Higher and Engineering Education Quality Assurance: Past, Present, and Future

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ABSTRACT

Quality assurance has been defined as a means of “control over the standards, delivery, and validation of higher education” (Brock, 2007, p. 25). Over the past twenty-five years (one could say 2500 years) calls for quality assurance have caused tension inside and with regards to the outcomes of higher education. These tensions stem from differing purposes, perceptions, and processes for quality assurance on the part of the groups that compete to control these elements. In essence, it is a matter of language and power (Ewell, 1989), that is, whoever defines the language of quality assurance purposes, perceptions, and processes has the power to control higher education. Inside higher education those in different disciplines may have quite divergent views of quality assurance. Often these views are divided along the lines of the sciences and humanities, as characterized by Snow (1961). In addition, the more applied or profession-oriented disciplines, such as engineering, business, health professions, and teacher education, have their own expectations related to the standards, delivery, and validation of higher education. It is often the case that faculty and administrative cultures within an institution have differing views related to purposes, perceptions, and processes of quality assurance.

Keywords: Accreditation, Accreditation Criteria, Assessment, Engineering Education, Quality Assurance

HISTORICAL PERSPECTIVE

Competition for control by religious, economic, and/or political powers has resulted in demands for higher education quality assurance since Classical Greek times.

As Brock (2007) notes, in about 500 BCE “the idea of ‘the university’ as an institution of scholarship emerged in the Eastern Mediterranean and Eurasia” (p. 25).

At about the same time in Classical Greece pressure for quality assurance occurred in response to the perceived need for the “professional management of the civic, economic, and military affairs of the polis” (p. 25). This was in contrast to the Platonic non-commercial Academy and an emphasis on the quality of individual scholars that is determined by the recognition from peers, ability to attract students, and reputation of graduates. The emphasis on individual scholars and concerns for the polis were combined in the style of Aristotle “who believed in the overall control of education by the state” (Brock, 2007, p. 25). In turn, Rome inherited these state sponsored institutions in...
its conquest of Greek and then spread them throughout the empire.

However, with the fall of the Roman Empire it was the Arab institutions of the near east, particularly the Byzantine University of Constantinople established in CE 395, that carried forward the structure of the university and exemplified the combined interests of political, religious, and commercial powers. For nearly 1,000 years these institutions made significant contributions to applied mathematics and science, as well as to academic and intellectual knowledge. In contrast to these complex institutions, scholarship in the West survived during the so called Dark Ages through the efforts of individual scholar monks in remote isolated monasteries, especially in Ireland. Sometimes hermit monks attracted followers in much the same way that Plato did, but as their popularity grew monasteries developed around them that were co-opted to serve larger political, religious, and commercial interests.

During the transition of European society from the Early Middle Ages to Late Middle ages (500-1500 CE) the accomplishments of Islamic scholarship were translated into Latin and thus provided the basis for the Renaissance as it spread across Europe. It is during the Late Middle Ages and Renaissance that universities once again were organized to serve powerful political, religious, and commercial elites. Thus, control over the standards, delivery, and validation of higher education content in the form of public recognition was reestablished. As Brock (2007) notes, the Renaissance university “rapidly became a function of social reproduction, with expansion carefully regulated in the service of interests that were not necessary scholarly” (p. 27). Along with the heightened perceived value of a higher education came considerable corruption in the regulation process as vested interests sought to secure their own advantage and exclude others from the university.

The growth in urbanization throughout Europe over the following centuries with its increased social complexity and competition resulted in two changes that had a direct impact on the new universities that are still present today. The first was an increased need for professionals in such areas as medicine and law. Given the inherent influence of these professions over society it was in the best interest of those in power to exert quality assurance over the selection of students and their certification upon graduation. The second change was the rise of the middle class and its realization that higher education was a key to maintaining or enhancing its status. The rules and regulations that emerged during this time are the basis of our contemporary ideas of quality assurance.

At this same time, the creation of the schools within a university opened by masters became prevalent. Licenses to practice on the part of those with a Master of Arts degree and to offer degrees to student (Baccalaureate degrees) were granted based on standards that were established and maintained through formal examinations. The Master of Arts degree, therefore, was the earliest form of quality assurance related to individual scholars which is still in effect today as it is the most basic qualification to teach (i.e., instructor) at the post-secondary level. During this era, accreditation or the approval to operate as a scholarly community made up of a group of Masters and their houses or colleges was granted through a direct appeal to the ruling authority, typically, the Pope or a monarch.

The rapid expansion of Masters and their houses was in response to the increased number of students from the new middle class who saw the university as a way to enhance the upward mobility of their children. Once again, this created opposition from the former elites and some scholars who wanted to preserve their dominance by maintaining a high degree of exclusivity. This tension between openness and exclusivity has become “an enduring theme…, in pursuit of which various forms of regulation, accreditation and recognition played their part” (Brock, 2007, p. 27).

A particular manifestation of the conflict between these two interests was the non-recognition of qualifications gained elsewhere. This restricted the path of students from undergraduate to masters degree to within a university thus...
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