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Developing the Architecture Education in Iraq (Building a Student Base Strategy)

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ABSTRACT

Architecture education in Iraq stays for a long time without real developing strategy. This situation causes many problems for both students and higher education institutions. So,the research question is: what is the appropriate strategy to develop the architecture educationin Iraq.The paperdepends on a questionnaire methodologyconducted by 64 students. It hypothesized that the student is a main base to establish the developing strategy. The research concluded that the architecture students should be selected initially and they should not join the department based on their grades at the high school only. On the other hand, the research shows that the students have aninsufficient confidence on the local labor market of architecture.

Keywords: Architecture education, Design process, Student's wills and abilities, Study period, Architecture schools

HOW TO CITE THIS ARTICLE

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1. INTRODUCTION

The architecture education in Iraq applies the same curriculums for a long time and it accepts students according to their averages at the high school only. The Iraqi universities graduate many architects yearly. The analytical review of this education shows many problem suffered by students, architecture departments and the labor market. The accepted students face a big difficulty to cope with the department's requirements. This difficulty forces many students to leave this department even though they pass the first year. The study at the architecture departments requires many skills and abilities should be achieved by the students. In addition, the student should have a will to be an architect and have a sufficient culture to understand the architect's work during and after the study courses. The common teaching methods in these departments depend on giving the students many projects to design and show them other previous real projects designed by famous architects. The student will be shocked in conducting the design process without knowing how to design. This will teach the student that the process is to imitate the previous famous architects in producing the same forms of their architecture.

On the other hand, the labor market in Iraq is rarely provides jobs for young architects because of the lack of supporting by rules and the decrease in new constructed projects. In addition, the clear difference between the technical methods of architectural and presentation works used by the local and international architects. So, architecture education in Iraq needs a big development to cope with the huge improvements in this field globally in order to getting up the quality of graduates.

The architecture curriculum should consider the student as the core of the education process.It should concentrate on the student's requirements to be an architect. These requirements could be summarized; student's environment, student's qualifications, study programs and labor market. As the aim of this study is creating abase strategy to develop the architecture education in Iraq.

2. ARCHITECTURE EDUCATION

Teaching architectureis given as instructions of valid methods to use the drawing tools and design methodology. But the students' projects aren't a result of conducting the given instructions. There are big and clear efforts should be done by the students to cope with the study requirements of architecture. These requirements could be distributed between drawing and imagination skills, concept and form selection and computer programs.

The international experiences in architecture education have addressed many problems and applied some techniques. The design process has been considered as a main problem to deal with in architecture education. The reason of why the design process cannot be clarified in a simple diagram is that design is very individual process has many complex creative dimensions. For example, the design problem may involve various variables that could not be evaluated by the same measuring units. The value of judgments is inevitable and hard to be interpreted objectively to meet the scientific requirements [7].

The student in architectural department is shocked by what is required to do base on the knowledge he/she acquired previously. What he/she learned from scientific facts, mathematical equations and theories do not help him/her when he/she begins to meet the requirements of basic subjects, especially the architectural design. It is required to design a specific project, whether if it is abstract or realistic.

Many difficulties face the student in the department of architecture. First of all is the new method of gaining the knowledge and the competition with the other colleagues. The other difficulty is the evaluation process of projects which the student is subject to be assessed. The result is unknown for the student before the submission of the work and he/shecould not know the correct track required to reach the final successive submissions during his/her study. On the other hand, the student has the freedom to choose ideas and express them which gives him/her something of privacy in the work. In addition,the student put concepts, which enables him/herto review his/her creative side during the process of learning.This freedom does not found in other disciplines that depend on application of rules and testing theories by similar methods for all students. Also, the responsibility of the architecture student is greater than the others in terms of decision-making as well as the time schedule to complete the studyrequirements and this develops the ability to manage more than applies orders.The architecture student plans and implements while other students implement only.In addition, the continuous architecture education is hard to be achieved by the architecture schools.The undergraduate students in Iran for example, are more enthusiastic to finish their study with master degree. It also shows that the technical courses are beneficial in the specialist jobs [9].

The student's personality

The real applications played a main role in building the architect personality for the students such as the curriculum of M.I.T University in the U.S.A. It released the concept of the users of spaces could spend big efforts to improve these spaces in order to practicing their works. This concept has been applied by the architecture students of M.I.T University/ U.S.A when they refuse their studio boards to be arranged in straight lines face the same view. They use material leavings to build their spaces that are used for living, eating, study and meet their staff [5].

The self-aspect of the student in architecture department is an integral part of the educational process through which the individual abilities, aspirations and ideas are expressed so that he/she can compete with his/ her colleagues. This aspect can be seen especially in the architectural design lesson where students compete to design the same project on the same site and at the same time period. The student should have knowledge in construction technology and architectural presentation by computer programs such as Auto Cad and 3D max. On the other hand, students differ in terms of how to solve the design problems and propose solutions.

Many architects did their designs before they joined an architecture school such as Le-Corbusier and Leonardo Davinci. It is known at the Iraqi schools of architecture that the student analyses the given project, makes conclusions and build design decisions or establishes the design concept base on these decisions. This type of design methodology does not work with many architects and students as there is a clear difference between them. The personality of the architect and the student plays the main role in how to select, analyze and decide the architectural concept.

The approach of building the creative side of the student's personality is the most important characteristic of teaching architecture. This distinguishes the student from others who join the other disciplines.He/she is inventing his/her own projects and does not find them in books or apply a set of rules and knowledge published in finding solutions for a particular problems. He/she depends on his/her skills and creative potentials in producing the projects. So, it is not appropriate to lay a strict system followed by the students indoing his/her design duties or to impose certain ways in itself

to create the design.The students should be encouraged to study a number of options to choose.They should have the freedom to conduct the appropriate methods to design and not to specify a strict time to complete a certain stage of design.Any limitationsmay reducethe motivation of the outstanding student in completing the project, as well as loading the student with low efficiency. The proposal here is to give projects one after another with determining the final requirements.Then, give the student the opportunity to conduct the appropriate methods of achieving the project and time required. Thus, the student who completes his/her project early takes another project and the competition between students will be on the number of projects completed during a semester or an academic year.

The student and the design process

How could the student be taught the design process? The available time of the study forces the student's abilities and the way of managing time with the design process. As the design process will never be stopped even after building the architectural projects in reality. It is a continuous creative process could not be stopped unless the designer decides that. This process requires providing freedom for the designer and deadline for design completion. The student should be free and under obligation of time. The freedom includes coexisting in studios such as the case of Bauhaus school by letting the students to live and study at the same campus. On the other hand, the time obligation requires conducting intensive tests to improve the thinking ability of solving problems and graduating from simple to big projects. It is important for the student to allocate a sufficient time for design only. It is also required to encourage the student to produce creative works by giving a chance to compete at the labor market through solving real problems and show his/her projects for the clients. This will improve the confidence by him/herself as he/she does a creative job with high value.

The interest in developing the students' manual skills is an important factor in improving their design abilities and their transformation from theoretical to practical. This emphasizes the principles of architecture sensation and dealing with the physical objects, giving them more knowledge of what they design.They should aware more about their architectural design and they should be tasteful and critics of what they see and read the products of other architects.Thisidea takes them out of the spectator's astonished by the previous productions and the sanctity of those products.They stand dazed and confusedin front of them wondering how these works were done and what are the possibilities available to these genius people. They think that these worksare very difficult and this discourages their morale. The reason is that the architecture students are looking at the previous architectural products in their final forms.They did not see the early stages of design. On the other hand, they are required to live in the early stages of design such as studies, concept, prelim and the final submission which the student knows that it will not be built.This analysis requires rethinking many times with what it is taught for the students and how to build their skills. This involves encourage them to participate in practical projects from the beginning to the final stages.It is important to the student to build his/her project by a real beneficiary. These beneficiaries should support the students and may contract with the outstanding ones.

At the Bauhaus school designed by architect Walter Gropius, the complex contains a studios and a dormitory suite with a gymnasium and a swimming pool. Because of this complex, the process of design education has become an integrated world of life, work and recreation. This school adopts its principles of learning by work [7]. The great development in architecture industry through improving the skills of those who work in this field such as engineers, craftsmen and the professions associated such as blacksmithing, carpentry and construction. These skills contributed in raising the workers in the field of architecture and grew up the ability of imagination and creativity. This attitude encourages a group of architects to establish educational curricula based on craft and manual skill.

The design skill of the student should be built and developed rabidly and continuously. Developing the design skill of students could be achieved by continuous improvement of the given exercises, the students' contribution in studios, show them design experiences of others and increase their understanding of the design process [3]. The engineering of architecture is a technical view to design and construct buildings. It has an impact on other engineering disciplines. The loss of engineering from architecture means that architects have a little to say in comparison with other engineering disciplines [12].

There is a need to an association frame to integrate the concept of sustainable architectural education and architectural practice. This assists to understand the sustainable design studios and the architectural study courses related with sustainability in Nigeria. The study concluded that there is a need to improve the architectural education of the students about how to apply the mechanisms of design management to aid the green building designs. This will help the future architects to deal with and provide solutions for design problems and challenges face their societies. So, it is essential to contribute all stakeholders to support inserting the concept of sustainability in the architectural education [2].There were four different types of curriculum of sustainable design courses which are advanced, concomitant, dependent and changeful. The first two gives better abilities to insert the sustainable principles because the sequence of sustainability

course refers to equilibrium between the theoretical knowledge and its application in the design studios. The two other courses do not suggest a logical equilibrium between the sustainability sequences and the studios [11].

It could be found a simple environment to use for the students by web published boards to discover the design concepts. This method contains written texts and projects' presentation and It approved its activity when it is inserted in the educational curriculum because its simplicity [8].

The architecture schools

The architectural schools that encourage students to analyze, discover, innovate and express their abilities are the ones that have the best graduates. Therefore, it is strange that many architectural schools have remained on a certain curriculum and method of teaching for decades.

To develop the artistic aspect of the architecture students, it is important to examine their ability to produce the architectural forms and evaluate their products aesthetically. Thus, they are required to generate or create different forms from multiple sources not limited to what they imagine. They must have the ability to create new forms from all the surrounding physical environment, historical elements, written texts and scientific theories.They should refining and develop their artistic talents in the way of producing shapes with high craftsmanship. In addition, it is required to build a high various culture for the purposes of persuasion.

The Frank Lloyd Wright School of architecture applies a concept of Living as Education. The students have two campuses; one of them at Arizona and the second is at Wisconsin. They have two semesters a year where they transfer from one campus to another. They are required to arrange their living and working places at the two campuses. Their works will be evaluated by the campus staff and they are on display for the public both from exterior and interior design. All of the students' facilities should be completed inside the campus such as living, eating and working in order to examine the creative ability of the students. The high grades student is who deals seriously with the responsibility of creation in form and maintain his/her place and gains the most advantage of the capabilities provided by the campus [4].

The study period

The study program in architecture departments in Iraq takes five years. The students required to design a limited number of projects each year. This program is applied for a long time base on the manual methods in architectural presentation and hard copies of references. Nowadays, the students learn many computer programs that help in architectural presentation such as Auto Cad, 3D Max and Revit. So, the study program could be decrease and involved more projects.

The scientific and professional development

The scientific development in the various sciences has a great impact on the architectural work and thedesigner's potentials.This phenomenoncould be seen in controlling the environmental conditions and invest them in the production of the necessary energy for buildings such as solar energy and wind.The interaction with the environment produces the direction of architecture towards sustainability and green architecture.It is important to address the impact of the environmental changes on the architectural projects and exercises. So, it is essential to find design methodologies cope with future changes in the environment such as climate change [1].Although the subjects of environment and green architecture are exist in all of the architecture schools, but there are big differences between them in terms of definitions, time schedule to insert in the curriculum, their criteria and contents. The more popular subjects related with green architecture and urban design with their applications. Some of these subjects involve material physics and the environment's effects. Others are about sustainability, refuse cycling, ecological systems and virtual simulation in computer programs. It could be concluded that the educational curriculums show various methods to publish knowledge base on the way of managing the study programs.

On the other hand, the development of computer programs used in architecture produces the parametric architecture. Philosophy and sociology also have an impact on architecture such as the writings of Jacques Derrida and Gaston Basler.In language, the interpretation of the meaning of things such as differences of views between phenomenology and structuralism.All of these factors require reconsidering the curriculum to broaden the students' vision of what architecture is interested in and how should it achieve the success in all of these disciplines.The architecture profession is not a collection of protected secrets. It is an open participating process where the studios and design bureaus need to be connected with the public and clients and each other flexibly. So, the architectural works could not be evaluated or understood if they could not be seen [6].

The will and the ability of the student

The main branches of building the architecture personality for the student are the will to be an architectand the abilities required to work as a n architect.

The will: The process of building the will of the architecture student starts from him/herself personally and this is unknown for the teachers, especially in the first year of the study. The student is supposed to have the will and the desire to be an architect and this is not a wishful.The will does not mean that the person wishes to be as he wanted, but there must be incentives in the environment encourage the student to follow this trend.On the other hand,he/she must have the readiness to play the role of the architect in the future in his/her society.These motivations and incentivesinvolve the labor market which should be continuous, sophisticated and stable.In addition, there is a real need for the work of the architect and there is real competition in this work between architects.This will be reflected on the competition between schools of architecture locally and internationally.

The society should also have a dominanceof architectural culture in building. This culture should be supported byvalid laws and cover all the aspects of architectural work. This is what the surrounding environment must provide in order to encourage the student to be an architect. On the other hand, the personal side is supposed that the student should know that the architect is a thinker with a range of possibilities and he/she is not a drawer or a professional using the computer and advanced programs in drawing or an expert in models making only. He/she must love and be ready to be a thinker.Even being a thinker is not enough to be distinctive, but he/she must have a creative thinking.Creativity is the ability to produce what is distinct from other previous products. In addition,he/sheshould have the ability to represent the creative ideas abroad who see, use and evaluate his/her projects.He/sheshould be able to convince people in what he/she produces. All of these talents must be available in the student to be a successful project for a distinguished architect.

The ability: Building the abilities ofthe architecture student is a complex task for the department andthey could be classified into fourabilitiesbase on the action required:

1. The ability of designing: Building the ability to design in architecture students is one of the most difficult tasks faces all the schools of architecture locally and internationally. So it is difficult to indicate that unless after many architectural projects that follow a particular schooland exploring the priorities of these schools such as Bauhaus, modernity, post-modern and deconstruction.And this difficulty is due to lack of clarity or absence of the curriculum for the design process. Building the design process of the student is the main task of any architectural school. Many architectural schools ask the students to exercise the design process after teaching them the architectural presentation and the use of drawing tools or reviewing a group of projects belonging to famous architects.The most important misunderstanding by the student is that he/she will imitate the projects presented to him/her by the teachers. He/she still sees that the teacher is the teacher as he/she was in the high school and what the teacher presents is a fact and that the distinguished student is the one who can imitate the projects presented in the production of his/her projects. What really happened is that the student has a goal in producing the same projects represented by the teacher and the first thing to be learned is imitation.

Imitation as a method to design new projects is a big problem for the students. It assures the understanding of the design process as an imitation to what is designed previously only and it is not a creative process. So, it is a big danger to teach the first year student this concept as the concentration on imitating the previous famous architects and projects leads the student to be an imitator at the best cases. On the other hand, architecture as a discipline has been independent shortly and it is naturally to be taught historically. So, many students affected by the modern architecture, its architects and projects. It is required to show the students the previous architects and their projects to review and critic with considering the available potentials not for admiration. It is the most difficult task for the teachers to build the ability of criticism for the students. The students will understand the importance of their production and go towards the creative design which expresses the privacy of its founder. So, the design process is very accurate. On one hand, the student must be encouraged to produce. On the other hand, he/she must know that what has been accomplished from previous projects has been criticized even by him/her. The student knows that the process of criticism evaluates the architectural products and he/she will never favor imitation.

2. The ability of presentation: This task comes secondly after the ability to design. It includes teaching the students how to deal with tools, possibilities and techniques of architectural presentation and how to acquire the skills known of architectural drawing and filling surfaces and projection of all its kinds in the two-dimensional and Three-dimensional drawings and the imagination skill. Learning these basic skills requires comprehensive clarification, as well as adherence to the submission deadlines and sufficient time spent by the student.

3. The ability of persuasion: This requires building a capable personality of persuasion, the use of logic, thrill and inform others by the importance of the product. Therefore, the student must learn the importance of the commitment to complete the requirements of submission and to clarify his/her ideas in full form so that none of his/her ideas are not presented but focuses on the persuasive aspects and power in the concepts. It is common mistakes to provide incomplete ideas such as mass model or incomplete plans. The lack of clarification of the concept and its origins is a major problem leads to

misunderstanding by the teachers. It means that the student did not express his/her ideas in the form required or deals with the architectural presentation wrongly and indicates weakness in his/her projects.

4. The ability to deal with the developments: It is important to grow up the ability to address the recent problems associated such as in the areas of sustainability, green architecture, energy conservation and climate change. In addition, the students should cope with the development of computer programs in terms of presentation and design such as in the parametric architecture and exploitation of natural resources as sources of energy and provide thermal comfort.

3. CASE STUDY

The case study of this research depends on a questionnaire methodology. The questionnaire involved many questions related with the architecture education in Iraq. These questions have been extracted from three sources which are the international experiences, the real local education and the technological developments in the field of architecture. The questionnaire has been conducted by 64 students at the department of architecture. The questions concentrate on two sides of graduates which are supporting the will of students to be architects and building the ability to be architects. The questionnaire involves six questions related with the will. These questions are; why the students came to the architectural department, at what ratio the students doing the study requirements, what are the main sources of the knowledge, what is the student's methodology in design, have the students designed real spaces and are they able to join the labor market. On the other hand, the questionnaire involves five questions related with the ability. These are; the clarity of the design requirements, are the design projects enough, are the teaching methods appropriate, the efficiency of the weekly study table and where the students doing their work.

The results

The results could be classified into two sections according to the questionnaire form which are results related to the students' will and results related to the students' abilities.

First: the results show that 52% of the students came to the architectural department because of their average in the secondary stage (High school) and 42% of them came according to their desire. On the other hand, only 6% of them hop to join the labor (Job) market (Figure1). The ratio of the students who do their homework and classwork completely is 39%, 23% of them do their works by 80-85% and 38% of them do their works by 70% and less (Figure2). The ratio of students who depend on the internet as a main source of their information is 48%, 26% of them depend on the teacher and the internet as a main source. On the other hand, 16% of them depend on the teacher and only and 13% of them refers to the library as a main source (Figure3). The design methodologies used by the students are distributed as 62% of them release a concept and represent it as a physical form, 22% of them depend on relations and ratios, 23% study and analysis and only 3% of them imitate other architecture and develop it (Figure4). The ratio of the students who have designed their real spaces such as studios and living areas is 45%. On the other hand, 55% of them did not do that yet (Figure5). An 87 % of the students see that they are able to design in the labor market but only 13% of them see that they cannot (Figure6).

Second: a 90% of the students see that the design requirements in the department were clear but 10% of them saw that the requirements were not clear (Figure7). A 61% of the students see that the given projects in the department's plan were enough for learning architecture. On the other hand, 35% saw that the projects were not enough (Figure8). A 65 % of the students see that the teaching methods relied in the architectural design subject are appropriate. On the other hand, 35% of them see that these methods are not appropriate (Figure9). A 71% of the students see that the weekly study table is efficient to learn the discipline but 29% of them see that it is not (Figure10). 74% of the students prefer doing their work at home and only 23% of them prefer doing their work at class. On the other hand, just 3% of them prefer both home and classwork (Figure11).

Conclusions

1- The student's average at the high school plays the main role in determining the architecture department as a first choice to study for the most students. This case decreases the student's importance to achieve the huge educational tasks required to success in this department as a discipline in the future. So, it is important to review considering the student average as the only factor to accept the student in the architecture department. This research suggests that the students should be examined technically and interviews them to know if they prefer the department of architecture and they are ready to study.
2- The questionnaire shows that only less than 40% of the students do their works completely. This refers to the carelessness for most of students to finish these works. In order to solve this problem, the research suggests that it is

important to find an appropriate mechanism to obligating the students to do their works such as don't give grades for the unfinished works and don't giving the projects to the student with unfinished previous works.

3- Although the most of students see that the works required are clear, relying developed education methods encourage the students to finish their works.
4- The most of students see that the given projects in the design subject are enough to learn but more than third of them see that they are not enough. So, it is essential to add more projects and assure their variety especially under the development in the design and presentation methods namely by computer programs.
5- The most of students depend on the internet as the most important reference for their information. So, it is essential to provide the internet in the studios under the staff supervision. In addition, it is important to give more attention to the library to be near the studios and providing the internet with many spaces for the students inside. On the other hand, encourage the staff to publish their lectures and their notes on the internet.
6- Although the most of students rely the methodology of laying a concept and represent it in a physical form, but this is unclear in most of their works. This research suggests that encourage the students to represent the concept by verbal statement before moving to the physical form. It is important to do this process under the staff supervision with considering the logic in releasing the design concept and its connection with the reality in terms of site, function, symbols, the society culture and history and the possibility to be represented physically. In addition, it is important to concentrate on the ratios and the relations between the forms with considering the equivalent weight to the lied vocabulary in the concept.
7- The most of students have never design anything even their private spaces such as studios and living areas. So, the research suggests that it is essential to commission the students to design the real spaces inside the department such as studios, the interior spaces and landscape. These works should be involved in the study plan and the student should be assessed according to these works. These works give the student the required confident to face the real labor market.
8- The most of students see themselves able to join the labor market successfully. This indicates that they have the confidence to what they have learned during the study program which refers to a successful educational curriculum. So, the research see that the most lack comes from the student's quality accepted in the architecture department.
9- The more than two thirds of students see that the educational methods used are appropriate for studying architecture but third of them see that they are inappropriate. So, this paper suggests improving the used methods by supporting them with developed ones in learning with computer programs and new presentation methods. In addition, it is important to use the new architectural programs in design and presentation especially at the third, fourth and five years.
10- The most of students see that there is no problem in the weekly study tablebut less than third of them have problems with it. So, this paper suggests that the students should be participated the students' opinion in organizing the weekly study table.
11- The most of the students prefer to finish their works at home instead of studios. So, it is important to pay more attention to the study places and improve them. This will help students to do their works both at studios and homes.
12- The base strategy to develop the architecture education curriculum in Iraq could be represented as a diagram shown in (Figure12).

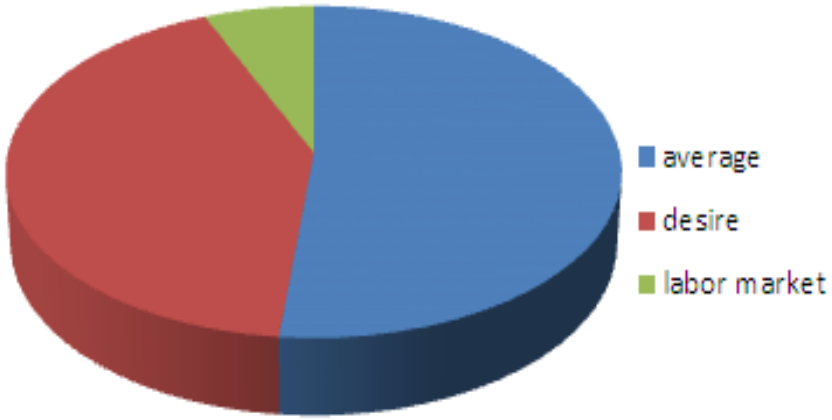

Figure1: The reason behind joining the architecture department

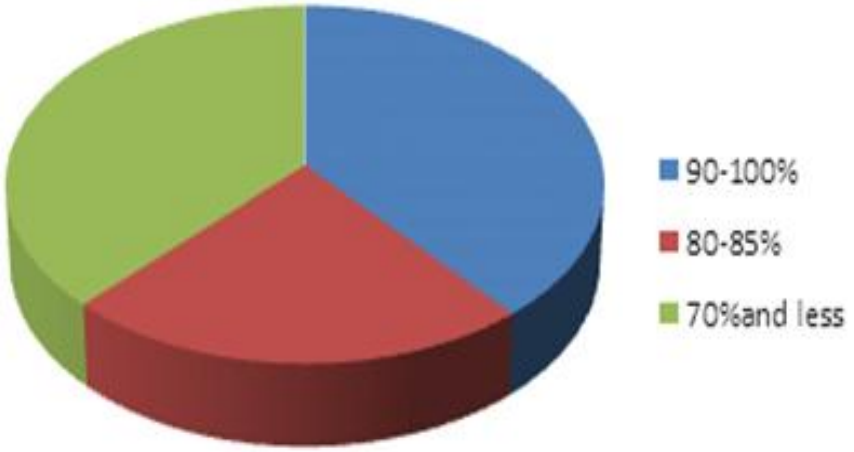

Figure 2: The ratio of doing their works

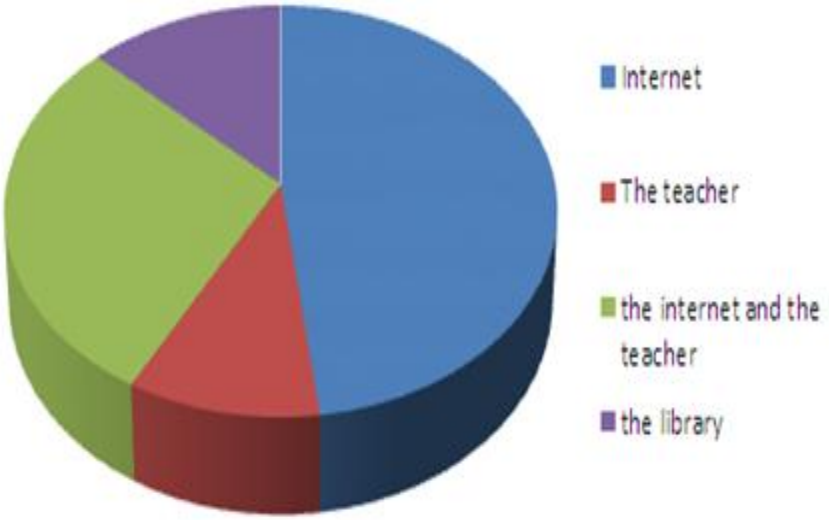

Figure 3: The main sources of information for the students

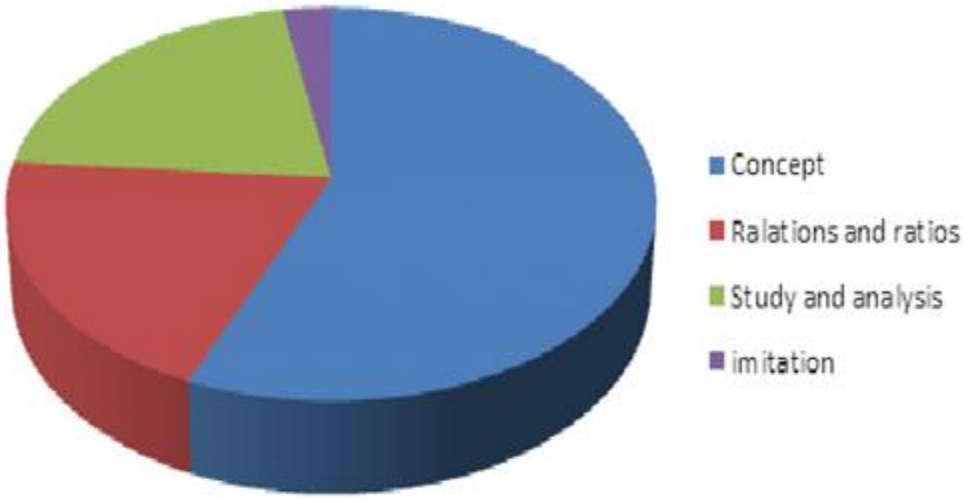

Figure 4: The student's design methodology

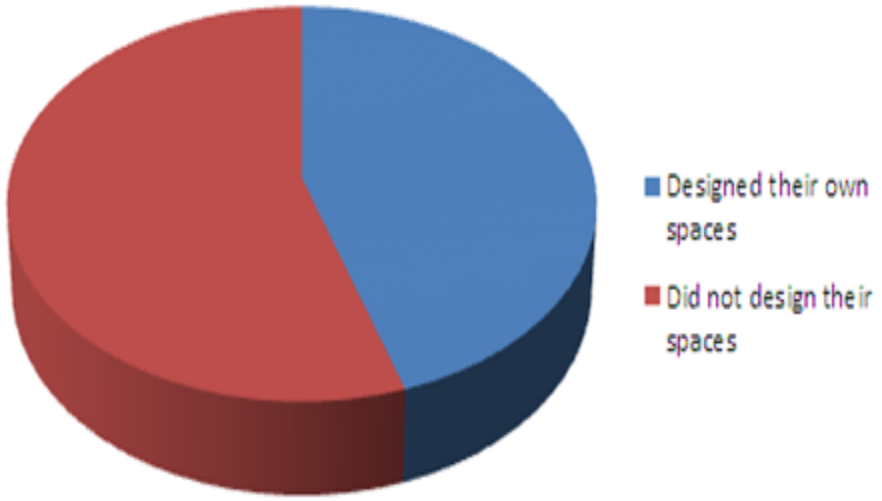

Figure 5: The students designed their own spaces

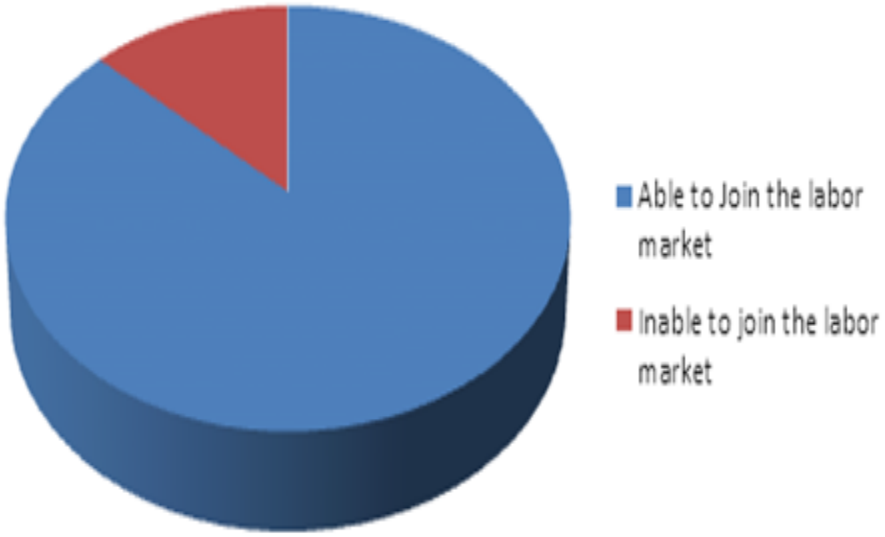

Figure 6: The readiness to join the labor market

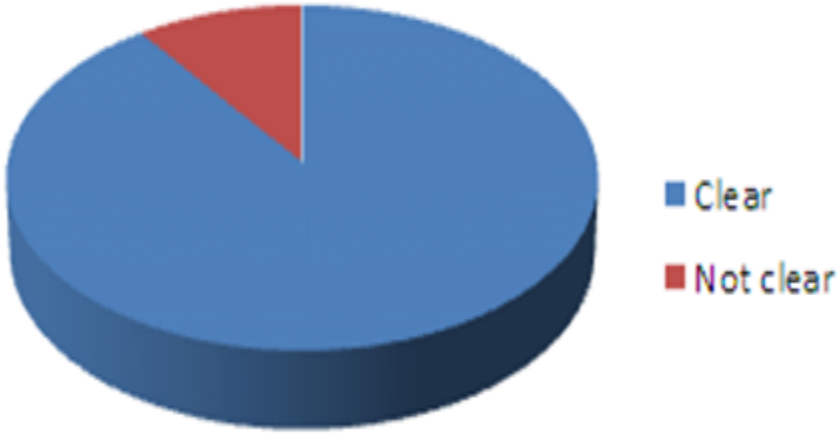

Figure 7: The clearness of the design requirements

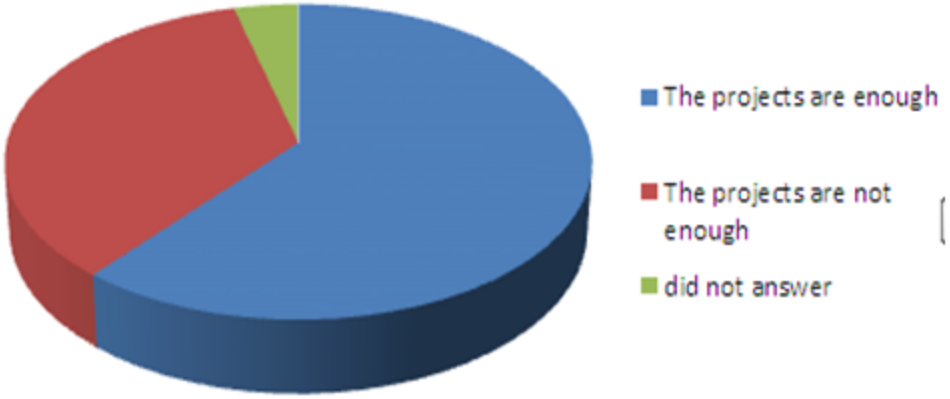

Figure 8: The projects are enough for learning design

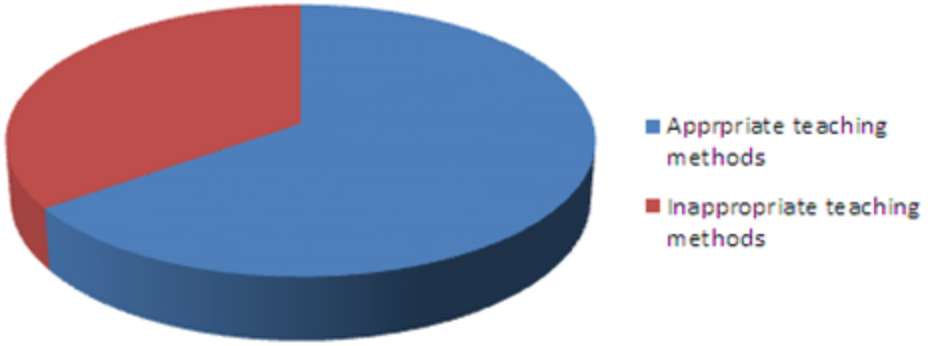

Figure 9: The appropriateness of the teaching methods

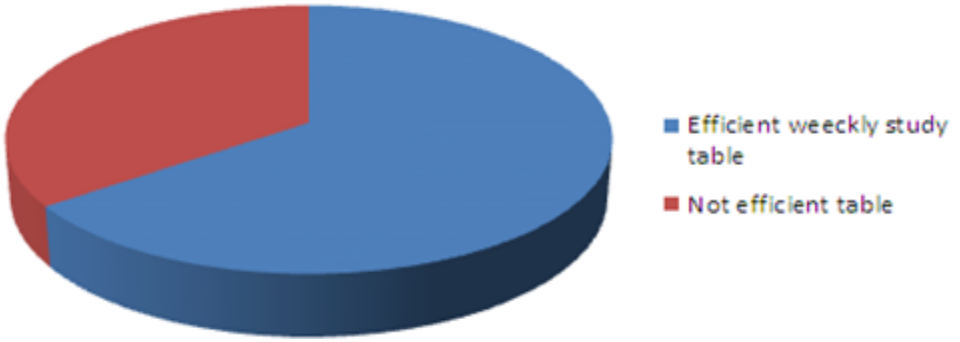

Figure 10: The efficiency of the weekly study table

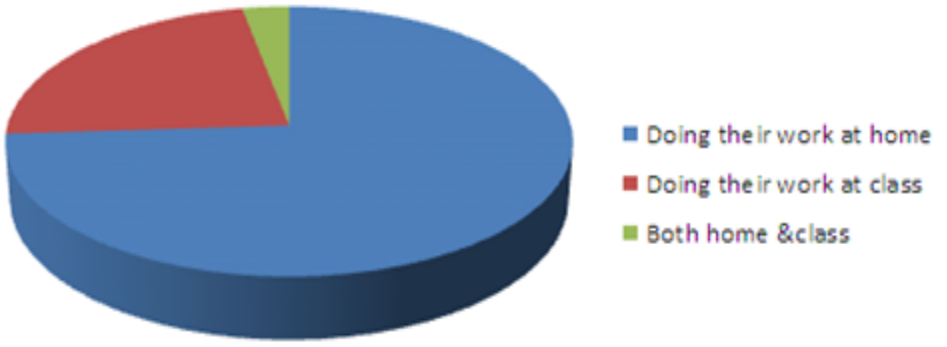

Figure11. The students preferdoing their work

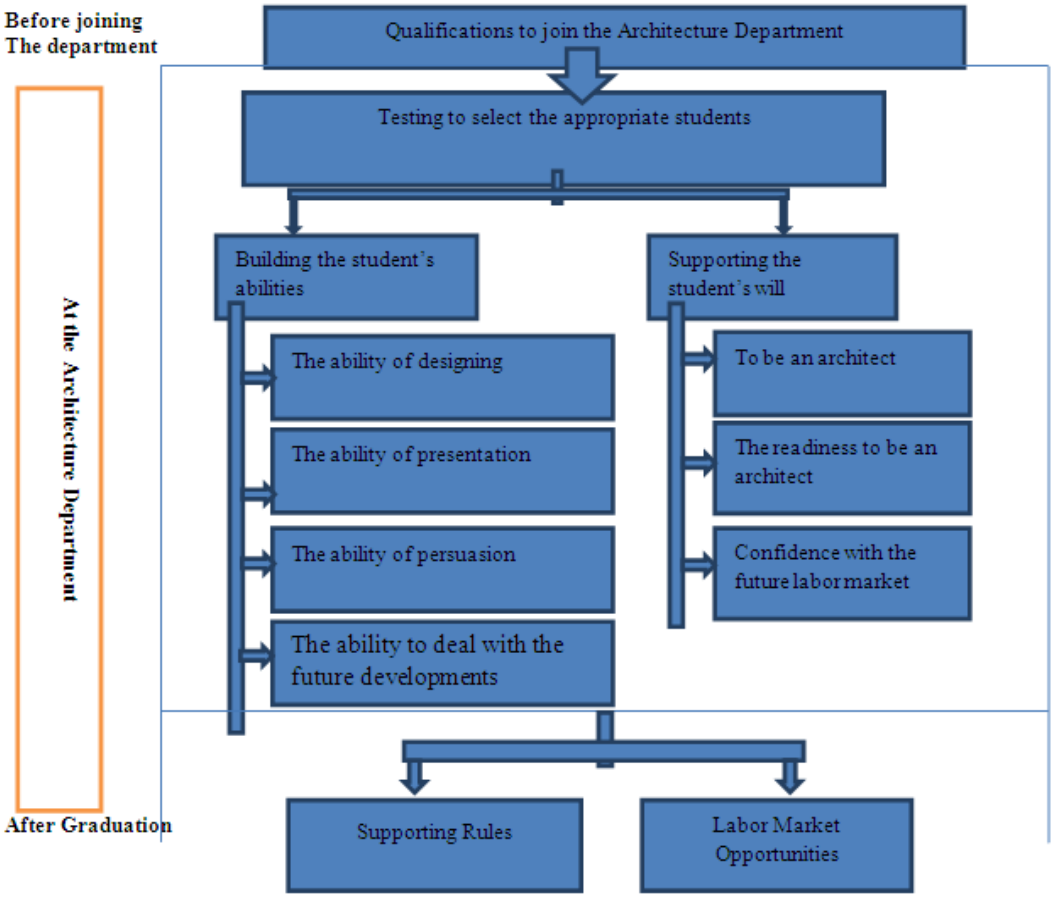

Figure 12: The base strategy to develop the architecture education in Iraq

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