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Projectification: Using Project Management Methodology to Manage the Academic Program Review

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***Abstract*—**While research is rich with what criteria could be included in the academic program review processes, there is rarely any mention of how this significant and complex process should be managed. This paper proposes using project management methodology in alignment with the program review criteria of the Dickeson's Prioritizing Academic Programs model. Project management and academic program review share two distinct characteristics; one is their life cycle, and the second is the core knowledge areas they use. This aligned and structured approach offers academic administrators a step-by-step guide that can help them manage this process and effectively assess academic programs.

***Keywords*—**Project management, academic program, program review, education, higher education institution, strategic management.

I. Introduction

HIGHER education institutions (HEI) are facing increasing pressure to streamline their academic offerings in the face of declining funding, under-enrolment and stiff competition. The modus operandi now is efficient operations and effective use of resources. Hence, more universities are conducting institution-wide program reviews to ensure that they are effectively using their resources in the most efficient way, and that they are strategically planning for the future [34].

Academic program review helps to determine the viability and effectiveness of an institutional unit. An academic program review is meant to

> "…improve the quality of academic units individually and the university as a whole. Academic reviews provide an opportunity for each academic unit to reflect, self-assess, and plan; they generate in-depth communication between the unit and the university administration, thus offering a vehicle to inform planning and decision-making… By stimulating program planning and encouraging strategic development, academic program reviews can be a central mechanism to advance the University mission" [19].

Educational program evaluation may be conducted through a variety of methods such as, evaluation through self-study by the institution; evaluation by external accreditation bodies; or research-based evaluation using instruments with a high degree of validity and reliability [37]. Program evaluation should not only provide a measurement of the results of a program but should also provide a continuous assessment of measuring all the components of a program including guidance for making decisions regarding continuance, worth or merit of a program, modification, expansion, or curtailment of programs [15], [4]. Institutions vary in their approaches to program reviews, depending on their needs and strategic objectives. However, many institutions use historic, current, and projected data related to program purpose; required resources; and student performance. Moreover, an overall evaluation of the unit is also included. Program reviews are usually conducted on a regular basis, frequency of 2-5 years, and in some cases to coincide with institutional or program-level accreditation processes. In fact, many institutions design their academic reviews after their accreditation requirements [19].

With fiscal constraints, maintaining program quality can be a real challenge. To offset those fiscal constraints, and yet balance academic quality, some institutions have cut the number of programs they offer, combined programs, reduced the number of sections for a course suffering under-enrolment, turned majors into concentrations or minors, or merged academic departments. In conducting those strategies, many institutions have employed the methodology of Robert Dickeson's seminal work "Prioritizing Academic Programs and Services: Reallocating Resources to Achieve Strategic Balance." Dickeson's model accentuates reallocation and redistribution of resources ("doing more with less")— an alluring prospect for institutions looking for a vital harmony between the cost and quality of program offerings. Despite the fact that to some degree, less normal, different institutions have additionally turned to business sector approaches, for example, Jim Collins' "Good to Great" model, in executing program survey [19].

Although considerable research has been done in the areas of common characteristics of academic program reviews, the use of academic program reviews [5], [6], [23], [28], [25], key areas of concern, such as how the academic program review process was managed, and whether it has contributed to continuous program improvement have not been established [27], [20], [16]. The academic program review process is a significant and complex process that should be managed carefully and in a well-documented and structured manner. It should not be managed arbitrarily and inconsistently.

The purpose of this study is to present project management as a comprehensive framework for effectively managing

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"Academic Program Reviews". "Project Management is the discipline of initiating, planning, executing, monitoring & controlling, and closing the work of a team to achieve specific goals and meet specific success criteria" [33]. This study proposes using project management methodology in alignment with the program review criteria of the Dickeson model and the author's additional criteria. Project management and academic program review share two distinct characteristics; one is their life cycle (Initiate, Plan, Execute, Monitor & Control, and Close); and the second is the core knowledge areas they use: Integration, Scope, Time, Cost, Quality, Human Resources, Communications, Risk, and Outsourcing. This synchronized-structured approach can effectively offer a step-by-step guide to help academic units effectively assess the overall effectiveness of academic programs. It is critical to take note of that while the information introduced in this paper offers a general outline of academic program review methodologies, the list is not comprehensive. While numerous universities create assessment processes in view of normal evaluation standards, such methodologies are regularly acclimated to suit the interesting needs of the individual institution. In that capacity, the accomplishment of a given model or approach ought to dependably be considered inside the institutional setting of its execution.

II. Literature Review

A. Academic Program Review Models

While there is no universal approach to academic program review, there are popular frameworks that have been used over the last two decades. Below, we briefly examine several such models [19].

- Dickeson's Prioritization Model [14]
- Collins' "Good to Great" Approach [9]
- The Kirkpatrick Steps [3]
- The Massy Model [26]
- The QPC (Quality, Potential, Cost) Model [12]
- Independently-Devised Methodologies (Decision-making, Goal-based, Responsive, and Connoisseurship)

Unlike other models, Dickeson's comprehensive approach is meant to assess all programs within an HEI simultaneously, allowing for cross-program comparisons and benchmarking. Rather than completely focusing on quality enhancements or other types of program improvements, Dickeson also focuses on program prioritization and resource re-allocation [14]. This approach by Dickeson's has generated a great deal of interest in the higher education sector, particularly in an environment where new sources of funding are increasingly scarce [17]. Dickeson's book, Prioritizing Academic Programs and Services, has been cited in a large number of universities. The Dickeson's process aims to review all programs and rank them in a way that can help a university decide which programs it should invest on. Dickeson's model identifies 10 primary criteria that should drive any program review or evaluation. These criteria are shown in Table I.

Jim Collins published a model that defines organizational success by applying specific core elements. Although Collin's model measures performance through financial criteria, the model focuses on the alignment of institutional goals for social sector organizations. Collin's models emphasize a point, where the institutions realize what it does best and focuses on it. He calls this point, the "inflection point". Compared to the Dickeson's model, Collin's model was adopted by fewer institutions. This is possibly due to the relatively unstructured nature, and its close association with business, as opposed to academia [36]. However, among those that have adopted elements of Collins' approach (including the University of Cincinnati and the University of Nebraska-Lincoln), the emphasis on an inflection point has proven valuable in achieving long-term goals [41].

TABLE I
Dickeson's [14] 10 Primary Program Review Criteria

Program Review Criterion	Associated Considerations
History, Development, and Expectations	• Historical enrolment patterns • Alignment with institutional mission • Relationship to labor market trends/ demand • State requirements • Extent to which program is "core" to the educational experience
External Demand	• Labor market projections • Employer feedback • National and state policy/ economic projections • Placement data
Internal Demand	• Enrolment levels • Whether program supports majors and minors and/ or other programs • Courses delivered • Student credits generated
Quality of Program Inputs and Processes	• Student academic profile • Program review data • Quality of faculty
Quality of Program Outcomes	• Graduate satisfaction • Graduation rates • Job placement and success • Employer satisfaction
Size, Scope, and Productivity	• Ratio of students to faculty • Enrollments • Section fill rates • Graduation rates
Revenue and Other Resources Generated	• Tuition • Program-allocated resources • Grant income • Other revenue • Special program fee income
Costs and Other Expenses	• Fully allocated cost per full-time student • Allocated institutional support (library, computing, tutoring) • Marginal cost of program, including faculty salaries, capital expenses, and equipment
Impact, Justification, and Overall Essentiality	• Contribution to institutional reputation • Contribution to state economy • Degree to which program is "mission critical" • Other measures of institutional value
Opportunity Analysis	• New program opportunity • Potential net revenues • Alternative delivery mechanisms • Potential for interdisciplinary programs • Opportunity to realign or strengthen program

The "Kirkpatrick Model" was initially introduced and applied in the corporate, government and academic sectors. Kirkpatrick proposes four sequential levels for evaluating programs. Institutions move from one step to the next as the

evaluation process becomes more complex. However, as the organization progresses, it develops more advanced techniques for measuring analyzing and improving outcomes. However, the models have been criticized for being too focused on learning outcomes alone, and too simplistic. Moreover, the models lack correlation between the various levels outlined [3], [45].

Massy's model [26] for program review focuses less on assessing quality and more on the process of assessment itself. The model is comprised of seven quality principles. Although Massy's work is often cited, the lack of specificity in his approach makes the model less practical [19].

The QPC (Quality, Potential, Cost) model was first introduced by Jamie Comstock and Cathy Booker in 2009 [12]. The model was mainly developed in response to the demand for "transparency, accountability, quality assurance, and quality improvement" in higher education. In addition, it was aimed to address the shortcomings in Dickeson's model.

The main principle of the model is a holistic review where each variable affects and impacts other variables, contributing to a comprehensive, balanced review.

Application of the QPC model results in the ability of the HEI to place all academic programs into a matrix, keeping in consideration all the qualitative and quantitative inputs of each key component of the QPC model. The sub-ratings can be used to calculate the summary ratings for each of the three overarching variables.

Just recently, Majdalawieh and Marks [25] identified four core areas and 23 sub-areas of academic program measurement for a sustainable academic program review. The four core areas are program curriculum and instructions; institute resources and support; industry partnership and collaboration; and planning, leadership and governance. In addition to the above mentioned key program-review models, numerous institutions choose to develop their own philosophies and methodologies for leading program reviews, electing to avoid outside defined characterized rules, procedures and techniques.

In many cases, HEIs choose to coordinate program review methods with accreditation requirements. And while in general, program reviews can be broken down into two categories—qualitative and quantitative—a combination of both is advisable. Independently-created program reviews tend to follow one of four generic models:

1. Decision-Making model: Underscores responsibility and might be utilized to reallocate resources or settle on continuation of program(s).
2. Goal-based model: Compares data assembled in the review to the program goals, objectives and standards.
3. Responsive model: Concentrates on the concerns and issues of partners and stakeholders.
4. Connoisseurship model: Relies upon the expert judgment of an experienced individual in the teaching area.

While the particular concentration of each model shifts, there are regularly three fundamentally components of program audit: a self-study, an outside overview, and a survey of discoveries that prompts an activity design. Regular highlights of the self-study of a program review incorporate those listed in Table II.

TABLE II
COMMON FEATURES OF THE INTERNAL SURVEY PORTION OF AN ACADEMIC PROGRAM [19]

Item	Description
1	Description of program, vision, mission, and goals
2	Description of staff and work environment
3	Detailed budget and associated cost
4	Evaluation of: • Students demographics and overall numbers • Students needs • Program SWOT • Determining factors if students' needs are met • Actions on evaluation results • Overall evaluation of program maturity level
5	Description of innovative practices or niches of the program
6	Opportunities for improvement
7	List of short-term and long-term recommendations

A. Accrediting Bodies Criteria

Although accrediting standards and guidelines are mainly concerned with programs that have already been established and in many cases, have had graduates; and in some cases, it may focus more on learning and teaching and education objectives than profitability and other financial aspects. The authors believe it is important that program evaluation criteria under this category is also included, as it provide the reader with a broader perspective of the evaluation process, and solidifies the argument of this study.

Accrediting bodies, regional and otherwise, also require the vetting of specific elements for programs for review. The Southern Association for Colleges and Schools (SACS) standards review the following areas in any academic program: Mission, governance and administration, institutional effectiveness, Faculty, Learning Resources, Procedures and Policy, and Compliance. SACS states that a "HEI must employ sound and adequate practices for deciding the sum and level of credit granted for courses, paying little heed to configuration or method of delivery, and provide appropriate academic support services. A HEI must demonstrate academic quality. For instance, faculty holds the primary responsibility for the content, quality, and effectiveness of the curriculum. For each major in a degree program, the institution assigns an obligation regarding program coordination, and additionally for educational modules advancement and review, to people scholastically qualified in the field. The institution must utilize qualified faculty to fulfill the mission and objectives of the foundation. While deciding the satisfactory capabilities of its personnel, an establishment gives essential thought to the most astounding earned degree in the field. The institution likewise considers skill, effectiveness, and capacity.

The institution regularly evaluates the effectiveness of each faculty member in accordance with published criteria, regardless of contractual or tenured status. The institution gives continuous professional improvement of the faculty in the three dimensions: as teachers, as scholars, and as

practitioners [39].

The Middle States Commission on Higher Education (MSCHE) standards emphasize key elements such as the Design and Delivery of the Student Learning Experience, Support of the Student Experience, Educational Effectiveness Assessment, Planning, Resources, and Institutional Improvement, Governance, Leadership, and Administration. Specific to educational programs, MSCHE states that a program length should be appropriate to the objectives of the degree or other credential, designed to foster a coherent student learning experience and to promote synthesis of learning; student learning experiences should be designed, delivered, and assessed by faculty who are qualified. The curriculum should be designed so that students get and exhibit vital skills including in any event, oral and composed correspondence, technical and quantitative analysis, critical examination and thinking, and data & information literacy. The program must have adequate reviews, approvals, and periodic assessments [29].

The standards Commission of Academic Accreditation (CAA) in the UAE, emphasizes key areas such as mission, organization, governance, quality assurance, faculty, evaluation, and students support. The CAA manual states that the institution must thoroughly assesses the need for any new program and includes a market analysis, an analysis of competing programs, projections of resource requirements, a determination of student interest, and other indicators in the needs assessment as indicated in Stipulation 2: Feasibility Study, Financial Analysis and Timed Action Plan. The institution must demonstrate that the proposed program/s is/ are consistent with the institutional strategic plan; includes in its program plans, enrolment projections by program, an identification of required facilities, human and non-human resource requirements, and both short and long-term budgets; analyses enrolment trends and resource demands in its decisions to terminate programs; seeks input and advice related to the proposed program and its learning outcomes from potential employers and relevant advisory committees; involve faculty in the development of new programs including curricula; includes the results of benchmarking in the development of programs. The CAA further states that each program must have well-articulated outcomes that are consistent with the institution's mission; course learning outcomes are specific, measurable and aligned with the program learning outcomes. The curriculum of each program comprises a progression and mix of courses or learning modules/ units [10].

The Accreditation Council for Business Schools and Programs (ACBSP) criteria examine programs leadership, strategic planning, students and stakeholders focus, measurements and analysis of students learning and performance, faculty and staff focus, and Educational and business process management [11]. The Accreditation Board for Engineering and Technology (ABET) criteria examine eight key criteria (Students, Program Educational Objectives, Student Outcomes, Continuous Improvement, Curriculum, Faculty, Facilities, and Institutional Support) [1]. The National Association of Schools of Arts and Design (NASAD) criteria focus on the following program areas: Purposes, Size and Scope, Finances, Governance and Administration, Faculty and Staff, Facilities, Equipment, Health, and Safety, Library and Learning Resources, Recruitment, Admission-Retention, Record Keeping, and Advisement, Published Materials and Web Sites, Community Involvement, Articulation with Other Institutions, Evaluation, Planning, and Projections, and Operational Standards [31].

B. Project Management

Today, project management theories, standards, processes, concepts, tools, and techniques, are the mainstream in many organizations and, with globalization, diminishing resources, and increasing population, project management continues to spread across organizations and industries [22]. Project management is becoming more of a science than an art. Per the Global Accreditation Center for Project Management Education Programs, in 2009, the "U.S. News and World Report had ranked project management as the third most valued skill by employers, behind only leadership/ negotiation skills and business analysis" [35]. Rising enthusiasm for the field has prompted the establishing of expert associations, for example, the Project Management Institute (PMI) and the International Project Management Association (IPMA), as well as scientific journals such the Project Management Journal (PMJ) and the International Journal of Project Management (IJPM) [30], [21]. The study of Whittington et al. [42] of 3,500 European firms uncovers a sharp increment in the utilization of project-based structures, from 13% to 42%, through the span of four years.

A cross-sector survey conducted in 2004 with 200 firms by PWC concludes that "it is hard to imagine an organization that is not engaged in projects" [32]. Thus, there has been a shift to collaborative forms of project delivery [2]. This new condition can be described as the project society. In Project Society, organizing by projects plays a prominent role. One way to describe this trend is to say that there is societal organizing in which various types of projects are becoming even more prevalent and diverse. The projectification trend seems to be the result of a variety of mechanisms at work, where a wide set of traditional institutions is constantly challenged and reformed [24]. Today, many companies can be viewed as project-based organizations [40]. In these organizations, project management offers organizations the means to be efficient, effective, and competitive in a shifting, complex, and unpredictable environment [44], [43], [7], [18], [8].

Project Management processes fall into five groups: Initiating, Planning, Executing, Monitoring & Controlling, and Closing. Project management knowledge draws on four core areas: Scope, Time, Cost, and Quality; and six facilitating areas: Integration, Procurement, Human resources, Communications, Risk management, and Stakeholder management (PMBOK, 4th Edition). The benefits of using project management can include: Better control of resources, Improved stakeholders' relations, Shorter development times, Lower costs, Higher quality and increased reliability,

Improved productivity, and Better internal coordination [38]. From the literature of academic program reviews and project management, we can establish the following:

1. Academic program reviews are projects in their nature
2. Academic program reviews and projects have a similar life cycle (initiating, planning, executing, monitoring & controlling, and closing)
3. Academic program reviews and project may draw on the same core knowledge areas (quality, cost, scope, and time)
4. Academic program reviews and projects may draw from the same supplemental knowledge areas (human resources, communication, risk, stakeholders' management, etc.)
5. Academic program reviews and project share the same characteristics (unique, finite, iterative, collaborative, etc.)

It is evident then from the academic program models and the accrediting bodies' standards and guidelines that the focus of academic program reviews have been mainly the criteria that could be included in the review, and there seem to be an agreement on key criteria that should be included. However, what is missing from the academic program models and accrediting bodies' standards is the lack of focus and specificity on:

- Whether the process is effective
- What specific details (specific inputs and outputs) should be required under each criterion
- Whether the data collected is validated and appropriate to the purpose
- Whether the outputs of each criterion are objectively viewed and analyzed

The academic program review process is a significant process that can lead to long-term investments and decisions that can affect a HEI's financial and human resources, and strategic direction. Hence, the academic program review process should be managed both carefully and effectively, not as another document that needs to be filed every once in a while. The authors believe that a project management framework can address the identified gaps and significantly help the academic review process, by adding specific structure and deliverables to each requirement. Section 4 discusses the proposal in more detail.

III. Methodology

Although considerable research has been done in this area, common characteristics of academic program review approaches, the primary purpose of which is program improvement, have not been established [27], [20], [16]. The bulk of the research done in this area concentrates in the design, implementation and use of academic program reviews [5], [6], [23], [28], [25], but no research has been conducted in the areas of academic program review management and effectiveness [5], [13], [16]. The academic program review process is a significant and complex process that should be managed carefully and in a well-documented and structured manner. It should not be managed arbitrarily and inconsistently. This study is directed at developing a feasible conceptual framework for effectively managing "academic program reviews", and to properly assess the effectiveness and viability of an academic program using project management methodology. The proposed framework is based on literature review and the authors experience as academic administrators and project management professionals.

The proposed framework is aimed at enabling institutions to achieve improved program reviews outcome. After the literature review, the initial components have been identified and guided us to the early design of the framework. Dickeson provides a practical planning structure and a rationale for program prioritization that aligns programs, resources, and university mission. Then the authors went through an iterative process of designing, collecting evidence, evaluating the design in terms of meeting the objectives of the study, and use these insights to redesign the conceptual framework to improve the effectiveness and the efficiency of the framework. The authors gradually learned new things about the completeness of the design over several iterations. The proposed framework was then shared with 10 program chairs in the MENA region for implementation. Ten semi-structured, in-depth interviews were conducted after completing the program reviews with the proposed structure. The authors went through several iterations to come up with the final framework.

Given the pros and cons of the different models that were presented in the literature review section of this paper, the literature on project management, and the input received from this study, the authors believe that the project management approach to academic reviews address the gaps identified. The proposed framework is based on four key elements: (A) Dickeson's Academic Program Review Model and Criteria, (B) Academic Program Review criteria gathered from the iterative interviews, specifically where Dickeson's model did not provide sufficient coverage, (C) Project Management content areas, and (D) Project management and academic program review life cycle. While the Dickeson's model focuses on the following key criteria and their associated considerations, as displayed in Table I (History, Development, and Expectations, External Demand Internal Demand, Quality of Program Inputs and Processes, Quality of Program Outcomes, Size, Scope, and Productivity, Revenue and Other Resources Generated, and Costs and Other Expenses), this study indicates that the model did not provide enough coverage for other important academic program review criteria. The interviewees have identified the following as key criteria that should be included in an academic review. Time: Time is a key area in Project Management, both from a product perspective, and from a project perspective. The currency of programs is very important. While some traditional programs may be reviewed every four or five years, other programs (e.g. IT security forensics) should be reviewed more often. Time can also play a factor in terms of a program length (credit hour perspective) or delivery mode (online, face-to-face, hybrid). Human Resources: Staffing and support for the program is essential. That may include faculty count, faculty credentials, and Support Staff. Communication: This

may include communication with Prospective Students, Communication with Existing Students, Communication with Alumni, Communication with Faculty, Communication with Support Staff, Communication with Internal Stakeholders, and Communication with External Stakeholders. Procurement and Outsourcing: This may include outsourcing of adjuncts faculty, Rent or Buy Facilities, Outsourcing of IT, Infrastructure, Outsourcing of IT Support, and Outsourcing of Student Support Services. Risk: While Dickeson focuses on opportunities, program risks should be identified and analyzed for business continuity purposes. Integration: While Dickeson's talk about alignment, integration within the context of project management goes beyond the program, with alignment with the organizational goals to include the integration of the program review process as well. The effectiveness of the review process is critical to the sustainability of the program. Within the context of project management – academic review, integration refers to the program review assessment process, program review assessment document, program review assessment criteria, program review assessment changes, and program review, and assessment results.

IV. Proposed Framework

The proposed framework is based on four key elements:

1. Dickenson 2008 Academic Program Review Model and Criteria
2. Academic Program Review criteria gathered from the interviews, where Dickenson's model did not provide any criteria
3. Project Management knowledge areas (integration, scope, time, cost, quality, human resources, communication, risks & opportunities, and procurement and outsourcing)
4. Project management and academic program review life cycle

These will be covered based on the life cycle and content area perspectives.

TABLE III
Life Cycle Perspective

Initiating Processes:	Those processes are performed to gain approval and launch the academic program review. 1. Develop academic program, preliminary business case 2. Identify key academic program stakeholders that need to be informed and involved.
Planning Processes:	Those processes required to establish the scope of the academic program review, refine its objectives, and plan the actions required to complete it. 1. Develop the academic program review Management Plan. 2. Collect academic program review scope requirements. 3. Define scope of program review. 4. Create Work Breakdown Structure (WBS) of program review. 5. Define program review activities. 6. Sequence program review activities. 7. Estimate program review activity resources. 8. Develop program review schedule. 9. Estimate program review cost. 10. Determine program review budget. 11. Plan program review quality. 12. Develop program review human resources plan. 13. Plan program review communication and establish a communication approach. 14. Plan program review risk management. a. Identify risks. b. Perform qualitative risk analysis. c. Perform quantitative risk analysis. d. Plan risk response strategies. 15. Plan procurement and outsourcing.
Executing Processes:	Those are the processes performed to complete the academic program review as planned. 1. Direct and management program review execution. 2. Perform quality assurance. 3. Acquire program review team. 4. Develop program review team. 5. Manage program review team. 6. Distribute information. 7. Manage stakeholder expectation. 8. Conduct procurement and outsourcing.
Monitoring and Controlling Processes:	Those are the processes required to monitor, track, review, and control the progress and performance of the academic program review. This is also where change management occurs. 1. Monitor and control program review work. 2. Perform integrated change control. 3. Verify scope. 4. Control schedule. 5. Control cost. 6. Perform quality control. 7. Report performance. 8. Monitor and control risks. 9. Administer procurement.
Closing Processes:	Those are the processes required to finalize all activities related to the academic program review, and end the work. 1. Finalize program review. 2. Close procurement and outsourcing.

TABLE IV
CONTENT AREA PERSPECTIVE

Academic Review *Integration* Requirements:	This area is concerned with all the activities required to identify, define, combine, and coordinate all the different activities required to complete the academic program review. Integration entails making decisions about resource allocation, trade-offs, interdependencies, etc., and key tasks of academic review integration may include: 1. Develop program review preliminary business case. 2. Develop the academic program review Management Plan. 3. Direct and management program review execution. 4. Monitor and control program review work. 5. Perform integrated change control. 6. Finalize program review.
Academic Review *Scope* Requirements: [14]	This area is concerned with the following activities: 1. Collect academic program scope requirements. 2. Define scope of program review. 3. Create Work Breakdown Structure (WBS) of program review. 4. Verify scope. 5. Control scope.
Academic Review *Time* Requirements:	This area is concerned with the following activities: 1. Define program review activities. 2. Sequence program review activities. 3. Estimate program review activity resources. 4. Estimate program review activity durations. 5. Develop program review schedule. 6. Control schedule.
Academic Review *Cost* Requirements: [14]	This area is concerned with the following activities: 1. Estimate program review cost. 2. Determine program review budget. 3. Control cost.
Academic Review *Quality* Requirements: [14]	This area is concerned with the following activities: 1. Plan program review quality. 2. Perform quality assurance. 3. Perform quality control.
Academic Review *Human Resources* Requirements:	This area is concerned with the following activities: 1. Develop program review human resources plan. 2. Acquire program review team. 3. Develop program review team. 4. Manage program review team.
Academic Review *Communication* Requirements:	This area is concerned with the following activities: 1. Identify key academic program stakeholders that need to be informed and involved. 2. Plan program review communication. 3. Distribute information. 4. Manage stakeholder expectation. 5. Report performance.
Academic Review *Risk and Opportunity* Requirements: [14]	This area is concerned with the following activities: 1. Plan program review risk management. 2. Identify risks. 3. Perform qualitative risk analysis. 4. Plan risk response. 5. Monitor and control risks.
Academic Review *Procurement and Outsource* Requirements:	This area is concerned with the following activities: 1. Plan procurement. 2. Conduct procurement. 3. Administer procurement. 4. Close procurement.

A. Life Cycle Perspective

A life cycle is a collection of generally sequential and overlapping phases. The Life cycle provides the basic framework for managing the required tasks, and ensures effective flow of the work conducted. From a life cycle perspective, the proposed program review process using project management methodology should follow the steps presented in Table III.

B. Content Area Perspective

From a content area perspective, the proposed framework contains the requirements as presented in Table IV.

V. CONCLUSION AND FUTURE RESEARCH

Academic program reviews are complex and long-term investments for HEIs. It is critical that academic program reviews are comprehensive in what they cover, and it is equally critical that the academic program review process is managed effectively. While the Dickeson's model brings forward valid and important criteria that should be examined in an academic program review, it lacks other important criteria that should be included. The project management framework proposed in this study offers key criteria that must be examined in any effective program review, namely (Integration, Scope, Time, Cost, Quality, Human Resources, Communication, Risks & Opportunities, and Procurement & Outsourcing). Moreover, the proposed framework offers a

step-by-step guidance on the (Integration) on how the academic program review process could be managed, both from a life-cycle perspective and from a content areas perspective. The proposed methodology can be used as a continuous management tool to assess senior management to make the right strategic decisions regarding development and resource allocation, significant restructuring, or in exceptional cases, program closure.

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