# Creating a tripled-assessment model of academic programs

## Nadia Ahmed Mohammed[1]

*[1](Master of Architectural Engineering, Faculty of Engineering/Cairo University, Egypt)*

***Abstract :*** *The assessment of academic programs considered the backbone of any internal quality system as it is crucial for determining how, and to what extent, quality improvement systems are effective in educational practices and outcomes. Therefore this paper aims to creating a tripled- assessment model of academic program as it depends on three pillars; credibility, accountability and improvement.  The tripled-assessment model will provide the departments, especially at Egyptian Universities which undergo a transformation period towards implementing its internal quality assurance systems, with a road map for the assessment of its different academic programs, furthermore help policy makers and program developers in taking proper improvement decisions as well.*

***Keywords:*** *self assessment, program assessment, accountability, program accreditation, assessment criteria*

## I.    Introduction

Assessment of program forms the first step to be taken by any department intent to apply for academic or professional accreditation, furthermore the assessment results if linked with decision making it will lead to improving and enhancing the program as a whole.

Therefore the research selected the subject of academic program assessment to be the field of study for its importance. The research begins with identifying the problem and objective, then demonstrating the research methodology to conclude finally with main findings and contributions of the research.

## II.    The research problem and objective

Whoever the national authority of quality assurance and accreditation of education "NAQAAE" in Egypt has developed a guide for departments and faculties to establish their internal quality assurance system which depended mainly on self assessment process, we are still missing a comprehensive model of program assessment that provide a clear strategy for the assessment.

Therefore, the research aims to creating a tripled model of academic programs assessment characterizes with comprehensiveness as it identifies the aims and strategic objectives of the assessment, how the program will be assessed, who will be responsible for assessment process, and what are the criteria that the program will be evaluated against.

## III.    The research methodology

The research methodology consists of three parts; literature review, analysis study and the application study which consists of sex phases as follows;

   – Developing a theoretical approach.
   – Purpose identification of program assessment
   – Identifying The self-assessment process
   – Developing main assessment criteria of program
   – Creating the final assessment model of academic program
   – Evaluation of the final assessment model.

## IV.    Literature review

The objective of reviewing relevant literature is to understand the meaning of self-assessment and the program assessment, how the program is evaluated, and what the different approaches in evaluation of programs are.

### 1.1 The self- assessment

Self-assessment is an internal evaluation that makes graded judgments about quality. Assessment indicates the actual process of evaluation (reviewing, measuring, and judging) of the quality of higher education institutions and programs. It consists of those techniques, mechanisms and activities made by internal body in order to evaluate the quality of the higher education processes; practices, programs and services to ensure that it

is fulfilling its own purposes as well as the standards that apply to higher education in general or to the profession or discipline in particular [1].

Different situations could probably be seen as stages in the development of a self-assessment capability:

– The first level is the provision of basic data and information regarding each of the standards or criteria;
– The second level is the analysis and evaluation; and
– The third level, which is what should be achieved, is to report on the level of the standards or criteria actually being met.

The capacity to prepare an evaluative self-assessment report (third level) is the desirable stage in the development of internal quality assurance capacity among institutions. However, it puts many institutions in a very difficult position.

Under self-assessment, academics and administrators within the department/institution discuss the strengths and weaknesses in their units and identify causes for possible weaknesses based on a catalogue of either open questions or indicators to be collected. They usually decide for themselves on strategies to be used, aiming at quality improvement. This has the advantage of directly involving competent professionals who will be in charge of implementing reform action. In the long term, it helps set up a culture concerned with quality.

the underlying assumption in insisting on self-assessment is that an institution that really understands itself — its strengths and weaknesses, its potentials and limitations — is likely to be more successful in carrying out its educational mission than one without such self-awareness. Therefore Self-assessment is seen as the backbone of the quality assurance process. It is through the self-assessment report that the external review team tries to understand and evaluate the institution or program prior to the site visit [1].

### 1.2 Program assessment

Program assessment defined as " a systematic process of gathering, reviewing and using important quantitative and qualitative data and information from multiple and diverse sources about educational programs, for the purpose of improving student learning, and evaluating whether academic and learning standards are being met [2].

Institutions of higher learning are becoming increasingly involved in conducting assessment within their academic programs and administrative support organizations. The desire to know how well the institution and its programs are doing and to improve service and student learning are all motivators for conducting assessment. Institutions are facing internal and external pressures to increase quality. Increasingly, various organizations that accredit academic programs (e.g., NCATE, ABET, and AACSB) are requiring that institutions assess how well the programs are meeting their objectives to inform improvement efforts [3].

Assessment of programs as a type of self assessment that the research focuses has different approaches, Stufflebeam in his study "Foundational Models for 21st Century Program Evaluation" classified these different approaches into four categories as follows [4].

### 1.2.1 Pseudo evaluations

The term was the first used by the author, such studies often are motivated by political objectives, e.g., persons holding or seeking authority may present unwarranted claims about their achievements and/or the faults of their opponents or hide potentially damaging information. If evaluators acquiesce to and support pseudoevaluations, they help promote and support injustice, mislead decision making, lower confidence in evaluation services, and discredit the evaluation profession. It addressed to be avoided as invalid practices [4].

### 1.2.2 Questions/Methods-Oriented Approaches

The second category of approaches includes studies that are oriented to address specified questions whose answers may or may not be sufficient to assess a program's merit and worth and/or to use some preferred method(s). These Questions/Methods-Oriented Approaches include studies that employ as their starting points operational objectives, standardized measurement devices, cost analysis procedures, expert judgment, a theory or model of a program, case study procedures, management information systems, designs for controlled experiments, and/or a commitment to employ a mixture of qualitative and quantitative methods.

Since these approaches tend to concentrate on methodological adequacy in answering given questions rather than determining a program's value, the set of these approaches may be referred to as quasi-evaluation approaches. While they are typically labeled as evaluations, they may or may not meet the requirements of a sound evaluation [4].

### 1.2.3 Improvement/Accountability-Oriented Evaluations

The third set of approaches involves studies designed primarily to assess and/or improve a program's merit and worth. These are labeled Improvement/Accountability-Oriented Evaluations. They are expansive and

seek comprehensiveness in considering the full range of questions and criteria needed to assess a program's value. Often they employ the assessed needs of a program's stakeholders as the foundational criteria for assessing the program's merit and worth.

They seek to examine the full range of appropriate technical and economic criteria for judging program plans and operations. They also look for all relevant outcomes, not just those keyed to program objectives. Such studies sometimes are overly ambitious in trying to provide broad-based assessments lead in to definitive, documented, and unimpeachable judgments of merit and worth. Typically, they must use multiple qualitative and quantitative assessment methods to provide cross-checks on findings. In general, these approaches conform closely to this paper's definition of evaluation [4].

### 1.2.4 Social Agenda/Directed approaches

The fourth category of approaches is labeled Social Agenda/Directed (Advocacy) Models. The approaches in this group are quite heavily oriented to employing the perspectives of stakeholders as well as experts in characterizing, investigating, and judging programs. Mainly, they eschew the possibility of finding right or best answers and reflect the philosophy of postmodernism, with its attendant stress on cultural pluralism, moral relativity, and multiple realities.

Typically, these evaluation approaches favor a constructivist orientation and the use of qualitative methods. These evaluation approaches emphasize the importance of democratically engaging stakeholders in obtaining and interpreting findings. They also stress serving the interests of underprivileged groups. Worries about these approaches are that they might concentrate so heavily on serving a social mission that they fail to meet the standards of a sound evaluation [4].

## V. Analysis of general assessment approaches of programs

The study of alternative evaluation approaches is vital for the professionalization of program evaluation. Professionally, analytical study of the approaches being of program evaluation will ultimately help in developing an appropriate approach of academic program assessment.

Stufflebeam in his study "Foundational Models for 21st Century Program Evaluation" classified, analyzed and criticized the different approaches of program evaluation. The current research identified the most applicable approaches in the assessment of academic programs to be analyzed which are:

  – Objectives-Based evaluation;
  – Outcomes Monitoring/Value-Added Assessments;
  – Decision/Accountability-Oriented Studies and
  – Accreditation/Certification Approach.

Table 1 summarizes all four approaches and illustrates their objectives and methods in addition to evaluating them.

Table 1.Analysis of some approaches of program evaluation (Source: [4].

| General approaches of program evaluation | | | | |
|---|---|---|---|---|
| | **Objectives-based evaluation** | **Outcomes monitoring/value-added assessments** | **Decision/accountability-oriented approach** | **Accreditation/ Certification approach** |
| **Objectives** | ▪ Determine whether the program's objectives have been achieved.<br>▪ Compare students' test performance to standards | ▪ Evaluating how far particular programs adding value to students' achievement<br>▪ Pinpoint responsibility for good & bad outcomes<br>▪ Diagnose program Shortcomings<br>▪ Direction for program improvement<br>▪ identifying To what extent are program successes and failures associated with the system's different organizational levels<br>▪ Compare performance of competing programs<br>▪ Inform policymaking<br>▪ Ensure standardization of outcome measures | ▪ Provide a knowledge and value base for decisions | ▪ Approve/ recommend professional services |

| | | | | |
|---|---|---|---|---|
| **Methods** | ▪ Operational objectives<br>▪ Criterion-referenced test<br>▪ Management by objectives<br>▪ Independent goal achievement auditors | ▪ Standardized testing<br>▪ Computerized or other database<br>▪ Policy analysis | ▪ Surveys - Observations<br>▪ Needs assessments- Interviews<br>▪ Case studies - Resident evaluators<br>▪ Checklists - Advocate teams | ▪ Observations<br>▪ Interviews<br>▪ Self-study<br>▪ Site visits by expert<br>▪ panels |
| **Strengths** | ▪ Common senses appeal<br>▪ Widely known & applied<br>▪ Employs operational objectives<br>▪ Employs the technology of testing Focuses on outcomes. | ▪ Systematization and standardization of a database of outcomes that can be used for policymaking, accountability to constituents, and feedback for improving programs.<br>▪ Popular among constituents and Politicians.<br>▪ Efficient means of data collection<br>▪ Stress and validity & reliability<br>▪ Monitors progress on each student.<br>▪ Emphasizes service to every student.<br>▪ Hierarchical analysis of achievement<br>▪ Conducive to policy analysis<br>▪ Employs trend analysis<br>▪ Considers contextual influences<br>▪ Focuses on outcomes. | ▪ Keyed to professional standards<br>▪ Examines context, inputs, process, & outcomes<br>▪ Balances use of quantitative and qualitative methods<br>▪ Integrates evaluation into management operations<br>▪ Targets constituents' needs<br>▪ Stresses program improvement<br>▪ Provides basis for accountability<br>▪ Involves and addresses the needs of all stakeholders<br>▪ Serves decision making at all system levels<br>▪ Promotes & assists uses of evaluation findings<br>▪ Emphasizes democratic principles<br>▪ Produces a comprehensive assessment of merit & worth<br>▪ Provides formative & summative evaluation | ▪ Keyed to professional Standards<br>▪ Balances use of quantitative and qualitative methods<br>▪ Provides basis for accountability<br>▪ Involves and addresses the needs of all stakeholders<br>▪ Promotes & assists uses of evaluation findings<br>▪ Stresses an independent perspective<br>▪ Stresses consumer protection<br>▪ Produces a comprehensive assessment of merit & worth<br>▪ Grades the quality of programs & institutions. |
| **Limitations** | ▪ May credit unworthy objectives<br>▪ May employ only lower-order learning<br>▪ Objectives<br>▪ Yields mainly terminal information that<br>▪ lacks utility for program improvement<br>▪ Provides data only on<br>▪ May provide too narrow an information<br>▪ basis for judging a program's merit&<br>▪ worth student outcomes<br>▪ May miss important side effects | ▪ May employ only lower-order learning objectives<br>▪ Relies almost exclusively on multiple choice test data<br>▪ May reinforce & overemphasize multiple choice test taking ability to the exclusion of writing, speaking, etc.<br>▪ Provides data only on student outcomes<br>▪ May provide too narrow an information basis for judging a program's merit &worth<br>▪ May poorly test what teachers teach<br>▪ Low feasibility<br>▪ May issue invidious comparisons<br>▪ May produce unhealthy competition<br>▪ May provoke political unrest<br>▪ May oversimplify the complexities<br>▪ involved in assigning responsibility for student learning gains to individual teachers<br>▪ May miss important side effects | ▪ Involved collaboration with client/stakeholders may engender interference & bias<br>▪ Influence on program operations may compromise the evaluation's independence<br>▪ Carries connotation that top decision makers are most important<br>▪ May overemphasize formative evaluation and under employ summative evaluation | ▪ Involved collaboration with client/stakeholders may engender interference & bias<br>▪ May overstress intrinsic criteria<br>▪ May underemphasize outcome information<br>▪ Includes many opportunities for evaluation to co-opt & bias the evaluators |

## VI. Application study

Application study divided into sex phases as follows;

- Developing a theoretical approach.
- Purpose identification of program assessment
- Identifying The self-assessment process
- Developing main assessment criteria of program
- Creating the final assessment model of academic program

    – Evaluation of the final assessment model

## 1.3 Developing a theoretical approach of the assessment model

        Reviewing and criticizing the different theoretical approaches of academic program assessment revealed that depending on one approach of assessment would not be sufficient in fairly judging the quality of academic programs. So, the research adopt a tailored approach by combining three approaches; the decision-oriented, the accreditation, and the system approach to reach a comprehensive assessment whereas the shortcomings of each approach are effectively coped.

## 1.4 The main principles of the tailored approach

        The main principles of the tailored approach are summarized as follows:

– The purpose of the tailored approach on one hand providing a knowledge and value base for making assessment of academic program accountable for and coordinate with decision making concerning the improvement of such program.

– On the other hand the approach aims to meeting accountability demands by assuring the necessity of compliance with national and international accreditation criteria of each program regarding its specification to gain the national and global confidence.

– The system view of the tailored approach reflects in considering the academic program as a network of interdependent components that work together to accomplish the aim of the program, the main components of the program are input, process and outcome in addition to the context or external environment. The feedback is a key feature of the system in achieving desired objectives of the evaluation process.

– Consequently the assessment model will concern with the extent to which the four components (context, input, process and outcome) are evaluated as follows:

▪ Context evaluation: Evaluating the external environments that affect the academic program. Context evaluation provides information for the development of mission, vision, values, goals and objectives, and priorities, identify and diagnose the problems which might inhibit achieving the goals and objectives so it serves planning decisions.

▪ Input evaluation: evaluating the various resources needed to run the program, SWOT analysis, e.g. facilities, customers, clients, program staff, etc. So, it serves structuring decisions related to development of program designs and setting strategies to meet needs and bridge the gap.

▪ Process evaluation: evaluating how the program is carried out, e.g. students are taught and assessed, knowledge is delivered, etc. So it serves implementation decisions.

▪ Outcome evaluation: Evaluating the impacts of program on the students and their attributes and skills, e.g. number of students taught, graduates' attributes, student performance, research work produced, etc. it serves recycling decisions concerning accepting, amending, or terminating the program, using criteria related to the goals and objectives. Fig.1 illustrates the tailored approach of assessment model.

## 1.5 Purpose identification of academic program assessment

    In designing a self assessment model, specific questions need to be answered; Why to assess a program? How to be assessed? Who are responsible for the assessment process? What are the stages and mechanisms, and which methods and tools could be used? All these questions come to mind when any institutions intend to assess its program. The answer of the first question (why to assess) identifies the objectives and motivation for assessing any academic program.

        From reviewing the definition of program assessment it can be concludes with the objectives of the assessment process of academic program in a way that reflecting a subtle balance between accountability of program and its continuous improvement requirements. So, the objectives of assessment are triple, to prove, to inform and to improve through;

    – Credibility through measuring how far the program achieves its aims, mission and objectives.

    – Accountability by meeting the stakeholders' demands and gain their satisfaction through assuring the compliance of the program with the nationally and internationally minimum standards of quality assurance and accreditation.

    – Continuous improvement through linking the results of assessment with decision making and providing feedback to determine the priorities of improvement to make effective decisions.
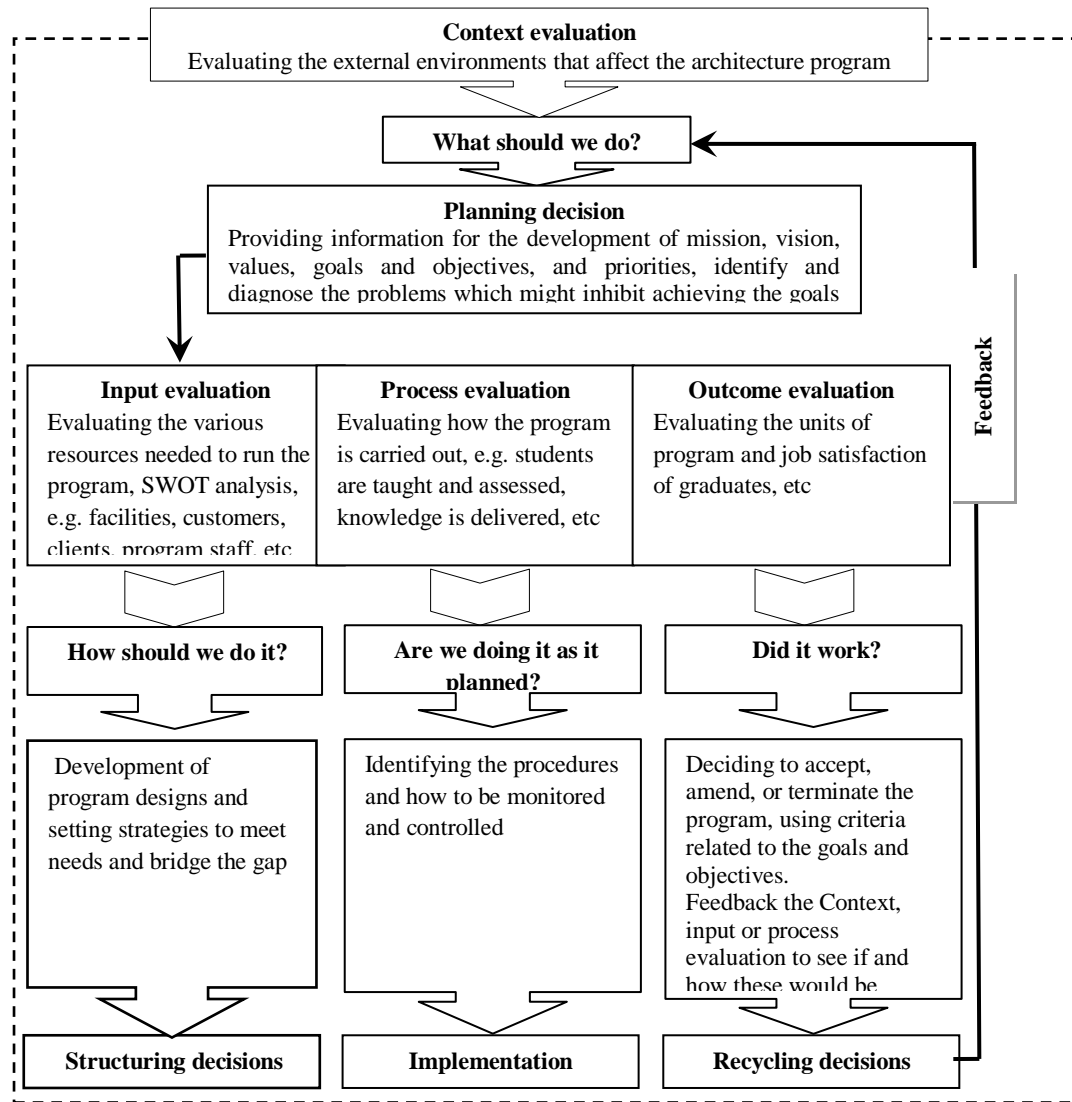
Figure 1.The Tailored Approach of program assessment (Source: the researcher).

## 1.6 Identifying the program assessment process

The assessment process within the tailored approach is considered a systematic process of collecting, processing, analyzing and interpreting data regarding certain entities and certain criteria used aiming to give information useful for future improvements [3]. These stages are defined in "The Deming cycle" or wheel; it consists of a series of four separate but interlinked activities and contributes to the stabilization of the assessment process and enables the identification of continuous improvement opportunities as the plan-do-check-act cycle provides the basis for developing assessment plans that match the needs of the program [5]. So, the self-assessment process combines four phases as follows:

### 1.6.1 Plan phase

Before developing a plan for assessment, it should firstly define and scan the external environment that affect the academic program and. This environmental scanning is conducted at a macro level, by identifying the political, economic, social and technological factors that indirectly affect academic education in Egypt, in addition to at a micro level including the recent challenges and architectural trends that directly affect the academic program. Then the collected information form environmental scanning should be analyzed in terms of strengths, weakness, opportunities or threats "SWOT analysis" that support or impede achieving the goals of academic program to define the gap between what existed and what needed.

Depending on context evaluation the assessment plan is developed by identifying firstly who responsible for the assessment process, and then identifying, developing and carefully articulating the program's mission, goals, and outcomes.

Within this phase all stakeholders such as academic and management staff, student's representative graduates and professional bodies must be involved in a negotiation process where each stakeholder needs to formulate, as clearly as possible, his requirement and needs and the department must try to reconcile all these different wishes and requirements and translate it into the expected learning outcomes of the program [6]. This phase consists of five steps as follows:

### 1.6.1.1A self- assessment team and its responsibilities

As mentioned in previous chapter, the Self-assessment team is responsible for the assessment process of academic program, chaired by a coordinator and combines as main members;
- Academic staff (including teaching and assistant staff)
- Students' representative
- Administrator/s
  And supported by external stakeholders for consultancy including;
- Quality assurance of higher education expert or researcher for technical advising
- Employers' representatives; as Academic and contracting Companies
  The responsibilities of commission include the following:
- Plan, coordinate and organize procedures for the self assessment process including the data collection to identify the extent to which the program meets the standards.
- Developing specific criteria of academic program and continuously assuring its alignment with national ones set by NAQAAE, and with the minimum international standards set by international professional bodies.
- Preparing the self study report of academic program.
- Identifying priorities of improvement.

### 1.6.1.2Define the mission of the program

The program mission is a broad statement of the directions, values and aspirations of the department with regard to its programs. It should provide a clear description of the purpose of the program and the learning environment [7]. For a given program, the mission statement should, in specific terms, reflect how the program contributes to the education and careers of students graduating from the program.  Mission statements for academic programs should reflect how the teaching and research efforts of the department are used to enhance student learning. The mission should be aligned with the Department, College, and University missions.   In addition, the mission should be distinctive and indicates who the stakeholders are [3].
The following questions help in defining and evaluating the mission [7].
- What are the general values and principles that will guide the program?
- What are the general characteristics and abilities of the ideal graduate?
- Whom will the program serve, and how?
- In what specific ways is the program mission consistent with the University's mission and strategic plan?
- Is program mission certified and disseminated via various means inside and outside the institution?
- Are there official mechanisms for the mission regular review? The criteria of developing program mission illustrated in Fig.3.

### 1.6.1.3Define the goals of the program

Goals are broad statements that describe the long-term program targets or directions of development. They state in broad terms what the program wants to accomplish (in terms of student outcomes) or to become over the next several years. In order for program assessment to be successful, the department must reach a consensus on the goals of the program and have an understanding of what the program is trying to accomplish, as well as how the goals are addressed in the curriculum [7].

The goals of a program must be consistent with those of the school or college. The goals statement addresses the following questions:
- For each principle of the mission, what are the major categories of knowledge and abilities are intended for graduates to develop?
- Describe in broad strokes the kinds of strengths, skills, knowledge, and values of your ideal graduate?
- What kinds of career achievements do you hope will distinguish your graduates?
- How do your program goals relate to the program mission? How do they relate to the University's mission and goals?
- Does the program development team participate in identifying and stating its planned goals?
- Are the goals certifies and disseminated via various means inside and outside the institution?

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┌──────────────────────────┐
│  Program Mission criteria │
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        ┌─────────────────────────────────────────────┐
        │ A clear description of the purpose of the program │
        │ and the learning environment                  │
        └─────────────────────────────────────────────┘
        ┌─────────────────────────────────────────────┐
        │ Aligned with the Department, College, and     │
        │ University missions                           │
        └─────────────────────────────────────────────┘
        ┌─────────────────────────────────────────────┐
        │ Certified and disseminated                    │
        └─────────────────────────────────────────────┘
        ┌─────────────────────────────────────────────┐
        │ Reflecting how to enhance student learning    │
        └─────────────────────────────────────────────┘
        ┌─────────────────────────────────────────────┐
        │ Distinctive and indicates who the stakeholders are │
        └─────────────────────────────────────────────┘
        ┌─────────────────────────────────────────────┐
        │ Having mechanisms for regular reviewing       │
        └─────────────────────────────────────────────┘
        ┌─────────────────────────────────────────────┐
        │ The core values of the institution are clearly reflected │
        │ in the mission Statement.                     │
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        │ Adopting the major stakeholders' perspective  │
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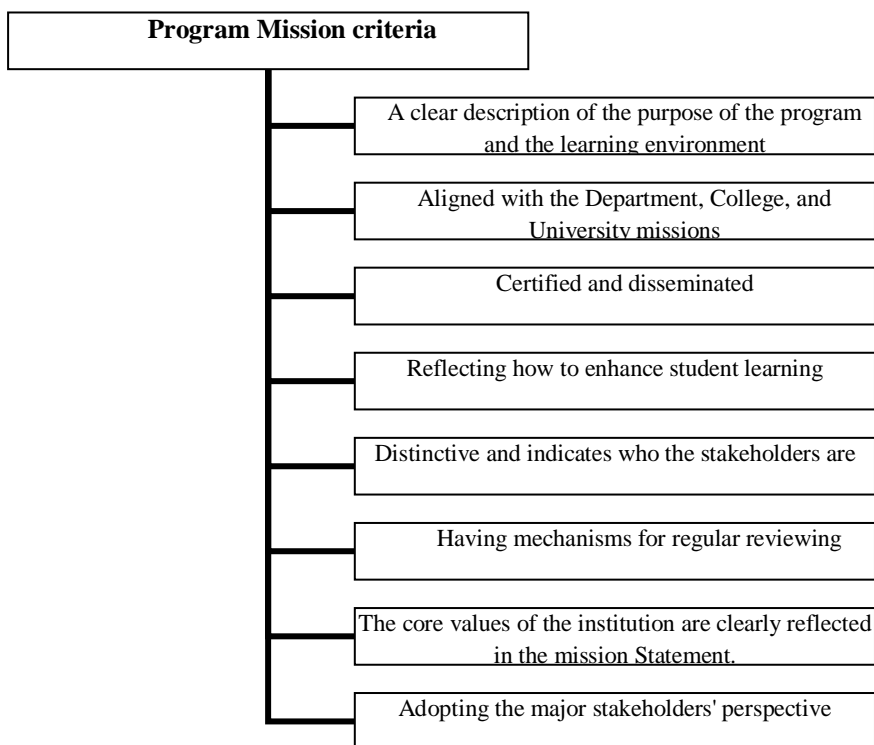
Figure 3.Program mission criteria (Resource: the researcher)

Example of statement of Goals: The department will produce graduates who:
- Understand and can apply fundamental concepts of the discipline.
- Communicate effectively, both orally and in writing.
- Conduct sound research.
- Address issues critically and reflectively.
- Create solutions to problems.
- Work well with others. Fig.4 illustrates the criteria of developing program goals.
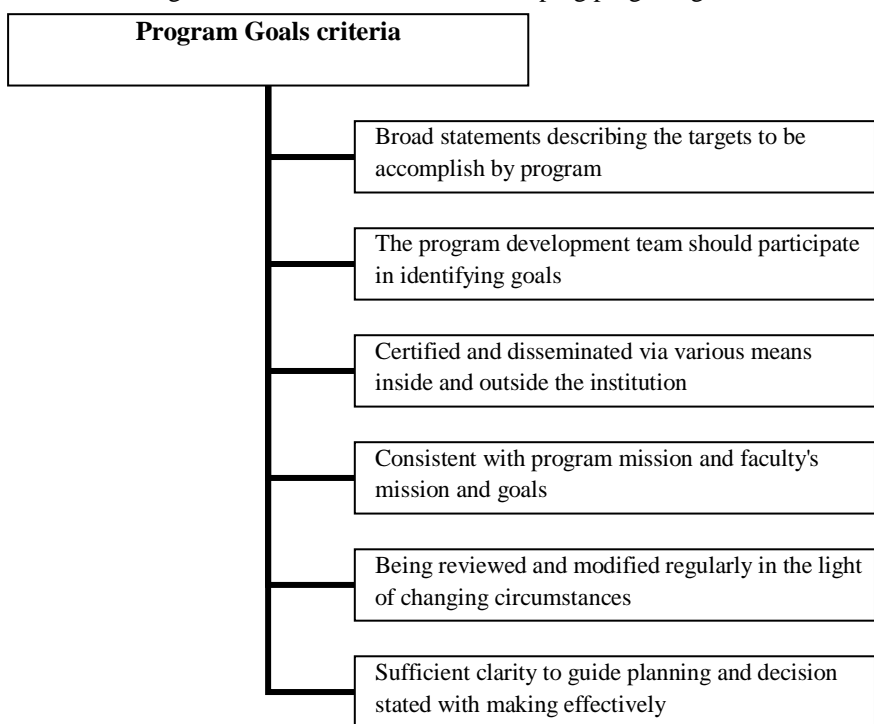
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┌──────────────────────────┐
│  Program Goals criteria   │
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        ┌─────────────────────────────────────────────┐
        │ Broad statements describing the targets to be │
        │ accomplish by program                         │
        └─────────────────────────────────────────────┘
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        │ The program development team should participate │
        │ in identifying goals                          │
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        │ Certified and disseminated via various means  │
        │ inside and outside the institution            │
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        │ Consistent with program mission and faculty's │
        │ mission and goals                             │
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        │ Being reviewed and modified regularly in the light │
        │ of changing circumstances                     │
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        │ Sufficient clarity to guide planning and decision │
        │ stated with making effectively                │
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Figure 4.Program goals criteria (Resource: the researcher)

**1.6.1.4Define the intended learning outcomes (ILOs) of the program**

Program goals are general while program outcomes are more specific and reflect the broader goals. The learning outcomes of a program describe the intended educational outcomes in terms of specific abilities, knowledge, values and attitudes that students in the program to possess [3].The following criteria can be used to develop and evaluate student learning outcome statements:

− Aligned with mission statements and goals of program
− Describe intended learning outcomes and not the actual outcomes.
− Focus on the learning result and not the learning process.
− Focus on what students learn not on what the course covers.
− Concise and understandable by all interested groups including students, parents, faculty, and others specific to the program.
− Describe how students can demonstrate that they have the knowledge, skills, and/or attitudes/values specified in the goals by using different methods of assessment.

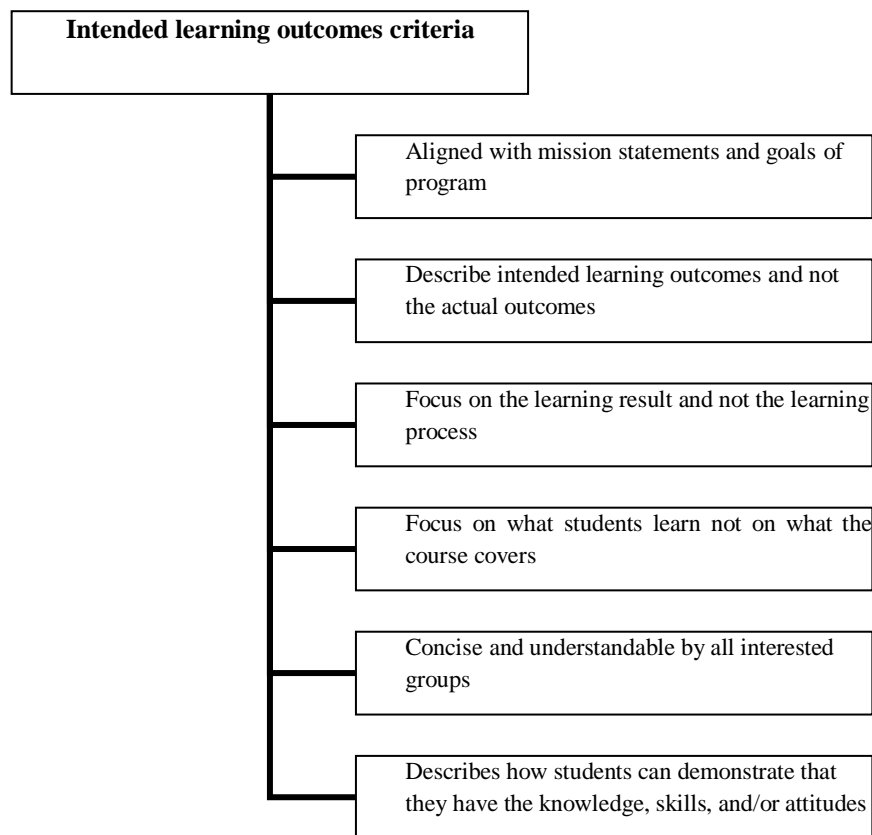Fig.5 summarizes the criteria of developing intended learning outcomes.

**Intended learning outcomes criteria**

Aligned with mission statements and goals of program

Describe intended learning outcomes and not the actual outcomes

Focus on the learning result and not the learning process

Focus on what students learn not on what the course covers

Concise and understandable by all interested groups

Describes how students can demonstrate that they have the knowledge, skills, and/or attitudes

Figure 5.intended learning outcomes criteria (Resource: the researcher)

**1.6.1.5Develop an assessment tool**

In this step, the assessment team develops an assessment tool for measuring to what extend the academic program meets its standards and achieves its goals.

So, the team need firstly to develop assessment criteria of academic program and its indicators or evidences through national level consultation to assure the desired level of engagement of all stakeholders, taking into account the national assessment criteria of academic programs and the consistency with minimum international standards of academic program set by professional and accreditation bodies.

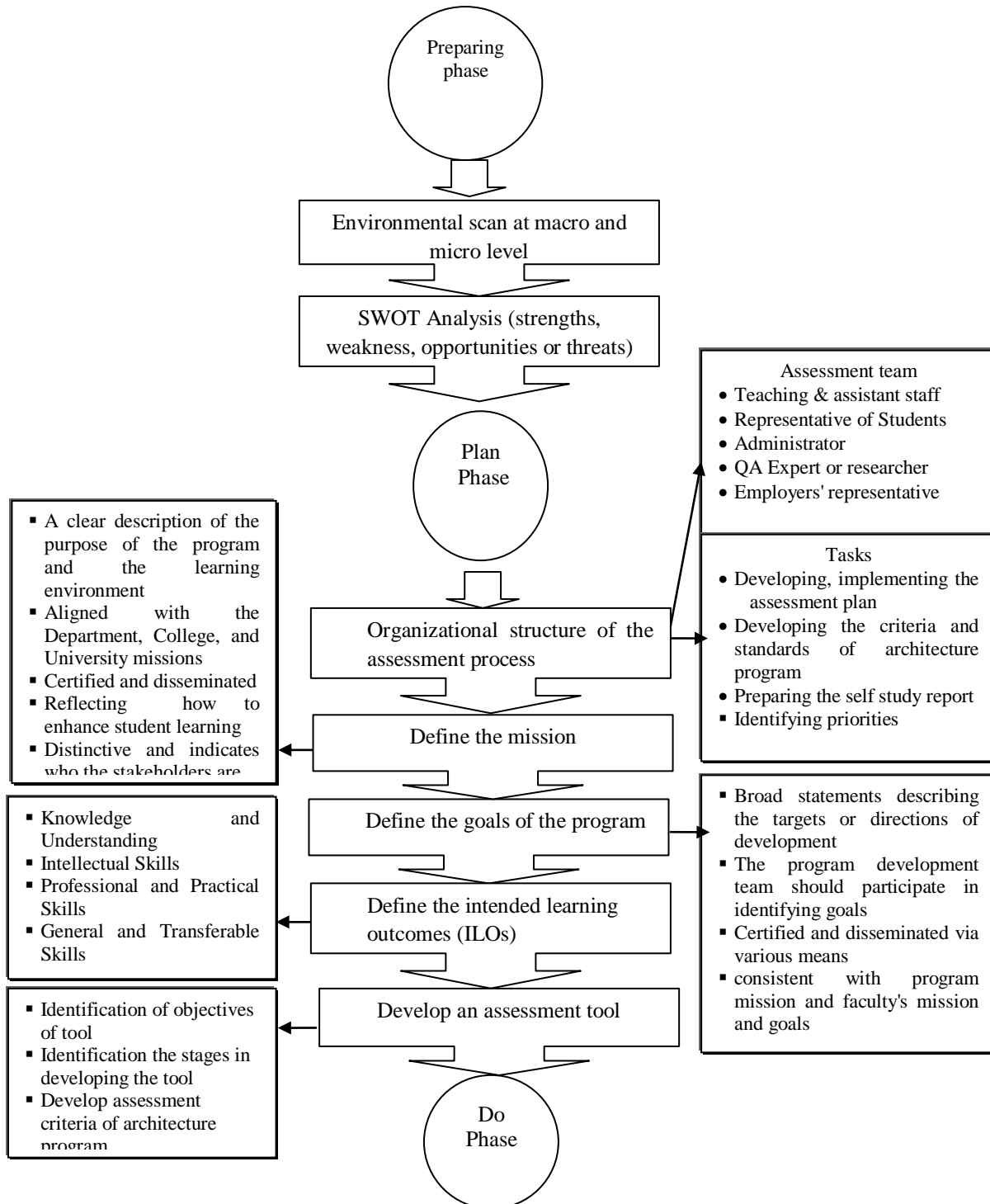Fig.6 summarizes the plan phases and its consequent steps.

Figure 6.Plan phase (Resource: the researcher)

**1.6.2 Do phase**

After developing the assessment plan, it should be implemented and evaluating the program against predefined criteria. This phase comprises the following steps:

**1.6.2.1 Select assessment methods and tools of measurement**

Assessment methods are varied based on the focus of the assessment as follows;
- Student learning
- Program and department processes
- Curriculum

The effectiveness of assessment depends on making a combination of qualitative and quantitative methods, direct and indirect ones.

**1.6.2.2 Collecting data and evidences for each criteria**

After developing the specific criteria of academic program, it should have an official approval from faculty, department council and national institution of quality assurance and accreditation, then the team will collect the data and prepare the different evidences that needed for meeting each criterion. Fig.7 summarizes Do phase.
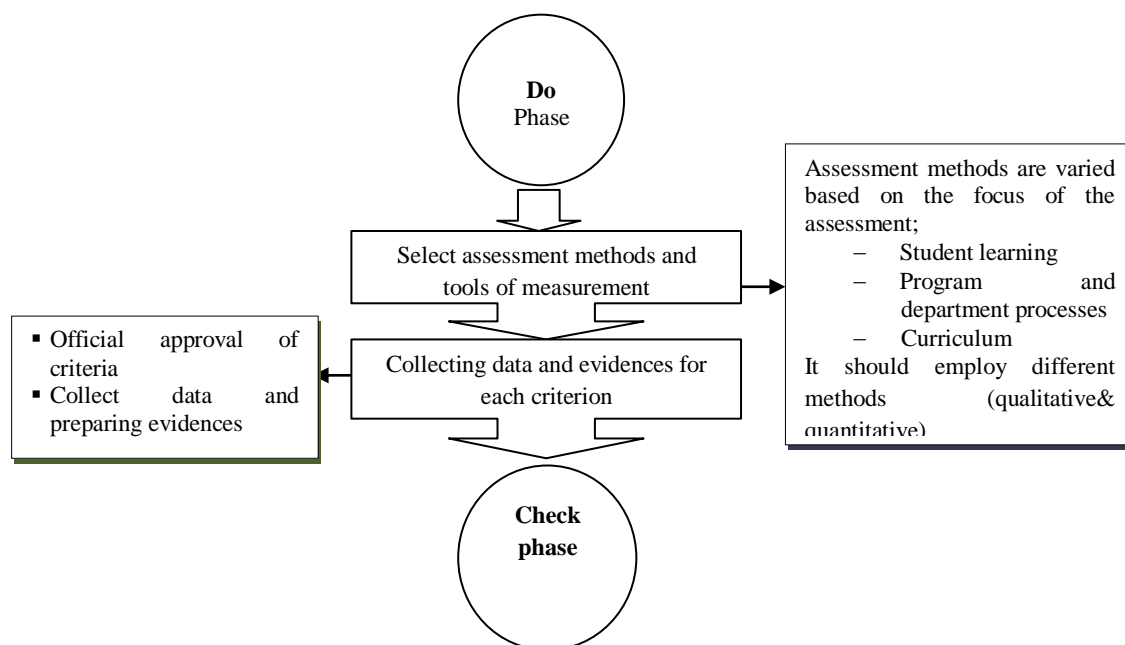
Figure 7.Do Phase (Resource: the researcher)

**1.6.3 Check phase**

The purpose of this phase is to analyze the results and determine what actions need to be taken to improve the program. This phase comprises two steps:

**1.6.3.1 Analyze the results**

After the data have been collected, the assessment team will analyze the results. It is important to summarize the results in a meaningful way so that the department can review them and determine what actions are needed. In supporting the analysis process, there are general recommendations that would be helpful for assessment team as:

- Presenting data in relation to identified goals and objectives
- Selecting and using appropriate procedures for data analysis
- Using both qualitative and quantitative methods to present a well-balanced picture of the program
- Tailoring the analysis and reporting procedures to the identified audience(s)
- Identifying the strengths and weaknesses of the academic program [8].

There are different tools used in analysis and evaluation the program. One of these tools for example is the "strengths and weakness" analysis which serve as a check to see how far program is in compliance with the given criteria. This is best done using the checklist; the program will be evaluated on predefined scale such and then give a meaning for each score. So, the assessment team could draw a final conclusion with identification the strengths and weaknesses areas and give recommendations for the improvement priorities [3].

**1.6.3.2 Provide feedback**

The results and information gained should be distributed to the department staff to obtain their ideas in collaboration with the other stakeholders on how to improve the program. Fig.8 summarizes the check phase.
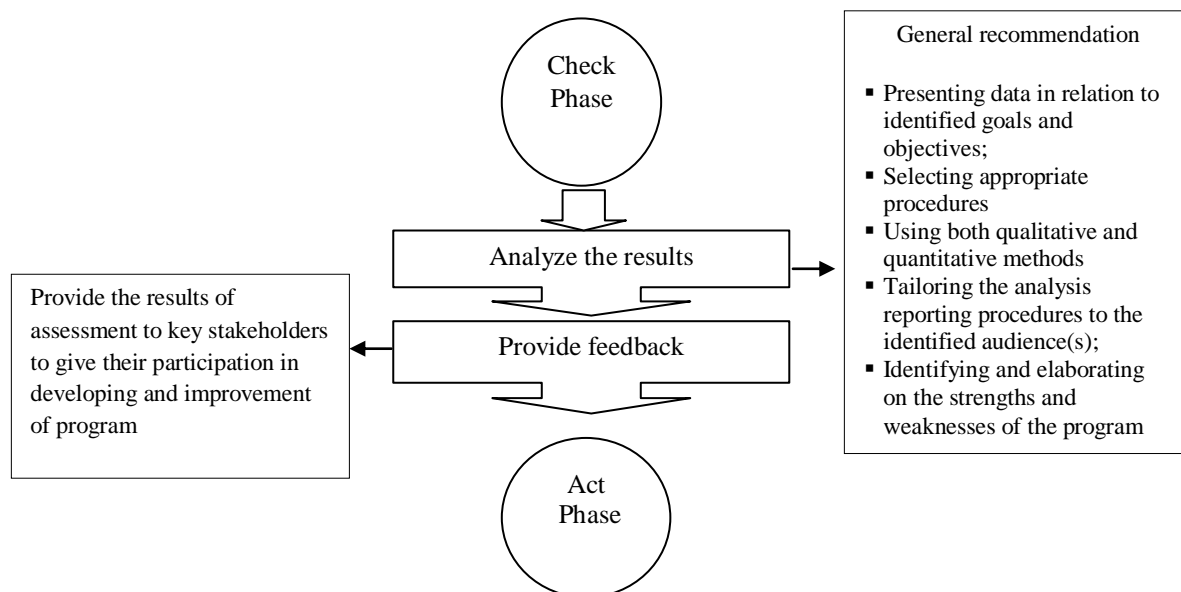
Figure 8.check Phase (Resource: the researcher)

**1.6.4 Act phase**

The objective of this phase is to implement action plans to improve the program and to prepare for the following assessment cycle. This phase consists of three steps [9].

**1.6.4.1 Implement actions plans.**

The planning and improvement team has the responsibility of translating the ideas generated from the feedback into action plans and starts to implement it and set timeline.

**1.6.4.2 Follow up and monitoring**

The action plans should be followed up and monitored to determine whether or not the changes had the desired effect and the obstacles of the improvement. One way of achieving this is to use the same assessment plan as used in the previous cycle and compare the actual results to the intended results.

**1.6.4.3 Setting action plan for the coming year**

In this step all of the information obtained from the assessment process will be reviewed to determine how this will affect next assessment plan. This provides the starting point for the next iteration of the plan-do-check-act cycle to continuous improvement of the academic program. In this stage it should maintain a record of key activities and the measurement of impact, which can be included in self-evaluation reports and presented as part of the application for accreditation. All stages of Act phase are summarized in Fig. 9.

**1.7 Developing main assessment criteria of academic program as an assessment tool**

Developing assessment criteria of academic program and its indicators requires effort and collaboration of all stakeholders and cannot be done comprehensively by one individual or by group. So, the research focuses on developing main assessment criteria of academic program as an assessment tool in the light of the adopted theoretical approach. Firstly, the tool will be classified into four sections or types, under each section the main assessment criteria will be suggested, and then the results of each assessment section will be linked with improvement decisions. Additionally the research will develop in detail the academic standard as one of the main criteria.
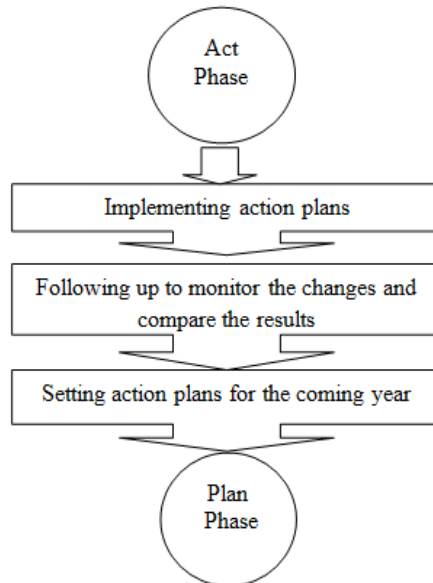
Figure 9.Act Phase (Resource: the researcher)

**1.7.1 Classifying assessment criteria of program**
According to the adopted approach, assessment criteria of academic program are classified into four sections context, inputs, process and outcomes criteria; each section includes main assessment criteria as demonstrated below:
Context criteria of program
–   the internal academic context
–   The external civil community
–   The current and emerged trends in academic and building industry
–   The challenges and obstacles face academic education in Egypt and the expected ones in the future
–   The challenges and obstacles at global level
Inputs criteria of program
–   Program mission, aims  and objectives
–   Admission policies and measures
–   Learning resources and facilities
–   Program Budget and Financial Support
–   Academic staff characteristics
–   Students intake
–   Program design
Process criteria of program
–   The teaching and learning methods
–   Student assessment
–   Program improvement process
–   Curriculum development
–   Performance evaluation and development of academic staff
Outcomes criteria of program
–   Student learning outcomes
–   Student performance
–   Graduates' attributes
–   Graduate Employment
–   Graduation Rate
–   Stakeholders' satisfaction.

**1.7.2 Identifying the results of assessment and linking it with improvement decisions**
The final step in this stage is to identify the results of assessment and linking it with the improvement decisions as demonstrated below:

- The results of context assessment support program planning decision as it include:
  - Identification and diagnosis of the problems which might inhibit achieving the goals and objectives or the opportunities to be employed.
  - Information for the development of mission, vision, values, goals and learning objectives of academic program.
  - Identification of different stakeholders of program.
  - An evaluation time-frame including deadlines of deliverables for each assessment stage
- The results of input assessment support program structuring decisions as it include:
  - Development of program designs
  - Setting strategies to meet the needs of stakeholders and achieve the goals and objectives of the program.
- The results of process assessment support implementation decisions as it include:
  - Identification of the shortcoming or problems related to all program process and any educational activities such as program delivery, reviewing, students assessment, curriculum development, etc.
- The results of outcome assessment support evaluation decisions as it include:
  - Evaluating to what extend the academic program achieved its learning outcomes.
  - Deciding if the strategies of improving the program be accepted, refined, or corrected.
  - Feedback to planning and structuring decisions

Fig.10 illustrates the final framework of assessment model of academic programs.

## 1.8 Evaluation of the assessment model of academic program

The assessment model being proposed and devised through this research project is a comprehensive mechanism for ensuring consistent standards in architectural education.

The implementation of this model will assure uniformity in the academic program accreditation process with a systematic and scientific application of accreditation criteria and assessment. The strengths of the self assessment model are listed below:

- Providing a comprehensive evaluation of academic programs and not emphasizing on one aspect but examining the context, inputs, process and outcomes all in the same importance.
- Integrating evaluation into management operations
- Stresses program improvement
- Involving and addressing the needs of all stakeholders
- Serving decision making at all system levels
- Promoting using of evaluation findings
- Having a potential to act in a formative, as well as summative way, helping to shape improvements while the project is in process, as well as providing a summative or final evaluation overall.
- Enhancement of quality assurance of programs;
- Secure accreditation, locally as well as internationally;
- Uniformity in the accreditation criteria and procedure;
- Fostering the mutual recognition of the Egyptian architects' qualifications;
- Promoting academic mobility of Egyptian academic programs globally

The limitations with the developed model are listed below:

- Involved collaboration with client/stakeholders may engender interference and bias.
- May overemphasize formative evaluation and under employ summative evaluation.
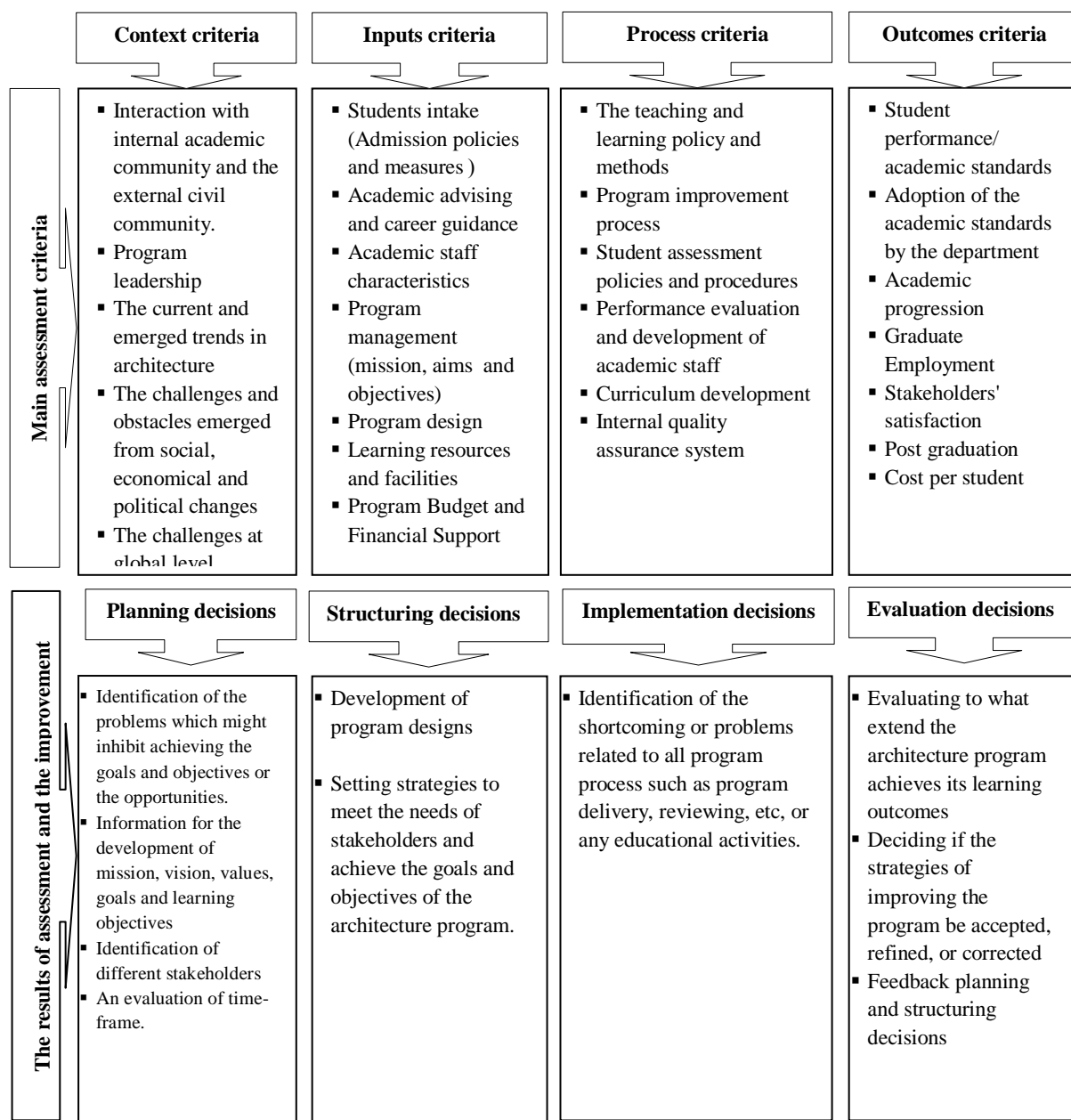
| Context criteria | Inputs criteria | Process criteria | Outcomes criteria |
|---|---|---|---|

**Main assessment criteria**

| | | | |
|---|---|---|---|
| ▪ Interaction with internal academic community and the external civil community.<br>▪ Program leadership<br>▪ The current and emerged trends in architecture<br>▪ The challenges and obstacles emerged from social, economical and political changes<br>▪ The challenges at global level | ▪ Students intake (Admission policies and measures )<br>▪ Academic advising and career guidance<br>▪ Academic staff characteristics<br>▪ Program management (mission, aims and objectives)<br>▪ Program design<br>▪ Learning resources and facilities<br>▪ Program Budget and Financial Support | ▪ The teaching and learning policy and methods<br>▪ Program improvement process<br>▪ Student assessment policies and procedures<br>▪ Performance evaluation and development of academic staff<br>▪ Curriculum development<br>▪ Internal quality assurance system | ▪ Student performance/ academic standards<br>▪ Adoption of the academic standards by the department<br>▪ Academic progression<br>▪ Graduate Employment<br>▪ Stakeholders' satisfaction<br>▪ Post graduation<br>▪ Cost per student |

| Planning decisions | Structuring decisions | Implementation decisions | Evaluation decisions |
|---|---|---|---|

**The results of assessment and the improvement**

| | | | |
|---|---|---|---|
| ▪ Identification of the problems which might inhibit achieving the goals and objectives or the opportunities.<br>▪ Information for the development of mission, vision, values, goals and learning objectives<br>▪ Identification of different stakeholders<br>▪ An evaluation of time-frame. | ▪ Development of program designs<br><br>▪ Setting strategies to meet the needs of stakeholders and achieve the goals and objectives of the architecture program. | ▪ Identification of the shortcoming or problems related to all program process such as program delivery, reviewing, etc, or any educational activities. | ▪ Evaluating to what extend the architecture program achieves its learning outcomes<br>▪ Deciding if the strategies of improving the program be accepted, refined, or corrected<br>▪ Feedback planning and structuring decisions |

Figure 10.The framework of final assessment model of academic program

## VII.    Conclusion

The paper introduced a comprehensive model of program assessment as it theoretically based on a tailored approach of assessment, articulated clearly its objectives, identified in detail the process of application and proposed general criteria of program assessment.

The self assessment model characterized with many advantages most valuable are in integrating three different perspectives; firstly, the credibility of the program in achieving its aims and objectives, secondly, its accountability in meeting quality assurance and accreditation standards and increasing the stakeholders' satisfaction, and thirdly the continuous improvement of the program.

The contribution of this assessment model demonstrated in guiding the departments which undergo transformation towards implementing internal quality assurance systems, by introducing a road map for implementing the assessment of its academic programs which considered the backbone of the internal quality assurance system, furthermore linking the results of assessment process with the decision making activities such as program review and strategic planning, as well as external accountability activities such as accreditation.

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