Architectural theory as a tool for architectural criticism necessarily employed for the betterment of architectural education

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A R T I C L E   I N F O

A B S T R A C T

Criticism, or "to criticize" derives from the Greek krinein meant to distinguish, which is to separate, to silt, to make a distinction. The word "theory" comes from the philosophical Latin term "theoria" meaning spectator, while in modern days means the attempt to decide architectural right and wrong on a purely intellectual base. Pedagogically architecture students participating in a review learn from whoever provides useful criticism benefiting from critiques or reviews. This research in comparison to the ones that went through focuses on Architectural Criticism and Architectural Theory and which one stems from the other, their significance in architectural education in form of crit or review and shows a road map of how reviews are to take place by their different constituents. The purpose of the paper is to see whether the architectural theory is stemming from architectural criticism and whether it's employed in architectural education. The methodology of this paper depends on both theoretical and analytical studies through three major fields; architectural criticism, architectural theory, and the analytical study of architectural education in form of critique or review. Finally, the paper concludes by linking architectural education mostly in its architectural design projects critique or review form with architectural theory and its dependence upon architectural criticism.

1. Introduction

Criticism is not in any sense a table of results or a body of judgment; it is essentially an activity, that is to say, a series of intellectual acts inextricably involved with the historical and subjective existence of the person who carries them out, and has to assure responsibility for them (Barthes, 1964). The term criticism is generally understood and used in the sense of judgment (the American Heritage Dictionary of the English Language (Pickett, 2018)). The verb "to criticize" means "to judge the merits and faults of; analyze and evaluate," or "to judge with severity; find fault with; censure" (Barthes, 1964). To criticize, as it is most often used in the last sense is to find fault with, does not only narrow the

function of criticism to be judgment alone, it implies that the act of criticism is inherently negative. Subsequently, understanding and appreciating criticism as a valuable activity become difficult. In fact, Judgment is not the only legitimate usage of criticism, and the negative allusion of finding fault with is not the purpose of criticism. This becomes evident if the etymology of the word is investigated. Criticism, or "to criticize" originally derives from the Greek krinein which means to separate, to sift, to make distinctions (Attoe, 1978). The Greek origin of this word was "to discern" or "to judge" (Ducasse, 1944). Although the latter is closer to the common and technical usage of criticism today, many writers stress the significance of the former. Levin (1967) noted that the Greek krinein meant to distinguish, which is to separate, to silt, to make the distinction before it meant to judge. The concept of criticism is an old expression driven from the Greek Kritikos (Latin criticus), where krites means to judge, and the word "critic" entered the English language in the middle of the sixteenth century. This early use of criticism as synonymous with judgment shows that

judgment and evaluation are essential to criticism (Johnson, 1994). This denotes that "to criticize" does not solely mean "to judge," especially in the sense of negative evaluation as is commonly understood. Judgment is not necessarily a judgment on worth (Ducasse, 1944).

In this regard, criticism as a description is not meant to evaluate, but rather provide an understanding of the work criticized. When a critic makes a judgment, sifting, separating, the distinction between the materials concerning the criticized subjects is simply made. At the end of this process, the critic through discommend then is able to evaluable. Criticism used in this sense should therefore mean merely an evaluation without necessarily finding fault, is then simply, passing judgment whether favorable or unfavorable or judging the merits or demerits of something equally. Criticism is a behavior in which individuals express their own perceptions of a physical place, an object, or ideas in the hope of communicating their ideas to others. However, criticism is sometimes perceived to have a negative connotation because of its sense of passing a judgment upon a physical place or object.

In brief, criticism can be best described as an interpretation made with discernment, either of an evaluative judgment or a non-evaluative description. The objective of criticism, particularly which of evaluative judgment, should be viewed as positive, not threatening or intimidating. It should be seen as a vehicle for conveying significant content for responding to or affecting the environment (Attoe, 1978). While evaluative criticism can be valuable as a tool used for generating better work, descriptive criticism can be useful as a device to facilitate understanding (Barthes, 1964).

Most people are familiar with architectural criticism only in the form of "journalist criticism" the commentaries and appraisals in journals or professional publications. In addition to this, those in the architectural field may think of "design criticism" as criticism that takes place in the process of design.

This category can be c1assified into "academic criticism," and "professional criticism." The former, the "academic criticism," which teachers bring to their students in academic design studios. The latter takes place in professional practice, such as criticism exchanged between junior and senior architects in design offices. Professional criticism can also be differentiated into many categories by means of participants, for example, the criticism made between architects and clients, or architects and contractors. There is also "self-criticism," an assessment designers make for themselves in the design process for their solutions (Barthes, 1964).

The above categories reflect some conventional perceptions of criticism of architecture in general. Most are bound out to evaluative criticism. Moreover, the same obsession with architectural criticism as being only an evaluation can also be found in a few writings on the nature of criticism.

Collins (1971) classified architectural criticism into four categories. Architectural judgments usually relate to one of four main categories which may be classified, for the sake of discussion, as; the design process, competitive assessments, control evaluations, and journalism. The description or interpretation of architectural history is criticism. History reflects criticism as a description made with discernment rather than evaluation (Attoe, 1978).

Architectural criticism, therefore, can be regarded to fall mainly within either evaluative or non-evaluative categories. However, these two categories are still not sufficient to explain the various forms and natures of architectural criticism. Amongst the few writers on this subject is Attoe (1978), who provided the most inclusive taxonomy of architectural criticism. Attoe (1978) viewed "criticism being a method to improve the environment," therefore, classified the method of architectural criticism into three fundamental groups: Normative, interpretative, and descriptive criticism (Fig. 1).
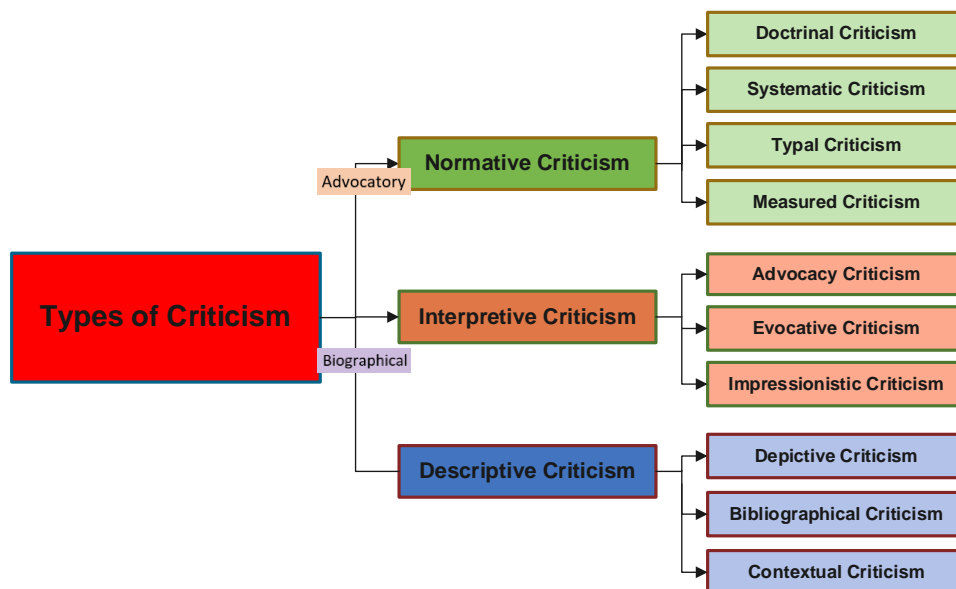

Fig. 1: Three architectural criticism fundamental groups: Normative, interpretative, and descriptive criticism (Attoe, 1978)

Normative criticism has as its basis either a doctrine, system, type, or measure. Normative criticism depends upon our believing in something (norms) outside the environment under scrutiny and assessing the environment in relation to the standards implicit in those beliefs. We prescribe, and then we make judgments using the standards indicated (Barthes, 1964). Attoe (1978) has a similar definition of Normative criticism. According to him "it is based on a fixed standard, a fixed method, or a system of rules or doctrines that are of the contemporary paradigm." Examples of this are the ancient Greek ideals of proportion, the doctrines of Modernism "form follows function." Traditional concepts that particular building types are appropriate for certain activities because of their specific appearances, like housing or school architecture, are also a normative expression. Presently there are no such clear normative doctrines for the concept of beauty, so trends have a decisive impact. A diagram showing the four types of normative criticism (Fig. 2) (Attoe, 1978).
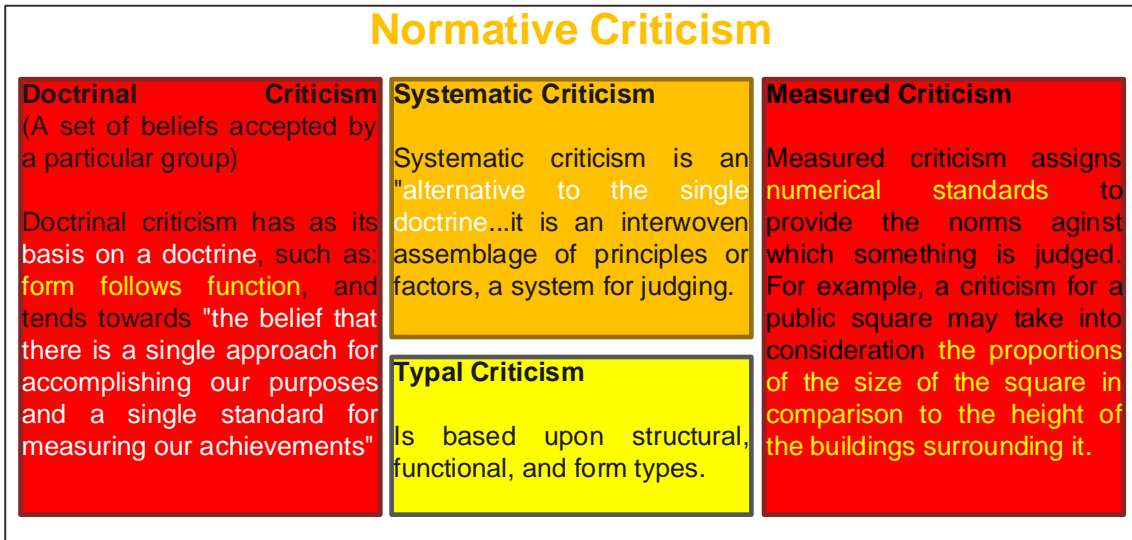
Normative Criticism

Doctrinal Criticism
(A set of beliefs accepted by a particular group)

Doctrinal criticism has as its basis on a doctrine, such as: form follows function, and tends towards "the belief that there is a single approach for accomplishing our purposes and a single standard for measuring our achievements"

Systematic Criticism

Systematic criticism is an "alternative to the single doctrine...it is an interwoven assemblage of principles or factors, a system for judging.

Typal Criticism

Is based upon structural, functional, and form types.

Measured Criticism

Measured criticism assigns numerical standards to provide the norms aginst which something is judged. For example, a criticism for a public square may take into consideration the proportions of the size of the square in comparison to the height of the buildings surrounding it.

Fig. 2: Four types of normative criticism (Attoe, 1978)

Interpretive criticism is either advocatory, evocative, or impressionistic in character. Whether an assessment of a designed environment is right or wrong in relation to some external norms or standards is not the issue here; rather interpretive criticism attempts to make us see the environment in a particular way (Barthes, 1964).

Attoe (1978) has a similar definition of "Interpretive criticism, which can be defensive, associative or impressionistic, is highly personal, and is an attempt to get other people to accept a vision that the critic or presenter has already decided on." External standards are less important in this type of criticism. The critic's credibility is more important than facts. Interpretive criticism can scarcely be considered objective, but it can help increase awareness of the objectiveness of criticism and therefore be of pedagogical value. A diagram showing the Three interpretive criticism; advocatory, evocative, or impressionistic (Fig. 3) (Attoe, 1978).
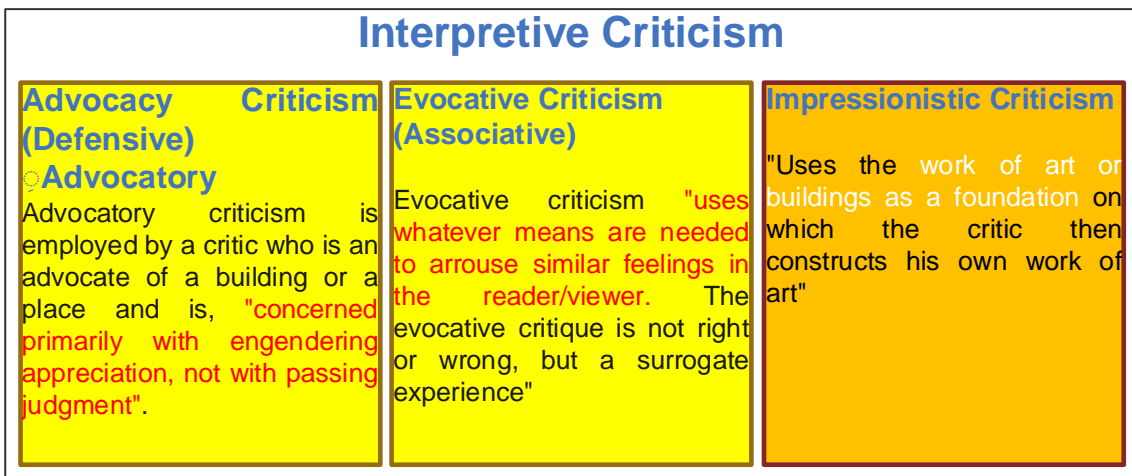
Interpretive Criticism

Advocacy Criticism (Defensive)
○Advocatory
Advocatory criticism is employed by a critic who is an advocate of a building or a place and is, "concerned primarily with engendering appreciation, not with passing judgment".

Evocative Criticism (Associative)

Evocative criticism "uses whatever means are needed to arrouse similar feelings in the reader/viewer. The evocative critique is not right or wrong, but a surrogate experience"

Impressionistic Criticism

"Uses the work of art or buildings as a foundation on which the critic then constructs his own work of art"

Fig. 3: Interpretive criticism; advocatory, evocative, or impressionistic (Attoe, 1978)

Descriptive criticism either depicts (pictures) physical phenomena, recounts pertinent events in the life of the designer, tells us about the historical context of the design process and construction

insofar as the context influenced design decisions or details of the design process itself. Descriptive criticism, then, either pictures a building or the process of its generation in other words depictive or is biographical or contextual in character (Barthes, 1964).

Attoe (1978) has a similar definition of descriptive criticism, which may be figurative in other words depictive, biographical, or contextual, has the character of a report, with plain descriptions and no judgments. Figurative descriptions start with static aspects like form, material, finish, or from

dynamic aspects the use of a building, it changes over time, it is influence on its surroundings. Biographical criticism connects the stories of buildings and environments to events in the designer's life. Contextual criticism attempts to widen the understanding of objects by relating them to social conditions, the economic and political context, and any possible pressure that has been put on the designers during their work. Fig. 4 is a diagram showing the three descriptive criticism types; figurative in other words depictive, biographical, or contextual.
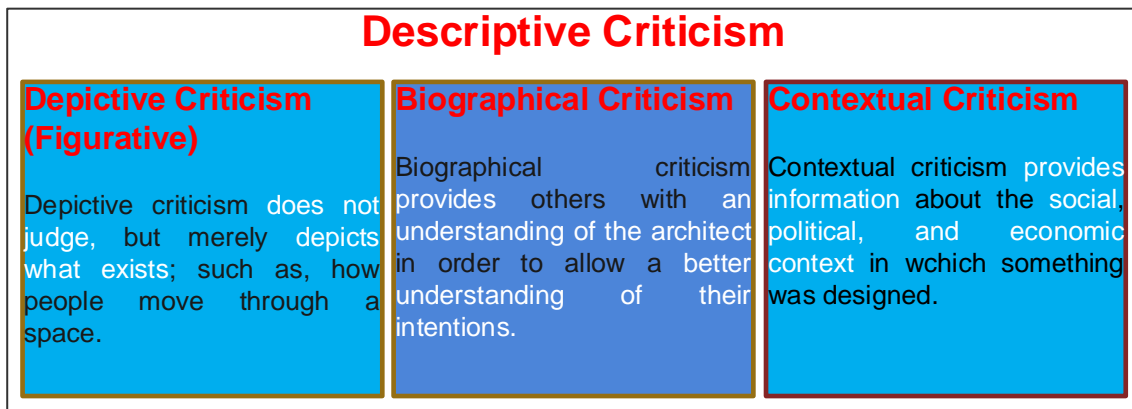
Descriptive Criticism

Depictive Criticism (Figurative)	Biographical Criticism	Contextual Criticism
Depictive criticism does not judge, but merely depicts what exists; such as, how people move through a space.	Biographical criticism provides others with an understanding of the architect in order to allow a better understanding of their intentions.	Contextual criticism provides information about the social, political, and economic context in wchich something was designed.

Fig. 4: Three descriptive criticism types; figurative, biographical, or contextual (Attoe, 1978)

Attoe (1978) based his classification on the original meanings of Greek krinein, which means "to judge" or "to discern" While he derives "normative criticism" from the first more common usage of judgment or evaluation, he further differentiates the latter non-evaluative discernment into two categories: descriptive and interpretive criticism, which are distinguished by their respective goals. The objective of descriptive criticism is to depict fact and help to see what is actually there. On the contrary, the purpose of interpretive criticism is to provide a particular view of a building or an environment. The clear distinction between the views produced by descriptive and interpretive criticism is that the first attempts to be objective while the latter is truly subjective.

According to Attoe's (1978) taxonomy, interpretive criticism can be further divided into three categories by techniques used and specific intentions of the critic: advocatory, evocative, and impressionistic (Barthes, 1964).

Advocatory criticism aims to provide a new perspective, particularly an advocatory view, on an object, a building, or an environment (Barthes, 1964). Evocative criticism, on the other hand, intends to evoke in the viewer's feelings similar to the critic's views. The critic does this by presenting surrogate experience to the objects of criticism (Barthes, 1964). Impressionistic criticism, in opposition to both previous categories, does not intend to provide any kind of view towards the object of criticism instead, it uses the work of art or building or the object involved in criticism as a foundation on which the critic then construct his or

her own work of art as an alternative. The original work suggests to the critic a new and different area worthy of exploration (Barthes, 1964). In this method the new work of art created by the critic becomes criticism. An understanding of this nature of impressionistic criticism lays the ground for another significant mode of criticism in architecture, namely "architectural criticism."

1.1. Criticism in literature and art

Literature is defined as written artistic works, especially those with a high and lasting artistic value. (The Cambridge International Dictionary of English; Procter, 1995) definition related to this research goes for all the information relating to a subject, especially information written by experts.

In literature, criticism is sometimes considered to be a piece of literature in itself. In the visual arts, on the contrary, the idea is that of "art as criticism" since the artistic product, an art object can also be criticized. However contrary the ideas in literature and art are, both share one common characteristic in using their own languages and productions to interpret their works (Stead, 2012). Criticism as literature employs its own literary language or words as a medium for creating a work of art as a piece of literature. Similarly, "art as criticism" exploits its own artistic production in form of art objects as a means to deliver a message that could be criticized termed a work of criticism. The tactic of using its own specific medium consequently becomes the potential of "art or criticism" since no other language can better and effectively invoke a

perspective that could be criticized than the language of its own discipline. This is possible only after the barrier that separates the two interchangeable discourses, the work of art and the work of criticism, is dissolved (Alexandra and Jeremy, 2012).

In architecture, criticism seems often confined to literary activity, this is illustrated by Maharaj's (1976) study. Maharaj (1976) summarily defined criticism as "any intelligent discussion of architecture." This implies the medium of criticism to be only a kind of verbal discourse, either through speech or writing. Verbal discourse, however, is not the only valid medium for the exercising of criticism, whatever the discipline. As each discipline has its own distinctive nature, there should be various media that can be used to accommodate proper criticism of various disciplines. For this reason, Barthes's (1964) definition of criticism in "Criticism as Language" may be brought in to provide a more general and inclusive insight of criticism applicable to any discipline. As he points out, criticism is essentially an activity, that is to say, a series of intellectual acts inextricably involved with the historical and subjective existence of the person who carries them out and has to assume responsibility for them (Barthes, 1964).

Criticism is no longer confined to one medium, the verbal discourse, as it is frequently perceived. Criticism is viewed rather as an act or activity, thus allowing the vehicle of criticism to be any media. Similarly, Bonta (1979) also suggested the same inclusive idea of criticism in its description of designers' role as interpreters or in other words designers' role as interpretive criticism in the sense of "art as criticism." He wrote: Designers were presented in the interpretation model merely as trying to adjust their designs in order to let them elicit the reactions they wish to include in interpreters. Designers can do far more, they may try to become authoritative interpreters, in other words, "interpretive critics" and influence people's view of their work. They may use verbal and written language and more subtle gesture systems to achieve their goals (Bonta, 1979).

Both remarks from Barthes (1964) and Bonta (1979) define a more inclusive realm of criticism than is usually accepted. They understand criticism as "intellectual activities" which use any "subtle gesture system" and not necessarily as verbal discourse. Although speech and writing are also intellectual activities, they sometimes may not suffice to deliver significations that could be criticized, particularly in architecture. The limitation of verbal discourse and the possibility of other appropriate media for architectural criticism is pointed out by Attoe confirming that another reason for rejecting the view of criticism as a literary activity alone is that while this medium might suffice for discussions of literature, the printed word is too limited to provide for all perspectives and nuances pertinent to the discussion of what is seen and experienced as three dimensional. A photograph,

cartoon, or diagram can often say it better (Attoe, 1978). Accordingly, a three-dimensional object can sometimes say it even better. A photograph, cartoon, or diagram only extends the mode of the media of criticism from literary activity to another two-dimensional graphic manipulation. In comparison, a three-dimensional object, which can be a modification of a real building, does not only provide a perspective that could be criticized but also offers the reader an authentic experience of architecture.

1.2. Architectural criticism

Architectural criticism is the critique of architecture. Everyday criticism relates to published or broadcasted critiques of buildings, whether completed or not, both in terms of news and other criteria. In many cases, criticism amounts to an assessment of the architect's success in meeting his or her own aims and objectives and those of others. The assessment may consider the subject from the perspective of some wider context, which may involve planning, social or aesthetic issues. It may also take a polemical position reflecting the critic's own values. At the most accessible extreme, architectural criticism is a branch of lifestyle journalism, especially in the case of high-end residential projects (Stead, 2012).

The intimate concern of architectural criticism is with interpretation and judgment, though the process of criticism includes many tasks like exposition, analysis, comparison, justification, evaluation, and guidance (Stolnitz, 1960). This wide scope of tasks that could be criticized makes it an essential domain in architecture. As architectural criticism is a comprehensive domain, it can be applied to cover one or more of these three design stages; concept, process, and end product, in each stage the target, process, and method of criticism differ to suit the nature of that stage. For example, the aspect that could be criticized at the concept stage is concerned with visions, paradigms, theories, and principles, and the target of criticism is to check the appropriateness of that conceptual base implicit in the work to both the traditional and up to date vision of the community, so in that stage, the critic should be aware of all traditions, values, culture as well as the new visions and features of the era with its new discoveries, so as to be both traditional and up to date in his or her judgment.

The majority of works that could be criticized the focus on the stage of end product or buildings in reference to architectural design, this is because it is more tangible and it concludes all preceding stages. The other two preceding stages; process and end product have abundant works that could be criticized in comparison to the conceptual stage because it requires a high level of the critic.

2. Architectural theory

The word "theory" comes from the philosophical Latin term "theoria" which means spectator. And its

base "theasthai" means to look upon and contemplate, while "the modern use of the word means a systematic statement of rules or principles to be followed (Paul, 1994). A comprehensive definition of the theory states that it's an organized system of statements that include concepts, definitions, and interrelated assumptions, these statements explain, predict, and define the relationships between studied phenomena through generalizations and laws (Logan, 1955). The previous definition is about theory in general, while the definition of the architectural theory states that architectural theory is the attempt to decide architectural right and wrong on a purely intellectual base (Scott, 1924). This concise definition points out that the objective of architectural theory is to guide practice, which means that it should be objective and depend upon a powerful knowledge base. The architectural theory differs from the scientific one; this is because of the differences between the natures of the two disciplines. As architecture includes nonphysical dimensions; humanistic, cultural, aesthetic, social, and historical. Architectural theories can't be at the same state of universality and objectivity as scientific theories. Like any theory, architectural theory needs to be tested, but because of its special nature, it requires special tools, which are analytical to judge or criticize its validity and applicability.

2.1. Criticism in architecture

There is a strong relationship between architecture and criticism; architecture could only be understood if only criticism is introduced. Referring to (Barthes, 1964), descriptive criticism either depicts (pictures) physical phenomena, recounts pertinent events in the life of the designer, tells us about the historical context of the design process and construction insofar as the context influenced design decisions, or details the design process itself. Descriptive criticism, then, either pictures a building or the process of its generation or is biographical or contextual in character. Attoe (1978) has similarly related architecture and criticism in its descriptive criticism form, most precisely the figurative description criticism. Figurative description criticism starts with static aspects like form, material, finish, or from dynamic aspects, the use of a building, it changes over time, it is influence on its surroundings.

2.2. Objective criticism uses theory

The descriptive criticism is to depict fact and helps to see what is actually there. On the contrary, the purpose of interpretive criticism is to provide a particular view of a building or an environment. The clear distinction between the views produced by descriptive and interpretive criticism is that the first attempts to be objective while the latter is truly subjective.

Objective criticism is opposite to subjective criticism. Objective criticism always uses normative tools for analysis. On the other hand, the theory is considered a normative and powerful base, this is because of its objectivity, testability, and universality characteristics, so theory can be used as a normative base needed for criticism. Schulz illustrated how theory is important to criticism in its analytical dimension, he said: We have shown that any analysis is impossible without theoretically determined dimensions of comparison. These dimensions should have the character of empirical generalizations. This means that the analysis uses the theory according to (Barthes, 1964), as the analysis referred to here is criticism.

So the theory is the main analytical tool that objective critic uses, as it represents an intellectual and powerful tested basis, in other words; theory is the tool for objective criticism, in addition to that, theory gives the critic the criteria of goodness, criteria of architectural quality as well as the concepts, which he uses to judge and evaluate the value of the product. These concepts help the critic to understand the latest trends and movements in architecture as well as the development in the discipline of architecture, in other words, theory helps critics to be conceptually updated.

Through the criticism process the critic reviews the theoretical base of the product, and tests its validity based on both location and time, the critic also examines many things in the theory such as; objectivity, universality, and truthfulness. The critic finally states his or her judgment about the theory and its appropriateness, this judgment includes the defects of the theory as well as the guiding lines to improve and develop that theory.

The comprehensive criticism process should go through two main steps, first; the critic analyses the building so as to examine the ability of the building to express the theoretical base intended by the architect, the designer, and the acceptance of that building by people, where the second step is concerned with analyzing the theory to examine the appropriateness of this theoretical base to both time and location. These two steps are essential to get an objective judgment because in many cases the failure of theory leads to the refusal of the building product, where buildings are expressions of inappropriateness and baseless invalid criticism theories. Though during the criticism process, the critic can find out the applicability and validity of the theory which in turn helps in improving and developing architectural theories.

2.3. The locality of criticism and the universality of the theory

Criticism is local in nature as it is concerned with analyzing the appropriateness of the local conditions of the product (Huxtable, 1986). On the other hand, the theory is generalized and abstract, in other words, it is a universal or a general statement (Popper, 1972).

Criticism is analytical in nature seeking to decompose the architectural product to its primary

elements, so as to be better understood in addition to the comprehensive view on the product. On the other hand, architectural theory seeks to compose facts, principles, assumptions, and axioms to formulate a new statement.

As criticism is concerned with exposition, interpretation, evaluation, and Judgment of the architectural product, therefore always comes after the production, opposite to theory that comes before the production to give the architect a set of principles, rules, criteria, and guidance he needs for creativity. The integration between criticism and theory indicates that criticism can't stand without theoretical insights as well as theory can't develop without the presence of criticism, to eventually conclude that architecture can't come true without both theory and criticism.

2.4. The criticism as an aspect of the theory

The theory comes as a matter of criticism as through an analytical study of theory in architecture that criticism is realized. There are three main sequential levels of architectural theory analysis: the first is concerned with the form and structure of theory, while the second is concerned with the content of the theory, and the third is concerned with discussing the relation between theory and practice.

At the first level; criticism is concerned with testing the structure and form of the theory which means finding out if it is a real theory or if it is just opinions and hypothesis, so the critic should examine the characteristics of the theory such as its universality, objectivity, and corroboration because these characteristics are the prerequisites for a statement to be a theory.

In the practical life, there is a strong criticism to architectural theories as at the first level; Johnson presents criticism into architectural theory stating that architectural theory is rhetoric or just talk because most of what is called theory in architecture are either hypotheses incapable of being tested, or is a model of such simplicity that it lacks explanatory power, he as well criticizes architectural theory as it lacks universality considering it as local and regional statements.

As a defensible view, the problem of architectural theory to the lack of positive theories in architecture, which are more universal, objective, and testable, while the majority of theories in architecture are normative statements, which are value-laden, so it is not universal enough or objective. Lang also points out that architectural theory suffers from low external validity of concepts, (Scruton, 1979). This means that theory can not stand corroborated for a long time, as it is built upon subjective experience of the theorist, not objective-based knowledge.

At the second level; criticism is concerned with clarifying the issues, themes, and subjects that theory studies, as well as testing the degree of comprehensiveness of the theory, in addition, criticism is concerned with testing the relation

between theory and reality, society, context, and user. Johnson presents his criticism of architectural theory stating that architecture has never had a single, comprehensive, and totalizing theoretical prescription about design. Scruton (1979) has a similar point of view in analyzing the interrelation between criticism and theory mentioning that "all architectural theories are limited and narrow in dealing with architectural issues. Another aspect was presented by Alexander, who criticized architectural theories in the 20th century, focusing on the break or separation between theory and people, referring that to the lack of architectural theories that study the effect of the built environment on people, as well as the neglecting of studying human feelings, finally, Alexander (1991) concluded that there is always a conflict between the point of view of each theorist and people. When analyzing the relation between theory and practice, criticism is concerned with studying the relation between theory and practice, to clarify the guiding role of theory to practice. Most critics focus on the separation between theory and practice, for example, architectural theories are concerned mainly with ideologies held by architects or architectural schools of thought instead of the physical and practical issues of application and practice. Alexander (1991) also focused on the failure of theory to deal with and solve many problems, such as the moral dimension of practice, housing problems of poor people, architecture and the ecological balance, the contact of defining architectural quality, and other essential issues which architectural theory failed to find a definite solution to it. All these points of view brought about the ideas of post-occupancy evaluation of buildings where the majority of the theories fail to guarantee a well-being environment. The contemporary most renowned American architectural theorist (Salingaros, 2013) has proposed software anticipating the many design theories that succeed in evaluating the post-occupancy buildings (Salingaros, 2013). Despite that harsh criticism of the architectural theory, it stands as an essential domain in the discipline of architecture, as no discipline can progress without theoretical insights. It should be understood that the nature of architectural theory differs from scientific theory because of the artistic, contextual, and functional nature of architecture. So when applying the criteria of scientific theory on architecture, it is discovered that the architectural theory is not a theory, it is rhetoric or talks. To avoid this conflict, appropriate criteria need to be found out to Judge the validity of the architectural theory, widen the scope of theorizing, and seek comprehensive theories in architecture as well as accept the locality of architectural theory, especially in the cultural aspect.

3. Positive and normative theories

Positive theories are descriptive and explanatory systems as they identify causal links, predict the future behavior of the objects in question. Positive

Theory is a system of statements or ideas which describe and explain a phenomenon tested using scientific methods (Logan, 1955). Its Characteristics are explanatory and predictable, tentative and subject to revision, and can't be proved as it stands disproved. The functions of Positive Theory are; making sense of what otherwise remains non-meaningful, avoiding bias by being value-free, raising consciousness behavior in a built environment having design implications, and being helpful by making design decisions that lead to predictable outcomes. Lack of Positive Theory will lead to the challenge of cherished beliefs as shown in Fig. 5 indicates types and subtypes of Positive Theory according to Logan (1955).
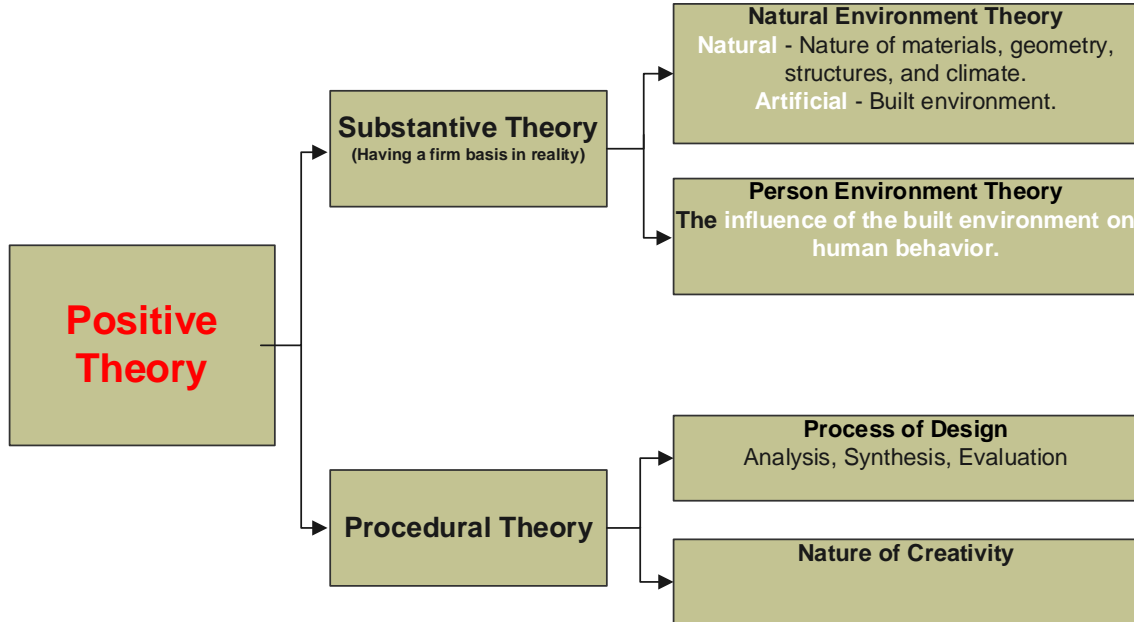

Fig. 5: Types and subtypes of positive theory (Logan, 1955)

Normative Theory includes a wide range of ways of doing what belongs to the realm of convention or rules of thumb. Action is taken based upon such tacit factors as this is how we have always done it, or this way is tried and true. Normative theories also describe explain and even predict. However, they cannot be said to have the logical rigor of positive theories and they can lead to a great variety of empirical outcomes, based on observation or experience. It is largely what motivates actions taken in design practice. Sugiyama et al. (2007) proposed that positive theories are testable according to the laws of empirical reality while normative theories, for instance, those related to design practice, are testable only by measures of professional acceptance or longevity.

The normative theory is often not conducive to rigorous testing as positive theory is another way to look at it is because the normative theory is demonstrated by conventional practices that have withstood the test of time, it is arguable that any normative theory has already been tested repeatedly and on daily bases in the field. For instance, the standard wood-frame house in the United States uses wood stud at 16 inches on center, is not something that needs testing it is just the way it is, or else the idea would have been rejected a long time ago. Fig. 6 indicates the types and subtypes of Normative Theory (Paul, 1994).
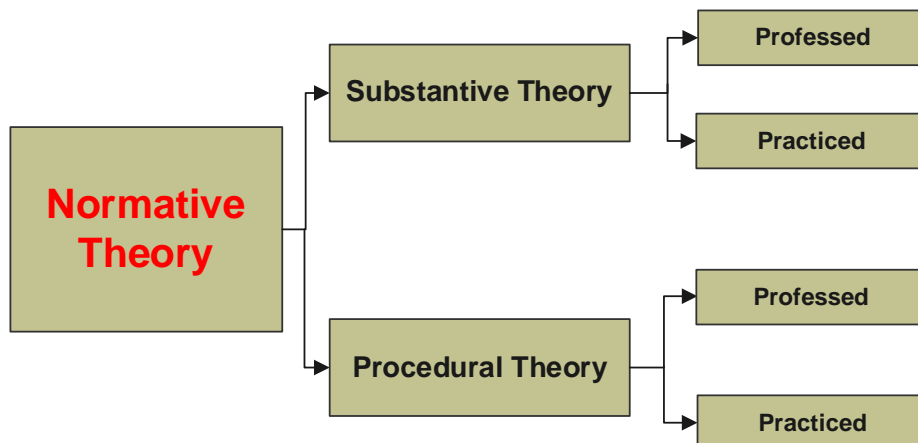

Fig. 6: Types and subtypes of normative theory (Paul, 1994)

Design principles used are based on the personal experiences of architects, not based on systematic research and a systematic body of shared knowledge. Intellectual development in the design profession is held back due to a lack of an explicit body of positive theory. Renowned architects' idioms are considered Normative theories.

Normative Theory is a value-laden statement on, what ought to be; perceptions of good or bad; right or wrong; desirable and undesirable. Perceptions for action could be perceived in design principles, standards, and manifests exemplars of that are; space standards as the height of the riser, size of the room, and width of the corridor.

From the previous analysis, the normative theory is a "prescription for action," examples given are design principles, standards, manifestos, ideology on "good architecture." The positive theory is a mental schema that is believed to describe and explain a phenomenon or a group of phenomena (Logan, 1955).

The key difference between normative and positive theory is that positive theory does not make value judgments. The reading states that this view of positive theory has been refuted, noting that researchers choose to pursue positive theory in a subject of their interest, implying an intrinsic value-judgment on what is interesting. However, when generally comparing the two, positive theory seems to offer less good compared to bad solutions in the case of normative theory (Logan, 1955).

4. Architectural criticism necessarily employed in architectural education

The theory and practice of learning are most commonly understood as the approach to teaching. This process influences by, the social, political, and psychological development of learners according to Fisher (Fisher et al., 2008). Pedagogy, being an academic discipline, is the study of how knowledge and skills are introduced in an educational context, and it considers the interactions that take place during learning. Both the theory and practice of pedagogy vary greatly, as they reflect different social, political, and cultural contexts (Li, 2012).

Pedagogy is often described as the act of teaching. The pedagogy adopted by teachers shapes their actions, judgments, and other teaching strategies by taking into consideration theories of learning, understandings of students and their needs, and the backgrounds and interests of individual students. It is aiming at furthering liberal education, which is the general development of human potential, and vocational education is the narrower specifics of introducing and acquisition of specific skills. Conventional western pedagogies view the teacher as knowledge holder and student as the recipient of knowledge (Freire, 2018) as the banking methods, but theories of pedagogy increasingly identify the student as an agent and the teacher as a facilitator. Instructive strategies are

governed by the student's background knowledge and experience, situation, and environment, as well as learning goals set by the students and teachers.

There are subtle differences in the way the notion of pedagogy is used and employed in architectural education, most precisely implemented in architectural criticism. Architectural criticism is a branch of criticism in general. Architectural criticism implies focusing on the built environment and the process of creating architecture, and it's often found in architectural magazines and other media. "Criticism in the architecture domain is most frequently used in the sense of evaluating proposals for buildings or environments that are presented in architectural education, in competitions or adjudications or for other proposals in different practical reviews, are the basis of the pedagogical method in which students take turns presenting their architectural design projects' proposals to critics or juries as well as to other students in the same design studio class or other classes or to architectural design professional in their practicing offices (Krupinska, 2014). Architectural criticism has the potential to be a powerful pedagogical tool in architectural education, forming the base of architectural pedagogy in the study of the methods of architecture teaching.

Criticism generally is a behavior in which individuals express their own perceptions of a physical place, an object, or ideas in the hope of communicating their ideas to others. However, criticism is sometimes perceived to have a negative connotation because of its sense of passing a judgment upon a physical place or object (Krupinska, 2014).

Criticism in Architectural education focuses on the ability to observe and generate reflections, which could be termed opinions or precisely termed concepts to eventually termed architectural criticism by architectural critics. Architectural criticism develops the skill of coping with uncertainty, the process of receiving Crits hones one's judgment and helps to manage the complexity that is inherent in the architectural creative profession. A primary purpose of architectural criticism is to develop the sphere or domain of architectural education by reinforcing the analysis by synthesis methodology because that is what leads to consciousness.

There are several pedagogical advantages in having assessments that could be criticized, both for students and teachers. A successful critique that emphasizes the design process; shows clearly that several solutions are possible, opens a discussion about problem interpretation, sheds light on concepts and criteria behind design choices, reveals various sides of the problem for the entire student group, leads to new viewpoints, illustrates specific technical or social issues as necessary and encourages discussions of conceptual questions, shows the role of the architect. There are also opportunities in the process and product-oriented criticism to; enrich the architectural debate and

introduce discussions using the terminological theory, present references, thereby widening the architectural vocabulary, acquiring new knowledge, reflecting on disparate values, and gradually covering larger areas of skill and competency and see if the chosen presentation technique succeeds in communicating the message and get advice on alternative presentation methods (Krupinska, 2014).

A criticism assessment is often experienced as a severe kind of test, where not only is the student's knowledge and talent evaluated, but his or her self-identification can be strained to the limit. The critique situation is frequently very tense, especially if the student is being graded simultaneously by different critics. The student agonizes about the comments and is often uncertain if their proposed solutions are appropriate. A long period of work concludes with a final exertion. The critics' tasks are not simple, either. They must have a distinct ability to quickly access several proposals and be able to summarize their strengths and weaknesses on a large and small scale, in a relevant and constructive way. The tense atmosphere means that the learning potential inherent within the process of critique is not always fully utilized.

At the comprehensive level, criticism can be product or process-oriented. Criticism that is product-oriented is focused on the presented proposal, its architectonic qualities, and the possibilities for getting it built. The opinions given relate to whether the solution is optional in terms of the different aspects that are part of the complexity of the problem as durability, utility, or aesthetics. Process-oriented criticism concentrates on the student's working methods, his or her evaluation of the problem, and the thought and reflection behind chosen solutions. How the student goes about finding good answers by what is referred to as defense; in other words, how he learns to design becomes the primary objective (Krupinska, 2014).

4.1. Criticism and critique

Criticism and Critique have become synonymous with theory. Critique is commonly understood as fault finding and negative judgment, involving merit recognition, and in the philosophical tradition, it also means a methodical practice of doubt as it philosophically means a methodical practice of doubt. Critique is a method of disciplined, systematic study of a written or oral conversation (Gasché, 2007). Critique is an alteration of an archaic word that referred generally to criticism. Critique itself dates to the early 18th century and originally referred to a piece of writing that criticized a literary or artistic work. The words criticism, critique, and review overlap in meaning (Gasché, 2007). Criticism usually means "the act of criticizing" or a "remark or

comment that expresses disapproval," but it can also refer to the activity of making judgments about the qualities of products. Critique is a somewhat formal word that typically refers to a careful judgment in which someone gives an opinion about something. Review can refer to an essay analyzing a literary or artistic work (Webster, 1989) as in the case of architectural projects design drawings. The term critique is derived from the French language which originated from the Ancient Greek word Kritikos, associated with "the faculty of judgment," that is, discerning the value of persons or things. Critique is also known as major logic, as opposed to minor logic or dialectics (Simpson and Weiner, 1989). In French the word criticism is critique, in German is Kritik and in Italian is critica as eventually there is no distinction between the two words critique and criticism. Critique is never personalized nor rhetoric but is instead the analyses of the item critiqued.

According to Parnell et al. (2007), crit, jury, or review are synonymous, which refer to the act of criticizing or judging. The review method of criticism was adopted ever since 1819 in the Ecole des Beaux-Arts, which was the leading center of architectural education in France. Ecole des Beaux-Arts is seen by many architectural educators as an early precursor to the model of architectural education we experience today. The design problem was developed as the main method of teaching architecture and the review was used as a way of evaluating students' works. These reviews were carried out behind closed doors by design tutors with no input from students. Since the mid-twentieth century, this process has evolved into an open format with inputs from the students. In contrast to the original system, the open, public nature of reviews today is fundamental to the process.

The outline of reviews is that; reviews are held both during and at the end of a design project, students present their work and ideas on their own or in a group, reviews could be informal as a chat around a table or formal as a presentation in rows of seated individuals as shown in Fig. 7 (Parnell et al., 2007).

Students will usually present a visual and verbal explanation of their works, students will be one in a series of presentations, students will probably have a limited amount of time, the audience could be small or large as students in the same year, students from other academic levels, tutors involved in teaching the project, other tutors, architects, and specialists, or lay-people such as clients and users, the audience may give the students feedback on their works and students could discuss ideas with each other's, there is the potential for the student to learn from everyone involved in the review and the students might be marked or their works might be evaluated during the review.
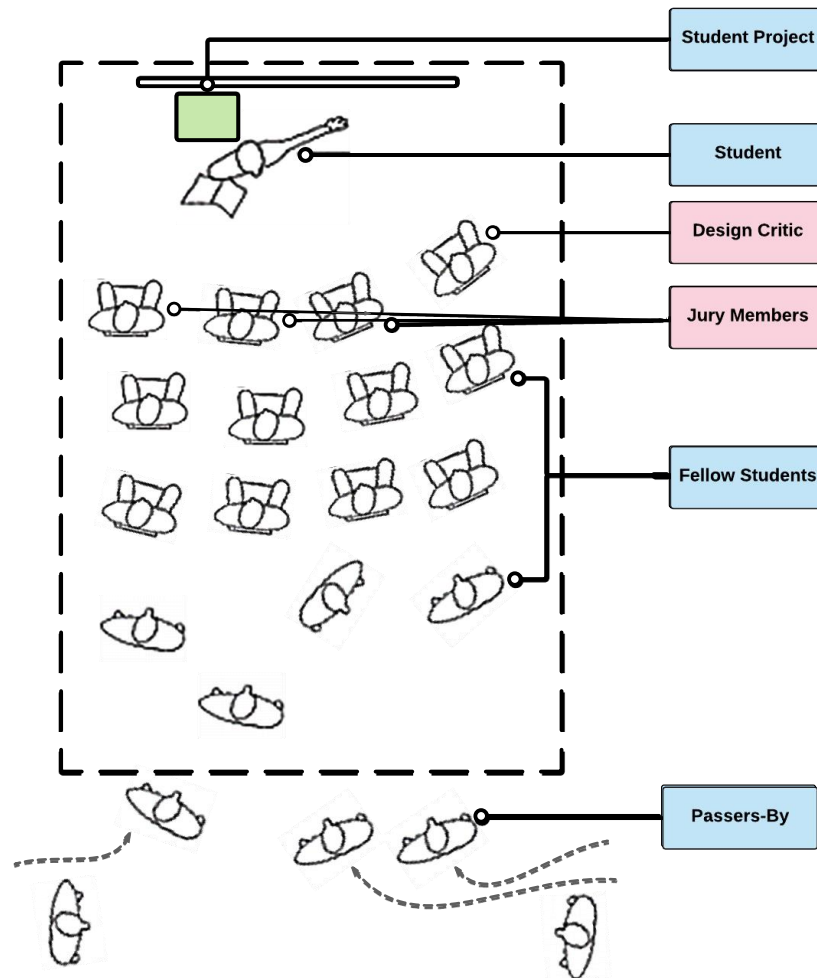
Fig. 7: Formal review as a presentation in rows of seated individuals' (Parnell et al. 2007)

The review has three main stages; the initial stages where the student might be expected to discuss the findings of any research he has done with other students and tutors, or even to make a formal presentation. This is the perfect opportunity to learn from others and to bounce around his or her initial ideas. Forms of review most likely at this stage may be; round-table discussion with students and/or tutors, small/medium group tutorial with their tutor or tutors, meeting with clients or users, and question and answer session with an expert or experts as an engineer.

The Intermediate stages where most design projects involve a presentation of work in progress or an interim review. Up to this point, the student might have discussed his work only in one-to-one tutorials or with friends. An interim review allows the student to present his or her work to a larger audience and get a variety of opinions from this peers and tutors. The student could be looking for inspiration or he or she might want specific advice on how to progress. Forms of such reviews most likely at this stage be; round-table presentation, small/medium group tutorial, formal spoken presentation to a group with work on display.

The final review stage process is likely to be more formal than earlier stages; this is why it can be the most nerve-wracking stage, particularly if the student knows that his or her work will be marked and evaluated. Like the interim, the student can get feedback and learn from the discussion. The principles he or she learns here can be applied later. In the final review, there might also be an emphasis on practicing presentation skills for his or her future life as an architect. Form of review most likely at this stage be formal rhetoric or spoken presentation to a group with reference to work on display, the exhibition of work with no verbal presentation.

Review best case occurs when the review process is working well, providing many learning opportunities as a chance to evaluate work. Reviews are never purely a chance to mark work or get evaluated. They provide an opportunity for the student to view his or her own works in relation to the works of his or her peers, considering his or her rate of progress, and the rate of progress of the whole class. They enable tutors to evaluate the success of the studio program, and how well he or she is working within the program. Providing feedback. Feedback from the review should give the student specific instruction on strengths and weaknesses, successes, and missed opportunities. Fulfilling project objectives. It is his chance to show how he has achieved the objectives of the project. It is also an opportunity to explain his or her own objectives in doing the works. If he or she does not make these clear he or she can only be judged according to the objectives of his audience. The

students practice for practice. The process of presenting to an audience, listening to presentations, and forming questions can help him or her develop skills that are important in architectural practice. The review should help him or her to build confidence in selling himself or herself and his or her ideas. The review is a safe environment. Despite the link with practice, the school environment gives the advantage of being able to test ideas without the consequences of the real world. The students develop critical awareness. Their involvement in the discussion about projects is a good way to develop skills in critical thinking. By trying to understand the different ideas and approaches that the students see, they will develop their own thinking about architecture. The students learn from everyone. Participating in a review gives them the chance to learn from everyone around them. Students, tutors, and other contributors such as specialists, practicing architects, and laypeople, can provide useful criticism (Serginson et al., 2013).

From the students' point of view, at least the crit means they have finished the project even though they normally and mostly feel sick to death of it. The review is a deadline which is good practice in time management. Final reviews provide a ceremonial end to a project, a celebration of the students' hard works. In the highly social environment of the design studio, students learn to communicate, critique, and respond to criticism, and to collaborate as much as they can benefit the much from critiques or reviews. Fig. 8 indicates the much students and tutors could interact in critiques or reviews (Serginson et al., 2013).

Fig. 8: Much students and tutors could interact in critiques or reviews (Serginson et al., 2013)

5. Conclusion

From the previous interrelationship between architectural theory, architectural criticism, and architectural education, it is concluded that architectural criticism is the base out of which architectural theory stems to eventually reach architectural education. Architectural criticism is for assessing architectural designers' aims and objectives and those of other critics, being tutors, students, or clients employing many tasks including exposition, analysis, comparison, justification, evaluation, and guidance. As architectural criticism is applied to cover one or more of these three design stages; concept, process, and end product. The product or buildings in reference to architectural design is more tangible concluding all preceding stages whereas the conceptual stage, is the one that

needs more effort to work on requiring a high level of critic for the benefit of the architectural designer. Judgment and evaluation are both necessary for criticism, as Judgment provides an understanding of the architectural design project criticized, therefore is more significant than evaluation, which in turn is significant for architectural designers, especially the students to show them the value of their efforts. Architecture products or buildings could only be understood if only architectural criticism is introduced. As architectural theory is the attempt to decide architectural right and wrong on a purely intellectual base, necessary to guide practice, being objective and depending upon a powerful knowledge base, therefore, it is the tool for objective criticism, in addition to that, it gives the critic the criteria of goodness, criteria of architectural quality as well as the architectural design concepts, which he must use to judge and evaluate the value of the architectural design projects, that is why its failure leads to the refusal of the building product. Architectural criticism is a powerful pedagogical tool in architectural education, forming the base of architectural pedagogy in the study of the methods of architecture teaching. Architectural education based on architectural criticism focuses on the architectural design concepts of the architectural critics. The primary purpose of architectural criticism is to develop architectural education through critiques by critics. For architectural projects design process successful critiques, critics have to show clearly that several solutions are possible, open a discussion about problem interpretation, shed light on concepts and criteria behind their design choices, reveal various problems sides for the all students group, lead to new viewpoints, illustrate specific technical, socio-cultural and environmental issues as necessary and encourage discussions of conceptual aspects, show the role of the student who is the future architects and how he or she goes about finding good answers by what is referred to as defense. In successful critique students usually have to present visual and verbal explanations of their works termed as architectural design concepts. A student has to be one in a series of presentations. A student, when presenting his or her work, should better have the audience in small or large numbers as his or her classmates, students from other academic levels, tutors involved in teaching the project who could be internal examiners, other tutors who could be external evaluators, architects, and specialists, or lay-people such as clients and users, the audience may give the students feedback on their works. Students better discuss ideas with each other's, there is the potential for the student to learn from everyone involved in the review and the students might be marked or their works might be evaluated during the review. The critics' review should be in three main stages; the first stage is the initial stage where the student might be expected to discuss the findings of any research done with other students and tutors, or even to make a formal presentation.

The critics' review is the perfect opportunity for the student to learn from others and to bounce around his or her initial ideas. Forms of review most likely at this stage may be; round-table discussion with students and/or tutors, small/medium group tutorial with their tutors, meeting with clients or users and having questions and answers sessions with experts as the engineers. The second stage is the intermediate stage where most architectural design projects involve a presentation of work in progress or an interim review. Up to this point, the student might have discussed his or her work only in one-to-one tutorials or with friends. The interim review allows the student to present his or her works to a larger audience and get a variety of opinions from his or her peers and tutors. The student could be looking for inspiration or he or she might want specific advice on how to progress. Forms of such reviews most likely at this stage be; round-table presentation, small or medium group tutorials, formal spoken presentations to a group with works on display. The third and final review stage process should be formal compared to earlier stages; which should not be a nerve-wracking stage, even if the students' work will be marked and evaluated. Like the interim, the students should get feedback and learn from the discussion. The principles he or she learns here might be applied later. In the final review, there should also be an emphasis on practicing presentation skills for his or her future life as an architect. Form of review most at this stage be: formal spoken or rhetoric presentation to the group. The exhibition of their works must necessarily be visually and verbally explained termed as architectural design concepts.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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