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Title:

"Academic Curricula – Work Market Interactive Systemic in Architecture & Urban Planning Education"
"A Strategic Approach and Future Challenges of The 21st Century"

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Abstract:

The architecture and urban planning education are the motive power of the comprehensive development movement as well as the instrument for the development and progress of nations within an economic, intellectual, behavioral, political and social development.

Hence, it is crucial that the new graduate participate should have a complete faith and belief in his academic abilities which would enable him to cope with the challenges of the 21st century, and to lead his society to progress whether (locally or internationally) within the fierce constant international changes which are rapidly taking place in all aspects of life (globalization).

Therefore, **the research paper aims** at studying the mechanisms of Architecture and Urban planning International Work Market (AUIWM) and its impact on academic curricula of both the public and private Egyptian universities.

Hence, it analyses the current Academic Curricula of Architecture and Urban Planning (ACAUP) departments in public and private Egyptian universities, as well as in abroad (e.g. American Universities) taking into consideration its interaction and integration with AUIWM.

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Therefore, analytical quantitative technique **(methodology)** focused here on the ACAUP, as a branch of Engineering Education, and oriented to study its interactions with AUIWM, as the main systemic approach, which was based on:

- Classification of the credit hours or the weekly study curricula according to its relation with the mechanics of the Architecture and Urban Work Market into nine groups. Each group influence on the graduate quality is determined by its specific relative weights.

- Analyses the quantitative number of credit or study hours per week for each group with similar group at other departments (Egyptian & American Univ.).

- Determination the relative weights of each specialized group in the same department. This weight should be considered as an indicator that helps in determining the identity of the graduate, his specialization and the relation between the relative weight and the mechanics of the AUIWM.

- Determination the required specializations according to the actual needs.

On the other hand, **the research suggests** a permanent committee (as a sub systemic) to study the course description in each group in order to update the oriented courses. This systemic aims to avoid the future weak points which affected the preparation of a graduate to deal with the actual practice work.

These comparative analysis proved that the current ACAUP in private Egyptian universities are repetitions of the old version of the public ones. Both of them did not reflect AUIWM needs (graduate only architecture designer or planner) and failed to play the role they are deemed to undertake, in spite of the several changes that happen every 5 years in the public ones. This means that the changes occurred was not sufficient.

Thus, the scenario developed here is based on the experiential learning concept. It refers to learning in which the learner is directly in contact with the realities being studied. It contrast with learning in which the learner only reads about, hears about, talks about, and writes about these realities, but never comes in contact with them as part of the learning process. The experiential learning within this scenario can be regarded as a new systemic for future architecture and urban planning pedagogy.

Therefore, **the paper proposed** to set a new systemic approach to structure and reform the architecture and urban planning education in Egypt in order to graduate a new generation (the required specializations) capable of confronting the challenges of the 21st century (e.g. globalization & ISO) according to the actual needs of the AUIWM.

It also **suggested** (another sub-systemic) a new distribution of the relative weights of the specialized groups of courses which determine the graduate identities which produce eight specialties: policies planner, manager planner physical planner, environmental planner, urban designer, architecture designer, architecture & planning reviewers, and building technology engineer.

Introduction:

In spite of, the AUIWM needs different specialized graduates, the architecture and urban planning education concept in Egypt graduates a general practitioner engineer. The existence of Private Universities beside public ones, is a healthy phenomenon in order to create competition which will in turn lead to re-form the concept of University graduate. The Private Schools experiment is the best proof thereof. However we should keep in mind differences in comparison. No one can deny the positive role provided by the Private schools within the Pre-University Education system, it would not be harmful to get Private Universities beside public Universities in an integrated system of university education, in spite of the fact that the Private Universities have not yet realized the purpose of their establishment (discussed afterwards). Nevertheless, we focus here on the Architecture and Urban Education as a branch of Engineering education under the umbrella of University education.

the Private Universities experiments as well as the theoretical concept beyond their certain. It also sees whether it has managed to develop a sort of balance in fulfilling the needs of the work market or it has been merely a stereotype of the public universities.

The analysis of the current ACAUP is by all means the most important element of the Architecture and Urban Education system in relation to the Work Market through proposing and academic methodology for the subject comparative analysis, whereby the curricula are divided into groups and sub-groups such as basic groups and supporting groups … etc., according to the influence of the groups in guiding towards the required specialization and its relation to the mechanics of the Work Market.

The division of groups and sub-group was based on the standard of Educational Curricula which will eventually lead to the graduation of certain types of engineers in an attempt to satisfy the needs of the Work Market needs, instead of the current traditional methodology which leads to the graduation of a general practitioner Engineer, in others words, helps to build a Fundamental Base of curricula for every graduate

> On the other hand, the research was oriented also to develop an understanding about the underlying changes taking place in the practice and process of design and the need to develop flexible architecture and urban planning and management tools to tackle the current problems in an effective manner.

The need to change architecture and urban planning curricula:
Few of the faculty have actual design experience. There is a difference between "applied science" and "design". However, we must be careful to balance empirical solutions with theoretical knowledge. Though there is "art" to architecture and urban planning with corresponding creativity and innovation, it does not lack a thorough scientific base ….
Architecture and urban planning education has had a quality control mechanism in place …. A student has to satisfactorily complete the required pre-requisite courses, before moving to the next sequence …. Architecture and urban planning education has been so structured that a student has had to satisfactorily complete all the courses at one level before being allowed to pass to the next level … every thing is interconnected and interlaced … this is unique among many professions. [David R., 1995]

International competitiveness has become a major issue for architects and planners in every developed country, as well as for those in technically emerging countries. The current competitive challenge at its most fundamental level is to produce higher quality products than the competition. Technical practices, codes, specifications inspection or testing practices, and standards may also differ from country to country.

According to the guidelines of ISO 9000 application to Universities, Universities have to treat their students and students' employers as customers. They have to satisfy their requirements, by incorporating Total Quality Management (TQM) concepts in curricula. The curricula is recognized as the raw material on which students work. And this work must, when students are engaged with it, teach them something important and socially valued. When graduates understand the concept of TQM including how and when to use the basic TQM tools, they will be more employable.[I. A. Aboulnaga, 1994]

In the light of the above, the architecture and urban planning education today is typically guided by national level standards and review mechanisms. Thus the ACAUP must be focused upon making the new graduates fully aware of their social responsibilities, and better able to consider related factors in the decision-making process in order to face the needs of AUIWM.

Therefore, the change of ACAUP is a must.

Philosophy of the Private Universities in Egypt:

No doubt, Private Universities managed to carry out, desires potentially valuable but ignored by the current educational System (University distribution). This role is similar to the opportunities offered by the Open University (OU) to study in special circumstances selected by the student e.g. to study at home and the time pace appropriate to him. [(1) J.C. Levy].

The aim of the new experiment is to give more distinguished University Education chances along with efficient facilities so as to be an addition to Public University Education. They must be also efficient scientific schools interested in specialized studies needed by the current future AUIWM and to avoid being a repetition of the present colleges in Public Egyptian Universities. (Dr. Mufid Shehab- Minister of Higher Education & Scientific Research- Al Ahram, Aug. 11, 1997) [11].

It is not less important to said new controlling executive regulations flexible enough so as to create modern specialists according to the needs of the Egyptian, regional and AUIWM.

Therefore, the above mentioned regulations should concentrate on a general philosophy consisting of the following group of axes:

- To help in developing the ability of free reading, searching for truth and reaching conclusions.

- To develop the ability to analyze, connect, deduct and create.

- To help commanding, utilizing and developing the mechanics of the age and new technologies, for the benefit of the local and international society.

- To encourage the student to study and to convince him that education is the only way for him to have a better life.

- To over flow the creation and preparation energies in students.

- To develop a personality capable of practicing political, social, intellectual, and scientific life with maturity and awareness.

- To interact with the society, state and Public Universities in a strong, homogeneous way.

- To connect the academic movement with the reality (Work Market) by means of setting study curricula syllabuses, and a plan for continuous development.
- To get the Research Centers, Universities and Organizations connected.
- They should not be a repetition of the Public Universities.

The above mentioned axes are not confined to the Private Universities only but, they propose a system to integrate between the Public and Private Universities, to prepare a creative graduate sensitive to the problems and gaps of knowledge, capable of determining the difficulty, searching for solutions, guessing, creating and examining hypotheses, re-examining and amending them, then making conclusions. A graduate should be equipped to be capable of undertaking scientific research throughout his professional life. Modern knowledge today to be obsolete tomorrow. The University should prepare the student to be capable of educating himself, developing his abilities to create and produce.

(Final statement of the Supreme Council of the Arab Engineers Union / Tunisia 97) (El-Mohandseen Magazine Edition No. 494 - May 97) [2].

The concept of analysis:
The Educational Curricula and syllabuses are considered the most important elements of the Architecture and Urban Education System. Although they got developed several times, the substantial change never occurred. The problem got more complicated because the Private Universities emulated substantially the Public ones.
The basic aim of the comparative analysis is to find out the weak points which affected the preparation of a graduate to meet the needs of the International Work Market.
Therefore, the analysis was oriented to compare the ACAUP in the Egyptian universities (both in public & private ones) with the similar ones in American and British universities as follows:

- The syllabuses in ACAUP was classified into nine main groups. Each specialized group influence on the graduate quality is represented by its specific percentage of the whole program (as a credit hours).
- These percentages were compared with the similar groups at other departments in Egyptian universities as well as with others in American ones.

- This concept of analysis should be considered as an indicator that helps in determining the identity of the new generation of the graduate and his specialization according to the AUIWM needs.

The specialized groups have been determined as follows:

1- Design Group:
It is subdivided into sub-groups (e.g. Architectural, Planning and Urban Design, …. etc) including the curricula which help the student to innovate and reach final generations such as the Architectural Designer, City Planner, Urban Designer, Landscape Architecture …. etc.

2- Technological Group:
It comprises the curricula related to the Knowledge Revolution and Development in materials, building industry, modern utilization such as using the computer in design and constructing buildings, executive drawings, installations and others.

3- Management Group:
It comprises the curricula of Management, legislation, practicing the profession, feasibility studies and others.

4- Structural Group:
It comprises the curricula related to the construction structure of buildings including reinforced concrete, foundations, metal constructions, survey and others.

5- Humanistic Group:
It comprises the curricula related to the human being, how the human being influence architecture and urbanism and vice versa such as the human factors manifested in architecture, theories, social studies and history.

6- Environmental Group:
It comprises the curricula related to the environment such as the environment control, solar energy and climatic studies.

7- Supporting Group:
It comprises the curricula oriented to aid the identity of graduate such as statistics

8- Elective Group:
It varies and depends on the election of the student and his tendencies according to election rules.

9- Field Group:
It includes all what is related to the applied practical training at the work sites.

The ACAUP comparative analysis:

It includes the departments of architecture and urban and urban planning at the public and private in Egyptian universities as well as the similar departments at the American universities.

Architecture Departments in Egypt:

It tackles the following departments:

- Public universities:
  1. Architectural Department, Faculty of Engineering, Ain Shams University.
  2. Architectural Department, Faculty of Engineering, Shoubra.
  3. Urban Design Branch, Ain Shams University, Faculty of Engineering.
  4. Urban and Regional Planning Faculty, Cairo University.
  5. Planning Department, Faculty of Engineering, Al-Azhar University.

- Private universities:
  1. Architecture Department, Misr International University. (MIU).
  2. Architecture Department, Tenth of Ramadan Higher Technology Institute. (HTI).
  3. Architecture Department, Tenth of Ramadan Higher Engineering Institute. (HEI).

The Private Egyptian Universities do not include until now any planning or Urban design departments (Source: the bye-laws each Faculty or Institute) [3-9].

Architecture departments in America:

1. Colorado
2. Buffalo
3. Carnegie Mellon
4. Wisconsin
5. Texas
6. Andrews
7. Cincinnati
8. Pennsylvania
9. Catholic

Analysis of Departments of Architecture:

All Architectural departments in Private and Public Universities graduate the architectural designer. The total percentage of hours per week for the design group when compared with the other design groups shows that it ranges from 40% to 50% of the program, except in the Higher

Technological Institute where it reaches 31%, with an average 41% of the total program, Table (1).

Table (1): The percentage of groups per prog. at architecture dept. in Egypt.

Dept. of Arch.	Design G.	Tech. G.	Manag. G	Stru. G.	Hum.G	Invi. G.	Supp. G	Elective G	Practic G	Total
Ain Sham	50%	21%	1%	13%	7%	1%	2%	3%	2%	100%
Shoubra	41%	19%	2%	11%	12%	4%	4%	6%	2%	100%
MIU	43%	22%	0%	12%	13%	1%	3%	6%	0%	100%
HEI	40%	20%	0%	13%	14%	2%	5%	5%	2%	100%
HTI	31%	23%	1%	9%	13%	5%	12%	4%	3%	100%
Average	**41%**	**21%**	**1%**	**11%**	**12%**	**2%**	**5%**	**5%**	**2%**	**100%**

Source: [Ref. 3 – 9].

The design curricula of the Architecture or Planning Departments are equally distributed all over the programs along all academic semesters. This means that the Private Universities emulate the Public Universities. In other words, Architectural departments in Private Universities are repetitions of the Public ones. The Public departments do not reflect National and International Work Market needs. They graduate architectural designers only. Both of them failed to play the role they are deemed to undertake.

It is worth denoting that the percentage of the design group in the previous academic syllabuses of the Public Universities was higher than the percentage in the present ones. The tendency to increase these syllabuses has prevailed. The introduction of modern updated technology and science is seen to be necessary. There must be an emphasis on getting the Universities connected with the Architecture and Urban International Work Market (AUIWM).
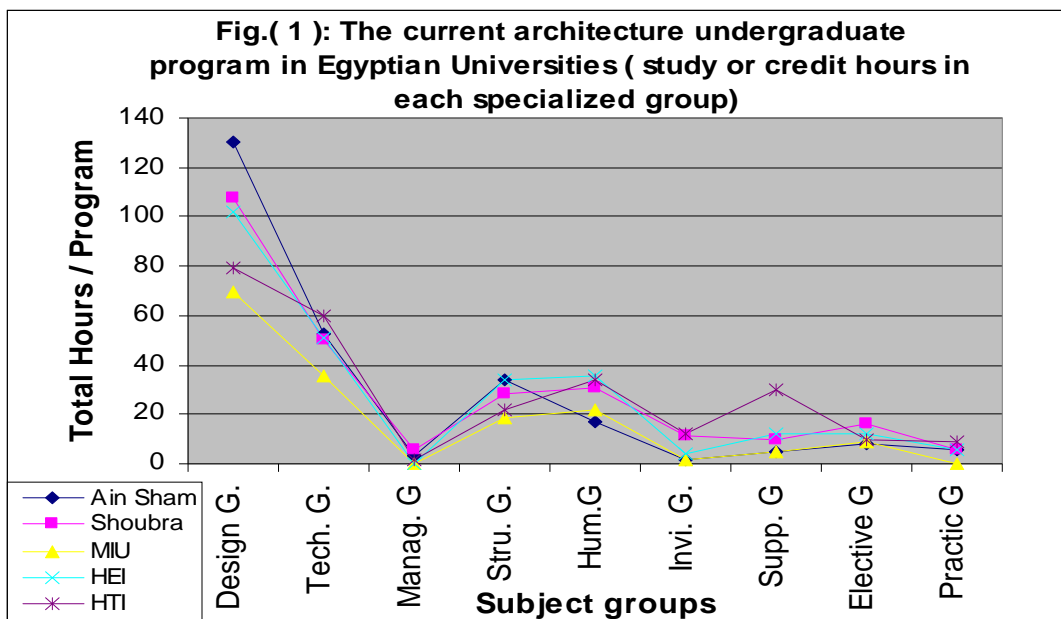
The Architectural Department in the Higher Engineering Institute attempts to follow the past overall academic syllabus of a Public University. Nevertheless, the Institute failed to equate the number of hours whether in the entire program or in each academic semester. The sparseness of the design hours was not counterbalanced by an increase in any group except in the support group. The graduation project did not participate in shaping the graduate identity. The graduation project had four hours a week in one academic semester. This seems illogical especially when we know that Ain Shams University allocates 32 hours a week for the same academic semester and also Shoubra allocates 2 hours a week in semi final semester and 24 hours a week in the final semester (4 hours set against 32 hours means 1:8, or 4 hours set against 26 hours

means 1:7). The graduation project is essential for the architectural designer specialization.

On the other hand, the Tenth of Ramadan Higher Technological Institute attempted to graduate an architecture engineer. The attempt failed due to the sparseness of hours of the Urban and design group. It was also noticed in the Institute curricula that the technological group increased a little and the legislative and humanistic group increased a lot.

If the graduation of an architecture engineer was set as a target, then sparseness of the design group hours should have to be counterbalanced by a considerable hour increase in Legislative, Urban, and Technological groups.

If we have the graduation of and architecture engineer as a target, we must handle the sparseness of the design group hours by increasing Technology, Urban and Legislation groups hours and decreasing the humanistic group hours. However, this did not happen since the slight increase in the technological group is not sufficient. The sparseness of the construction material group hours is undesirable. The increase of the human group hours is undesirable too. The increase of regulations group hours is needed. The Institute succeeded in decreasing the design group hours and increasing the regulations group hours but it failed to do the other necessary changes in numbers of hours.

Fig.(1): The current architecture undergraduate program in Egyptian Universities (study or credit hours in each specialized group)

The comparative analysis of the academic plans of architectural departments reached the conclusion that the Private Universities emulate the Public Universities see Fig.(1). Comparing groups percentages led to

reaching this conclusion. This could be attributed to the following reasons:

- Private Universities cannot risk graduating students different from those of Public Universities whereas the Public Universities try to graduate different types of students.
- These Universities have no permanent cadres. The teaching staff are seconded from other Universities.
- This Universities fear to graduate an engineer who may not be accredited. This impedes investments in this field.
- These Universities fear the certificate not to be equated with the Public one. They depend, therefore, on making the academic syllabuses similar to the Public ones.
- Because these Universities try to be similar to the Public ones, laws and regulations are inflexible.
- There are no binding goals to establish Private Universities
- Owners of these universities lack an intellectual scientific vision.
- They view the Private University as a means of making money.

As shown in Table(1), the average of the total percentage of hours per week, at architecture departments in Egypt, for the main groups was oriented and concentrated in the design and technological groups reaches 62%of the program. Also, the percentage in management, environmental and practice groups are very low weight reaches 5% of the total program. The comparative analysis indicates that the architecture curricula in Egyptian universities do not concern with the practical needs and do not reflect the AUIWM needs.

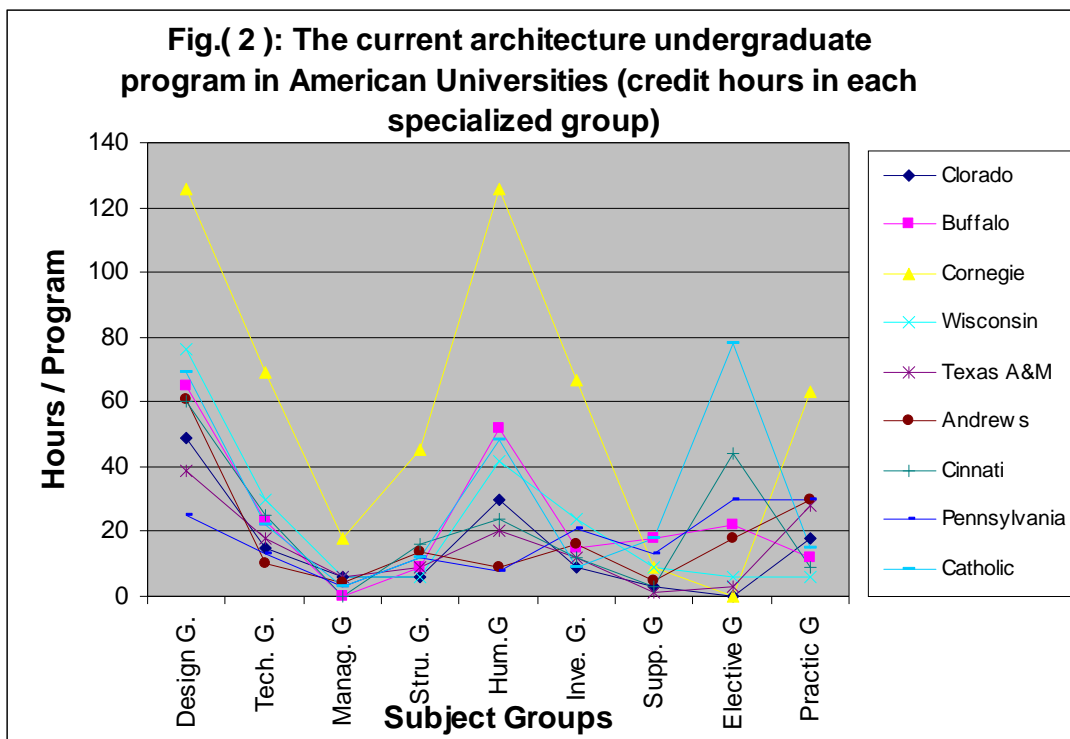**Table (2): The percentage of groups per prog. at architecture dept. in America.**

Dept. of architecture	Design G.	Tech. G.	Manag. G	Stru. G.	Hum.G	Invi. G.	Supp. G	Elective G	Practic G	Total
Colorado	36%	11%	4%	4%	22%	7%	2%	0%	13%	100%
Buffalo	30%	11%	0%	4%	24%	7%	8%	10%	6%	100%
Carnegie	24%	13%	3%	9%	24%	13%	2%	0%	12%	100%
Wisconsin	37%	15%	3%	3%	20%	12%	4%	3%	3%	100%
Texas A&M	29%	13%	4%	7%	15%	9%	1%	2%	21%	100%
Andrews	37%	6%	2%	8%	5%	10%	3%	11%	18%	100%
Cincinnati	31%	13%	0%	8%	12%	6%	2%	23%	5%	100%
Pennsylvania	16%	8%	2%	8%	5%	14%	8%	19%	19%	100%
Catholic	25%	8%	1%	4%	18%	3%	7%	28%	5%	100%
Average	29%	11%	2%	6%	16%	9%	4%	11%	11%	100%

Source:[12]

In the other side, the total percentage of hours per week for the design group, at the architecture departments in America, when compared shows that it ranges from 24% to 37% of the program, except in Pennsylvania department where it reaches 16% of the program, with an average 29% of the total program see Table (2).

The average of the total percentage of credit hours, in American departments, for the main groups, proved that the percentage of design and technological groups reaches 40% of the program, against 62% in Egyptian ones, and the percentage of management, environmental, and practice groups reaches 22% of the program, against 5% in Egyptian ones see Table (1,2).

This could be illustrate the interaction between the ACAUP and AUIWM needs in the American departments and determine the weak points in Egyptian ones see fig.(1,2).

Fig.(2): The current architecture undergraduate program in American Universities (credit hours in each specialized group)

Analysis of Departments of Urban Design & planning:

The departments urban Design or planning are still confined only within three departments in Public Universities. The three departments graduate a planner or the urban designer only. The diagram shows that the grand total of the correspondent groups is very similar whereas the grand total in the design group varies e.g. the total percentage of the Urban group in the Urban Planning Faculty is lower than the total percentage of Ain Shams and El-Azhar. The total percentage of Ain Shams is lower than

the total percentage of Urban Planning and Al-Azhar. The total percentage of Al-Azhar in construction and graduation project is lower than the total percentage of the Urban Planning and Ain Shams.

Table (3): The percentage of groups per prog. at planning dept. in Egypt.

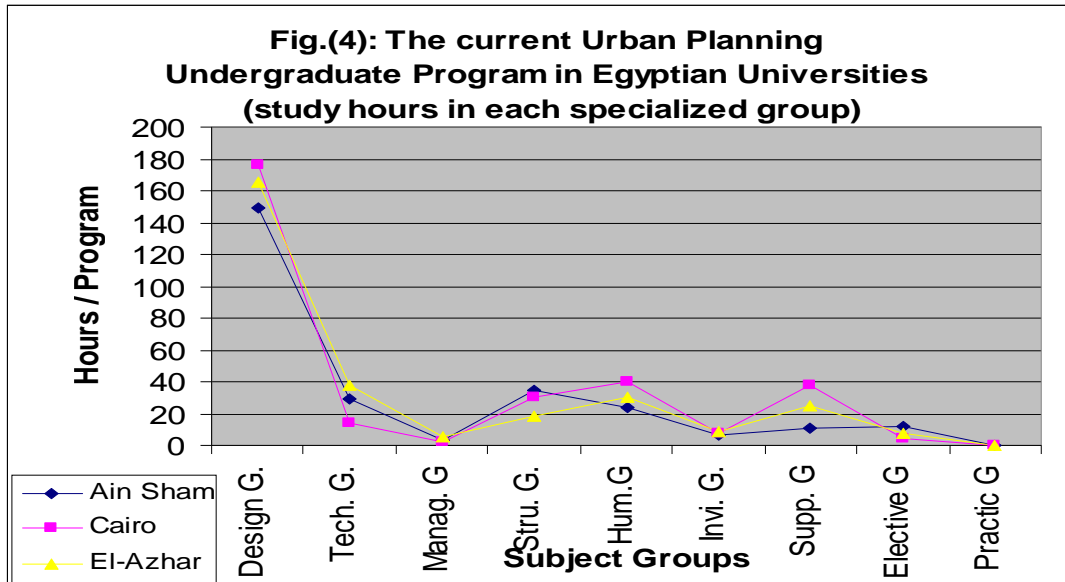| Dept. of Planning	Design G.	Tech. G.	Manag. G	Stru. G.	Hum.G	Invi. G.	Supp. G	Elective G	Practic G	Total
Ain Sham	55%	11%	1%	13%	9%	2%	4%	4%	0%	100%
Cairo	56%	4%	1%	10%	13%	3%	12%	1%	0%	100%
El-Azhar	55%	13%	2%	6%	10%	3%	8%	3%	0%	100%
Average	56%	9%	1%	10%	11%	3%	8%	3%	0%	100%

Source: [Ref. 3 – 9].

In Ain Shams Planning, Table (3) & Fig.(3) show that the total percentage of design group of the program is 55%. It is distributed as follows: Architecture 25%, planning 2.5%, Urban 14.5%, the project 13%. The internal percentages of the design group are distributed as follows: Architecture 46%, Planning 4%, Urban 28% and project 22%. The architecture design still controls the graduate quality (in urban planning program). The construction percentage rose higher than architecture departments' percentage but the identity of the planner is not clear.

Fig.(3) The percentage of design subgroups at the departments of planning in Egypt.
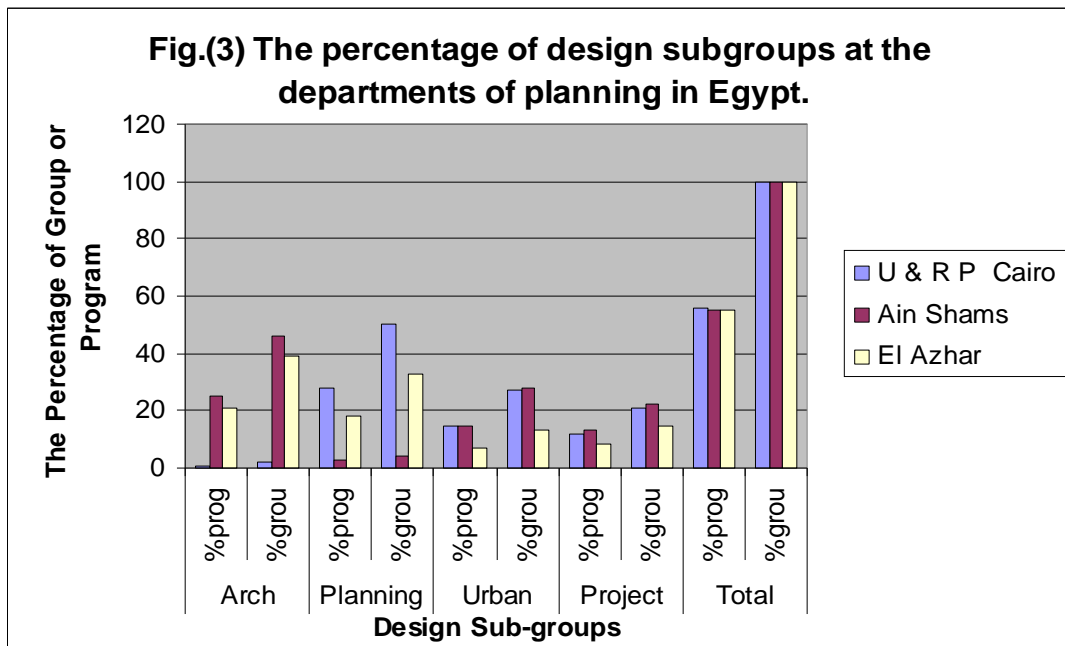
In Cairo Urban Planning, the design group constitute 56% of the program distributed as follows: Architecture 1%, Planning 28%, Urban 15%, Project 12%. The percentage is distributed in this group as follows:

Architecture 2%, Planning 50%, Urban 27%, Project 21%. Planning prevails the design group and the graduate quality. The design group in El-Azhar planning constitutes 55% of the program distributed as follows: Architecture 21.2%, Planning 18.2%, Urban 7.2% Project 8.4%.

Fig.(4): The current Urban Planning Undergraduate Program in Egyptian Universities (study hours in each specialized group)

The percentage is distributed in this group as follows: Architecture 39%, Planning 33%, Urban 13%, Project 15%. The effect of the relative weight is still present whereas it does not represent the graduate quality. The graduation project is common in all these groups. When it is added up to one specialization, it participates effectively in determining the graduate identity through its relative weight. In other words, in the Urban Planning Faculty, if the project 21% is added up to planning 50%, the planning group becomes 71% the graduate then will be a planner. When Ain Shams project 22% is added up to the urban design 28%, the Urban group will be 50%. Al-Azhar will be 15%, project plus planning will be 33% so the planning will be 48%.

Urban & Regional planning faculty and El-Azhar planning will be then a planning group and Ain shams will be an Urban design group.
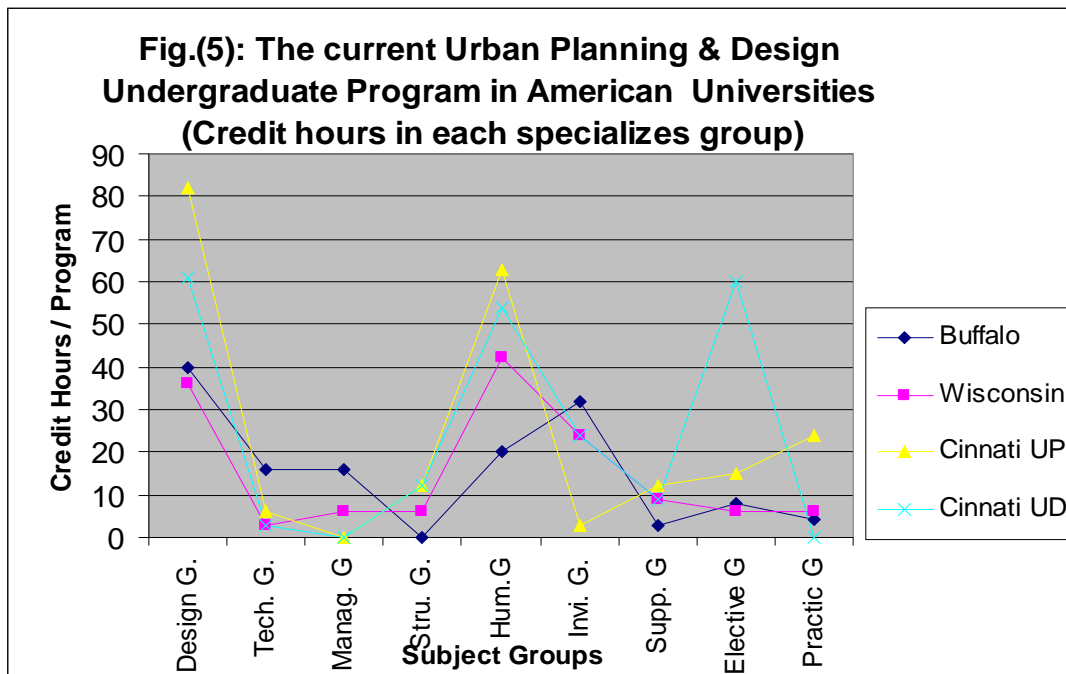
Table (4): The percentage of groups per prog. at planning dept. in America.

Dept. of planning	Design G.	Tech. G.	Manag. G	Stru. G.	Hum.G	Invi. G.	Supp. G	Elective G	Practic G	Total
Buffalo	29%	12%	12%	0%	14%	23%	2%	6%	3%	100%
Wisconsin	26%	2%	4%	4%	30%	17%	7%	4%	4%	100%
Cincinnati UP	38%	3%	0%	6%	29%	1%	6%	7%	11%	100%
Cincinnati UD	27%	1%	0%	5%	24%	11%	4%	27%	0%	100%
Average	**30%**	**4%**	**4%**	**4%**	**25%**	**13%**	**5%**	**11%**	**5%**	**100%**

Source:[12]

On the other hand, the total percentages of the design and technological groups, in American departments, when compared with the similar Egyptian ones shows that it reaches 34% in American departments against 65% in Egyptian ones. Also, the percentage of management, environment, and practice groups reaches 22% in American departments against 4% in Egyptian ones, see Table (3,4) & Fig.(5).
This means the same conclusion above.

Fig.(5): The current Urban Planning & Design Undergraduate Program in American Universities (Credit hours in each specializes group)

The new curricula was based on:

General criteria – sets the standards that must be met by all architects and planners.

Program criteria – specifies criteria what elements must be met each specialty (discipline) according to the AUIWM needs. The program criteria amplifies the general criteria, but is not in conflict with it.

Table (5): Principles to be used in curricula development:

Process of Learning	Deep learning
	Collaborative learning
	Hands-on experience
	Active learning
	Appropriate examination procedures
	Reduce overload and boredom
Fundamental Processes	Design
	Problem solving
	Communication

Timing	Engineering in first year
	Articulation of theory and application
Content	Reduce factual load
	Reduce total content
	Some specialization in a broad degree
	Accreditation not a constraint
Personal Development	Promote personal development throughout
	Prepare for lifelong learning
	Provide appropriate support
	Build confidence
	Allow appropriate flexibility

Source: These principles have been culled from a variety of sources(Sparkes, 1991, 1993- D.M. Fraser, 1995)[1]

In order to effectively address the changes required, a set of principles are developed, starting with the learning processes then some fundamental processes which need to be embodied throughout the curricula, next issues of the timing of material, followed by factors which affect content, and finally matters pertaining to personal development.

Curricula changes to meet market needs:

The relationship between education and employment, and school-to-work transitions has been the subject of substantial research over the last decade. High unemployment rates for youths have caused concern for twenty years, leading researchers and policy-makers to focus on the school-to-work transition stage of young peoples lives.

Over the last 20 years, most educational changes in the workforce are due to rapid technological and autonomous educational changes. Although technological change is one of the main factors, autonomous educational change (due to other factors) is almost equally as important. Also, Most educational change in the labour market occurs within occupational groups not between them. In many occupational/industrial settings educational change may come first and then technical change is facilitated. However, within certain occupational/industrial groups technical change appears to be the main driver.

Therefore, future policy should focus more on the necessity to bring qualifications up to minimum threshold levels (legitimized by employers or labour market needs) as well as addressing the individual educational/ developmental needs of clients.

As shown in Fig.(6), The diagram represents this relationship and translates the interaction between architecture & urban planning

education and the market needs in a cycle, which summarizes the following facts:

- Market needs are shaping architecture & urban planning education more than ever.
- Experiential learning and an integrated classroom curricula are a powerful combination.
- Students gains skills and attitudes from experiential learning projects.
- Then, the market generates a new needs (opportunities) of specializations.

Fig.(6): The relevance of Architecture & Urban Planning Education – Market Needs Cycle
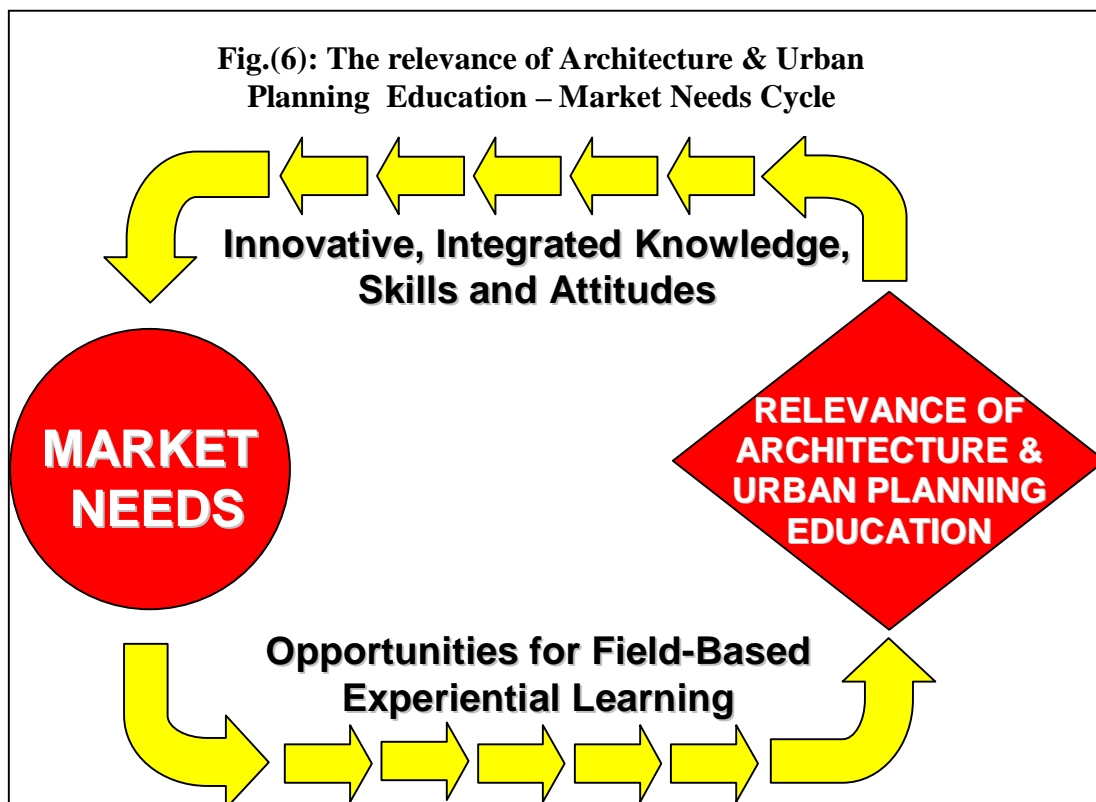
Because off the scenario developed here is based on studying the market needs, International competitiveness has become a major issue for architects in every developed country, as well as for those in technically emerging countries.

Thus the diagram in Fig.(7) summarizes the different kinds of graduate programs (undergraduate and post graduate) in Egypt and America, and its relationships with national and international market.

The undergraduate program in Egypt produce a general practitioner engineer or designer who works in a various specialized branches, but in

America, the concept is different. The graduate must pass a qualified exam or study two years for the required specialization (opportunity).
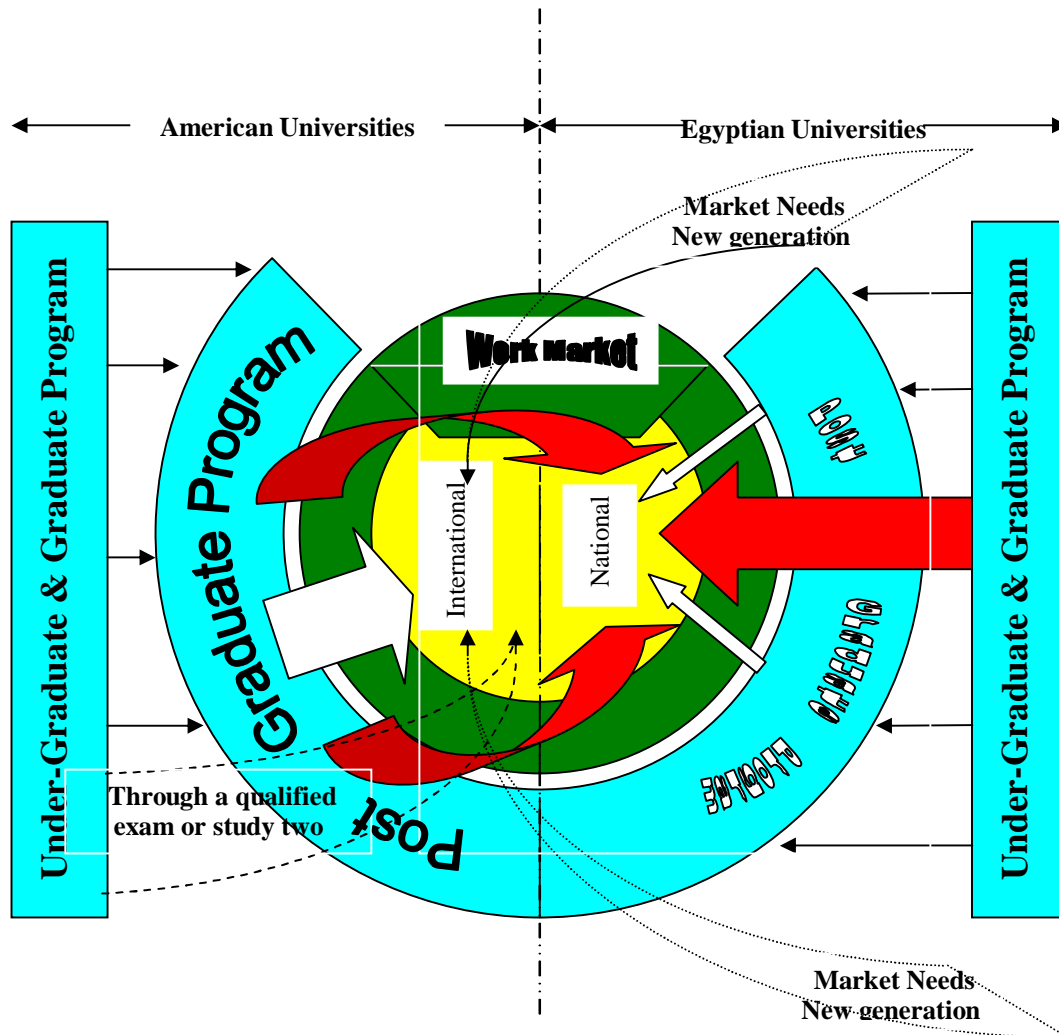

Fig. (7): Current and future challenges of AUIWM competitions

The Proposed ACAUP-AUIWM Interactive Systemic Structure:

Although, the identity of the Private Universities is not clear enough, we hope several specializations reflecting the mechanism of Urban and architecture Work Market will emerge. The private university is new and it is concerned only with graduating an architecture designer.

The researcher propose, therefore, to reform the concept of graduating engineers in departments of architecture and urban planning and to structure the architecture and Urban education according to AUIWM needs using curricula changes of undergraduate program.

Fig.(8):The Proposed AUIWM–ACAUP Interactive Systemic structure
"The Current Gap"
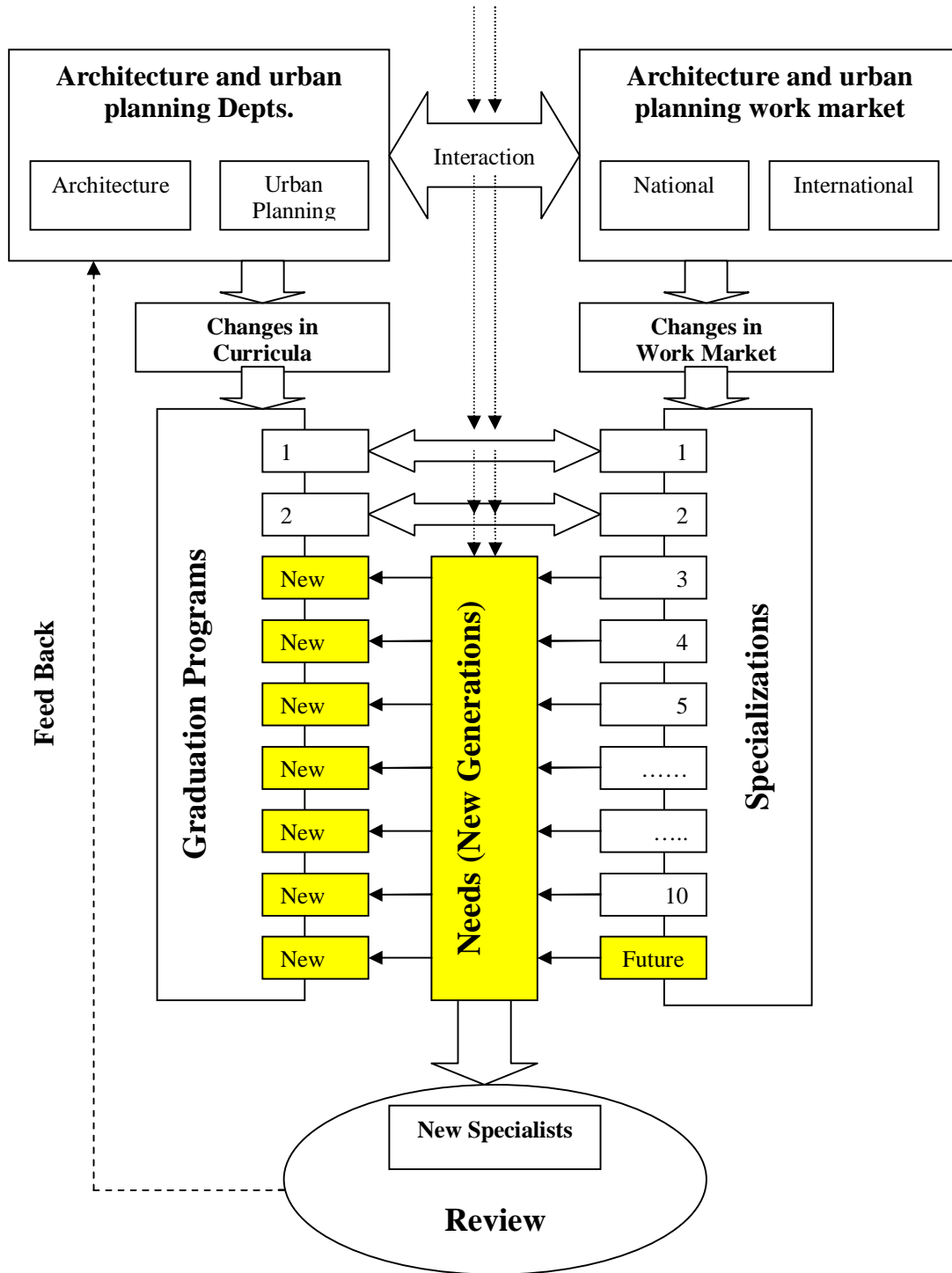
These changes aimed to produce 10 sub-systemic programs which represent integrated branches see Fig.(8). The suggested branches (new generations) based on redistribution of the percentages of the relative weights in each proposed group Table (6).

Table(6):The proposed programs of architecture and urban planning education

New Generations	Design group					Technological Group	Management Group	Structure Group	Humanistic Group	Environmental Group	Supporting Group	Elective Group	Practice	Total
	Plan.	Urban	Landscape	Interior	Arch.									
Policy Planner	4	3	2	1	2	8	10	5	30	14	6	11	4	100
Management Planner	4	3	2	1	2	10	21	4	20	18	4	7	4	100
Physical Planner	19	7	6	1	4	8	8	5	12	12	6	6	4	100
Environmental Planner	10	7	7	1	4	6	6	4	15	24	4	4	5	100
Urban Designer	7	19	6	2	4	10	8	6	11	10	8	5	4	100
Landscape Arch.	4	7	19	2	6	10	8	4	11	12	6	5	6	100
Architecture Designer	4	4	5	7	19	12	7	10	10	9	3	3	7	100
Interior Designer	4	4	5	19	7	12	7	7	10	9	3	7	6	100
Arch.& Plan. Reviewer	7	3	3	2	9	6	9	10	8	8	9	10	10	100
Architecture Engineer	2	2	3	2	8	20	10	14	4	3	4	4	20	100

The proposed programs of architecture and urban planning education is oriented to meet the market needs and briefed in ten specialized groups as follows:

1- Policy Planner.   2- Management Planner.
3- Physical Planner   4- Environmental Planner.
5- Urban Designer.   6- Landscape Architecture
7- Architecture Designer.   8- Interior Designer.
9- Arch. & Plan. Reviewer. 10- Architecture Engineer.

The AUIWM needs **Policies Planner** to work in the Ministry of Housing. He draws up strategies, planning policies, rules and regulations, **The Arch. & Plan. Reviewer** or **Municipality Auditor** ensures the implementation of policies, rules and regulations through City Halls and district authorities, The **Physical Planner** draws up the structural plans of the cities, he also chooses the Urban sites through the New Urban Societies Organization, **The Management Planner** to manage the planning process, **The Environmental Planner** to ensure the required environmental balance, **The landscape Architecture** to the urban land, **The Urban Designer** draws up the visual and urban form of the city, **The Architecture Designer** designs buildings through consulting engineering offices, The Interior Designer to create the indoor

decoration, whereas **the Architecture Engineer** carries out the work through the contractor register.

The proposed organization structure determines the graduate identity and the Work Market oriented specialization.

The theoretical background of this proposed system includes these general criteria:

1. The Identity of a new generations (specializations) is determined according to the AUIWM needs.
2. To determine the relative weights of each specialized group when working according to obligatory subjects.
3. When working according to credit hours, the academic syllabuses should be drawn out to be able to elect from groups associated with a certain type of graduates.

Conclusion:

This paper proposes to set a systemic structure of Architecture and Urban education based on the International Work Market needs. It also redistributes the relative weights of the specialized groups, according to the comparative analysis, which determine the graduate identity which includes ten specialties: starting from

Policy Planner, Management Planner, Physical Planner, Environmental Planner, Urban Designer, Landscape Architecture, Architecture Designer, Interior Designer, Arch. & Plan. Reviewer, and Architecture Engineer.

Public Universities should cooperate with the Private ones in order to implement this systemic taking into consideration the architecture and urban planning international work market needs. To avoid repetition, the job could be divided between them according to the proposed graduations.

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