

# **Measuring Quality in Graduate Education: A Balanced Scorecard Approach**

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**Placement: Tennessee Higher Education Commission  
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### **Summary of Project:**

There is an increasing concern among academics, funding agencies and the public at large concerning the quality and value of higher education in the country. A number of factors in recent times have exacerbated this concern. The increase in the cost of college education, the decrease in state funding of higher education across the country and the increase in college debt, are among many factors that have raised the issue of the value proposition of graduate education and college education in general. In our own State, some have raised the question and suggested that graduate education does not necessarily provide an appreciable added value to recipients of graduate education. Of course, there are those that beg to disagree with such assertions. Consultations with some of the governing agencies for higher education in our State, suggest that measuring quality in graduate education has been challenging.

The focus of this project is to explore how to measure quality in graduate education, recognizing the fact that the concept of quality, may mean different things to the different stakeholders in graduate education. The project is proposing a multidimensional approach to how we measure quality in graduate education with deference to the mission of different educational institutions. The project is proposing a balanced scorecard approach, with emphasis on institutional/program missions and student input.

## **Measuring Quality in Graduate Education**

There are a number of approaches to dealing with the issue of measuring quality in graduate education. As one should expect, those funding graduate education are concerned about “the return on their investment”. Government agencies, using tax payers’ money to fund graduate education look at the issue of quality of graduate education from a different perspective than other stakeholders in the enterprise of graduate education. Educators tend to measure quality using different indices than parents or even students themselves. In an increasingly competitive employment environment, the quality of graduate education is also taking some utilitarian dimension. Put simply, does graduate education help me gain employment and/or earn more money? There is the implicit assumption, which is difficult to argue against, that if graduate education is of good quality, then it would meet the expectations of the different stakeholders. However, there has not been much consensus on how quality should be defined and how to measure the construct.

## **Approaches to Measuring Quality in Graduate Education**

The approach we have taken in this project is to explore briefly how quality has been defined in graduate education and some of the critique of such definitions. We then explored some of the approaches and “best practices” in measuring quality in graduate education. As we surveyed the literature on measuring quality in graduate education, some trends became quickly obvious. The indices used by employers tend to be different from those of the educators. For example, the number of terminally qualified faculty, institutions where doctorates were earned, and scholarly research output tend to indicate quality graduate education for educators. The percentage of graduates employed within a few months of graduation, tend to be more important to students, and discipline related competencies and readiness for the workplace tend to be more important to employers. For students, the level of non-academic services offered by the school, and non-class engagement with faculty tend to be indicators of quality graduate education. The literature on quality graduate education also suggests that some of the measures of quality are driven by standards set by different accrediting agencies. Since accrediting agencies tend to be discipline specific, some of the measures do not have universal appeal. While some government and funding agencies have used accreditation as a proxy measure of quality, measuring quality for those programs that do not have outside accrediting agencies tend not to be consistent even within the same campus. It was observed that some of the indices being used for measuring quality in graduate education have not fully incorporated the implications of how technology

is changing the delivery of graduate education. Finally, it was observed that the level of input by students in measuring quality in graduate education is relatively minimal.

### **A Balanced Scorecard Approach**

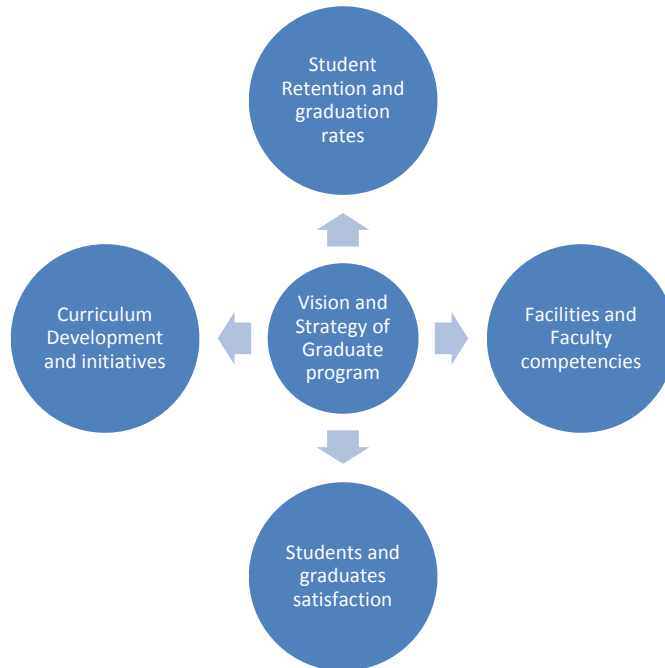
Given the above observations from the literature on measuring quality in graduate education, the project is proposing the Balanced Scorecard approach to measuring quality in graduate education. The Balanced Scorecard (BSC) is a strategic planning and management tool developed by Kaplan and Norton in the early 90's (Kaplan and Norton, 1992). It is a multidimensional performance measurement framework, with emphasis on aligning organizational activities to the vision and strategy of the organization. As suggested by Kaplan and Norton, the idea of the BSC is akin to the dials and indicators in an airplane cockpit. In order to navigate and fly an airplane successfully, pilots need information on fuel, air speed, altitude, weather conditions in their present environment and destination. Dependence on only one dial or indicator in the cockpit may prove fatal. Given the different stakeholders and their expectations in the enterprise of graduate education, and the changing and challenging environment in higher education, this project proposes to adapt the BSC approach in measuring quality in higher education. Two significant areas of adaptation of the BSC approach will include using a weighted percentage approach on the BSC, and placing more emphasis on the student input. The emphasis on student input is the genesis for the proposed student survey as will be described later in this paper. Traditionally, the BSC approach generally has four perspectives:

1. Financial
2. Internal business processes
3. Learning & Growth (human focus, or learning and development)
4. Customer satisfaction.

In our application of the BSC to the measuring of quality in graduate education, we are proposing the following perspectives; Student retention and graduation rates, curriculum development and initiatives, facilities and faculty competence, and students/graduates satisfaction. These four perspectives were selected given the expectations of the major stakeholders in graduate education. For publicly funded universities, it is becoming increasingly clear that state governments and other parastatal agencies are interested in the number of students graduating from higher education institutions. It has also been suggested that from an economic development perspective, a state or region with citizens with more advanced degrees tend to attract potential employers. This in part, explains some of the initiatives in our state to increase the number of citizens with post-secondary credentials. Curricular development,

and facilities and faculty competency tend to be measures of quality that accrediting agencies focus on. This is especially true of professional graduate schools. With the influence of the accrediting agencies, it has been the practice to let accreditation be a proxy measure for quality in graduate education. However for academic programs that do not have discipline-specific accrediting agencies, the measuring of quality can be problematic. The extent and frequency of curricular development is an indication of commitment to continuous improvement. The survey of literature also suggested that metrics for measuring quality of faculty competency tend to focus on criteria such as number of scholarly publications by the faculty, the reputation of institutions where faculty members earn terminal degrees. Some have suggested that some of these metrics are favored by faculty members and may not necessarily mean that those faculty members are actually providing quality education to their students. It would be safe to suggest that educational background and publication records of faculty members are necessary but not sufficient indicators of quality graduate education. One area of increasing importance is the level of faculty engagement with students. The final perspective in measuring quality in graduate education is the satisfaction level of students and graduates of the programs. It will not be farfetched to consider the students as the “customers”. The perspective of the students and graduates of each academic program impact the reputation of the program and may be directly correlated to future enrollment in the programs. There seems to be a realization that student experience should play a part in measuring quality of graduate education. However, there is a dearth of instruments or tools measuring student satisfaction with graduate programs. One of the major contributions of this project is developing an appropriate instrument, administered to students to measure quality of graduate education. Getting direct feedback from your “customers” can be a great impetus for continuous improvement. As suggested earlier, this should be one of the indicators that can help to measure the quality of graduate education. The details of the proposed instrument will be discussed in another section of this paper.

**Figure 1 A Balanced Scorecard Approach to Measuring Quality in Graduate Education**



### **Weighted Balanced Scorecard**

As indicated earlier, the proposed weighted BSC approach will give deference to institutional mission and student input. Understanding that different institutions and programs have different missions and strategic focus, the proposed approach suggests that the four perspectives as shown in the diagram above should be given different weights. Weights given to each will be driven by the vision, mission, and the strategic intent of the particular program. This approach will suggest that Masters' programs and Doctoral programs may give different weights to each of the four perspectives, or that different graduate programs on the same campus may assign weights differently, depending again on the vision and the strategies of the program.

The rationale behind a weighted approach to the balanced scorecard is based on the reality of differences in the strategic vision of each institution and graduate program. This is not to suggest that any of the four perspectives on quality is less important, but one should note for example, the expectations for library facilities and faculty competencies of a doctoral granting graduate program may be slightly more significant than one for a master's granting program. It could also be suggested that the Carnegie ranking of institutions implicitly suggest differences in strategic intent and as such quality metrics should be cognizant of such differences. The current performance funding formula as developed by Tennessee Higher Education Commission, (THEC) seems to give a nod to this notion of differences in institutional mission.

Rather than having a prescribed weight distribution on these perspectives, it is suggested that this should be articulated by the different institutions in conjunction with external reviewers of programs. The weight distributions among the four perspectives should be consistent with the Carnegie rankings of

the institutions. Future changes in the distribution of weights can be proposed by institutions and be approved by the necessary institutional committees with final approval by the appropriate governing agencies, TBR and or THEC

### **Students and Graduate Satisfaction**

Given the aforementioned dearth of instruments to measure student and graduate satisfaction, we will propose an instrument for measuring students' perception of quality in graduate education. The proposed instrument will draw on the literature on higher education performance and consumer marketing studies. The intention is to eventually test the instrument with students. The project will also address how some of the quality metrics can be used for continuous improvement and as part of the equation in rewarding quality performance at institutional levels.

Historically, the input of students in measuring quality of graduate education has been relatively minimal. We have suggested earlier why the input of students in this equation is becoming increasingly important. The transactional element of providing and consuming graduate education is now a reality. The increasing cost of higher education and the opportunity cost associated with furthering one's education are responsible for the new dynamics. In addition to the altruistic nature of getting a graduate education, students are increasingly looking at education as "purchasing" a service, and expect quality service as part of the value proposition of graduate degree programs.

### **Measuring Service Quality in Higher Education**

In the mid-1980s, researchers gave more attention to managing service quality. One of the results of the focus on service quality was the introduction of instruments to measure quality service. Parasuraman, Zeithami and Berry (1985) developed the service quality model, SERVQUAL, which identified ten elements of service quality. Those ten dimensions were later collapsed into five factors (reliability, assurance, tangibles, empathy and responsiveness). These five factors of quality became the basis of questionnaires developed by businesses to measure customer expectations of service quality. The gap between customer expectations and their perceptions of received delivery suggests the level of quality. The SERVQUAL has been used successfully in measuring service quality in different service industries and its value as a service management tool has been extolled.

However, it has been suggested that the instruments developed based on the SERVQUAL model may not adequately capture the perceived quality in higher education. A variant of SERVQUAL, with specific application to higher education was suggested by Firdaus (2006). In developing HEdPERF (Higher Education Performance) he suggested six service quality dimensions related to higher education, as described below:

**Non-Academic Aspects:** Items that are essential to enable students to complete their study obligation and relates to duties by non-academic staff.

**Academic Aspects:** Items that are solely the responsibility of the academics, good communications skills of teaching staff, feedback to students, proficiency in subject matter

**Reputation:** items that relate to Programs, Colleges and Universities projecting a professional image.

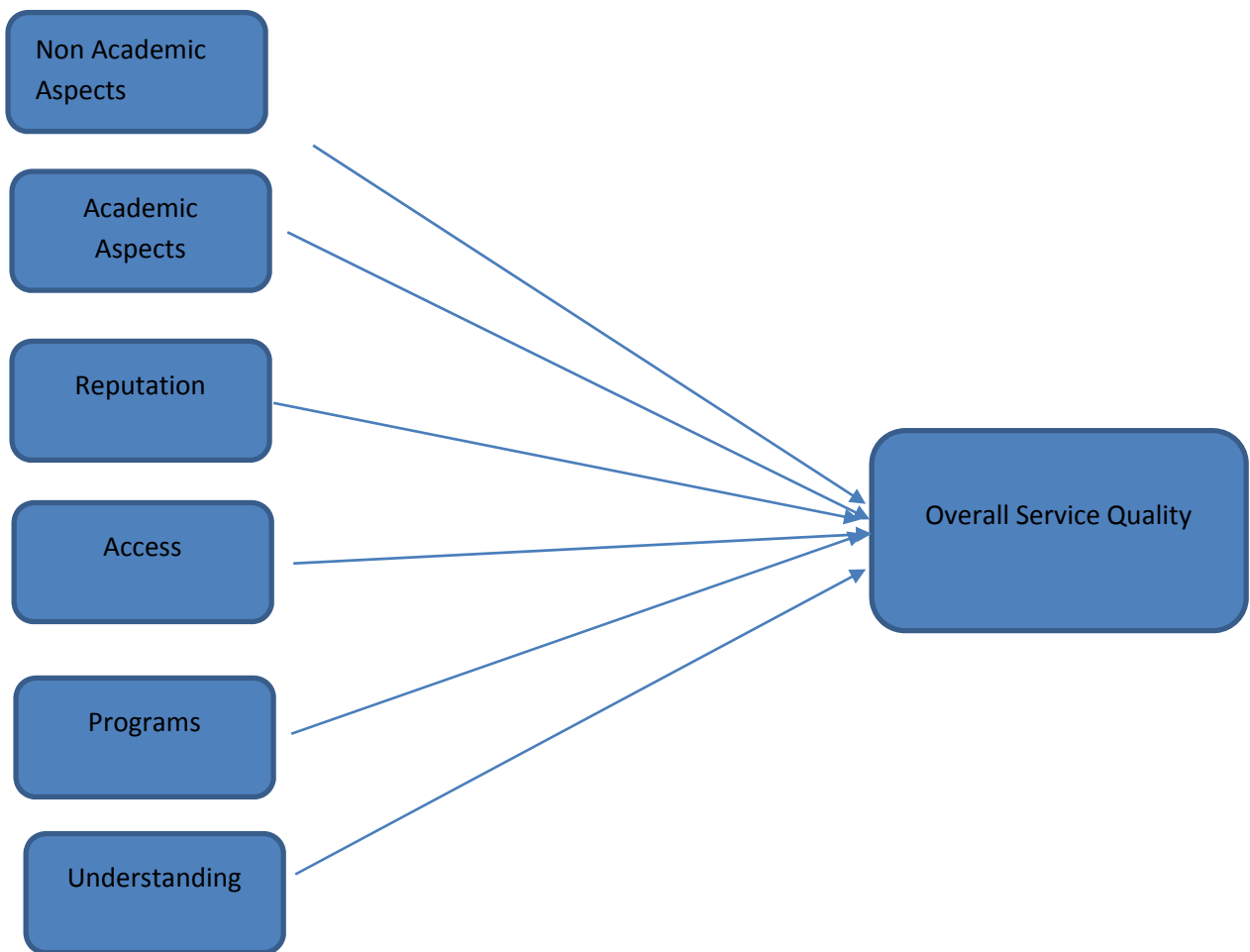
**Access:** Items that relate to ease of contact, approachability and convenience.

Program Issues: items that relate to offering a wide range of reputable academic programs and specializations with flexible structure.

Understanding: Items that relate to understanding the career and professional counselling needs of students.

According to Firdaus, these service quality dimensions can indicate the overall service quality from the students' perspective . Figure 2 represents the suggested theoretical framework.

**Figure 2. Theoretical Framework for Service Quality**



It is on the basis of this theoretical framework that we developed the instrument to measure service quality for graduate programs. As indicated, the instrument placed more emphasis on the student input in measuring service quality. A sample questionnaire is shown in the appendix

The reliability and validity of the instrument developed from this framework should be tested using student samples from different Colleges and Universities offering graduate degree programs.



Appropriate statistical analysis will show the overall effect of the quality dimensions on the service quality level as perceived by the students. In addition, we can also assess the relative importance of the individual dimensions of quality.

### **Implications of the Balanced Scorecard Approach to Measuring Quality**

We have attempted to make a case for a multidimensional approach to measuring quality in graduate education. Assuming the veracity of the approach, its sustainability will presuppose an appropriate performance and reward structure built around the system. One should not expect an improvement in overall service quality, if only one or two aspects of the scorecard are being rewarded. This line of thinking will suggest a performance reward structure that is cognizant of all the different dimensions of quality. At the institutional level, colleges and departments must use an equation that considers all the relevant variables. For example if an institution is rewarded (funded) on the basis of number of students enrolled, it stands to reason for those institutions to focus their efforts on increasing enrollment. However, if funding is on the basis of multiple criteria then we expect those institutions to respond accordingly. As depicted in Figure 1 above, the importance of and thus weight allocated to each of the four perspectives on quality education must be driven by the vision and strategy of each institution.

Measuring service quality also implies the opportunity for continuous improvement. The database generated from administering an exit survey focusing on measuring quality can be the basis for allocating resources to continuous improvement initiatives.

### **Project Deliverable and Follow-up Studies**

The goal at the end of the Fellowship was to develop a survey instrument that can be administered to students to measure quality in graduate education. The intent is to administer the instruments on selected campus and graduate programs. Once the reliability and validity of instrument are confirmed, the instrument can be part of the exit survey that is used for those graduating from different graduate programs.

The survey instrument has been developed as shown in the Appendix. The plan is now to get the required IRB approval in the Fall of 2014 and be able to administer the survey to graduate students. The survey will be administered first to graduate students in my host institution and subsequently in other TBR institutions with graduate programs.

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## APPENDIX

**(Insert Questionnaire Here)**

## Acknowledgment

I am very grateful for the opportunity to have served as a Maxine Smith Fellow this year. The year has been a significant milestone in my professional career. I am very grateful to the staff at TBR that made this year a very worthwhile experience. I am also very grateful to Dr. Sidney McPhee, President MTSU who nominated me for the fellowship and to Dr. David Urban, Dean, Jones College of Business, at MTSU who provided all the encouragement and administrative support I needed during the term of my fellowship.

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