

Maturity Model for Process of Academic Management

Daniel Fernando Antonucci e Silva¹, Rodrigo Becke Cabral²
Centro Paula Souza¹, Cadsoft – GAM², Brazil
daniel@cadsoft.com.br, rodrigo.cabral@cadsoft.com.br

Abstract

The segment of education in Brazil, especially in higher education, has undergone major changes. The search for professionalization, for cost reduction and process standardization has led many institutions to associate through partnerships or acquisitions. On the other hand, maturity models have been used very successfully in several areas of knowledge especially in software development, as an approach for quality models. This paper presents a methodology for assessing the maturity of academic process management in private institutions of higher education that, initially, aims the Brazilian market, but its idea can be applied to a global maturity model of academic process management.

1. Introduction

The segment of Brazilian education has undergone major changes in the last ten years in pursuit of development and consolidation of this market. Education institutions have become professionalized, seeking capital in the stock market and adopting marketing concepts, management and strategic planning, marketing planning, BSC and others [1]. A small group of institutions positioned themselves as "consolidators" of the market, growing by acquisitions of other institutions and forming strategic partnerships to expand the markets where this institution does not have any presence. However, it is important to note that quality management in education is a challenge not only in Brazil, but worldwide, as can be noticed in the text of Tucci [2] "Quality implementation in higher education institutions is a great challenge in all Europe, especially after Bologna Declaration (1999)."

Brazil has also aggravated the pressure for the growth of the country, which deepens the need for generation of qualified workforce in shorter learning cycles and affordable learning programs for the whole population. However, analyzing the process of this segment without assessing the global context can be misleading. For McGrew [3] Globalization refers to those processes, acting on a global scale, crossing national borders, integrating and connecting communities and organizations in new combinations

of space-time, making the world in reality and in experience more interconnected. Thus it is necessary to seek global solutions to local problems.

In addition, the government, with a defined positioning for investment in public education has expanded, through the Ministry of Education and Culture (MEC), that regulates the opening and closing of institutions and programs, and methods for an institution to continue working or offering certain programs. In recent years concepts have been created as: ENADE, IGC, CPC, all under the aegis of SINAES [1], specific legislation:

- Ensure the national process of evaluation of higher education institutions with the cooperation of the systems that have responsibility for this level of education;
- Authorize, recognize, accredit, monitor and evaluate, respectively, the programs of higher education institutions and methods of its education system.

To complement the current situation of Brazilian education segment, there are also the representative institutions that want, through the association of Private Institutions of Higher Education (PIHE), to have a unique position to the government when it comes to regulations and controls that are being created, which often in view of these institutions are difficult and expensive, without necessarily improving the quality of Brazilian higher education. Figure 1 summarizes the current situation of most of the PIHE and the pressures faced by these.

This scenario suggests that the segment is receptive to the development of audit standards and quality, and therefore, a maturity model can become a tool to ensure continuous evaluation and comparative, underpin the decision making of managers of these institutions.

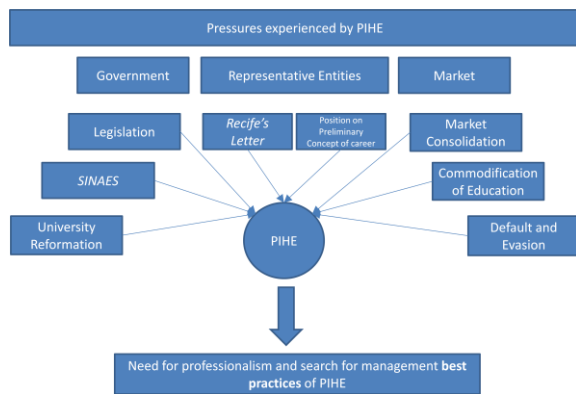


Figure 1. Pressure suffered by IPES

As stated by Silva, Cabral e Colenci Jr [4], “the studies indicate that, currently, there is no standard definition of maturity levels of academic management processes, also pointing the lack of mechanisms for assessing the maturity”.

Therefore, the proposed model presented in this article brings to the segment of education, the concepts of maturity models that have emerged over the years, as part of the development of quality models and audit organizations. By definition, a maturity model is a structured collection of elements that describe certain aspects of the maturity of an organization [1]. A maturity model provides, for example:

- A starting point for a quality program, allowing us to track the progress of the improvements achieved;
- The benefits of learning from past experience, reusing the knowledge of individuals and organizations;
- A common vocabulary and a shared vision, enabling the development of best practices;
- A framework for prioritizing actions, reducing costs and increasing the effectiveness of work;
- A way to define the most significant improvements to an organization, creating an abstract view of what should be done.

The Maturity Model Process is identified by Silva [1] to:

- Assess the ability of processes in achieving their goals;
- Find opportunities to improve productivity and quality and reduce costs;
- Plan and monitor the actions of continuous improvement of business processes;
- Evaluate different organizations and make comparisons between them;

2. Elements of the Proposed Model

According to the Maturity Model presented there are four axis elements that give sustainability to

implementation and evaluation of academic processes management in private institutions of higher education [5]. These elements were defined according to academic studies and real experiences in the implementation and improvement of management processes in Brazilian institutions. The four elements are:

- Processes of Academic Management
- Expected Results of Process (ERPs)
- Processes Attributes Results (PARs)
- Maturity Scale

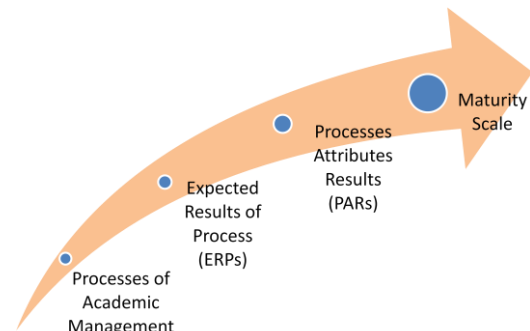


Figure 2. Graphical representation of the elements of the Maturity Model

3. Process of Academic Management

The ISO / IEC 15504-5, 2006 [6], used in this Maturity Model, is a reference for building the format of the academic process management and determining the characteristics necessary for the existence of a process, which are:

- Process identifier;
- Process name;
- Process purpose;
- Outcomes;
- Base practice;
- Work-products;

For this Maturity Model four out of six characteristics of the process were chosen, which are:

- Process identifier;
- Process name;
- Process purpose;
- Outcomes (Expected Process Results - EPRs)

The "best practices" and "work products" are addressed by a complimentary methodology, not described in this paper, for the implementation of processes and operational flows that support the development, improvement and consolidation of operational management process of a private institution of higher education.

The Processes of Academic Management are aligned with planning levels of educational institutions, that are operational, tactical and strategic. This

relationship can be better understood through figure 3. It is important to note that the Maturity Model for Academic Process Management covers the strategic and tactical levels while the models of deployment of processes and operational flows should cover the operational level.

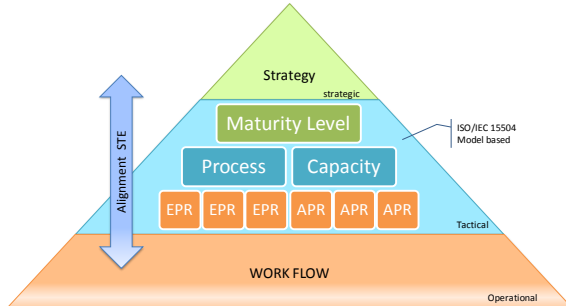


Figure 3. Alignment between the structure of processes and levels of planning in organizations

The purpose of an academic process management establishes three important elements of planning organizations, which are:

- The purpose of the academic process management
- How it helps the institution to achieve its goals
- The future scenario that will be achieved after the implementation of the process

Through the purpose of the academic process management it is possible to reach the connection with the educational institution strategy that must be established through its own strategic planning.

Currently the Maturity Model of Academic Process Management provides 19 processes, distributed in the maturity scale that will be presented in Chapter 7, which are [4]:

- Education Program Management
- Teacher Body Management
- Financial Plan Management
- Regulatory Requirements Management
- Student Support Management
- Application Offering Management
- Application Management
- Program Structure Management
- Content Management
- Admission Management
- Certificate Management
- Assessment and Attendance Management
- Collaboration Management
- Payments Managements
- Debts Management
- Institutional Evaluation Management
- External Evaluation Management
- Alumni Relationship Management
- Academic Performance Management

4. Expected Process Results (EPRs)

The expected results [5] allow the process to be measured by their results achieved or not achieved by the process of academic management in question. Each expected result is broken down into items, called goals set, and each goal set presupposes the existence of evidence showing that the goal was achieved. The evidence may be:

- Standards, procedures and ordinances of the institution to determine rules and process flows;
- Process flow definition documents resulting from methodologies of process mapping;
- Systems screens and reports;
- Other documents that have the institutional credibility and are valid at the time of diagnosis.

The goals set can have four stages of diagnosis, which are:

- Achieved - When the evidence shows that the objective was fully met;
- Not achieved – When there is no evidence showing that the goal set is met;
- Partially achieved – When the evidence shows that only part of the goal was met;
- Not Apply– Occurs when a goal set has a specific feature and that is not practiced by the institution.

Table 1 helps to understanding how the goals set should be evaluated:

Table 1. Goals set for an example of EPR with the simulation of an evaluation

Goals Set	Status
<i>The fixed costs of career are set</i>	<i>Achieved</i>
<i>The variables costs of career are set</i>	<i>Achieved</i>
<i>The direct and indirect expenses are cleared</i>	<i>Achieved</i>
<i>The investments required for opening and / or maintenance of the career are planned</i>	<i>Achieved</i>
<i>The career coordinator actively participate in the process of career financial management</i>	<i>Not Achieved</i>

After analyzing the processes of an institution, during the diagnostic, must be made recommendations to ensure that all goals set of a particular ERP (Expected Results of Process) will be reached. The recommendations may also be suggested to improve the process that the goals set were met.

5. Processes Attributes Results (PARs)

The ability of a process [5] is determined by a group of process attributes described in terms of good working practices. The capability of the process shows the degree of professionalism and seriousness of a process running in an education institution. As the institution develops itself in the scale of maturity, a wider group of practices for implementing the process should be performed.

The practices determined by the Attributes of Processes Results (APRs) must be performed for all processes of the maturity level corresponding. To the extent that an institution evolves in the scale of maturity, the APRs that are already running should be applied to the new academic process management included in the maturity level that the institution intends to achieve.

Which Processes Attributes Results (PARs) contains:

- Identification
- Definition
- Goals set

For this maturity model were proposed 5 PARs, and one for each level in the maturity scale, which are:

PAR1 – The process achieves its defined purpose

- The process is executed and achieves its purpose
- The goals set for the process are implemented and proven

PAR2 – The process implementation is managed

- The process implementation is planned
- The resources needed to implement the process are identified and made available
- People who perform process tasks are competent and proficient

PAR3 – The process is measured

- The implementation of the process is monitored and adjustments are made to meet the plans
- Measures are planned and collected for monitoring the implementation of the process
- The results of the work are evaluated objectively in relation to standards, procedures and requirements and non-conformities are addressed
- Measures and the frequency of the measurements are identified and defined in accordance with the objectives of the process measurement
- Results of measurements are collected, analyzed and used to characterize the performance of the process

PAR4 – The process is controlled

- Measurement data are analyzed and the variations are observed
- Corrective actions are taken to address special causes of variation
- Models of process performance are established and maintained

PAR5 – The process is continuously optimized

- The impact of the proposed changes is assessed in relation to the objectives of the process
- The implementation of all agreed changes are managed to ensure that any change in process performance is understood and are taken pertinent actions
- The effectiveness of the changes, taking into account their performance resulting, is evaluated with respect to product requirements and goals of the process

The organization of ERPs and APRs in the maturity scale determines finally the Maturity Model for Process of Academic Management.

6. Maturity Scale

The maturity scale is the last element of the Maturity Model for Academic Process Management that unifies other elements of the model. Through the relationship between the level of maturity, the process of academic management and its expected results and finally the process attributes, which be possible to assess the maturity level of an institution and compare it against the levels of maturity between different institutions.

Table 2 shows the maturity scale of the Maturity Model for Process of Academic Management in its preliminary version, adapted from CMM[7] and CMMI [8].

Table 2. Maturity Scale of of the Maturity Model for Academic Process Management

Maturity Level	Academic Process Management	Process Attributes
5 – Optimizing	<ul style="list-style-type: none"> • Institutional Evaluation Management • External Evaluation Management • Academic Performance Management 	PAR5 – The process is continuously optimized
4 –Managed and Measured	<ul style="list-style-type: none"> • Regulatory Requirements Management • Certificate Management • Teacher Body Management • Collaboration Management 	PAR4 – The process is controlled

	<ul style="list-style-type: none"> • Alumni Relationship Management 	
3 – Managed	<ul style="list-style-type: none"> • Education Program Management • Debts Management • Payment Managements 	PAR3 – The process is measured
2 – Partly Managed	<ul style="list-style-type: none"> • Content Management • Student Support Management • Application Management • Assessment and Attendance Management 	PAR2 – The process implementation is managed
1 – Informal	<ul style="list-style-type: none"> • Financial Plan Management • Admission Management • Application Offering Management • Program Structure Management 	PAR1 – The process achieves the defined purpose

For each level it is possible to define a profile for an educational institution, which are:

- **Informal:** In this level the educational institutions are characterized for a tendency to give up process in crisis situations and inability to repeat their success and the clearly separation between academic and administrative departments.
- **Partly Managed:** In this level the educational institutions are characterized for to have short term planning but still have the clearly separation between academic and administrative areas.
- **Managed:** In this level the educational institutions are characterized for to have medium term planning, by having process clearly defined and the academic and administrative departments feels that belong for the same institution.
- **Managed and Measured:** In this level the educational institutions are characterized for to have long term planning and by execution of their process with defined goals. The management is executed using indicators and the errors are identified and fixed.
- **Optimizing:** In this level the educational institutions are characterized by the continuously improvement of their process bring new ideas and technologic improvement.

7. Conclusion

This paper proposes a maturity model for academic management processes in private institutions of higher education, having as its foundation four basic elements, as described previously. From this model it is believed that higher education institutions can evaluate and know the level of maturity of each process of academic management. With this information, managers of these institutions can compare their institution against the market or compare institutions within the same group. Additionally, it allows for quality improvement of their processes, unification of these processes when possible and, consequently, the reduction of operating costs. A maturity model, unprecedented in the education market, will contribute to improve the quality of education services and strengthening the position of private institutions.

8. References

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