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TOWARDS BUILDING A COMPUTER-AIDED ACCREDITATION SYSTEM

A Thesis

by

EMMANUEL ALEJANDRO SANTILLANA FAYETT

Submitted to the Graduate College of
The University of Texas Rio Grande Valley
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August 2016

Major Subject: Computer Science

TOWARDS BUILDING A COMPUTER-AIDED ACREDITATION SYSTEM

A Thesis
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August 2016

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ABSTRACT

Santillana Fayett, Emmanuel Alejandro., Towards Building a Computer-Aided Accreditation System. Masters of Science (MS), August, 2016, 46 pp., 10 Figures, 30 references.

Accreditation is a big subject. What is accreditation? Why should it matter to us? How many types of accreditation can an institution have? Is the government involved? What issues are present? How can we improve the accreditation process? All these questions will be covered in this paper. In addition, I will build towards a software that will apply the most important points in this paper, like applying the mission, objectives, and outcomes expected from the students in the form of a syllabus. This will help the faculty with the accreditation process and will help the students know what is expected from them since the first day of class. In addition, it will improve their performance.

DEDICATION

I dedicate my thesis to my wife and family. A special show of gratitude to my loving wife, Alejandrina Reyes, whose support, encouraging words, and push for tenacity helped me take this important step. My parents, Carlos and Alicia Santillana, who have supported me during this period of my life and helped me get through hard times. My sister, Karla, and my brothers, Carlos, Marcos, and Obed, who also supported me.

In addition, I dedicate this thesis to the Reyes family, who supported me throughout this process. I will always appreciate everything they have done. I also thank close friends and relatives for their support.

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CHAPTER I

INTRODUCTION

How do you choose a school? What factors help you decide on the best program among several schools? How do you, or how does someone you know, get the best education? What is accreditation? What is the process? What are the different types of accreditation a school might have? Why does it matter to us?

In today's educational environment, there are many educational institutions to choose from. Someone can choose a school that just opened or that is not recognized nationwide, or someone can choose a state school. One can also choose to go to an Ivy League school. Between all of them is a standard verifying that certain criteria are met no matter where you study, or if you transfer to another school, certifying that you have the required skills. In this paper we will talk about the accreditation process, some of the changes it needs to undergo, what would happen if the government regulated it, some of the issues in accreditation, the importance of an accredited school or program, and the importance of teaching quality.

Accreditation is a process that consumes significant time. The accreditation process requires the gathering of documentation like student's work, the planning of objectives for the programs or courses, the establishing of a clear outcome for each course, the determining of which skills the students will learn for each course, and other information. To gather all this information consumes time. Once it is gathered, time is needed to organize all the data.

Let us visualize this. For each working day of a faculty member, we can suppose 4 hours is used to get ready for the accreditation process for two months before the day of the visit. This gives us a total of 160 hours solely for preparation for the accreditation process. The accreditation visit usually takes three days. Let us suppose that these three days consume another 4 hours per faculty member; this adds 12 hours. In total we have 172 hours invested in this process per faculty member. Let us then say that each department has 10 faculty members. Now we can multiply 172 hours for each faculty member by the number of faculty members in the department that gets accredited (for example, Math, Science, Business, etc.). Now let us multiply 172 hours by 10 faculty = 1,720 hours per department multiplied by 5 departments = 8,600 hours per school.

If each faculty member earns an average of 40 dollars per hour, we can say that 8,600 hours multiplied by 40 dollars per hour = 344,000. This is the total amount of dollars each school invests in faculty time preparing for the accreditation process. This is if the department has only 10 faculty members; this might not be the case for all schools, as they usually have more than 10 faculty members.

In the U.S. there are 4,706¹ universities. If all of them accredits 5 departments and has only 10 faculty members (this is not the case for all of them), then $344,000 \times 4,706 = 1,618,864,000$ dollars. This is a billion-dollar process done every 5 to 10 years. That is why I want to work towards software that will help faculty gather, prepare, and organize all the required paperwork for this process. This software will create a syllabus for the professor for each of his or her courses, stating clear expectations, what the student should know, and what the outcomes will be. This will

¹ U.S. Department of Education, National Center for Education Statistics. (2015). Digest of Education Statistics, 2013(NCES 2015-011)

help the faculty have everything organized, and will also have an impact on the student, because it will state all the details on what the faculty expects from the students.

CHAPTER II

ACCREDITATION

This section goes through the meaning of accreditation, how it is handled, the types of accreditation available, the procedure, and how it can be improved. Accreditation is an important factor for the public, which wants to see an institution as accredited because they can be assured that the students in the institution are receiving a quality education. Also, accreditation is important for the faculty because they are always working on improving the quality of teaching, keeping up to date in the field, and having the equipment necessary to ensure quality in teaching.

The committee members on Consequences of Accreditation [1] define accreditation as a third-party examination and evaluation, usually done by peers, through some mutually agreed-upon process, to arrive at a quality determination of that which is being examined. The results of that assessment are made publicly available as an indication to all interested parties of the quality that was perceived and attested to by disinterested parties. It explains the types of accreditation (institutional, specialized), the purpose (certifying that an institution has met established standards, assisting prospective students in identifying acceptable institutions, assisting institutions in determining the acceptability of transfer credits, helping to identify institutions and programs for the investment of public and private funds, etc.) and problems (accreditation has never focused on educational outcomes, and thorough longitudinal studies show little or no relationship between accreditation standards and the subsequent success of graduates of accredited institutions and

programs). Accreditation has never been able to define quality of education except in terms of specific criteria.

The procedure for accreditation has six steps. First is the establishment of an accrediting agency. Second is setting standards. Third is self-study. Fourth is on-site evaluation. Fifth is publication. Sixth is re-accreditation. The committee also discusses recognition of a broad spectrum of accounting education, like the accrediting body, focus of accreditation, and consequences of accreditation. The committee recommends that the American Accounting Association be the only national association of accounting educators, and take initiative and leadership in the movement toward accreditation accounting. The academic representatives should take the lead in establishing standards which inspire improvement in the quality of accounting education.

Similarly, Kauko Hämäläinen [2] analyzes the standards, criteria and indicators used in program evaluation and accreditation in Western Europe. The definition given by Criterion is understood to provide a basis upon which an evaluative conclusion is drawn. It offers a means of interpreting how well the objectives have been reached. Standards is defined as the level of requirements and conditions that must be met by institutions or programs to be accredited or certified by a quality assurance accrediting agency. These conditions involve expectations about quality, attainment, effectiveness, financial viability, outcomes and sustainability. The indicators describe the features or the state of the object or the change occurring in it. This says something about what is considered important in teaching and learning in higher education and about the concept of university teaching and learning used in different countries. The aim is to carry out a thorough analysis of currently used indicators, to be followed by a formulation of modifications of indicators, or even new indicators which should lead to an improvement in the quantitative

assessment of higher education at both system and instructional levels. This is done by the material collected for UNESCO-CEPES, which has launched a project on Indicators for Institutional and Programme Accreditation in Higher/Tertiary Education as part of the Project on Strategic Indicators. Many kinds of material are analyzed: reports by national accreditation and quality assurance authorities, as well as by professional associations and associations of institutions and private organizations. Kauko Hämäläinen concludes that cooperation is needed in creating standards and indicators; a common reference framework could point to which areas should be evaluated and could include a set of standards, criteria and indicators from which evaluation agencies can select what they need in their national context.

Regarding this, Ossian MacKenzie [3] presents that accreditation is probably one of the most talked about and least understood facets of academia. The author likes the definition of accreditation by Dr. Selden, Executive Secretary of the National Commission on Accrediting, who says: “Accrediting is the process whereby an organization or agency recognizes a college or university or a program of study as having met certain predetermined qualifications or standards.”^{3a} Dr. Selden was the first to admit publicly that accrediting is not an exact science and employs gross measures in judging educational institutions or programs of study. Accreditation is important because we want assurance that an institution or program meets certain prescribed minimum standards of excellence. Another important function is the establishment of minimum standards as a target and measure in raising the general excellence of education. The author talks about the three types of accreditation, state legal agencies, regional associations of institutions, and professional associations or organizations. The state accreditation of an individual is, for example, the accreditation of nurses, teachers, or others. The Regional Associations of Institutions determine the status as a whole and not specific programs. The Professional Associations are

agencies that accredit departments, for example, AACSB for business schools and ABET for engineering schools.

Speaking of accreditation, Patricia A. Thrash [4] presents, from a perspective of the accrediting associations, a brief description of the accreditation process and evidence of their productive response. The accreditation process is defined as the outcome of an evaluative process guided by a criterion generally based on judging an institution or a program in the light of its stated purposes and analysis of developments that have affected accrediting agencies. For example, the Division of Eligibility and Agency Evaluation (DEAE) is one of the accrediting agencies that determines the quality of training offered by its members in terms of the eligibility of schools and colleges to participate in federal education assistance programs. Because of the rapid growth in school demand, the accrediting agencies had initial difficulties adapting their evaluation procedures to these different kinds of institutions. Patricia A. Thrash references the “Interim Statement on Accreditation and Non-Traditional Study” and “Interim Guidelines on Contractual Relationships with Non-Regionally Accredited Organizations” that served as useful guides to the regional commission as it developed its own procedures. With this data the author concluded that these procedures were appropriate for the evaluation of all institutions. Also, the accrediting commissions found themselves reexamining their basic purposes and recasting their evaluative procedures for all institutions to emphasize educational outcomes.

In the same way, William E. Troutt [5] focuses on identifying regional (institution, organization, administration, etc.) accreditation criteria that propose to assure institutional quality, recognizing major assumptions underlying these criteria and reviewing accreditation criteria in light of available research on correlates of educational quality. The accreditation criteria are institutional purposes and objectives, educational program, financial resources, faculty, and

library/learning center; all of these areas represent checks of institutional quality. The first assumption made by the regional accrediting association is “that judgments about institutional quality should rest on inferences from certain conditions rather than direct assessment of student performance”. The second assumption is “that no common benchmarks exist for assessing institutional quality”. Third, “current accreditation criteria equate higher education with a production process”. William E. Troutt conducted a survey of research that satisfied these criteria: (1) employ measures of intellectual achievement or cognitive outcomes, (2) collect data from contrasting types of institutions, and (3) provide information on student change between admission and subsequent point in time. He found that basing graduation on intellectual attainment rather than accumulated credits would produce far different results. One college’s graduating class would consist of 28 percent seniors, 21 percent juniors, 19 percent sophomores, and 15 percent freshmen, each contingent representing roughly one-fourth of the new class. This study’s major weakness lies in its failure to separate the effects potentially attributable to maturation or student ability at college entrance. A final result suggests available research cannot substantiate the claim that certain accrediting association criteria assure institutional quality. However, there is difficulty in authoritatively stating that research demonstrates the lack of any relationship between accrediting association criteria and institutional quality. “Accreditation criteria do not emerge out of empirical research, it grows out of [an] experienced educator’s judgments as to what characteristics constitute a reputable institution.”

In a like manner, Mantz Yorke [6] sets out to sketch a synoptic framework within which performance indicators may be used within higher education. The framework for considering course quality has four main institutional resource inputs to the delivery of a course, educational equipment and materials of various kinds, accommodation and student support services. The

evidence to date suggests that the use of performance indicators has not adequately taken into account a number of factors at the level within the higher education system at which they are being used, their practicability, and the inter-relationship between both quantitative and qualitative data. The effective use of performance indicators is discussed in terms of exercises in which judgments must be made upon complex sets of data rather than upon a narrow range of parameters, with significant implications for what is managerially feasible. The author does not provide data, but does provide many references and diagrams. The conclusion that Mantz Yorke reached was that a bridge between intra-institutional and extra-institutional indicators of performance is an operational framework which recognizes institutions' internal performance assessment activities as providing trustworthy evidence of attaining targets, and evidence of the quality of course provision.

Considering accreditation, Charles B. Reed and R. E. LeMon [7] interviewed two representatives of Florida's system on important issues regarding teacher education, particularly about how accreditation fits into the process of preparing the best educators possible. The format elicited responses to a series of questions that captured some of the major concerns regarding accreditation in the field of education. For example, **“some people argue that accreditation of teacher education programs is unnecessary. Why should accreditation be sought at all? [In terms of] money and quality, we are investing 76 million in education...so if programs can prove their viability through a national accrediting process involving peer review, then we can begin to feel comfortable that high-quality programs are in place.”** **“You used the term ‘investment.’ How does the allocation of resources fit into the picture?** Education is the most humane and honorable of business[es] – but [it] is a business, and it should be treated as one, with the full complement of consequences. When good ideas work in education, they should be rewarded.

When the outcomes are not worth the investment, then the resources devoted to them should be reallocated to the implementation of new ideas or to existing areas of need.” **“Why is it that universities and university administrators in particular may be reluctant to engage in accreditation?”** First, human beings do not inherently possess a...desire to be reviewed. If accreditation results in real change and real responses to areas of need, then faculty members and administrators become more comfortable with the procedure. [The] second reason is a money issue, [as] accreditation activities can be very expensive, given the costs of site visits, preparation of materials, and so on. The third reason is that accreditation activities take an enormous amount of time away from instruction and research. Most universities begin their preparation at least a year in advance. This means that they are engaged in accreditation activities for two years out of a five-year accreditation cycle.”

Redefining Accreditation

Accreditation has been in existence for many years, and it has not evolved since its establishment. In this section we will discuss factors that should be considered, as well as what should change in the accreditation process and why.

Concerning accreditation, Kenneth E. Young [8] examines the development of a redefinition of the scope to evaluate the quality from a one-man school to a statewide system or institutions that operate campuses across the world to institutions that have no campuses at all served by accreditation, a change in the role of accreditation, and substantial alterations in the attitudes and activities of government in relation to both postsecondary education and accreditation. Kenneth E. Young defines educational quality “within the context of the institution or program’s statement of its own scope and purpose as compared with similar institutions and programs”, and institutional integrity as being “an institution or program [that] is what it says it is

and [that] does what it says it does educationally, at any given point in time.” This is important because accreditation currently focuses on these two concerns, which are evaluated and encouraged by looking at conditions that are necessary and desirable to assure quality and evidence. The accreditation process is designed primarily to encourage and assist the institution with an evaluation of itself and then to validate what the institution says about itself. The criteria of the accrediting body are intended to establish a common frame of reference for institutional self-study and peer review, not to impose rigid quantitative requirements on the institution. Accreditation is evolving to a point where institutions, for their own purpose as well for socially induced reasons, will engage in a continuing process of self-evaluation and center on more explicit statements of expected educational outcomes. As a result, the uniqueness and value of this process is based on four factors: the accreditation function is located in the private, not the governmental sector; and it balances the interests of institutions, professions, and the public.

Likewise, the authors [9] examine the influence of a change in accreditation standards on a representative national sample of 203 engineering programs at 40 institutions. They investigate the differential impact of change in accreditation standards on programs reviewed in different years during the period of transition. The ABET Board of Directors approved Engineering Criteria 2000 (EC2000) in 1996. This new criterion altered the evaluation of undergraduate engineering programs, shifting the emphasis from curricular specifications to student learning outcomes and accountability. Engineering programs must define program objectives to meet their constituents’ needs. To ensure accountability, they are required to implement a structured, documented system for continuous improvement that actively and formally engages all of its constituents in the development, assessment, and improvement of academic offerings. Also, they must publish specific goals for student learning and measure their achievement to demonstrate how well these

objectives are being met. This research was based on data collected from more than 140 program chairs, 1,200 faculty members, 4,300 graduates from 2004, and 5,400 graduates from 1994. The 2004 evidence demonstrates a surprisingly uniform level of student experiences (in class, collaborative learning, instructor interaction and feedback, internships, and professional societies) and outcomes (apply math and science, design and problem solve, group skills, ethics and professionalism, and communication skills). This suggests that engineering accreditation is beginning to accomplish its quality assurance goals.

Accreditation and the Government

Some people believe that the government will help improve the accrediting process, but in this section we will see why the government must stay away from this process. We will also discuss its effects, and all the Acts passed that are “affecting” the accreditation process.

Ernst Benjamin [10] invites faculty members to preserve accreditation and insists on participating fully in the evaluation of colleges and universities in the design of academic procedures. For example, shaping assessment is the responsibility of a few faculty specialists whose expertise lies more in testing than in subject matter learning. If faculty members do get involved, the state and federal governments will regulate almost every aspect of higher education. Ernst Benjamin states his point of view on how the government will affect the quality of education; for example, the Higher Education Act imposed specific student outcome measures to be employed by newly created State Post-Secondary Review Entities (SPREs). If the state agency or accrediting body declares a college below standard, students there would lose federal financial aid. The outcomes include graduation rates, job placement, and successful licensure examination rates; all of these outcomes will significantly distort programs by increasing vocationalism and disadvantaging schools that admit high-risk students. Ernst Benjamin proposes that in order to

balance public accountability with professional standards and control, accreditation structures must be renewed and strengthened, as well as regulated. This implies not only the loss of academic self-governance but also the loss of academic freedom.

As a result, Judith S. Eaton [11] presents the ways in which the federal government is increasing its presence by the Higher Education Opportunity Act in areas (transfer credit, articulation agreements, distance learning, enrollment growth, quality of teacher preparation, textbooks) that traditionally have been the domain of faculty and institutions. It invites faculty members to get beyond deprecation and discontent and to strengthen independent and meaningful accreditation. The author talks about laws like No Child Left Behind (NCLB) and the Higher Education Opportunity Act, as well as their impact on institutions. NCLB emphasizes K-12 accountability and a federally organized regimen of national testing focused on documenting student success. This law did not have a direct impact on higher education. The Commission on the Future of Higher Education, with this initiative, constituted the most extensive federal attention given to higher education in the past few years. This commission's report urged that accreditations take action to remedy these concerns by providing students and the public with more evidence of student achievement and institutional performance, ensuring that this evidence was easily understandable and readily accessible, and developing means to help students and the public compare institutions. Also, accreditors and institutions should collect evidence of student achievement primarily in judgments about academic quality. The author suggested that more involvement (accreditation commissions, faculty leaders to join forces with administration and association leaders) is needed from the faculty to establish roles instead of creating discontent and the deprecation of accreditation.

Similarly, Judith S. Eaton [12] describes accreditation as reflective of the cores values of the academy, peer review, the centrality of mission, institutional autonomy, and academic freedom. Peers judge institutional quality based on respective institutional missions. It is committed to assuring that faculty have appropriate discretion with regard to what is taught, who is taught, who teaches, and what standards are applied.

There are several factors that lead the federal government to press more vigorously for greater authority over accreditation. First is the growing federal financial investment. The federal government has invested more tax dollars in students' grants, loans, and other funds. The second factor is the cost of tuition. Costs for students have continued to rise, outpacing even the increased costs of healthcare. The third factor is public accountability. This is in the form of greater evidence of student achievement and institutional performance as well as increased transparency. Accreditation in the United States is undergoing a major change as governmental regulatory authority to judge quality expands, eclipsing accreditation's collegial model of quality review. The large amount of public and private money in higher education, the commitment to universal access and the accompanying calls for greater public accountability, the growing nationalization of public policy, and the impact of electronic technology have all contributed to this change.

Improvement in the Accreditation Process

This section will describe how the accreditation process can be improved by understanding all the processes involved in the accreditation, what changes need to be made, and what needs to change.

Greg Gilbert [13] offers recommendations on shaping the future of higher education in California through involvement in accreditation by serving on visiting teams, and sitting on the

accreditation commission itself so it can provide a useful understanding of this process to others. Also he gives an insight to others by providing recommendations for faculty members based on the author's experience. These recommendations are as follows. Develop clear outcomes, which will help because the accrediting commissions want to see plans for assessing what students know upon completion of courses, programs, and degrees, and documentation of how assessment results will be applied to future planning. Conduct meaningful program reviews, which is an important component of the accreditation cycle because it allows for the thorough review of program data (retention, attrition, rigor, student satisfaction, and so on). Participate in local accreditation planning and development, as participation demonstrates the role of the faculty in the profession. By serving on visiting teams, the training and experience gained by visiting other campuses can benefit home institutions and programs as well as one's own professional standing.

Likewise, Richard Rothstein, Rebecca Jacobsen, and Tamara Wilder [14] state that a change in accountability is required because public schools are based exclusively on standardized test scores. An effective accountability system requires youth development institutions to demonstrate to the public's satisfaction that they are pursuing goals established through democratic processes. The regional associations now claim to base accreditation reviews on outcomes, but this usually means that they expect school faculties to establish their own specific learning goals (typically test scores) and achieve them. Accreditation is mostly a peer-review process that focuses on the quality of high school programs and resources, not the achievement of students. Some other areas that accreditation agencies require of schools are: offer designated courses; maintain libraries with reference materials and a specified number of books per student; have a minimum number of teachers who are college graduates; maintain science laboratories, gymnasiums, ventilation systems; and others. The regional associations have no tax support and are funded only by the

membership dues of participating schools, so their budgets are small, and the visiting accreditation teams are usually composed only of volunteers. Volunteers are teachers or administrators from other schools in the region, and an effort is made to include teachers from various subject areas. In most regions, schools undergo a year or two of preparation before they are visited by a team of educators. Little is random about the observations; teachers may take care to present their best lessons during the visit. They may also carefully select students and parents to be interviewed, and select unrepresentative work to include in the portfolio examined by team members. To fulfill an accountability role, associations should become quasi-governmental agencies with tax support and budgets large enough to conduct school visits more frequently and to employ trained professional evaluators. The American accreditation system provides a start toward meaningful accountability; to get there, however, modifications are necessary.

Equally, David D. Dill, William D. Massy, Peter R. Williams, and Charles M. Cook [15] review recent arguments and proposals (the National Policy Board on Higher Education Institutional Accreditation [NPB], which pledged to pursue significant improvements in institutional accreditation) for changing the structure of institutional self-regulation in the United States. They suggest that the real challenge to voluntary accreditation—the inadequacy of collegial mechanisms of educational quality assurance—has not been effectively addressed in the contemporary debate. The NPB proposed that rigorous standards for the assessment of institutional quality were applied consistently in the evaluation of colleges and universities, with particular attention paid to measuring institutional effectiveness through student achievement, and that there be public disclosure of relevant information about the effectiveness of affiliated institutions and certified accrediting agencies. Then the following should be examined: various mechanisms for quality assurance (this is the collegial peer review and evaluation), accreditation (the process that

determines whether an institution or a program meets threshold quality criteria and therefore certifies to the public the existence of minimum educational standards), assessment (evaluates the quality of specific activities within academic units), and academic audit (an externally driven peer review of internal quality assurance, assessment, and improvements systems) that have emerged in higher education systems across the world. The conclusion the authors reached was to encourage quality assessments of teaching and learning at the institutional level, which could be pursued by a research and dissemination project initiated by CHEA (Council for Higher Education Accreditation). The CHEA would work closely with the regional agencies to facilitate experimentation with academic audits as a new mechanism of external accountability.

Issues in Accreditation

The accreditation process is not a perfect system that will make every institution its best. In this section we will discuss issues in some accreditation processes, the importance of learning value, and some misconceptions about accreditation.

Considering a type of accreditation, Eric J. Romero [16] provides accurate information about accreditation issues that impact business faculty and helps faculty understand the value of AACSB accreditation to management education. Another goal is to facilitate an open discussion of how AACSB accreditation impacts business schools and perhaps motivate faculty to reconsider their perceptions about it. One of the issues is that accreditation interferes with strategy, according to Julian and Ofori-Dankwa (2006), who claim that accreditation standards have a negative effect on strategy. A school mission statement, the foundation of its strategy, is the basis for determining the appropriate mix of degree programs, faculty resources, student services, and other key functions; therefore, schools make these decisions independently. Another issue suggested by Julian and Ofori-Dankwa (2006) is that adhering to accreditation standards reduces the flexibility

of schools in reacting to market changes. Current accreditation standards are flexible by design; for example, the standards indicate that faculty should encourage instructional innovation and administrators should provide professional development opportunities for curricular and course innovation. Also, Julian and Ofori-Dankwa (2006) suggest that there is a trend toward “accreditocracy,” which they describe as increased formalization, reliance on hard data, documentation, and continuous improvement. In other words, a lot of paperwork, but paperwork has been around long before accreditation. Eric K. Romero responds to Julian and Ofori-Dankwa ideas on issues of accreditation, and provides data, graphs, tables, and references. The conclusion Eric J. Romero reaches is that AACSB accreditation is a framework and a process that increases the likelihood of a school meeting its goal and meeting the needs of students, faculty, employers, and other constituents. It is a general baseline of quality that encourages innovation and continuous improvement in a global environment.

In accordance, Kenneth R. Thompson [17] interviewed Milton R. Blood, who is managing director of Accreditation Services for AACSB International—The Association to Advance Collegiate Schools of Business. Some of the important questions and answers are:

“What does an AACSB accreditation mean? [It] is that schools are engaged in pursuing quality in [their] activities.”, **“You do require that they track how they progress. That would imply that they have to develop some sort of baseline measures.** They keep track of the accomplishments as high priorities and how well they are achieving those things.”, **“What implications will this tracking process have for individual faculty members?** [It] is dependent upon the school’s action items. We expect that making the strategic management process very important for schools that want continuing accreditation, asking schools to develop learning goals, and being very clear about the kinds of interactions expected among participants will result in the

development of a greater sense of community within the school.”, **“Since the goals and objectives can be relatively school specific as schools develop their plans to meet their mission, how will AACSB ensure quality given the diversity of goals? You alluded to that when you talked about the different paradigms across the world and wanting to be sensitive to those cases, yet you want to have assurance of quality learning.** [With] all of the programs, for example, [the] master of science, MBA, EMBA, the school is striving to create quality educational programs, we want to look at the school for the goals it has set.”, **“What would be an example that would demonstrate what is required?** Let’s suppose that one of the learning goals for a school was that students should be able to create and deliver a persuasive oral argument as an oral communication skill. The school would develop a conceptual definition of that learning goal, and then they would possibly set up an operational definition that would say the skill would be imbedded in three courses, then make a measurement related to this skill and in each course deliver an oral report that will be judged on very specific criteria, then develop a scoring procedure and assess whether students meet the goal.”, **“On a gut level how will a school really know what it is doing, if it is doing an effective job, at the end of the day?** I guess at the gut level we will know a school’s doing a good job when they look forward to having their accreditation review team come so they can show off the quality of their programs.”

In a like manner, Terrel L. Rhodes [18] explains the importance of learning value, accreditation, and the quality of the degree. “The Degree Qualifications Profile (DQP)” was released by the Lumina Foundation and discusses accountability and assessment in the broader context of the quality of student learning and the meaning of college degrees. The DQP focuses on the premise that a college degree embodies an expectation for levels of learning in a collection of areas for anyone who receives that degree, regardless of the major or program of study. It

describes the students' performance appropriate for each degree level through clear reference points that show the incremental and cumulative nature of learning. Focusing on conceptual knowledge and essential competencies and their applications, it also outlines how students should be expected to perform at progressively more challenging levels. With the DQP, it is clear that a useful approach to track and measure students' progress is needed throughout their education. Accreditation bodies, both regional and professional, always had a set of learning objectives that were implicit and not explicit. One can help students gather evidence of learning throughout their academic careers through the use of an e-portfolio, which can be transported everywhere. The use of these e-portfolios for learning and for reflecting on how their educational activities have enhanced their abilities and skills shows higher rates of retention, graduation, and grade point average. The use of an e-portfolio would help the school show the progress and work done by its students. The challenge for accreditors is to design the institutional certification process in a way that both respects the faculty's expertise and encourages their involvement and grounds accreditation in direct evidence of student-demonstrated learning at the levels expected for graduates earning a specified degree rather than in the perseverance of students in obtaining a certain number of credits and grades.

Likewise, Frank B. Murray [19] covers six misconceptions in accreditation. He states that accreditation does not protect students from bad schools; this view is rooted in the fact that nearly all institutions and programs that seek accreditation satisfy their accreditors' standards and acquire accreditation. This misconception assumes that there are accredited schools with low scores. Accreditation is focused on the wrong thing; a program is judged by whether it has accomplished its own mission and not that of some other group with other goals and aspirations for higher education. Accreditors with standards that require a certain number of books in the library, or that

classes be of a certain size, have terminal degrees, be full time—all these are the wrong focus in the accreditation process because they cannot indicate low quality. Accreditation is not transparent; this happens because the public sees only the outcome of the process, the school or the program accredited, but not what supported it. There is no review of or details regarding what the program did right or wrong.

Accreditation is riddled with conflicts of interest. Institutions and programs seeking accreditation pay the accreditors' cost, so it may appear that they are purchasing their accreditation. The appearance of a conflict of interest is that faculty members serve on accreditation panels, commissions, and committees. For example, a faculty member evaluating an institution is aware of the fact that the faculty of another institution seeking accreditation may one day serve on the panel evaluating the panelist's own institution; therefore, members of the same profession or discipline may feel a bond that compromises their objectivity. Accreditation reviews are too infrequent; schools exist in volatile environments in which online courses and programs, tuition dependence, and other circumstances may lead them to make frequent and rapid changes in their characters and programs, so accreditors could come back to review the change at least a year later, depending on the accreditation. In addition, accreditation is not always fair to institutions and programs. This could mean that the accreditation agency focuses on factors that have little to do with quality. For example, a poorly managed accreditor might give inconsistent and invalid assessments in violation of its own policies. The point here is that what makes for a high-quality teacher education program, and what would be fair to the accreditation of one, depends to a large extent on the settling of some unsettled matters. For example, competent teachers are those who accept and achieve the state's standards for their students, challenge those standards, or insist on

more modern teaching strategies, maximizing student potential or ensuring that their students pass standardized tests.

The Importance of Accreditation

In this section we will examine principles for good practices, determine why accreditation attracts such interest, and discuss the difference between accreditation and certification.

Jon F. Wergin [20] invites the reader to apply the Council of Regional Accrediting Commission's (CRAC) "Principles for Good Practices." These principles describe what an accrediting commission should reasonably expect of an institution. First, the centrality of student learning in accreditation means that the institution defines educational quality in terms of how well it fulfills its declared mission on student learning. Through documentation of student learning, the institution demonstrates that student learning is appropriate for the certificate or degree awarded and is consistent with the institution's own standards of academic performance. Compilation of evidence means that the institution derives evidence of student learning from multiple sources, such as courses, curricula, and co-curricular programming, and includes the effects of both intentional and unintentional learning experiences. Stakeholder involvement is the collection, interpretation, and use of student learning evidence, and is not viewed as the sole responsibility of a single office or position. Capacity building means that the institution uses broad participation to reflect upon student learning outcomes as a means of building a commitment to educational improvement. What an accrediting commission should reasonably expect of itself is: 1) the centrality of student learning in accreditation, 2) that success in achieving student learning is central to each commission's function and public charter, and 3) that learning is conducted within the context of the mission of the institution and is based on the suitability and effectiveness of processes designed to accomplish goals. Evidence of student learning for accreditation focuses on

the strength of the institution's claim that it is fulfilling its declared educational mission and gives particular attention to how the institution's collection and use of student learning evidence helps achieve its learning goals. Forms of appropriate evidence is examined by commissions for the purpose of evaluating the quality of student learning. The improvement of student learning through accreditation commissions helps institutions document and improve student learning. Training commissions train evaluation teams, commissioners, and staff in the skills needed for effective accreditation practice.

In addition, Wergin [21] explains that the interest in accreditation is a result of the fact that it is the only organized means by which the academy provides quality assurance to the larger public. Accrediting commissions are faced with the problem of satisfying competing and even contradictory interests. Also, they must show that the tradition of peer review accurately and fairly assesses whether the public is getting its money's worth. On the other hand, accreditors must maintain strong ties to their member institutions. Peer review requires that these institutions be willing to go along with needed changes. The largest and most powerful are the accrediting commissions that accredit whole institutions, both public and private. There are 60 commissions responsible for accrediting specialized and professional programs within colleges and universities, such as law, engineering, education, and so on. This means that a single large university can be accredited by more than a dozen different agencies, one for the whole institution and the others for all its professional programs. The Council for Higher Education Accreditation (CHEA) is the primary national voice for voluntary accreditation and quality assurance for the U.S. Congress and U.S. Department of Education. The CHEA has promulgated several sets of principles in the accreditation practice. It suggests that accrediting bodies should expect institutions and programs to "routinely define, collect, interpret, and use evidence of student learning outcomes." Institutions

and programs should be responsible for establishing clear statements of student learning outcomes and collecting and using evidence of this achievement. The accrediting organization should be responsible for using evidence of student learning outcomes in making the judgment about academic quality and accredited status.

In contrast, Richard M. Millard [22] says that an accreditation association cannot create quality, but it can play a crucial role in assessing whether an institution or program has accepted and is carrying out its commitment to quality, and it can provide incentives to do so. Accreditation is a status granted to an educational institution or program that has been found by its peers, including professional and public representatives, to meet stated criteria. Accreditation states that an institution or program has clearly defined and educationally appropriate objectives, that it maintains conditions under which their achievement can be expected, and that it is accomplishing them and can be expected to continue doing so. The author talks about two types of accreditation, institutional and specialized (programmatic). Institutional accreditation is carried out by institutional accrediting associations, which are national or regional in scope. These associations focus on the institution as a whole, such as student personnel services, financial conditions, and administrative strength. Specialized accreditation is carried out by accrediting associations within specific professional, occupational, or disciplinary areas. These associations accredit programs or schools within complex institutions. Before getting specialized accreditation, a school needs to be institutionally accredited, so it can provide assurance that the program is relevant to current practice.

Richard M. Millard also talks about four criticisms of accreditation. The first involves the nature of accrediting associations. The members of institutional accrediting bodies are the accredited institutions; the members of the specialized accrediting bodies are the accredited

programs or the professional associations connected with the programs, or both. They are, after all, membership organizations, so it is argued that the associations are inevitably self-serving. A second major area of criticism involves the application of accreditation standards. This means that accreditation standards are based on quantitative factors such as number of volumes in the library and student-faculty ratios, which are not evidence of the quality of education. The third area of criticism involves the result of the accreditation process. Because most institutions are accredited and no differentiation is made among accredited institutions, accreditation is of little value as a guide to qualitative differentiation even among institutions with comparable objectives. Finally, the fourth criticism is of the number and types of specialized accrediting associations and their relation to each other and to institutions. There is a tendency toward fragmentation of specialized accrediting associations. For example, one institution might be accredited, but this institution will also be accredited for each department or program it offers.

The article [23] explains what accreditation and certification are. Accreditation refers to the formal endorsement of a school or program by an appropriate agency. Certification refers to the endorsement of individuals, normally for having met the requirements of some accredited program or for having passed some suitable standardized examination. Accreditation points out that, by setting minimum standards, it provides guidance, specific goals, and encouragement to schools that want to improve their skills programs and puts pressure on those that need to improve. Accreditation results would provide useful information to graduate schools, employers, and those who are deciding where to go as a teacher or student. This will help establish nationally accepted standards not only for curricula but also for facilities. As a conclusion, the author suggested a need for consensus, because if one is certified but has no experience in the field, there will be no support on the certification. Also, if one is accredited by a school but the school is not known or accredited

by an agency, the degree would not be of much help. For these reasons, a decision to try accreditation or certification should be made only after the whole community has had ample opportunity to consider the matter and express its views, and only after general support is clearly assured.

Teaching Quality

As noted in the previous chapter, accrediting agencies provide general assurance to the public in terms of the quality of a school, but accrediting agencies inspect schools and faculty members in periods of time that are several years apart. Therefore, how can one know if the faculty is providing quality in the teaching process? In this section we will discuss factors of which faculty members and department administrators should be aware when selecting faculty to teach specific courses, as well as what will help professors in evaluations by students.

Leslie A. Whittington [24] describes the means through which educators foster better teaching quality with their students. First, effective educators respect their students. This does not mean that professors treat their students as co-professors, but rather that they simply recognize that students are people who have the ability to make intelligent, thoughtful contributions to the classroom and the broader community. Second, good teachers are passionate about their subject and about teaching it. It is impossible to motivate and excite someone to great intellectual effort if it seems that the faculty member is not interested in exerting herself. Third, good professors are effective communicators. They organize their courses, make well-structured presentations, use clear language, and reinforce important ideas by tackling them from a variety of perspectives. Professors understand student questions and answer them respectfully. Fourth, effective professors have clearly organized their thoughts about course assignments and grading. They explicitly articulate their expectations in terms of quality, quantity, and timing of attendance, class

participation, papers, presentations, and exams. Course assignments are graded in accordance with the expectations outlined, and in this way can be perceived as fair and consistent. Fifth, students consistently want to be challenged. Students rank significantly higher those professors who challenged them; courses that are difficult are also ranked higher than courses that are considered easy. Many professors confuse workload with difficulty, but assigning a lot of work is not equivalent to designing a challenging course. The author concludes by providing ideas for improving student evaluations while increasing teaching skills and understanding of the learning process. First, give professors the opportunity and incentive to improve. Because evaluations are given to the professor many months later, after they have been filled out and submitted, the professor does not have a chance to improve or make corrections for the next term. Second, give professors the opportunity to teach several different kinds of classes. Faculty should not be locked into certain courses or course types. There are different skills involved in leading seminar classes, giving large lectures, and supervising student research; a professor should try them all, which will allow for the development of their teaching skills and can reduce some of the tension surrounding evaluations.

Alternatively, Michael Guolla [25] investigates the impact of evaluations and describes methods that instructors could use to enhance existing feedback processes. The method begins with a supplementary evaluation that students complete; it will provide simple information regarding teaching quality and how satisfied students are with the course and the instructor. The Students' Evaluation of Educational Quality presents a comprehensive definition and measurement of teaching quality and is comprised of eight factors. **Learning** reflects the extent to which students felt they encountered a valuable teaching experience. **Enthusiasm** represents the extent to which students perceived the instructor as displaying enthusiasm, energy, humor, and the

ability to hold students' attention. **Organization** concerns the instructor's organization of the course, course materials, and class presentations. **Interaction** reflects perceptions of the degree to which the instructor encourages class discussions and invites students to share their own ideas. **Rapport** is the extent to which students perceive the instructor to be friendly, interested in students, and accessible in and out of class. **Breadth** is the extent to which students perceive the instructor as presenting alternative approaches to the subject. **Assignments** refers to perceptions of the value and fairness of graded work. **Material** taps into the value of the course's reading requirements in boosting the appreciation and understanding of the subject. If students evaluate these eight factors, the professor will have enough data to determine whether he is doing a great job in terms of teaching quality.

A Tool to Improve Teaching Quality

Faculty should provide feedback to students constantly to maintain a high level of learning. Also, students should provide feedback to the professor so that the professor can determine whether the students understand all the knowledge provided. But how can we do this? In this section we will learn about a tool to help the professor and the student receive feedback about not only the learning experience, but also about which tools the students have or have not mastered. This will help the professor find areas for which the student needs to review or obtain more practice.

Walter W. Hudson [26] describes a new student/teacher evaluation system that helps students monitor and evaluate their progress in each course or unit of instruction. It is useful for both the professor and the student in the assessment and evaluation of joint learning teaching activities and achievements. Providing students with regular and detailed feedback regarding their evaluation in some well-defined unit of instruction usually enhances the students' motivation and

quality of work. To do so, the professor needs the time and energy to provide regular feedback. Another problem is that the instructor gets into a role conflict (teacher and evaluator), so it is difficult to provide the student with an evaluation of the work done without having that evaluation carry implications for the student's grade. An additional problem is having a system for a regular assessment that is uniform for all students. Non-uniform assessments may be beneficial to the student, but they are of little use to the instructor in providing a means of assessing the progress of the class as a whole. Students rarely have a good basis for judging the extent to which they are achieving a level of mastery. This paper presents a simple system for providing regular and systematic assessments to students concerning their level of mastery of course content or some other unit of instruction or training. This system is referred to as a "Sequential Criterion – Referenced Educational Evaluation" or SCREE. The SCREE system is a self-administered, self-scored test that has virtually no use to the instructor for purposes of assigning a final grade. It consists of developing a formal test that covers the content of an entire course or unit of instruction, and having each student take the same test once every two weeks throughout the semester. This test will ask the student to report their judgment as to whether they have mastered the content or the skill represented by the items on the test. The student will answer with a "1" to indicate "Yes, I know the answer" or a "0" that means "No, I don't know the answer". The questions in the test would be about the students' knowledge; for example, if the course required "knowledge of five major political events that led to the Crimean War", the SCREE test would ask, "Can you list five major political events that led to the Crimean War?" Another example is that if the course required the student to "write the raw-score formula for the Pearson product moment correlation", the SCREE would ask, "Can you write the raw-score formula for the Pearson product moment correlation?" After the student answered the questions, they would count the number of items that

were scored as 1, then record that number at the bottom of the test. This would be done every two weeks, so the student would be able to monitor their growth over the course of the semester or determine whether they needed help. The instructor would compute the mean score for the class and record it on a separate graph so that he or she would know how the class was progressing and which areas were in need of review. Ultimately, the SCREE system is something one can do without. It will not make anyone a master swami, and it clearly will not transform students into brilliant pedagogues. Even so, it does appear to have some utility in helping students and instructors better structure and tackle the joint learning-teaching functions they share in formal classroom or training activities.

In accordance, Kevin J. Corcoran [27] discusses the use of the SCREE because providing students with feedback on their progress in a course is a necessary component of effective education. When done on a regular basis, such feedback serves two purposes. First, it motivates student learning, and second, it lets instructors realistically evaluate students' professional development. The author conducted a pilot study that examined the use of the SCREE system in a graduate-level social work research course. The SCREE included 20 items which addressed issues of hypothetical-deductive reasoning, operationalization, research design, and measurement. The data from this study showed that the SCREE system was useful in social work education. Because of the sample size of the pilot study, the results must be considered tentative. Like Hudson [20] acknowledged, the SCREE is not used to assign course grades and it consumes valuable course time. However, these facts are inconsequential because the system is not intended for grading and the amount of time required to complete the SCREE is minimal. Other limitations would be that the instructor must have a clear and concise notion of what the student should learn in the course.

Additionally, Martha L. Ellison [28] presents an assessment tool that students in the field can practice and that their field instructors can use to evaluate students' progress over a semester. The instructor evaluation and feedback represents a major course of student learning. The Council on Social Work Education [29] has called for the development of self-reflective practitioners as one goal of field instruction. Schon [30] has discussed the need for professionals to be self-directive learners who can identify their own professional weaknesses and seek needed learning. One method for achieving these goals is the use of the SCREE system. The multiple benefits of the SCREE are experienced by both the student and the instructor. The instructors indicated that the SCREE not only helped focus their feedback to students, but kept them on track regarding the students' learning needs. Another benefit for students was that the SCREE assisted them in more carefully examining their own practice and in becoming more involved in their learning. A major disadvantage of the SCREE involves developing the competencies, which can be tedious and time-consuming. Both students and instructors have indicated that although the SCREE does take time to complete, it is time well spent. As a conclusion, the SCREE is a useful tool for ensuring that students receive structured and periodic feedback from their instructors.

CHAPTER III

PROPOSAL

As a student, you register for a class, but you do not know what the professor expects of you. During the course, you do not know how the professor will grade, what will happen if someone cheats, whether electronics may be used during the class, or how well you are doing in the course. This creates significant stress for the student and distracts him or her from the objective of learning. That is why I will build software that will create a syllabus in order to state all the objectives the professor has for students, how they should behave, and how they will be graded. It will also provide proper feedback from the professor on the students' performance in class. This software will track student progress from the first day of class until he or she graduates and finds a job. This will help instructors/faculty monitor student progress, determining areas in need of work. In addition, if during one of the semesters the student is not reaching the desired outcome, this fact can be detected as soon as possible in order to improve his or her outcome in terms of the job market.

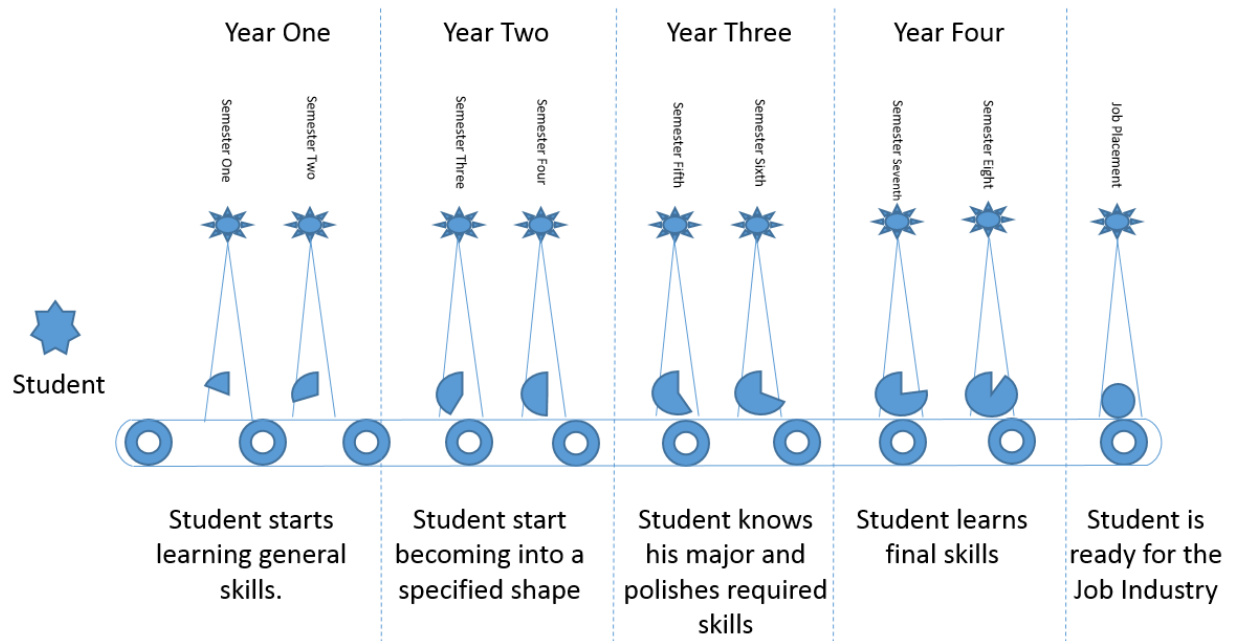


Figure 1: Complete cycle of a student entering a program until graduation.

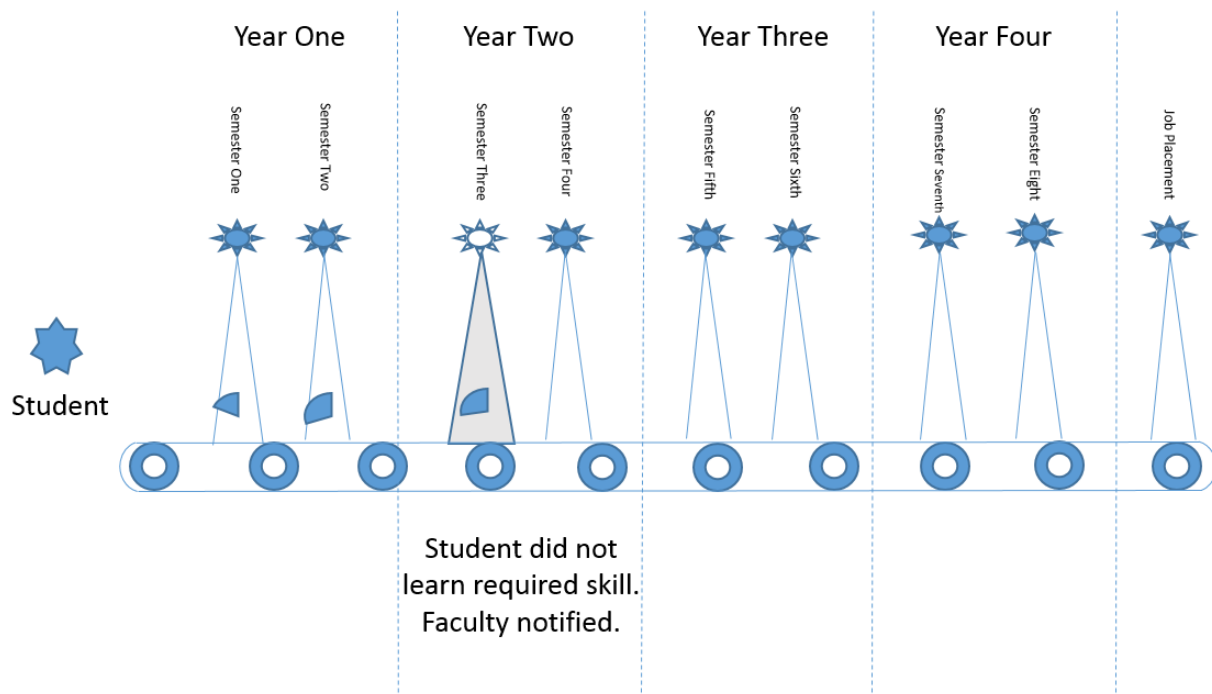


Figure 2: Software detects that a student needs attention in some skills during his third semester.

Computer Aided Accreditation System

The Computer Aided Accreditation System will be used by faculty/professors. It will require that data be input for a course's outcomes, expectations, rules, evaluation system, description, and required/recommended books. It will also require input regarding what students should learn in the course. In addition, it will require other departments to input their policies. The software should grab the field and add it to the syllabus without the professor having to add it manually.

When all the required information has been input into the software, it will be stored in a database for future reference or optimization. Then the faculty member/professor can create a syllabus for each courses. This will help the faculty focus on the expectations of the students and describe everything expected from them, leaving no surprises during the semester.

This software will have a broader impact on students because once the professor/instructor explains all the expected outcomes in the syllabus (for example, how he will grade, what students are expected to learn, and what skills students will improve upon), the students will become more confident, experiencing less stress and anxiety. This will improve the learning process. Also, the student can focus on what he needs to learn and not worry about how he is being graded or tested. The software will contain all the details about what the student should master. It can print a page with all this data and ask the student if he has mastered those skills. This will help the student review those areas; with that information, the instructor knows what areas need to be reviewed or practiced more in class.

Software Architecture Design

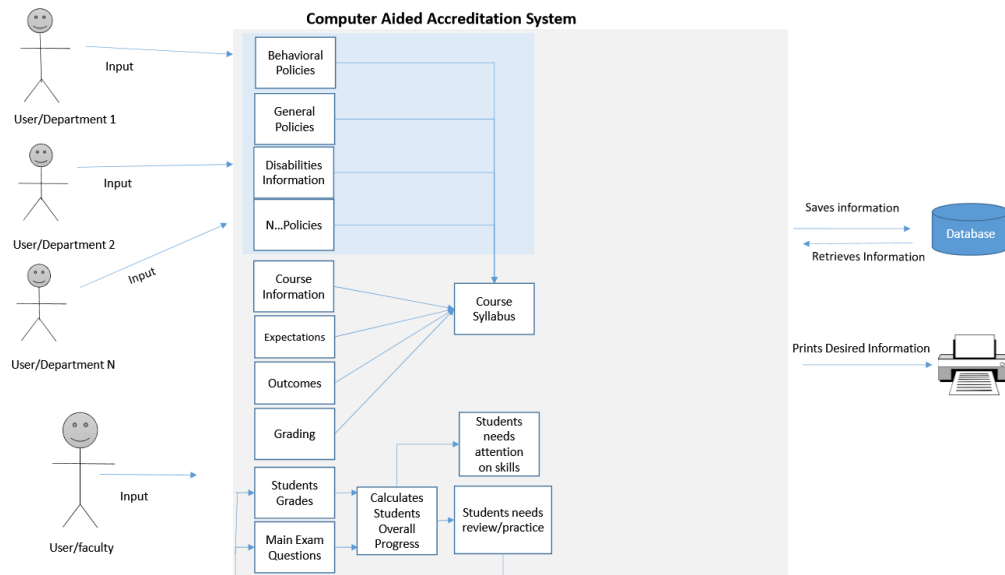


Figure 3: Computer Aided Accreditation System (CAAS) diagram.

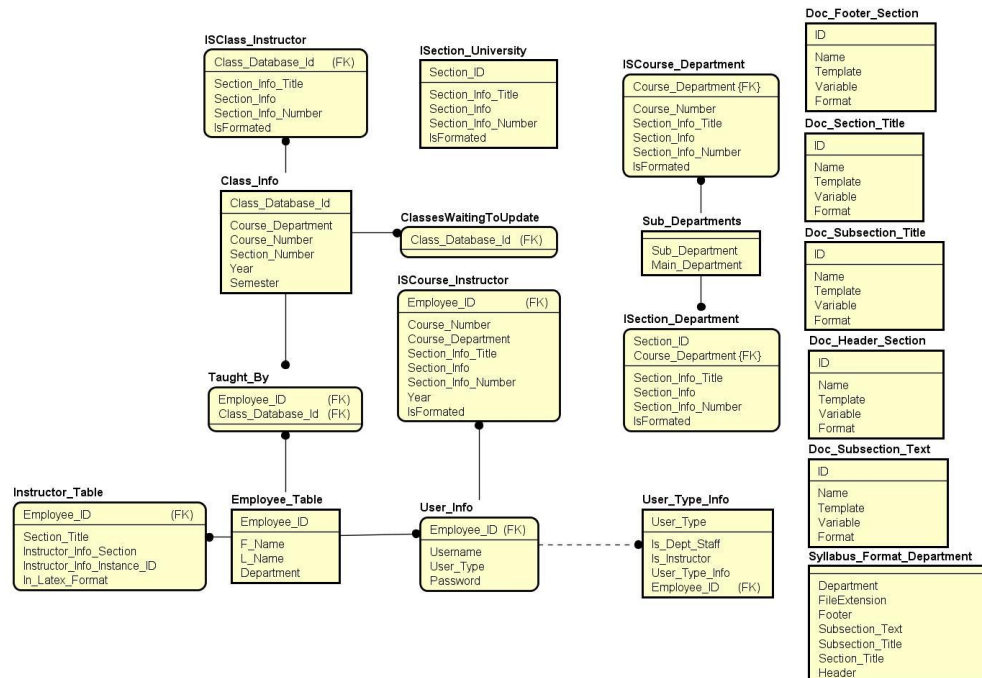


Figure 4: Database entity relational model for CAAS.

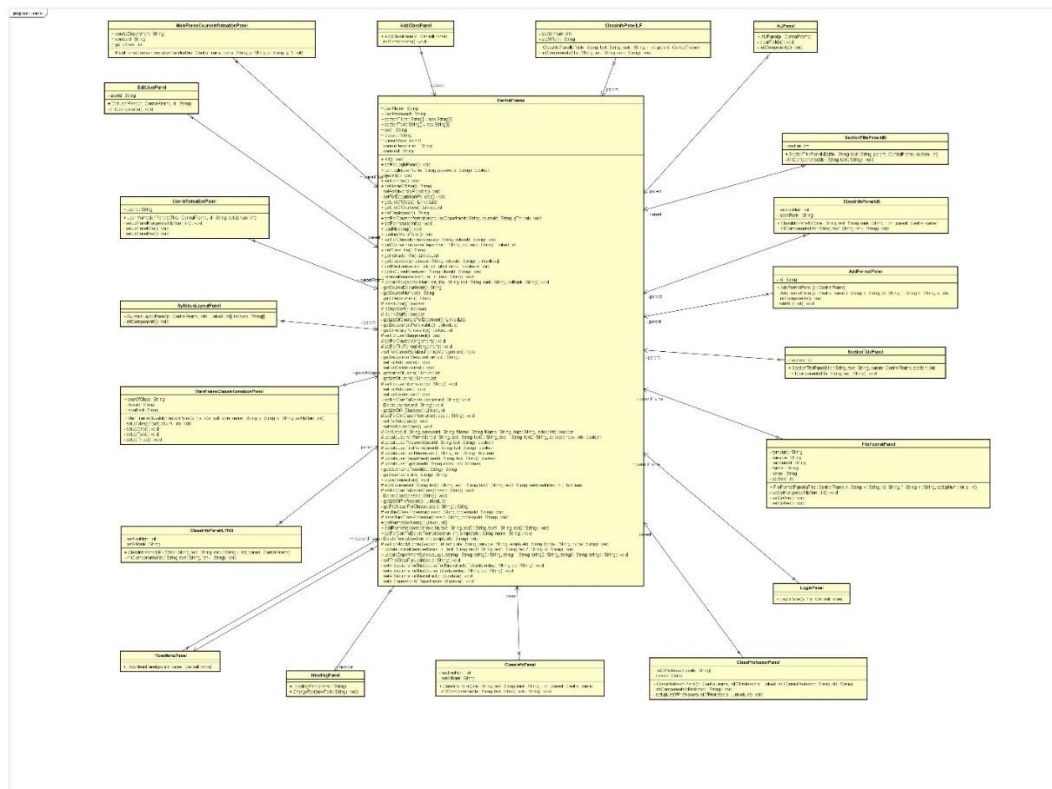


Figure 5: Class relationship from CAAS.

CHAPTER IV

METHDOLOGY AND RESULTS

The first thing I had to decide was which programming language I should use to create the Computer Aided Accreditation System, as it had to work no matter which operating system the user was running. The best fit was Java. Then I had to decide which database management system would store all the data. I decided to implement the database using Oracle's 11g Express Edition because it is one of the best systems for storing and retrieving data in big amounts. The software interface was provided by Kevin Moreno for an old project he had done, so I concentrated on rebuilding the software so that it could work with the most up-to-date Java jdk1.8.0_72 and Oracle 11g Express Edition technology. Java does not have a library to print into PDF, so I decided to use an open source technology called iText.

I create a SQL script to rebuild the database of the application and also populate the required information to make it functional. Once the software is running, the administrator can create courses, add employees, assign them as instructors, add university and department policies, and assign each course to an instructor. An instructor can view the courses available to him for the semester and year, view the policies from the department and university, and print a PDF syllabus with all the information about the course, including information about grading, textbooks, course descriptions, and department and university policies.

CHAPTER V

RESULTS

Use of this software helps the instructor print the syllabus for a specific course, reducing the amount of time invested in writing and editing previously used syllabi. Also, if new policies are added from the university or department, the instructor does not have to manually add them to his syllabus.

Let us look at some images of the instructor interface:

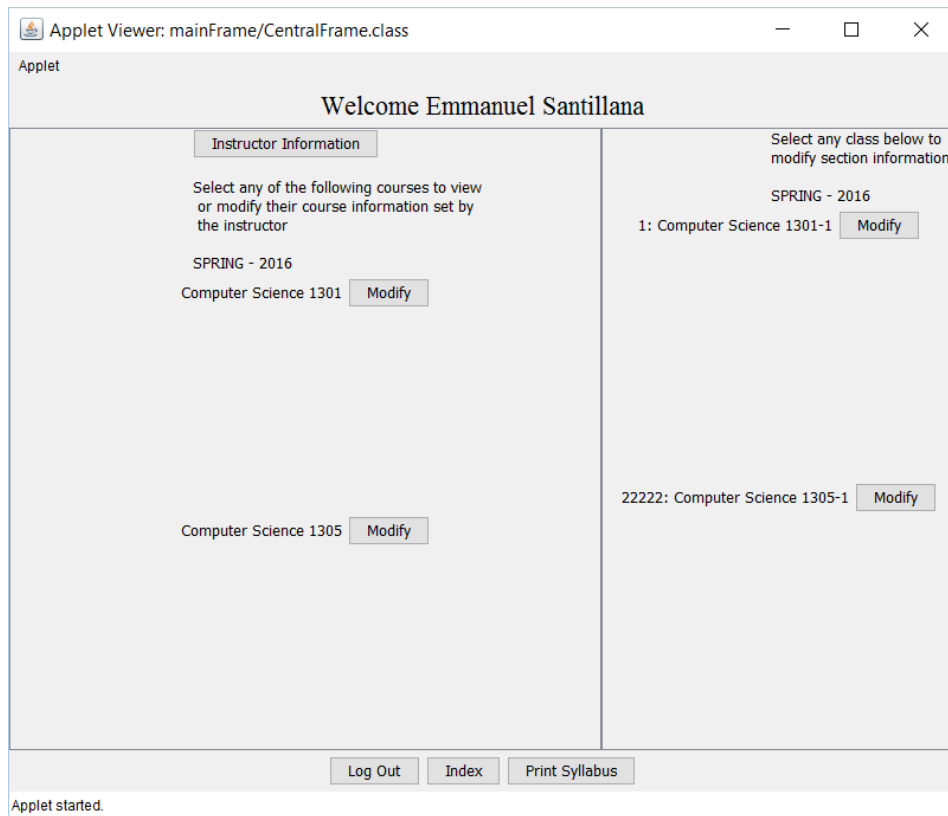


Figure 6: Main instructor window.

Applet Viewer: mainFrame/CentralFrame.class

Applet

Computer Science 1301

Sections below which state they are not formatted, will be converted into university's standard latex format on actually document. Sections which are in format must be entered in Latex format.

Course Section specific Information

Information in this section will appear in all sections of this course

Add Formatted Section Add Non-Formatted Section

Programming Fundamentals I

This course provides an overview of computer information systems and introduces

Section Not Formatted

Current Section Rank:

1

Remove

Update

< >

Log Out Index Print Syllabus

Applet started.

Figure 7: The instructor can add details about the course he is offering.

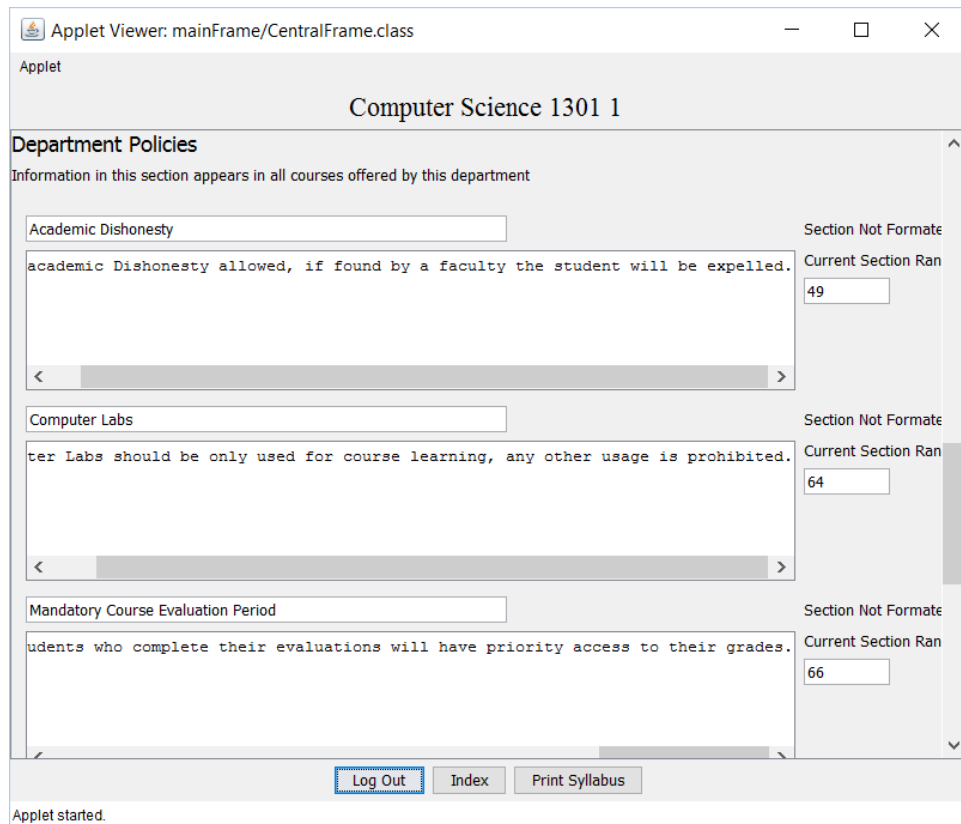


Figure 8: The instructor can read all the policies from the department and university.

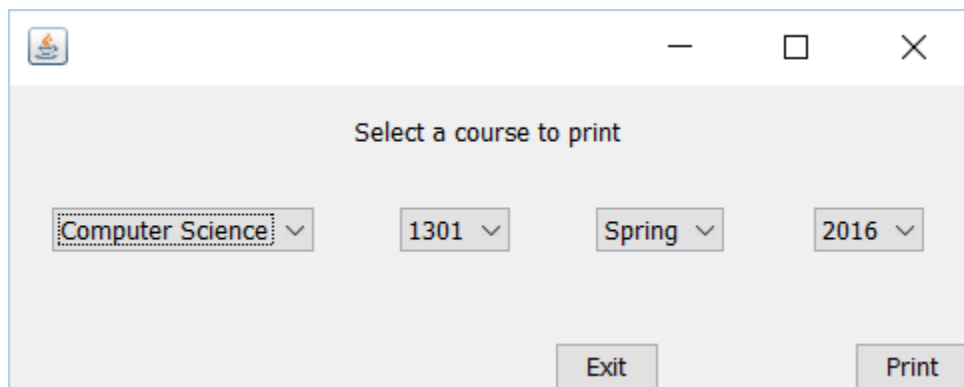


Figure 9: The instructor selects which course syllabus to print.

Course Instructor:

Emmanuel Santillana

Department:

Computer Science

Description of Course:

This course provides an overview of computer information systems and introduces computer hardware, software, the Internet, and Office applications. Current issues such as the effect of computers on society, business, education, etc., are also studied. This course does not count toward major in business or computer science.

Books:

Title: A Balanced Introduction to Computer Science

ISBN: 978-0132166751

Course Objectives

*Make students aware of all the programming languages that exists

*Expose students to basic concepts of programming.

*Student will know if computer science is the right path.

Course Outcomes

*Recognize and identify the different hardware components of a computer(system unit, storage devices, I/O devices, etc).

*Understand and describe the Internet and use a search engine to search the Web for information.

*Understand and describe the functions of an Operating System and the purpose of stand-alone utility programs.

Grading

Assignments: 20

Exam: 10

Final: 20

Midterm: 30

Quiz: 40

Projects: 50

Extra Credit: 1

University Grading Scale

A 100-90

B 89-80

C 79-70

D 69-60

F 59 >

Department Policies for: Engineering and Computer Science

Computer Labs

Computer Labs should be only used for course learning, any other usage is prohibited.

Mandatory Course Evaluation Period

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account

Figure 10: One page of the syllabus with all the information printed in PDF.

As a result, we can see that this software saves time for an instructor in terms of organizing and preparing for a course. Now the instructor can focus on other areas, like grading and teaching, or in preparing for the accreditation process.

CHAPTER VI

CONCLUSION

According to the survey included in this paper, the most important factors in the accreditation process are having clear outcomes for or expectations of students. By maintaining this clear outcome for each student, the faculty can focus on teaching. Building towards this accreditation software helps the faculty by having organized information and clear outcomes; it also gathers important data for students. This helps the faculty focus on other duties, like teaching and helping the student succeed during his studies. It also benefits the school because it saves money that would be invested as faculty time during the accreditation process; the faculty can concentrate on duties other than writing the course syllabus.

Discussion

There were some problems during the implementation of the software. For example, the intent was to recreate the database with all the details the other programmer had implemented. However, the database and interface were missing data required to make it work completely. Another problem I faced during implementation was the compatibility of old Java technology with the latest updates, as there were many security problems. Other problems with the application were that some details were not clearly stated in the code to determine why they were there.

During the experiment, many problems were fixed, such as incorrect SQL commands, functionality problems with buttons, the display of data, the I/O of data, and others. These results

were expected because if you implement software to accomplish something you typically do by hand, it speeds up the process, saving time and money. This is only the first stone placed in the field; additional functionalities must be incorporated to make it a fully working Computer Aided Accreditation System, but it is heading on a good path.

Following are questions for further discussion. Is it better to be certified than accredited? How can one guarantee that a review committee will have the same standards of quality as another review committee examining other schools? How can one know if a student is really learning? How can one know if a student is really picking up the skills desired in the course? How can one know if the professor is prepared to teach a desired skill? Should other professors create the final exam to verify that the student or the professor teaching the course has all the important skills? Is there a method to improve teaching and the learning skills process? Is a school's accreditation really a guarantee of better skills or more knowledge? How does the community or the business world see graduate students from a particular university/department/program? How can one know which areas of the university or department need improvement? Should a program in an accredited university be left by credits that a student can choose until he finishes all the credit hours for graduation, or should this be managed through a cohort? Is distance learning the same quality as in-class learning? Is certification really a guarantee of knowledge, or is a degree more valuable? Should faculty obtain a teaching certification to apply better teaching techniques? How can one determine whether accreditation is equivalent to quality?

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BIOGRAPHICAL SKETCH

Emmanuel Alejandro Santillana Fayett was born in Matamoros Tamaulipas, Mexico on August 6, 1984. He is the youngest of the five children of Carlos Santillana Danache and Alicia Fayett Lugo.

He graduated from primary and secondary school at Colegio Juvenal Rendon in 1996 and 1999, respectively. He graduated from high school at Colegio CIMA in 2002. All of these schools are in Matamoros. He received a Bachelor of Science degree in Computer Science at the University of Texas at Brownsville and Texas Southmost College in 2007. He decided to polish his teaching skills and sign up for the Alternative Certification Program to become a teacher. He worked as a teacher and instructor in English and Computer Science at the middle school, high school and university levels. He married Alejandrina Reyes in 2010. In 2011 he worked for the City of Matamoros as a tech and instructor for new technologies. In 2012 he was certified as a CompTIA A+ technician. In 2014 he decided to pursue his Masters of Science in Computer Science at the University of Texas at Rio Grande Valley. In 2015 he was certified as a CompTIA Network+ technician, and in 2016 he earned his Master's Degree. I can be reached by email at emmanuel_santillana@hotmail.com.