-consciousness theory based on Kantian dualism (Solomon, 1983). In

the theory of Hegel, the consciousness of a person takes place through doing activities for knowing phenomena repeatedly (Hegel, 2018). In Hegelian’s thoughts there is no consciousness from a real object in the mind directly in terms of awareness rather than through a self-experience in social context as norms (Pinkard, 2000). From this perspective, the awareness of an individual is formed based on the awareness of others (Rockmore, 1997) importantly nature, state, and other individuals. Nature referred to natural laws in Newtonian mechanics, the state referred to context, particularly government, policy, and power (Foucault, 1980) although an individual referred to others’ self-awareness based on objectivity (Hegel, 2018). This process of self-experience does not achieve the satisfaction of individuals; however, through this process, the action of to know takes place in critical reactions and interactions between subjects and objects (Stern, 2002). The key figure for confidence in the level of consciousness for Hegel is collective ideas through society. Individuals through norms achieve self-consciousness and understand phenomena (Hegel, 1991). Seemingly, if social and contextual conditions do not allow forming awareness about phenomena based on bias, self-consciousness could not freely explore for awareness (Fritzman, 2014). Hegel recommended a reciprocal awareness between individuals through the state that has the rule to facilitate, advocate, and harmonize the awareness of individuals for self-consciousness including others’ consciousness (Hegel, 2018).

For Hegel self-consciousness is a desire to achieve by each individual. Subjects do this achievement not only through self-awareness but also through the lens of others and themselves about this awareness. It means self-awareness could be assumed as an object out of the subject to be evaluated and examined by others. In other words, the self-consciousness of individuals through the lens of others creates satisfaction that referred to the approval of self-consciousness by groups, society, or states, which Hegel called collective knowledge (Hardimon, 1994). In this way, noumena become phenomena through self-experience. In fact, self-consciousness is a result of the immediate experience of the object by the subject that forms the dialectical journey from

self-awareness and self-experience, to self-consciousness. Therefore, the satisfaction of self-consciousness was extracted through others' consciousness to form normativity. Despite the sets of disagreed philosophers with this logic such as Edmund Husserl (1859-1938), Karl Marx (1818-1883), Martin Heidegger (1889-1976), and successor philosophers criticized this idea (Gron, 2009; Borchert, 2005) in terms of facilitation of totalitarianism to shape political powers.

Therefore, learning by doing under the leadership of the master of the atelier in design studios hardly will result in the self-consciousness of individual architects. Rather, it will result in harmonizing the activities based on the norms and styles that are traditional and personal to some extent.

Architecture crits and Hegelian idealism

Crits is a key matter in design studios in terms of backbone and include a long history in architecture education particularly Beaux Art tradition (Borden & Ray, 2006; Draper, 1977; Drexler, 1975; Garric, 2017; Griffin, 2022; Tafahomi, 2021b). However, this tradition was inherited from "Académie d'Architecture" after France's Great Revolution (Griffin, 2022). The ateliers in the Académie d'Architecture were run by the noble architects who provided budgets for the activities (Draper, 1977; Drexler, 1975). Both budgeting and nobility positions authorized the master of the atelier to run the design studio in "Academie" similar to own provide office (Garric, 2017, p. 2). Beaux Art inherited this tradition after French Revolution by restructuring the "Academie" into Beaux Art (Griffin, 2022). The study highlighted that studios in Beaux Art were based on a "personal arrangement of design studios rather than an academic system" for crits, evaluation, and selection of the best project of students (Garric, 2017, p. 6). The crits were based on the personal judgment of the master and his style (please be aware that there was no woman at that time in Beaux Art). This tradition continued in both Beaux Art and Polytechnique in Italy based on technical drawing and construction than design. Just in until 20th century, based on John Davey's theory of pragmatism, and the Marxist theory of social work in both Bauhaus (Germany) and

Vkhutemas (in the Soviet Union) a new approach based on interactions than repetition was applied (Adaskina, 1992; Bokov, 2021; Lerner, 2005; Lupton & Miller, 1993; Mindrup, 2014).

In fact, crits have roots in the reactions of the master of the atelier through comments, evaluations, and developments of the projects. The crits are started by exercises, tasks, and activities of the students to meet the expected results due to studio topics, themes, and scales. From the first step of activities in studios, students receive crits from the master of the atelier, instructors, and juries in different stages and level of progresses. The first cluster of crits normally is received when the students start to draft ideas, concepts, or design elements. This drafting process is under some backward-forwards movements from the first ideas and crits in terms of related comments to improve the ideas of students that we called desk-crits. This set of crits and comments are normally process-based due to the progress of the projects and crits gradually. Traditionally, it took place on the drawing desks in the hand-drawing times. After the improvement, revision, and development of the design ideas, the students go for pinup boards for the presentation of the tasks, ideas, and design activities. While the materials of this stage do not present the final outputs of the students and still the design boards could be improved, the crits are constructed based on the students' productions and task-response in this stage.

Normally, for the pinup stage, the instructors of design studios (master of atelier and assistants) have duties to give comments and criticisms. The numbers of desk-crits and pinup-crits are dependent on the course syllabi, subdivisions of the tasks, activities, and time arraignment, the style of the master of atelier to arrange the assessments, and policy of the institution to regulate the assessment processes. The final exam crits is a place for a meeting between the students, juries, and the design board products. Normally in this stage, the external examiners, professionals, and designers are invited for the final exam and presentation. The crits in this stage are contradictive to some extent based on styles of design, level of understanding of the student's projects, level of detailed presentation,

level of the expectations from the students, and time allocated for both students and juries. Nonetheless, the objectives of crits in all stages are to lead the projects of students to a higher level of quality as something that need to achieve in the next stage.

The study mentioned a long list of benefits for crits such as the process of interchanging knowledge, supporting students in design processes, and motivating the students to follow the right way of design (Doidge et al., 2000). Criticism was part of the Vitruvian criteria to do assessment of the architectural projects (Tafahomi, 2022a). This tradition of daily or weekly crits of atelier-master was started in Beaux Art due to the deadline of the competition (Carlhian, 1979). However, we could still observe crits as a style of education in architecture design studios in terms of dialogue between educators and learners (Schon, 1984) to improve architectural design (Anthony, 2012). It was supposed that students align the design processes with the received crits. Although crits are justified as a process of learning negotiation for students, crits have been a personal view of instructors without any training backgrounds (Goldschmidt, 2002).

It was supposed that crits always judge design outputs as an object to be evaluated based on expected qualities. The comments were expected to lead students to the next phases, stages, or activities in the judgment processes importantly for, a better understanding of the project, idea, or task. Crits were supposed to lead the students to the ideal type of design that either could win the prize of competition (Crosland, 1992; Garric, 2017; Griffin, 2022) or surprise all juries in the final design presentation (Doidge et al., 2000; Evans et al., 2014). However, the entire projects of students normally do not achieve to the expected results, and the ideal type of projects as a well-developed design project has had different meanings in the mind of studio-master and students. Perhaps, for this reason, Lawson (Lawson, 2005) criticized that architecture education has been more prescriptive than descriptive. In this regard, the study revealed that the crits in architecture were involved with stress, anxiety, sweating, and panic experiences (Anthony, 2012).

Hegel did not structure the critiques as a topic in the lectures on history nor in the phenomenology of spirit, rather than critiques were a tool for him to apply and criticize predecessors' philosophers particularly Kant and Descartes (Rockmore, 1997). The application of criticism for Hegel was based on an epistemological approach grounded on skepticism in science (Bristow, 2007). The process of application of the critique was taken place through the examination of the mind, perception, and consciousness to achieve absolute knowledge (Smith, 1987). Self-consciousness was formed based on dialectical relationships between abstract and concrete awareness of individuals to achieve self-consciousness through critiques. The critique was an examination of individuals' understanding of nature. Absolute knowledge always was far away somewhere in the next step that individuals should try to achieve through dialectic and critique examinations (Hegel, 2018).

The critique for Hegel was a way to clarify presuppositions from the mind of individuals in the self-consciousness process (Bristow, 2007). However, the absolute was not achievable due to the fundamental requirement that Hegel drew as equality with the perfectionism in Christianity as God. For this reason, among the successors of Hegel could be observed a long discussion on the problem of the hermeneutic circle (Borchert, 2005). Apparently, the absolute was an objective to achieve, however, the history was formed based on the concrete and abstract dialectic. Seemingly, crits facilitated the processes but the absolute was not a stage or product but rather an ideal type of consciousness in terms of idealism very close to the transcendental idealism of Kant. Apparently, crits were an engine to go forward from unknown stages toward a known stage based on idealism in Hegelian thoughts and perfectionism in design studios. It means the crits never are ended or lead the receiver to the crits for the next stage of progress and development. In the next stage, also there are some crits for the further stages. The idealism aspects of the final projects or expectations are never ended in the mind of critics, rather than other sets of crits appear to design an ideal type of something. For this reason, even many best developed

architectural projects receive crits from professionals, academicians, and students.

Master-apprentice in studios and Hegelian master-slave theory

Studio-master or atelier-master is the key figure in the architecture design studios and in other disciplinary studios, such as landscape, urban design, planning, interior, and industrial design as well. The master of the atelier gets his legitimacy through the position than knowledge. In the tradition of "Academie", the atelier-master was a noble person with the right budget to run the studio, and in Beaux Art, a practitioner who runs the studio in his own style (Garric, 2017) and even all ateliers were named the name of the atelier-master. The master determined architectural projects, scales, concepts, style of drawing, materials, and progress stages (Carlhian, 1979). In the tradition of Beaux Art, all years' students worked together in the same studio and the senior students had the role of supervisors for the junior students. This process was constructed based on the apprenticeship training processes that formed master-apprentice relationships (Garric, 2017; Tafahomi, 2021a). Master of atelier, his assistants (if he had), and the senior students presented crits on design projects. The students worked from morning until afternoon based on apprenticeship activities, and then the master of the atelier came to evaluate the progress and comments for the next step through crits (Draper, 1977; Drexler, 1975; Garric, 2017; Griffin, 2022). The students had different projects based on the years of training, but the process was clear, the master had the right to evaluate, judge, and lead all projects. The students needed the approval of the master to go to Rome, to trip, to start a project, and leave the studio (Draper, 1977; Drexler, 1975).

We can see some elements of the tradition in current design studios. The pedagogy of training the students is designed by the atelier-master who determined the atmosphere, discipline, and culture of the design studio (Griffin, 2022). This common activities process today in architecture studios is called reflective of practice in

education (Schon, 1984). The atelier-master is who to form the structure of thoughts among the students, to develop the skills of drawing, and to recommend them for positions in private or public sectors to practice. This key person is the benchmark, reference, and norm of design in the studio. Students in design studios have the right to ask questions, the answers were supposed to lead of the students to the next stage of design based on their talent, ability, and skills. However, studies criticized this process as a ritual process than an educational one (Neveu, 2009; Owen, 2009), and disciplines to follow than training (Foucault, 1995).

The relationships between master-apprentice in the design studios are so close to the theory of master-servant (Lord and the Bondsman) theory in Hegel's explanations in the Phenomenology of Spirit commonly called the master-slave theory by scholars (Cole, 2014). For Hegel, the conflict between master-slave in the state is inevitable and it is a significant part of the process of self-consciousness (Sekerci, 2017). In the process of self-consciousness, importantly, self-awareness, and self-experience, two independents encounter their desires. Because of freedom comes through a common self-consciousness by others, the master attempts to get acknowledgment and legitimacy from others (Borchert, 2005). It is a struggle between life and death, just calm down in the level of acknowledgment of the power by the obedience of slave (Fritzman, 2014). The master through his power forces the slave to act in the way of the master's desires. The master has everything, the slave nothing. The slave gets his recognition through acknowledgment of the master's power and ability. In this process, the slave also gets his self-consciousness through serving the master's desires (Hardimon, 1994). Hegel expended the umbrella of the master-slave theory to relations between nations, countries, and even God-Man (Hegel, 2018). Just successors such as Marx developed the dialectic of history into the relationships between the master-slave and revealed that this relationship will not be stable over history.

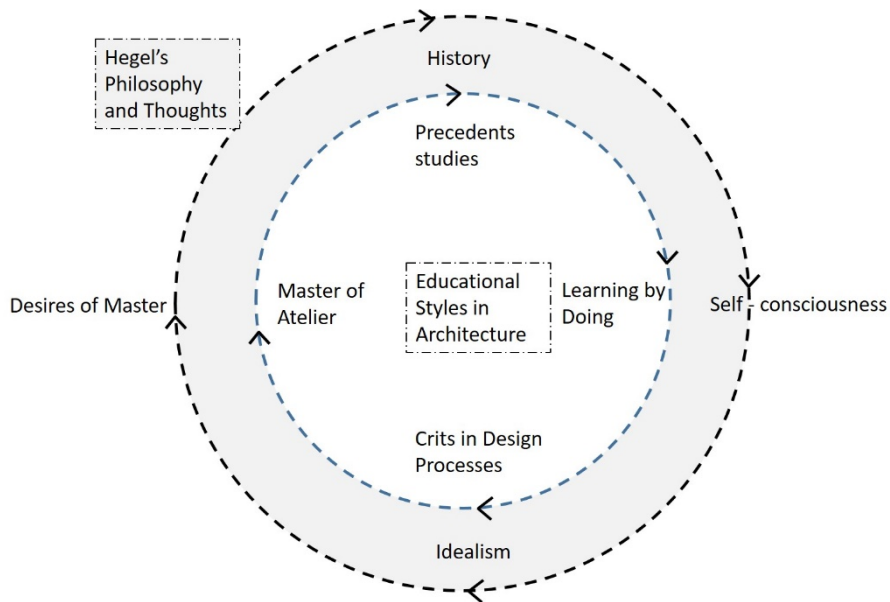


Figure 6: Interweaving of Hegel's Philosophy and architecture design studios

Still, the relationship of master-apprentices could be observed in the many design studios and even in normal classrooms. The relationship still is based on the position of the lecturer or instructor than knowledge. This relationship creates authority over students through institutions, curricula, and masters. Diagram 6 attempts to represent those influences from Hegel's philosophy to architecture design studios.

Discussion

The discussion section was designed based on the analysis section and followed the four components of the studies as below:

Precedents and dialectic of history

Precedents studies and analysis have been a significant part of the design studios to inspire students for the design project (Clark & Pause, 1996; Schon, 1984). While this inspiration resulted in some level of pressure on the students to follow the original projects (Tafahomi, 2021a), the process resulted in the compositional form of the project to draw an either integrated or reformed generation of ideas

and concepts (Laseau, 2000; Taura & Nagai, 2013). This tradition came from Beaux Art. A studio was the location to transfer knowledge and experience to students through examples of well-developed and constructed projects (Draper, 1977; Drexler, 1975). Both the theoretical and practical activities of the students took place in design studios (Garric, 2017; Griffin, 2022). However, this tradition always did not result in the same generation of architectural projects that were called styles of design (Wang, 2009). The architectural styles were not progressive or regeneration, rather, they should be responded to the social, economic, and political factors to represent through proper forms (Gomez, 2003; Hancock, 1995; Mugerauer, 1995; Seamon, 2015).

The results of the movements in the architectural processes, design styles, and technology contradicted the Hegelian dialectic based on the regeneration of the previous ideas in the new format. New enlightenment studies demonstrated non-linear, discontinued, disconnected, and non-transcendental meaning in history (Derrida, 2013; Foucault, 1972; Kuhn,

1962; Wang, 2009). For example, there are many projects that changed ideas of the romantic style of design to integrate symbolic and classical forms with other styles such as eclectic (Jencks, 2011). Apparently, students in design studios looked more for revolutionary ideas to bring in design studios for the projects (Tschumi, 1996). In addition, new movements in architectural design such as vernacular, new urbanism, and green building contradicted the process of the development of history to absolutism and idealism (Jencks, 2002). Retrospection processes have changed into magnificent phenomena such as climate change, global warming, and pollution and are unprecedented phenomena in current history (Habitat III, 2007).

Learning by doing and self-consciousness

Still, learning by doing is one of the significant approaches in architecture education (Ching, 2010; Edwards, 2008; Fawcett, 2003). Redrawing of great architecture projects to assimilate the technique was designed in Beaux Art based on analogs to art such as painting (Garric, 2017). This process of learning by doing is close to the behaviorism theory of education based on the repeating of behaviors due to the same process and learning to do activities with less error to complete the exercises (Krapfl, 2016). Particularly, new sets of achievements in educational psychology took into consideration environmental and interpersonal effects on the student's learning processes. Which, repetitive activities in the design studios based on behaviorism educational theory criticized widely by educational psychologists (Lee, 2005; Santrock, 2011; Woolfolk, 2016).

Foucault argued that institutionalization of education will result in some disciplines that normalize some exercises and experiences as training activities, which should be respected by the followers based on power than knowledge. This form of education formed both body and mind of learners as a tenet (Foucault, 1995). For Foucault, examples of such disciplines were law, medicine, and education in the 19th century to use disciplines to train students. In addition, also Bourdieu criticized that education makes people systematized user to follow the norms (Bourdieu, 1977). The study sets a list of

critiques on learning by doing theory to clarify the failed cases in the education of architecture (Webster, 2008).

Crits and idealism

Crit is the key epistemological approach in architecture education to transfer knowledge and skills to the learners through comment, analysis, and assessment of design products and evaluate the quality of design processes, outputs, and materials (Doidge et al., 2000). While in the Vitruvius's thoughts the criticism applied to the commodity aspects of the design (Proudfoot, 2000), the criticism was celebrated more than analysis and evaluation in architecture education (Tafahomi, 2022a) based on Beaux Art style to explain the ideas of atelier-master about the quality of the design productions (Doidge et al., 2000). This transformation took place in the time of "Académie d'Architecture" when architects and atelier-masters were selected from noble families and aristocratic classes (Garric, 2017). Both traditions of master-apprentice and crits were inherited by Beaux Art as the structure of education (Griffin, 2022) in the context of German idealism (Dupre, 2004; Roche, 2000). In this point of view, ideal types of physical elements, such as architecture projects were located in the next phases, steps, and attempts to achieve as an absolute (Hegel, 2018). The absolute in the Hegelian thoughts is a process of self-consciousness and never it had ended even in freedom. Therefore, crits in architecture never ended due to the next improvement, development, and edition. For this reason, even students received crits in the final exam after all development they have done based on previous crits (Borden & Ray, 2006; Evans et al., 2014). Perhaps, for this reason, the marks of the best students have been always a maximum of 80-85 out of 100 in the design studios, even after all development they have done. It referred to an image that the best product exists in terms of ideal forms or absolute, even if we do not know that it exists.

The crits created a circle that was embedded in a presumption that all crits, critiques, and criticisms will result in progresses in a certain aspect of science and knowledge (Smith, 1987). However, new findings in science and knowledge, such as psychology, sociology, and linguistics revealed that the crits becomes more problematic based

on unclear effects on the progress and development (Hansen, 2009). Still, the level of progress and regress through critique is under question to discover particularly from the methodological lens (Tafahomi, 2022a). In addition, the current knowledge in psychology revealed that many explanations take place based on unconsciousness than consciousness (Mugerauer, 1995; Zizek, 2007). Importantly, the position of the atelier-master established a power to dictate what is right and what is wrong. In this logic, Foucault criticized that power produces knowledge, and power and knowledge regenerate each other's (Foucault, 1980).

Master-apprentice and master-slave relationship

Despite the selection of atelier-master based on social class, experiences, and his own architecture firm in "Academie" and Beaux Art tradition (Garric, 2017; Griffin, 2022), the current process of the recruitment of studio-master is normally based on academic experience and practical activities. However, the power of studio-master, crits on the design outputs, and relationships between students and instructors have been the same as years passed. For this reason, the studies criticized architecture education as an unmodern style (Garric, 2017) and a set of rules that resist to be changed (Griffin, 2022; Littmann, 2000; Madanovic, 2018), and a separated form from the context (Draper, 1977; Drexler, 1975). It reminds again of the motto of atelier-masters "We teach as we have been taught" (Tafahomi, 2022a).

It is necessary to highlight that teaching of teachers was a new concept in education that just took place in the 19th century through apprenticeship approach in some higher institutions (Dennen, 2004; Labaree, 2008). Importantly, the study underlined that the need to teach educators for educational institutions have been a new achievement of modern society (Davey, 2013). However, other studies mentioned that still there are gaps in teacher education in higher education (Murray & Male, 2005; Murray et al., 2008; Struyven & De Meyst, 2010).

In this context, the relationships between

students and studio-master take place based on the lessons learned by instructors in the training process. The self-constructed aspects of education were mentioned by Hegel in terms of self-experience for self-consciousness, which normally in architecture it is called apprenticeship activities through project-based learning (Neveu, 2009; Owen, 2009). However, a new set of studies recommended other styles of training, such as problem-based (Hmelo-Silver, 2004; Seifert & Sutton, 2009), research-based (Groat & Wang, 2002; Neuman, 2006; Tafahomi, 2022a), student-based (Wright, 2011) and more on the constructivism theories (Gamoran et al., 2000).

Hegelian logic in the master-slave relationships was designed in the era of three great revolutions in his time importantly American (1765-1971), French (1789-1799), and Haitian (1791-1802). For example, the study highlighted that Hegel got his inspiration for the "lord-bondsman dialectic" in terms of a common understanding of master-slave relationships in a feudalism context based on the results of the Haitians Revolution in the 18th century (Buck-Morss, 2000). However, Hegel recognized that self-consciousness in the mind of the slaves could not come into recognition. The dialectical and paradoxical point was located in the realization of the subjectivity and selfhood in the slave's character that does not allow self-experience of awareness for self-consciousness to come into achievement (Sinnerbrink, 2007). In the Hegelian theory, the slave learned to survive through self-discipline, limit his desire, learn to work for the master, and become an object for the master (Cole, 2014). It resulted in denying the freedom of slaves by the master. However, according to Hegel's thoughts, the foundation of consciousness is freedom. Therefore, self-consciousness never will be achieved a locked boundary between selfishness and their needs in life. Critical theories in the neo-enlightenment clarified that psychological aspects of human do not allow discourse comes to form (Foucault, 1972), communication takes place (Derrida, 2013), and freedom to be achieved (Bourdieu, 1977; Foucault, 1980).

Conclusion

Hegel is one of the greatest philosophers of his time that affected current philosophy,

epistemology, and methodology deeply. Despite the Hegelian successors being divided into left and right (also called young and old Hegelians), critiques on the philosophy of Hegel resulted in varieties of schools of thought especially in education. Three great influenced schools of thought are Marxism, existentialism, and structuralism which resulted in educational schools such as pragmatism, existentialism, and constructivism. The critiques on Hegel's philosophy and thoughts could not degrade his position and role in the progress of thoughts in the times, rather it will lead the reader to read and know about his relationships with education, art, architecture, and aesthetics. This research attempted to portray an image of Hegel's influences on the architectural education styles in both direct and indirect ways that were arranged into four obvious clusters. Nonetheless, there are other aspects that this paper did not cover, importantly, aesthetics, object forms, and alienation that needs another effort.

Architecture education, processes, outputs, and outcome have been under question in current times that present a great need to change, update, and reform. Despite the ideas to revolutionize architecture education, seemingly, institutes prefer to take orientation toward reform in architecture education than the fundamental change due to Hegelian thoughts. Tracing Hegel's thoughts in architecture education styles, importantly Beaux art, Polytechnique, and Bauhaus reveal that all three styles of architecture teaching absorbed Hegelian influences either critically or uncritically. The task of instructors is to analyze the current activities in the design studios to see how the studio atmosphere and culture are critical or uncritical to the Hegelian philosophy and thoughts.

One of the important aspects of the current design studio activities is the development of psychology and educational psychology achievements that could lead instructors, as an educator, to deal with the different styles of learning among learners, which in the Hegel time was not developed. Apparently, the relationships between the the educators and learners have changed over times. The studio-master could not behave as hundred years ago,

and no longer are students the same as the students of ten years ago. Everything is under transformation that as a studio-leader we should be ready for changes.

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