

بحوث

المؤتمر العربي الدولي الثاني لضمان
جودة التعليم العالي



IACQA'2012

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بسم الله والحمد لله حمدا يليق بجلاله

والصلاة والسلام على محمد وآله

عبارات الترحيب بكم عاجزة عن التعبير عما تكنه لكم الجامعة الخليجية متمثلة في منسوبيها وإدارتها

ورئاستها، حللتم أهلاً ونزلتم سهلاً في بلدكم الثاني مملكة البحرين والجامعة الخليجية.

تفاوتت الآراء حول مفهوم الجودة وما هو مصدرها هل جاء بها الصناعيون، الإداريون، الاجتماعيون أم

التربويون.

أرى انه لا هذا ولا ذاك..... كلما عرض لي أمر سلوكياً من أمور الدنيا أو عصى على إدراكي

مفهوماً رجعت إلى كتاب المشرع الأعلى خالق الكون وملهم العباد أو إلى سنة رسوله الكريم وقوله:

" إن الله يحب إذا عمل أحدكم عملاً أن يتقنه "

إذن الجودة هي إتقان العمل، أول من نادى بذلك ديننا الحنيف قبل أربعة عشر قرناً ونيف، سبق بهذا المفهوم

عصر النهضة وعصر الحضارة الحديثة، إذا الجودة نهج ديني وليس مطلب حضاري بل توجيه سماوي علينا

انتهاجه والتمسك به.

اكرر ترحيبي بكم واسأل المولى القدير أن يوفقنا لتوفير سبل الراحة والتسهيلات لكم وأن يكمل جهودنا

جميعاً بالتوفيق في مؤتمرنا ،،،، وليكن شعارنا تحقيق الإتقان دوماً كقول رسولنا الكريم...

والسلام عليكم ورحمة الله وبركاته

د. منى راشد الزباني

رئيس مؤتمر IACQA'2012

رئيس مجلس إدارة الجامعة الخليجية

مملكة البحرين

تقديم

الأمين العام للمؤتمر IACQA'2012

الحمد لله رب العالمين والصلاة والسلام على اشرف الخلق والمرسلين سيدنا محمد وعلى اله وصحبه أجمعين. الإخوة والأخوات المشاركين في المؤتمر أحبيكم جميعاً بتحية الإسلام والسلام عليكم ورحمة الله وبركاته... وبعد: فانه ليسعدني أن أرحب بكم جميعاً أجمل ترحيب في رحاب الجامعة الخليجية جامعة كل العرب التي تستضيف في كل مؤتمراتها وندواتها العلمية في كل عام عدداً كبيراً من العلماء والباحثين من شتى بقاع العالم في ميادين شتى من العلوم والمجالات حيث تستضيف الجامعة الخليجية - هذا العام - الدورة الثانية للمؤتمر العربي الدولي لضمان جودة التعليم العالي IACQA'2012.

انشاء المؤتمر العربي الدولي لضمان جودة التعليم العالي؛ فهو مؤتمر علمي محكم متخصص في مجال جودة التعليم العالي ينعقد بشكل دوري مرة كل عام في إحدى المؤسسات العلمية العربية، وله اسم عالمي ذائع الصيت بوصفه مؤتمراً دورياً سنوياً، وينبثق بهيئاته كافة عن اتحاد الجامعات العربية ويتخذ من جامعة الزرقاء في الأردن مقراً دائماً لأمانته العامة. ومن الجدير ذكره، أن الدورة الأولى لمؤتمر IACQA'2011 عقدت في رحاب جامعة الزرقاء في المملكة الأردنية الهاشمية في عام 2011م.

ويشرف على المؤتمر لجنة منظمة دائمة تتكون من 32 عضو من الدول العربية بالإضافة إلى لجنة تحكيم عالمية تتكون من 200 عضواً من ذوي الخبرة والاختصاص من جامعات عربية وأجنبية.

ومن أهداف هذا المؤتمر:

- إبراز أهمية ضمان جودة التعليم العالي وأثرها في تطوير الجامعات العربية والارتقاء بها.
- تشجيع البحث العلمي والبحوث المشتركة وتبادل نتائجها في هذا المجال.
- تنظيم الندوات المتخصصة والعامة بما يخدم قطاع جودة التعليم العالي.
- ربط موضوعات البحث العلمي بحاجات الجامعات العربية.
- التنسيق بين الباحثين العرب لتسهيل المشاركة في الهيئات والمؤتمرات الدولية ذات العلاقة.
- توفير التعاون بين الجمعيات والهيئات والمؤسسات ومراكز الأبحاث في الدول العربية.
- توفير بيئة مناسبة للقاء العلماء العرب والباحثين والمهتمين معاً بهدف الاحتكاك وتبادل الخبرة.
- استقطاب الكفاءات والخبرات من خارج الوطن العربي للاستفادة من إمكاناتها والاطلاع على الجديد في مجال ضمان جودة التعليم العالي.

هذا وإن المجالات الرئيسية للمؤتمر:

أ. معايير ضمان الجودة في مؤسسات التعليم العالي:

معايير ضمان الجودة ، ضمان جودة البرامج الأكاديمية، ضمان جودة المؤسسات الأكاديمية ، ضمان جودة البحث العلمي، ضمان جودة التعلم عن بعد، ضمان جودة التعليم الإلكتروني، تجارب عربية وعالمية في ضمان الجودة.

ب. إدارة الجودة الشاملة في التعليم العالي:

التخطيط الاستراتيجي، أنظمة إدارة الجودة الشاملة، دور وحدات ضمان الجودة، التقويم الداخلي والخارجي، تجارب عربية وعالمية في إدارة الجودة الشاملة.

ج. ترخيص واعتماد المؤسسات والبرامج الأكاديمية:

معايير الترخيص الأكاديمي، ترخيص البرامج الأكاديمية، ترخيص المؤسسات الأكاديمية، تجارب عربية وعالمية في الترخيص.

د. جوائز الجودة وشهاداتها

الجوائز العالمية، الجوائز العربية، الجوائز المحلية.

هـ. التصنيف والترتيب العالمي والعربي للجامعات

و. أدوات الجودة في قياس وتحليل المعطيات.

هذا ويعقد المؤتمر سنوياً في إحدى الجامعات العربية وتعطى الأولوية في استضافته للجامعات الأعضاء مع مراعاة تنقله بين الأقطار العربية المختلفة تقدم الجامعة التي ترغب باستضافته كتاباً تبين فيه رغبتها بالاستضافة، مع بيان الموازنة المرصودة للمؤتمر. مشفوعاً بتفصيل عن مرافق الجامعة وتجهيزاتها التي ستوظف لخدمة المؤتمر، إضافة إلى كادرها المتخصص في ضمان الجودة إذا لم تقدم أي من الجامعات الأعضاء بطلب استضافة المؤتمر، يعقد المؤتمر في الجامعة المضيفة التي تستضيف مقر الأمانة العامة للمؤتمر.

وللمؤتمر لجنة منظمة دائمة تتألف من خبراء متخصصين في مجال ضمان الجودة عن الجامعات العربية التي دعمت الدورة التأسيسية للمؤتمر، إضافة إلى ممثل عن كل جامعة مضيفة لدورة من دورات المؤتمر، ويتم إضافة أعضاء جدد أو إسقاط عضوية أعضاء قدامى من اللجنة حسب النظام الأساسي للمؤتمر، تعقد اللجنة المنظمة الدائمة اجتماعها السنوي في الجامعة المضيفة على هامش المؤتمر، ويرأس الاجتماع الأمين العام للمؤتمر.

وأخيراً وليس آخراً

نشكر الجامعة الخليجية ممثلة بـ :

سعادة رئيس مجلس إدارة الجامعة الخليجية الدكتورة منى راشد الزباني.

السادة أعضاء اللجنة التحضيرية التي قامت بالإشراف على تنظيم وتحضير للمؤتمر وبالاخص الدكتور عمار السامرائي و الدكتور مرام السفاريني.

الأمين العام للمؤتمر ACQA'2012

د. نضال الرمحي

أعضاء

IACQA'2012 اللجنة التحضيرية لمؤتمر

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THE IMPACT OF INTERNAL SERVICE QUALITY DIMENSIONS ON STUDENTS' SATISFACTION: A CASE STUDY OF THE ARAB ACADEMY FOR SCIENCE, TECHNOLOGY AND MARITIME TRANSPORT (AASTMT)

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ABSTRACT –

Higher education in developing countries has serious quality problems. In order to change this scenario, it is necessary to invest in quality systems and tools for improvement. The SERVQUAL scale is one of these alternatives. It is used to measure the gap between quality expectations and perceptions in services making it possible to establish action plans.

The late peter Drucker said literally that customer research is more important than market research; customer is the core of the whole business process. The researcher had to look to the students as customers of education.

Capitalizing on this, service quality enhancement will be a necessity not a luxury nor an option. Continuous improvement will be the challenge after all through working on the service quality dimensions to maximize the level of student's satisfaction. We believe that student satisfaction is the clue for the success of any educational institution; we are trying to prove this through the research

Working on the satisfaction of students is a great source of competitive advantage for any educational institution this is not an easy mission, although ignoring the satisfaction of students will cost us a long term disadvantage.

How shall we overcome these barriers that may hinder the enhancement of service quality to satisfy students? This important question must be answered through our research. This research is just a start or opening the gate for the continuous improvement of service quality to maximize the level of student satisfaction

With the growth of private education sector in Egypt, we are trying through this dissertation (Case study of AASTMT) to test the impact of service quality dimensions on students satisfaction.

Key words:

Service Quality, Higher education service, Quality Management, Student satisfaction.

I. INTRODUCTION

There is no doubt that all the attempts to enhance the performance of any organization cannot be done in isolation from the customer satisfaction concept, customer satisfaction in general is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. There is a substantial body of empirical literature that establishes the benefits of customer satisfaction for firms. When it comes to education and especially higher education students at the end are considered customers who needs focus from all the stakeholders in the Education process

In education, even if a definition of quality can be formulated and agreed upon, devising a meaningful assessment process is a monumental task. The Egyptian higher education industry is facing turbulent times. Lowering of entry barriers, the advent of distance education, international educational institutes ready to enter the country, the huge growth in student numbers, internationalisation of education, the need to reduce dependence on government funding and increasing competitive pressures have prompted a need to focus on quality and customer service and the rise of a consumer culture. However, quality in education services is complex in its facets (as mentioned above), largely undefined and unresearched. This paper endeavours to fill the gap in the service quality literature by reporting insights obtained in an extensive exploratory investigation of quality in the education

sector. The research attempts to rectify the situation with the research question “how do you define service quality in the education sector?”, and the research objective to explore the dimensions of service quality in the context of the Egyptian Higher education industry. As higher educational institutions (HEI) tussle for competitive advantage and high service quality, the evaluation of educational service quality is essential to provide motivation for and to give feedback on the effectiveness of educational plans and implementation. A set of service quality parameters, drawn from students’ (defined as customers’) perceptions about service quality as well as the service quality literature have been drawn up. These parameters have been used in the context of large educational institute in Egypt to identify the underlying dimensions of service quality. The research involves the use of factors concerning student services that are queried and surveyed using the SERVQUAL methodology. Finally, the paper has drawn upon the findings of the service quality dimensions to contend the initiatives that educational institutes can take to improve the delivery of customer- perceived quality and increase customer satisfaction and loyalty.

II. Service quality

Service quality has been a frequently studied topic in the service marketing literature. Efforts to understand and identify service quality have been undertaken in the last three decades. A topic of particular interest in service quality research is the issue of measurement. Following the introduction of the SERVQUAL instrument (Parasuraman et al., 1985), many scholars have attempted to replicate and refute its structure and conceptualization (Carman, 1990; Cronin and Taylor, 1992; Teas, 1993). Much of the research to date has focused on measuring service quality using the SERVQUAL instrument. Subsequently, research on the instrument has been widely cited in the marketing literature and its use in industry has become quite widespread (Brown et al., 1993). The earlier work has advanced our understanding of service quality measurement. At the same time, one criticism of SERVQUAL has been the point that the instrument mainly focuses on the service delivery process (Groenroos, 1990; Mangold and Babakus, 1991; Richard and Allaway, 1993). However, it is also true that there is no general agreement as to the nature or content of the service quality dimensions (Brady and Cronin, 2001). Nevertheless, there is a general perspective that service quality is a multidimensional or multi-attribute construct (Cronin and Taylor, 1992; Groenroos, 1990; Parasuraman et al., 1985, 1988). That is, while the

contemporary studies on service quality seemingly focused on the process of service delivery; additional aspects to be considered have already been suggested, especially by European scholars. For example, the semantic differences in each dimension notwithstanding, Groenroos (1982, 1990) and Lehtinen and Lehtinen (1982) noted that the quality of a service as perceived by customers has three dimensions: functional (or process) dimension, technical (or outcome) dimension, and image. Further, Richard and Allaway (1993) argued that utilizing only functional quality attributes to explain and/or Predict consumers’ behavior might be a mis specification of service quality and have low predictive validity. To this respect, Brady and Cronin (2001) suggest that researchers generally adopt one of two conceptualizations in their work, the American or the European perspective. Education is a service industry. It needs to adopt the techniques in measuring the quality of its services and the satisfaction of its customers. Service quality also has become a predominant part advanced organization’s strategic plan. Increasing attention paid to service quality has resulted more progress and profit in organizations. Higher education possesses all the characteristics of service industry, i.e, intangible, heterogeneous, inseparability, variability, perishable, and the customer (student) participates in the process. However, quality measurement in higher education continues to be a challenging issue. According to Lampley (1999), the study was that the institution of higher education has not yet established a proven, generally accepted methodology for evaluating the quality of the services they provide. A long list of successes in the for profit sector has prompted institutions of higher education to imitate the business model of measuring service quality (Milakovich, 1995).

III. Higher Education Service

The quality of Higher education is fundamental to a country’s development because universities are the ones that prepare the professionals who will work as managers in companies and manage public and private resources and care for the health and education of new generations. “Higher education has been increasingly recognized as a service industry and, as a sector, it must strive to identify the expectations and needs of its clients, who are the students” (MELLO, DUTRA and OLIVEIRA, 2001, p. 130). According to Lovelock (2001), education service is classified as a service with intangible actions, directed towards the minds of people, with continuous delivery, conducted through a partnership between the service organization and its client, and although it provides high personal contact, there is low customization. The institutions

must work to obtain a standard of quality that exceeds client and/or student expectations and needs, extrapolating the assessments from legal demands (PEREIRA, 2004).

IV. Quality Management

Quality management is a broad theme that encompasses every sort of organization, multinational or national, eastern or western, large or small, services or manufacturing and public or private (DELAZARO, 1998). According to Oliveira (2004), its concept depends on the context in which it is applied, in face of the subjectivity and complexity of its meaning. Bateson (2001, p.363) says "quality is generally considered an attribute in consumer choices". Quality in services can be defined as a customer satisfaction index for any service, and this satisfaction can be measured by any criteria (SATOLLO et al., 2005). Quality in services provides a competitive factor for continued consumption, especially when intangibility relations are tightened between quality and the services. Responsibility and trust, two of the dimensions of service quality grouped by Parasuraman, Zeithaml and Berry (1985), generated by prior experience, are important factors for determining perceived quality by clients (ZANELLA, LIMA and LOPES, 2006). Quality is judged according to perceived satisfaction. According to Grönroos (2005, p.54), perceived quality is determined "by the gap between expected quality and experienced quality", that is, it is the difference between client perceptions and expectations. Satisfying the clients' immediate and explicit expectations should be sought in the short term. However, in the mid and long term, it is important to develop competences to achieve their real needs, even those that are not explicit or are unconscious (COELHO, 2004, p.37). According to the same author, quality is only measured at the end of the process, that is, when the service has been concluded, and there is no way to change client perception regarding the service received.

V. SERVQUAL

According to Parasuraman, Zeithaml and Berry (1985), regardless of the type of service, consumers basically use the same criteria to assess quality. Service quality is a general opinion the client forms regarding its delivery, which is constituted by a series of successful or unsuccessful experiences. Managing gaps in service will help the company improve its quality. But gaps are not the only means clients use to judge a service. They can also use five broad-based dimensions as judgment criteria: reliability, tangibility, responsibility, security and empathy (LOVELOCK, 2001). These dimensions are briefly commented below (BATESON and HOFFMAN, 2001; LOVELOCK, 2001):

- *Reliability*: is the company reliable in providing the service? Does it provide as promised? Reliability reflects a company's consistency and certainty in terms of performance. Reliability is the most important dimension for the consumer of services;
- *Tangibility*: how are the service provider's physical installations, equipment, people and communication material? Since there is no physical element to be assessed in services, clients often trust the tangible evidence that surrounds it when making their assessment;
- *Responsibility*: are company employees helpful and capable of providing fast service? It is responsible for measuring company and employee receptiveness towards clients;
- *Security*: are employees well-informed, educated, competent and trustworthy?
- This dimension encompasses the company's competence, courtesy and precision; and
- *Empathy*: this is the capacity a person has to experience another's feelings. Does the service company provide careful and personalized attention? These elements clearly have a highly subjective factor linked to the person who perceives the service. In reality, according to Kilbourne et al. (2004), every type of service can have determining factors that are considered more important than others, which will depend on environment characteristics or type of activity.

Therefore, we can conclude that as for any business or industry, customer satisfaction and retention is one of the major key performance indicators in the success of such organization same applied for higher education institutions, students are the customers of education, that's the way we should perceive students.

VI. Service quality in higher education

One approach used in higher education for studying student perceptions of quality is the service quality approach. This comes from service marketing, a sub-discipline within the overall marketing domain (Clewes, 2003). Quality from this point of view can be defined as being a measure of how well the service level delivered matches customer expectations (Grönroos, 1984; Parasuraman et al., 1985). There is currently agreement in the field that the trait that contributes most to determining the sustainable long-term position of a company is the opinion of its customers on the product or service they receive. For customers, having a good opinion of the company is necessary to satisfy all their needs and expectations. Service quality can be a strategic differentiating element for companies that are trying to achieve it (Ruiz-Olalla, 2001). Of course universities are different from other service

companies and they have their particular characteristics. Shostack (1977) emphasized the importance of intangible attributes in the make-up of the service product. For the author, teaching is one of the most intangible services of all. Soutar and McNeil (1996) explained how there has been little attempt to approach the topic of quality assurance, particularly important in the service industries, from the student's viewpoint. The marketing principle, which suggests that corporate strategy should flow from customer needs, has not been given much credence in discussions on accountability in higher education.

VII. Service quality measurement

Much of the research of the measurement of service quality within educational settings has been influenced by the seminal work of Zeithaml et al. (1990) based on the SERVQUAL model from which a 22-item instrument for measuring customer expectations and perceptions has been developed along with five-quality dimensions: tangibility, reliability, responsiveness, assurance, and empathy. This methodology operates by means of identifying "expectations" and "perceptions" with the aim of closing the gap between the two. These can be demonstrated in the following five dimensions in relation to educational settings.

VIII. Functional Aspect

1. Responsiveness

Institutions should be responsive to the shifting needs of their customers (students) in providing courses and training programmes that are relevant in subject matter and teaching approaches. The learning process is expected to be academically rigorous yet flexible in areas pertaining to course selection and assessment. With the advent of technology, course design and delivery are expected to be progressive, wherein the innovative and spontaneous construction of knowledge should be the by products (and process) of learning. Empathy: It is sometimes a challenge for institutions to exceed customer expectations and demands. For instance, a shortage of teaching staff and the need for optimal enrolments have seen an increase in class sizes, stretching the teacher-student ratio. This has implication on the level of individual attention and empathy given to each student inside and outside class. Further, when teachers are expected to assume multiple roles including curriculum writing, stand-up teaching, mentoring, project supervising and administrative responsibilities, the level of service quality may become less standardized and desirable over time.

2. Tangibility

The challenge for institutions is to ensure that service specifications such as course content,

delivery and application meet the expectations of their customers consistently. This is a precarious concern as performance associated with these "specifications" is highly context-driven based on a variety of factors, sometimes beyond the control of the actors involved. Learning experience and orientation at large cannot entirely be evaluated by grades alone; service performance should go beyond tangible forms. In addition, learning objectives need not necessarily lead to outcomes that are strictly quantifiable. As some would argue, the relevance of any course can only be evaluated years later when knowledge and skills acquired by students are usefully applied in professional contexts.

3. Reliability

Discrepancy between promise and delivery is largely the result of inaccurate communication from advertisements, road shows and exhibitions. Some institutions tend to oversell their services, leading to grand promises that misrepresent their actual potential and academic readiness. For instance, one of the most common strategies is the promotion of facilities and support services, ranging from "hardware" to "software" availability. Others boast of their state-of-the-art technology used in laboratories, computer systems and other learning facilities. On the "software" front, common concerns include the number of student clubs, activities, counseling and medical facilities, and entertainment outlets.

4. Assurance

Judgment of high- or low-service quality largely depends on how the customers perceive the actual performance based on their expectation. The level of tolerance in service standards differs across all areas; for instance, the more important the area, the smaller the boundary of tolerance. Customers' willingness to modify expectation of service standards can be appropriately managed through the availability of choices. These should diversify the expectation levels of customers in a way that the shortcomings of one service can be offset by the strengths of another.

Hence, from a holistic perspective of education, support services and facilities should play an equal, if not an even more important role, in contributing to the overall of As in many other countries, the Finnish HEIs are autonomous and therefore assume responsibility for their own quality assurance. Each institution builds its own quality assurance system, sets objectives and selects the methods of quality assurance. The Finnish Higher Education Evaluation Council is responsible for the external evaluation The external evaluation is based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (European

Association for Quality Assurance in Higher Education, 2005). Quality assurance must be taken into account in the general conceptual framework to evaluate the institutional performance, because quality assurance is compulsory for HEIs.

IX. Image

Groonroos also emphasized the importance of corporate image in the experience of service quality, similar to the idea proposed by Lehtinen and Lehtinen (1982). Customers bring their earlier experiences and overall perceptions of a service firm to each encounter because customers often have continuous contacts with the same service firm (Groonroos, 2001). Therefore, the image concept was introduced as yet another important component in the perceived service quality model, so that the dynamic aspect of the service perception process was considered as well. A favorable and well-known image is an asset for any firm because image has an impact on customer perceptions of the communication and operations of the firm in many respects. If a service provider has a positive image in the minds of customers, minor mistakes will be forgiven. If mistakes often occur, however, the image will be damaged. If a provider's image is negative, the impact of any mistake will often be magnified in the customer's mind. In a word, image can be viewed as a filter in terms of a customer's perception of quality.

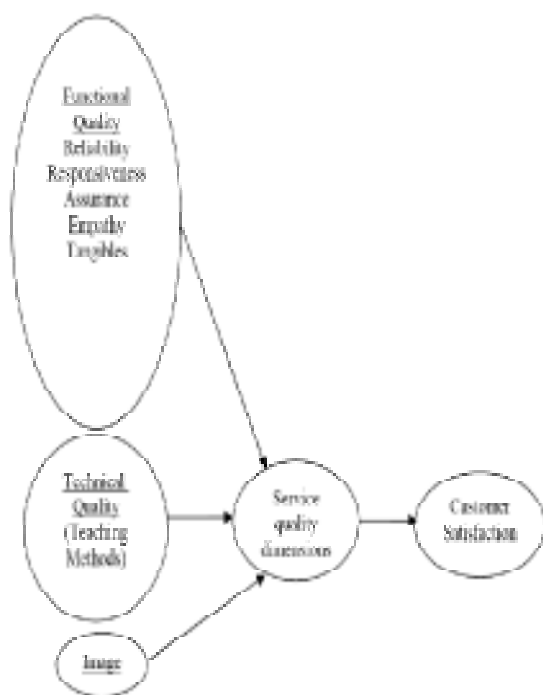
The construct of service quality as conceptualized in the service marketing literature centers on perceived quality, defined as a customer's judgment about an entity's overall excellence or superiority (Zeithaml, 1987). While the SERVQUAL instrument has been widely used, it has been subject to criticism (Asubonteng et al., 1996; Buttle, 1996). Criticisms include the use of difference scores, dimensionality, applicability and the lack of validity of the model, especially with respect to the dependence or independence of the five main variables (Babakus and Boller, 1992; Carman, 1990; Cronin and Taylor, 1992).

The criticism of note to this study is the point that SERVQUAL focuses on the service delivery process and does not address the service encounter outcomes (Groonroos, 1990; Mangold and Babakus, 1991). It is interesting to note that the developers of SERVQUAL initially suggested that service quality consists of functional (process) and technical (outcome) dimensions (Parasuraman et al., 1985). However, the SERVQUAL instrument does not include any measure of the technical quality dimension. Essentially, technical quality has been neglected in efforts to study and measure service quality. Service quality dimensions Whereas service quality is known to be based on multiple dimensions (Groonroos, 1982, 1990; Parasuraman et al., 1985),

there is no general agreement as to the nature or content of the dimensions (Brady and Cronin, 2001). However, a review of the service quality studies to date explicitly shows that European scholars have exerted a great influence on the study of service quality dimensions. That is, the contemporary discussions on the dimensions of service quality have been initiated by European scholars.

Lehtinen and Lehtinen (1982) defined service quality in terms of physical quality, interactive quality and corporate (image) quality. Physical quality relates to the tangible aspects of the service. Interactive quality involves the interactive nature of services and refers to the two-way flow that occurs between the customer and the service provider, or his/her representative, including both automated and animated interactions. Corporate quality refers to the image attributed to a service provider by its current and potential customers, as well as other publics. They also suggest that when compared with the other two quality dimensions, corporate quality tended to be more stable over time. With the suggestion that the "perceived service quality model" replace the product features of a physical product in the consumption of services, Groonroos (1982) identified two service quality dimensions, the technical aspect ("what" service is provided) and the functional aspect ("how" the service is provided). The customers perceive what she receives as the outcome of the process in which the resources are used, i.e. the technical or outcome quality of the process. But s/he also and often more importantly, perceives how the process itself functions, i.e. the functional or process quality dimension. For some services the "what" (or technical quality) might be difficult to evaluate. Accordingly, the current study was undertaken in an effort to better understand the nature of the dimension(s) of service quality based on the European perspective and to provide some insights regarding the perception of service quality. Our model is different than the European or the American perspectives we considered our circumstances and environmental factors. According to the Egyptian culture image should be taken as a crucial dimensions in service quality dimensions therefore the researcher modified the model to the following:

As the output of this model is customer satisfaction, in our case students became the customers of education, that's why we will focus on the student satisfaction.



Service quality dimensions model in higher education

Student Satisfaction

Students are the customers for higher education institutions. Student satisfaction need to be identified as a significant contributor to persistence and retention. In competitive market environment, dissatisfied student are likely to drop-out or transfer (Kerlin, 2000). A principle of TQM is customer delight and planned satisfaction (Morley, 2003). Students are no longer constructed as scholars to be and industrial process. According to Morley (2003) higher education is becoming more like the hospitality industry. In quality context, student services can be more linked to the market exchange relation, rather than humanitarian commitment. In the market culture, all student services can be read as manipulative. For the higher education industries, one of the factor contribute the students satisfaction is a good quality services.

X. Conclusion

Pressures for improving the quality of the educational experience and directive for assessment drive educational leaders to demonstrate that they are effectively providing services. One of the prevalent measures of effectiveness is student satisfaction. Student development standards such as social and academic integration and involvement have been supported as models that integrate perspectives on the needs of students and the ability of the institution to meet those needs and therefore retain students. These standards essentially rely on

student satisfaction in strengthening integration, involvement and retention. Literature on the higher education sector that focuses on customer satisfaction and service quality is limited compared to the literature generated by business and industries service sectors. In an era of high competition in higher education and emphasis on customer satisfaction, the business marketing sectors may offer education sectors some concept and models for understanding and improving customer (student) satisfactions.

SERVQUAL approach offers potential to higher education as it seeks to evaluate the effectiveness of its service quality. It has been used and debated in the literature, but the use to evaluate service quality within higher education is limited. The use of SERVQUAL in higher education setting not only assists community of higher education to assess student satisfactions within the service quality, but also contribute to the literature on service quality in higher education.

XI. Research Variables and their Operationalization

The variables of the study are as follows:

- The dependent variable: The dependent variable of this study is the students' satisfaction
- The independent variables: The independent variables of this study are the service quality dimensions which are the functional (Reliability, assurance, tangible, empathy, responsiveness), technical and image Lehtinen and Lehtinen (1982) noted that the quality of a service as perceived by customers has three dimensions: functional (or process) dimension, technical (or outcome) dimension, and image.

XII. Data collection

finalize their 11th week project. Secondary data were obtained from the official administrations.

1. Reliability

Reference to elements that intervene in the training process: Schedules, didactic materials, contents, size of groups, academic services, curriculum structure, elective subjects, attendance control, etc.

2. Responsiveness

Speed and quality of response from the institution and the people who constitute it Agility in common processes and attention to incidents

3. Assurance

Professionalism, Staff accomplishment of assigned tasks. Teaching capacity, professional experience and treatment by teachers. Accessibility and friendliness of administrative staff, etc.

4. Empathy

Capacity of the center to understand student needs and ability to give response to them. Flexibility of

curricula, response to social demands, also ways for student participation, complementary services (alumni associations, etc.)

5. Tangible

Physical aspect of facilities: signs, comfort, accessibility, spaciousness, functionality, cleanness, etc.

XIII. Sampling Design

The study was performed to explore the student's satisfaction at private higher education. The study focuses on the variables that affect the student's satisfaction directly through monitoring their expectations & perceptions of service quality overtime and the specific issues raised by the findings, accordingly; the sampling frame of this study is designed under three criteria: The studied Questionnaires were collected by personal interviews from selected respondents through April to May, from 427 students 25 students were not available as they were busy doing field studies to finalize their 11th week project. Secondary data were obtained from the official administrations.

1. Measurements

The five SERVQUAL dimensions were modified and used to measure functional quality. Modification of the instrument for different service settings is supported by the developers of the instrument (Parasuraman et al.,1994). Following the suggestions made by Parasuraman et al. (1994), only the perceptions and not the expectations of functional quality were measured, since the measures were used to assess the influence of functional quality on other constructs

2. Student's satisfaction:

The instrument to measure customer satisfaction was adapted from the work of Oliver and Swan (1989). Since the original items were developed for the automobile buying experience, it was necessary to modify the items to relate to educational services. All three items were measured using 5 -point scales anchored by "Strongly disagree" (1) and "Strongly agree" (5). Meeting the expectations of students, Satisfaction of the students within their decision in selecting university ,Students' feedback about the university as whole through questions 46-53,except for the following negative statements were measured using 5 -point scales anchored by "Strongly disagree" (5) and "Strongly agree" (1). Through questions 46-53. "(1) The services have not worked out as well as I thought it would(3) Sometimes I have mixed feelings about keeping it.(5) If I could do it over again, I'd choose a different university(6) I feel bad about my decision to use this service.(7) I am not happy that I used this service."

3. Functional quality

The focus on functional quality attributes is referred to as the American perspective of service quality.

population entirely, includes all students registered in the educational year of 2008. The studied population is representing typically, the whole educational sittings, fields, specializations and locations. The international program of Sunderland was excluded due to failure of meeting some of the agreement conditions. By this logic the sampling frame of study includes 5 main collages; the collage of maritime transportation, the collage of international transportation, the collage of engineering, the collage of computer sciences' and business. The random systematic sample was performed to select 5% from the studied sampling frame. Hence; the sample of study consists of 452 students.

The functional aspect of quality is concerned with (how the service is provided) It is crucial to assess the functional aspect of quality as it is related to how the process itself functions especially when we are talking about a service like education.

1.1 Reliability

A Reliable system of education can't be achieved without having standardized procedures for acceptance and for graduation. Reliability here means providing a system that you can depend on and trust it. It was measured through dependency of positive service, Consistency between subjects which was measured by having students that had to respond to five items were measured using 5point scales anchored by "Strongly disagree" (1)and "Strongly agree" (5) through questions(1-5).

1.2 Responsiveness

Responsiveness Refers to how quick our responding reaction, quick response from the admen, staffs other stakeholders in the education process will improve the satisfaction of students definitely. It was measured through Willingness to help students from different aspects (academic, administration), Employees' performance that was measured through different aspects (courtesy, knowledge) by having students respond to five items were measured using 5point scales anchored by "Strongly disagree" (1)and "Strongly agree" (5) questions(6-11).

1.3 Assurance

Assurance generally is defined as a positive declaration intended to give confidence, assurance here meant be working on all factors that build the bridges of confidence. It was measured through Communications skills that was measured through different aspects (personal interaction, information) by having students respond to five items were measured using 5point scales anchored by "Strongly disagree" (1)and "Strongly agree" (5) questions(12--16).

1.4 Empathy

Empathy in general is the general term to understand others' needs, actually empathy is an essential aspect in the functional quality, because people in Egypt are very emotional and putting into consideration their emotions will make a great impact on the students' satisfaction. It was measured through Flexibility of the systems, Interactions between employees and students by having students respond to five items were measured using 5 point scales anchored by "Strongly disagree" (1) and "Strongly agree" (5) questions (17--21).

1.5 Tangibles

Education quality is mainly related to the facilities provided like accommodations, sports centers, restaurants and the general environment, how can we provide a high quality education service without the existence of facilities. It was measured through having students respond to six items were measured using 5 point scales anchored by "Strongly disagree" (1) and "Strongly agree" (5) through questions (22--27). The European perspective suggests that service quality considers two more components, technical quality and image.

1.6 Image

Image might be exceptional here, a lot of us may ask why image is considered as a separate quality aspect, this is due to emotional feedback from a lot of parents and students the first question might be asked about the university, what about its reputation and other stuff like that, putting all these together made the image element as a university in the process of evaluating and enhancing the quality of education service. In a word image can be viewed as a filter in terms of a consumer's perception of quality. Although there are different levels of image (e.g. brand, product or company level) (Groenroos, 1990). Image of the service provider was measured by having students respond to ten items. Each item was measured using a 5-point scale anchored by "Strongly disagree" (1) and "Strongly agree" (5). Which included Settings of the education process, Reliability of the university, Societal role of the university; Reputation of the university, Size of the university. through questions (28-38).

1.7 Technical quality

The technical aspect of quality concerned with (what service is provided), in education service. "What service is provided" is an essential question, we have to evaluate the skills of students and evaluate the acquiring of new skills by time all of these put the technical quality as a cornerstone in the evaluation of education service. When it comes to any service, no way to excel in providing it without embedding the technology in every single aspect of the service provided, especially when it comes to service like education that's why we will find the technology

major partner in the names of all colleges in AASTMT. No measures have been developed to assess the technical quality of educational service providers. Unlike the other service categories whose outcome may not be easily discerned (e.g. education), educational service users should be able to easily discern the service outcome, measured by having students respond to seven items were measured using 5 point scales anchored by "Strongly disagree" (1) and "Strongly agree" (5) which included Practical portion compared to theoretical, Construction of the subjects from different aspects. Quality of the staff and instructors, Visual aids through questions

XIV. Reliability of SERVQUAL

Kang et al., (2002) stated that SERVQUAL has potential as a reliable measurement instrument. The result of his indicate that the SERVQUAL is multidimensional which support the usefulness of the perception subscale as a robust measure of service quality. Meanwhile, the usefulness of the expectation subscale would also be helpful in future comparison of service quality. The multiple dimensions of service quality are captured in the SERVQUAL instrument, which is an effective tool for surveying customer satisfaction that is based on the service quality gap model (Fitzsimmons, 2004). The SERVQUAL instrument clearly captures more subtle quality indicators in multidimensional way which are tangible, responsiveness, reliability and empathy as well as the overall factor of service quality. Therefore, this instrument will be able to focus quality improvement effort where they are most needed.

XV. Validity of SERVQUAL

There has been a number of studies applying SERVQUAL in public sector that report the successful application and reliability of scale. For examples in (healthcare Youseff et al., 1996; information system Dyke, 1999; Local Authority Brysland and Curry, 2000; education Long, 1999; Lampley, 1999; Kerlin, 2000; Greiner, 2000; Hadikoemoro, 2001; Avdjieva, 2002; Wever, 2002; Ham, 2003; LaBay, 2003; Grammil, 2004; Brown, 2006; Markovic, 2006; Broadnurst, 2006). SERVQUAL has been used successfully in higher education research. According to Ham, (2003) SERVQUAL has been administered by researchers investigating service quality in various industries including higher education by assessing expectations and perceptions with various determinants of service quality. Therefore, SERVQUAL instrument which is developed by Parasuraman et al., (1988) has been proven to be a valid instrument or measuring service quality.

XVI. Reliability Assessment

Alpha Chronbach coefficient was applied to estimate the reliability of studied variables, and the results showed that alpha values was 0.816, 0.724, 0.793,

0.811, 0.836, 0.785, 0.719, 0.804 which revealed the reliability and the internal consistency between the selected sub-dimensions of the studied variables.

Table (3.2) Reliability Assessment

Variable	Alpha Chronbach
Student's satisfaction	0.816
Reliability	0.724
Responsiveness	0.793
Assurance	0.811
Empathy	0.836
Tangible	0.785
Technical teach method	0.719
Image	0.804

(Note that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations).

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XVIII. Descriptive analysis (frequencies and percentages)

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple distribution, they form the basis of virtually every quantitative analysis of data.

XVII. Student's satisfaction

Customer satisfaction in general is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator. Customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Looking to students as customers is the driver to work on their satisfaction and therefore this will lead to enhance the quality of the education process as a whole

Table (4.1) Descriptive frequency of student's satisfaction

Student's satisfaction	frequency	Percent
Low (lowest than 26)	131	31
Moderate (26-32)	213	50
High (Highest than 32)	83	19
Total	427	100

As figured at table (4.1) the descriptive frequency of the student's satisfaction was classified as follows: 131 students represented 31% of the studied sample have a low level of satisfaction, whereas 213 students represented 50% of the indicated a moderate level of satisfaction and 83 students represented 19% of the examined sample have a high level of satisfaction.

1. Reliability

Providing a reliable product is one of the major objectives in any organization, when it comes to service this objective transformed into being a reliable service provider, in case of education this is not a luxurious objective it is a necessity, if you are not reliable as a university how can I trust you as a student, this is cannot be achieved without having standardized procedures for acceptance and for graduation

Table (4.2) Descriptive frequency of reliability

Reliability	Frequency	percent
Low (lowest than 15)	100	23.5
Moderate (15-20)	133	31
High (Highest than 20)	194	45.5
Total	427	100

As demonstrated at table (4.2) the descriptive frequency of the reliability was classified as follows: 100 students represented 23.5% of the studied sample determined a low level of reliability, while 133 students represented 31% of the stated a moderate level of reliability and 194 students represented 45.5% of the examined sample concluded a high level of reliability.

2. Responsiveness

Responsiveness refers to how quick our responding reaction, actually how dynamic is any organization is one of the major dimensions that this organization providing a good service ,when it comes to education with the new era of knowledge and the communication, everyday we have new update and the change is very rapid so the education system must cope with all these factors in order to provide a satisfactory service , the static system of education is obsolete ,Dynamic system and responsiveness is the clue to provide a satisfactory education service.

Table (4.3) Descriptive frequency of responsiveness

Responsiveness	Frequency	percent
Low (lowest than 19)	103	24
Moderate (19-24)	225	53
High (Highest than 24)	99	23
Total	427	100

As displayed at table (4.3) the descriptive frequency of the responsiveness was classified as follows: 103 students represented 24% of the studied sample declared a low level of responsiveness, whereas 225 students represented 53% of the verified a moderate level of responsiveness and 99 students represented 23% of the examined sample proved a high level of responsiveness.

3. Assurance

Assurance in general term is defined as a positive declaration intended to give confidence, so when it comes to education and especially higher education ,the assurance concept is essential ,the outcome of the assurance is confidence, if we lose the confidence we lose the credibility and the system as a whole.

Table (4.4) Descriptive frequency of assurance

Assurance	Frequency	percent
Low (lowest than 17)	86	20
Moderate (17-21)	285	67
High (Highest than 21)	56	13
Total	427	100

As figured at table (4.4) the descriptive frequency of the assurance was classified as follows: 86 students represented 20% of the studied sample confirmed a low level of assurance, whereas 285 students represented 67% of the decided a moderate level of assurance and 56 students represented 13% of the examined sample established a high level of assurance.

4. Empathy

Empathy in its general term is the capability to understand others needs or to put you in the shoes of others, switching roles is essential to understand each other, being emotional is very critical especially when we are talking about country like Egypt ,people in Egypt are very emotional and considering their feelings ,their occasions, for example exams in Ramadan could be not accepted, we have to consider the special circumstances that could happen to any student

Table (4.5) Descriptive frequency of empathy

Empathy	Frequency	percent
Low (lowest than 14)	71	16
Moderate (14-19)	242	57
High (Highest than 19)	114	27
Total	427	100

As figured at table (4.5) the descriptive frequency of the empathy was classified as follows: 71 students represented 16% of the studied sample established a low level of empathy, while 242 students represented 57% of the confirmed a moderate level of empathy and 114 students represented 27% of the examined sample determined a high level of empathy.

5. Tangibility

Table (4.6) Descriptive frequency of tangible

tangible	frequency	percent
Low (lowest than 16)	30	7
Moderate (16-24)	272	64
High (Highest than 24)	125	29
Total	427	100

As profiled at table (4.6) the descriptive frequency of the tangible was classified as follows: 30 students represented 7% of the studied sample concluded a low level of tangible, whereas 272 students represented 64% of the declared a moderate level of tangible and 125 students represented 29% of the examined sample stated a high level of tangible.

6. Technical teach method

Technology has affected society and its surroundings in a number of ways. In many

Table (4.7) Descriptive frequency of technical teach method

technical teach method	frequency	percent
Low (lowest than 37)	65	15
Moderate (37-51)	212	50
High (Highest than 51)	125	35
Total	427	100

As demonstrated at table (4.7) the descriptive frequency of the technical teach method was classified as follows: 65 students represented 15% of the studied sample proved a low level of technical teach method, whereas 212 students represented 50% of the verified a moderate level of technical teach method and 125 students represented 35% of the examined sample established a high level of technical teach method.

The tangibles dimension of service quality seems to be more important in the case of higher education. The quality and quantity of equipment and facilities such as workshops, laboratories, and library, computer and information systems play a key role in the learning as well as the teaching processes. Support facilities like accommodation, sports centers, restaurants, and the general environment should also be included in this dimension.

societies, technology has helped develop more advanced economies ,technology is the cornerstone in the education process, the more the role of the technology the more advanced is the education process ,for that reason you will find technology is a major partner in all colleges, in the undergraduate college of management and technology ,college of engineering and technology and even in postgraduate studies we have Techno MBA for example.

7. Image

Image in general term is referring to the opinion or concept of something that is held by the public. Image is one the major drivers in students satisfaction ,in all my interviews when I ask any student why do you want to join our university, image is the answer that's why we have to keep and invest in the image of the university, finally image is a reflection for all our efforts in the university at all levels.

Table (4.8) Descriptive frequency of image

classification	frequency	percent
Low (lowest than 19)	29	7
Moderate (19-25)	172	40
High (Highest than 25)	226	53
Total	427	100

As figured at table (4.8) the descriptive frequency of the image was classified as follows: 29 students represented 7% of the studied sample indicated a low level of image, whereas 172 students

represented 40% of the specified a moderate level of image and 226 students represented 53% of the examined sample decided a high level of image.

8. Correlation Matrix

The Pearson's r correlation coefficient was applied to investigate the relationship between the student's satisfaction and studied independent variables. As figured at table (4.9) the relationships between student's satisfaction and reliability, empathy, tangible and image were positive and significant at 0.01 level whereas r Pearson values were 0.326, 0.408, 0.381 and 0.362 respectively. And

relationship between student's satisfaction and assurance was positive and significant at 0.05 level whereas r Pearson value was 0.116. Finally the relationships between student's satisfaction and responsiveness and technical teach method were not significant while r Pearson values were 0.041 and 0.094 respectively.

Table (4.9) The relationship between the student's satisfaction and independent variables

Variable	r pearson value	Sig.
X1 reliability	0.326**	0.000
X2 responsiveness	0.041	0.400
X3 assurance	0.116*	0.017
X4 empathy	0.408**	0.000
X5 tangible	0.381**	0.000
X6 technical teach method	0.094	0.053
X7 image	0.362**	0.000

** correlation is significant at the 0.01 level

* correlation is significant at the 0.05 level

The construct of service quality as conceptualized in the service marketing literature centers on perceived quality, defined as a consumer's judgment about an entity's overall excellence or superiority (Zeithaml, 1987). Whereas service quality is known to be based on multiple dimensions (Gro'nroos, 1982, 1990; Parasuraman et al., 1985), there is no general agreement as to the nature or content of the dimensions (Brady and Cronin, 2001). The results mentioned before are reflecting the essential roles of reliability, assurance, empathy, tangible and image into the student's satisfaction. According to the

statistical significant of those variables; the first hypothesis was partially rejected.

9. Multiple linear regression

Multiple linear regression was conducted to predict the explained variance of the student's satisfaction (dependent variable) based on some predictors (independent variables). As showed in table (4.10) multiple correlation coefficient was 0.580 and F value 30.411 and it's significant at 0.01 and R square value was 0.337 meaning that the studied independent variables explain about 34% from the variance of student's satisfaction (as dependent variable).

Table (4.10) Multiple linear regression results

Variable	Beta	t value	Sig.
X1 reliability	0.216	3.425	0.021
X2 responsiveness	0.042	1.907	0.057
X3 assurance	0.114	0.430	0.668
X4 empathy	0.339	7.227	0.000
X5 tangible	0.318	4.861	0.000
X6 technical teach method	0.091	1.279	0.202
X7 image	0.289	5.101	0.000

F = 30.411

Multiple correlation coefficient = 0.580

R square = 0.337

As figured at table (4.10) the standardized coefficients (Beta) of empathy, tangible and image were positive and significant at 0.01 level whereas t values were 7.227, 4.861 and 5.101 respectively. The standardized coefficient (Beta) of reliability was positive and significant at 0.05 level, whereas t value was 3.425. Finally the standardized coefficients (Beta) of responsiveness and technical teach method were not significant at 0.05 level while t value was 1.907 and 1.279 respectively.

10. Stepwise multiple linear regression

Stepwise regression model yielded a reduced equation containing 4 variables and explains 33% from the variance of student's satisfaction (as dependent variable) and the three variables were excluded from the equation (responsiveness, assurance and technical teach method). Table (4.11) clarified that multiple correlation coefficient was 0.573 and F value 51.685 and it's significant at 0.01, R square value was 0.329 which means that the empathy, tangible, image and reliability (as independent variables) explain 33% from the variance of student's satisfaction (as dependent variable).

Table (4.11) The stepwise multiple regression analysis

Independent Variables	Beta	T value	Sig.	R square	
				change	accumulation
X4 empathy	0.382	8.991	0.000	0.166	0.166
X5 tangible	0.249	5.546	0.003	0.104	0.270
X7 image	0.241	5.482	0.008	0.040	0.310
X1 reliability	0.145	3.404	0.021	0.019	0.329

F = 51.685

Multiple correlation coefficient = 0.580

The independent variables were ranked as follows: firstly the empathy alone explains about 17% of the variance in the dependent variable and tangible variable explains about 10% of the variance of student's satisfaction (as dependent variable). Thirdly the image explains about 4% of the variance in the dependent variable and fourthly reliability variable explains about 2% of the variance of student's satisfaction (as dependent variable). Starting with the proposition that service quality is multidimensional, it is possible to develop a framework to illustrate the structure of service quality. These results are illustrating the fundamental effect of empathy, tangible, image and reliability to the student's satisfaction. According to the explained variance of those predictors; the second hypothesis was partially rejected. Universities world-wide are now competing for students both nationally and internationally. In order to recruit and retain students they should aim to enhance student satisfaction and reduce student dissatisfaction. This can only be achieved if all the services that contribute to "academic life" are delivered to a suitable standard. The students are the sole judges of whether or not this has been achieved therefore student satisfaction surveys should be undertaken on a regular basis and a university's service offering adapted accordingly. The results of these surveys and the correlations developed from their analysis result in a number of conclusions that are relevant for AASTMT faculty members and administrators alike. These results highlight the effectiveness of

service quality dimensions and their impact on students' satisfaction. However, once here it is the quality of the teaching and learning experience that is of importance. To sum it up the researcher is concluding that the following points must be taken into consideration: Education is a service unlike any normal service; it contains a lot of details and sophistications that must be handled carefully.

- To enhance the education service quality wise we have to work on the service quality dimensions simulatanously, any deviation in any dimension may cause a negative on the overall quality
- Student satisfaction is the clue to the success of any organization working in the education service
- We have to look to the student satisfaction as an opportunity that we have to seize it, satisfying the student will have a postive reflection on the whole education process.

XVIII. Recommendations

Basically higher education system is considered as one of the major competnecies of nations, simply it is the beginning of the story, if Egypt have a high level of quality in the higher eduaction sector this will be reflected on the level of graduates, for example Egypt is considered on of the best call centers providers worldwide, we couldn't acheive this without having calibers who are graduated from the higher education system, as we see in this case higher education system output is reflected on foriegn direct investment and job creation as well,

therefore higher education reform is the starting point of the macro economy reform, on this research, The researcher is focusing on student satisfaction as of the key success indicators and recommends the following:

XIX. Limitations of study

As with any study, several limitations should be noted: Limitations and directions for further research. By confirming the European conceptualization of service quality, this study has implications for future research. First, the current study adapted the SERVQUAL instrument to measure functional quality. The five sub-dimensions of the instrument did a good job of assessing the service delivery process. It is reasonable to consider, however, that there are other sub-dimensions of service delivery that should be assessed as part of an organization's functional quality. Future research should consider the differential influence of functional and technical qualities with respect to different service offerings. Some services are very difficult to assess due to high credence properties, while others are easy to assess based on experience and search properties. Additional work should compare the relative influence of functional and technical qualities for different types of services.

Third, the current study focused on one service sector. Limiting the study to a single sector did eliminate problems associated with the effects of industry differences. Future research should consider other services in order to ascertain the generalizability of the results presented with the current study.

The independent variables were ranked as follows: firstly the empathy alone explains about 17% of the variance in the dependent variable and tangible

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TOWARD AN INTEGRATED MODEL TO IMPROVE THE HIGHER EDUCATION OUTPUT IN THE LIGHT OF QUALITY MANAGEMENT CONCEPTS: The Case of AASTMT

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ABSTRACT – In this study, the reasons for the existence of a gap between the higher education output and the labor market needs and requirements has been examined, by trying to improve the higher education inputs which, in turn, include four main factors: staff members, students, course contents, and the facilities. An integrated model was designed including 18 main elements in the four factors of inputs in the light of quality management concept.

The existing gap was proved by the information gathered through the exploratory study at hand and the increasing number of the unemployment rate in the Egyptian economy in the last few years was identified.

A case study was done at the Arab Academy for Science, Technology, & Maritime Transport, (Colleges of Management and Technology), in both Alexandria and Cairo branches. Two questionnaires were developed and used - the first one directed toward the academic staff member opinions about the quality of higher education within the collages and the second aimed to reveal students' opinions about the quality of higher education in the Colleges of Management and Technology.

The data using questionnaires was further analyzed and comparisons were drawn between the opinions of the staff members and those of the students at the College of Management and Technology, AASTMT, using the analysis of variance (ANOVA) test to reveal if there is a significant difference between the responses of the staff members and students in the three branches. Also multiple comparisons between the three branches were made using the least square difference method (LSD) to find which branch has the most discrepancies.

The findings of this study showed that the four hypotheses were proved to be positive; this means that there is a significant relationship between the quality of staff members, course content, students and facilities and higher educational output at the College of Management and Technology, AASTMT. The study discusses the weak points in each branch after analyzing the questionnaires which reflect the opinions of the staff members and students in each branch. This is done to improve the weak points in each branch. General recommendations for this particular institution were explained: 18 elements were stated and used to construct the integrated model which is the contribution of this study.

Key words: HIGHER EDUCATION, Quality Management, Education Process

I. INTRODUCTION

Higher education currently places greater emphasis on meeting student's expectations and needs. As universities continue to become more student-oriented, learners' perceptions of higher educational facilities and services are becoming more important (Anci DT, 2006). Universities, in particular, represent one of the fundamental supports that contemporary societies depend on in order for them to realize social and economic development in the most comprehensive manner. The role of universities, in the present era, has been concluded with the speed of scientific discoveries and technological innovations hastening that is the matter which has a massive effect on labor market's requirements (Anci DT, 2006).

In this study, the researcher examines the reasons accounting for the existence of a huge gap between the higher education output and the labor market needs or requirements in Egypt, and how far this phenomenon is manifested in the increase of unemployment rate.

The study is proposed to examine the quality issue in higher education from the marketing perspective; that is, to understand the customers' needs by means of their perception of quality. The main aim of the study is to assess the quality attributes of higher education from students' and faculty members' perspectives. The study then classifies these quality attributes using the Input–Process–Output framework.

The researcher developed the following hypotheses as probable causes for the observed phenomenon:

- There is a significant relationship between the quality of the academic staff members (First independent variable) and the quality of higher educational output (dependant variable) in the College of Management and Technology, AASTMT.
- There is a significant relationship between the quality of the course content (second Independent variable) and the quality of higher educational output (dependant variable) in the College of Management and Technology, AASTMT.
- There is a significant relationship between the quality of the students (third dependant variable) and the quality of higher educational output (dependant variable) in the College of Management and Technology, AASTMT.
- There is a significant relationship between the quality of facilities (fourth independent variable) and the quality of higher educational output (dependant variable) in the College of Management and Technology, AASTMT.

The researcher analyzes the data collected using the questionnaires by drawing comparisons between the opinions of the staff members and students at the College of Management and Technology using the analysis of variance (ANOVA) test to test if there is a significance difference between the mean response of the staff members and students in the three branches. Also the researcher uses the multiple comparisons between each two branches by using the least square difference method (LSD) to find which branch is the source of difference.

II. History of Quality Management in Higher Education

There are various well-known definitions of quality. Crosby (1979) defines quality as conformance to requirement while Juran and Gryna (1980) define quality as fitness for use. Deming's (1986) defines quality as a predictable degree of uniformity and dependability at low cost and suited to the market is more towards quality in operation. Many organizations found that the old definition of quality, "the degree of conformance to a standard", is too narrow and consequently have started to use a new definition of quality in terms of "customer focus". It is reported that many companies had initially concentrated all their efforts on improving internal processes with little or no regard for the relationships between those processes and the organization's ultimate customers (Brigham, 1993). This failure to include the customer focus had resulted in companies struggling hard to survive and resorting to fire-

fighting situations. In the context of higher education, due to the intangible nature of their processes, there is considerable discussion on the notions of educational quality (Green, 1994 and Harvey, 1995a). Fincher (1994) describes how quality perspectives have evolved in higher education over the years by going through a shift from experience to technique to style and finally to process.

Neves and Nakhai (1993) describe the basic tenets of TQM as follows. Some of the basic tenets of TQM are long-term perspective, customer focus, top management commitment, systems thinking, providing training and tools in quality, increased employee participation, development of a measurement and reporting system, improved communication between management and labor, and continuous improvement. Johnston (1996) argues how these get addressed when there is quality in teaching. Owlia and Aspinwall (1996), in their survey, have reiterated that economic and legislative forces are pushing higher education into a new environment and in such an environment adopting TQM is a "natural" phenomenon. In higher education, TQM is considered as a process-oriented approach to increasing productivity, decreasing costs and improving quality of service (Johnson, 1993). From the theories of TQM, one can conclude that it stresses teamwork, finding better ways to do things, sharing responsibility and dramatically improving institutional cultures, all of which fall well in line with the value set of many modern universities and their faculties.

Motwani (1995) explained that educational institutions have started to feel the pressure to change and reform. Furthermore, there is a belief that academic institutions that are slow to embrace TQM, at best, miss the opportunity to lead change and, at worst, run the risk of becoming less relevant to the business world.

III. Barriers to Implement Quality Management in Higher Education

Many researchers from higher educational institutions are still skeptical about adopting TQM in education (Kohn, 1993). Kohn has pointed out that one should differentiate between education and business. He has expressed his concerns in the usage of metaphors by researchers while comparing education with industry. He emphasizes that in higher education, achieving high grades as a measure of success in implementing TQM is a major misunderstanding of the principles of TQM. Therefore the following barriers are important to bear in mind:

The first major barrier for the application of TQM in education is the misinterpretation of TQM

philosophy and the lack of understanding the processes that are different in education as compared to industry. This could be due to lack of the necessary knowledge about TQM.

Another barrier to both industry and education in implementing TQM is lack of proper leadership (Brigham, 1993). Leaders should be able to set viable corporate vision and be willing to initiate change and provide the resources needed for team efforts directed towards achieving the vision. Senior management may want the results, which TQM can bring but may not be backing it wholeheartedly. TQM should be embraced as a strategy by the top management and they should get visibly and explicitly committed to its philosophy.

A third barrier could be employees' resistance to change. In the case of higher education, most of the employees are predominantly professionals who by tradition expect autonomy and academic freedom. Academic staff may not like being asked to rethink their teaching styles (Blankstein, 1996). Educational professionals may be more devoted to teaching than to TQM. Further, it is a common belief that TQM adds unnecessary layers of bureaucracy (Sebastianell and Tamini, 1998) which is not a preferred domain amongst academic professionals. Hence, it may not be possible for them to adopt TQM principles in a short span of time.

Fourth, in higher education, poor curriculum design could lead to quality failure. There could be unsuitable academic systems and procedures that serve as a bottleneck while imposing changes in curriculum or course delivery (Kohn, 1993). Kohn feels that much of TQM implementation in education fails to address the fundamental questions about learning and more specifically whether the curriculum is engaging in the relevant learning processes. Further, with TQM, there could be too much of documentation of processes, which consumes time and effort.

A fifth barrier for TQM in education could be the lack of sufficient funds and resources. TQM involves a paradigm shift in the mindset of the entire organization. This can be achieved through systematic and strategic training of all the employees. The educational organization may not have the required expertise to train the staff and may look for external consultants for training, especially to suit the requirements of education. Hence, TQM involves high cost, effort and time (Koch and Fisher, 1998). Since educational institutions predominantly receive funds from the government, TQM may lead to overshooting of costs. With such immense financial and resource

considerations, TQM may not yield the expected benefits within a specific time frame.

Finally, in industry, it is easy to measure, monitor and improve product characteristics as compared to the situation in higher education. In higher education, service quality deals with people, the time of delivery, intangibility (learning process is subtle to be measured) and difficulty in measuring successful output and productivity in a quality audit (Harvey, 1995b Yorke, 1997 and Owlia and Aspinwall, 1998). It is definitely not easy to measure academic processes due to the involvement of numerous intangible factors. Hence, suitable models need to be adapted to measure quality in higher education

IV. Quality of the Academic Staff Member in Higher Education

Louden (2000) believes that in order to enhance the teaching quality of instructors, it is essential that instructors know what factors and criteria are closely related to the professional development of an instructor. These factors have been studied from different perspectives. From the perspective of instructors' behavior, some believe that the following five behavior characteristics can be used to measure the teaching performance of instructors:

1. Clarity of lecture.
2. Vividness of teaching material
3. Enthusiasm of instructors
4. Methodical course arrangement.
5. Willingness to help students in their studies and self-development

From the perspective of quality management, Lock et al. (1998) believe that a set of excellent teaching provisions should have:

- Clear institutional aims and curricular content.
- Good preparation/structuring by the instructor, and active involvement from the students.
- The institution's concern about the overall effectiveness of administrative and management structures.

From the perspective of teaching, Rueda (2002) believes that qualified instructors should be able to upgrade students' capability effectively, enhance their knowledge and skills, improve their behavior and attitude, and encourage them to make contributions to the organizational goal. From the perspective of learning scenario design, Bonk and Cummings (1998) believe that instructors should attach importance to the following factors:

- Students' perception
- Their motivation and sensibility
- Development in the society
- Individual differences

Kekkonenoneta and Moneta (2002) also found that prudent design of course and interaction between

the instructors and the students can effectively enhance the learning outcomes. Honore (2003) believes that, besides the course design and the interaction between the instructors and the students, the personal needs of the students and the professional skills of the instructors will also greatly affect the learning outcomes.

V. Quality of Students in Higher Education

One prominent interpretation of the “student as customer” concept is that it has developed within the wider context of changes to the ways in which higher education institutions are funded and managed Deem (2004) and has its origins in the Total Quality Management (TQM) movement. TQM originated in manufacturing; however the mechanistic standardized production emphasis inherent in the movement causes considerable discomfort when applied to education (Lagrosen *et al.*, 2004). The application of TQM principles to higher education was seen as a way of making the sector more relevant and responsive to the needs of employers and other sectors of society including funding agencies (Cruickshank, 2003).

The basic principles of TQM as applied to higher education are as follows:

- *Delight the customer:* Delight means being best at what matters most to customers, and this changes over time. Being in touch with these changes and delighting the customer now and in the future is an integral part of TQM. (Cruickshank, 2003).
- *People-based management:* Knowing what to do, how to do it, and getting feedback on performance is one way of encouraging people to take responsibility for the quality of their work. Involvement and commitment to customer satisfaction are ways to generate this. (Cruickshank, 2003).
- *Continuous improvement:* Continuous improvement or incremental change, not major breakthroughs, is the aim of all who wish to move towards total quality. (Cruickshank, 2003).
- *Management by fact:* Knowing the current performance levels of the products or services in the customers' hands and of all employees is the first stage of being able to improve. Management must have the facts necessary to manage business at all levels. “Giving that information to people so that decisions are

based upon facts rather than “gut feelings” is essential to continuous improvement (Kanji and Tambi, 1999).

VI. Research methodology

The population of the study is the students and the staff members at the College of Management and Technology, at the Arab Academy for Science, Technology, & Maritime Transport. A case study will be done on the students (i.e., customers) and faculty members (i.e., service providers) of the College of Management and Technology in the two Cairo branches of Sheraton, Dokki and as well as Alexandria's branch. A stratified sampling method was chosen by the researcher because it categories the sample into separate “strata”. Each stratum is then sampled as an independent sub-population, out of which individual elements can be randomly selected

The researcher uses a readymade questionnaire with the sample of students. (Firdaus, 2006) proposed HEdPERF (Higher Education Performance-only), a new and more comprehensive performance-based measuring scale that attempts to capture the authentic determinants of service quality within the higher education sector. The 36-item instrument has been empirically tested for unidimensionality, reliability and validity using both exploratory and confirmatory factor analysis, The second questionnaire used for staff members is also a readymade questionnaire. It was tested and used by (Ibrahim, 2005) in her study "*The expected role of the education members to implement the quality system in Egyptian higher academic education*".

VII. STATISTICAL ANALYSIS

Analysis of the Staff Members Questionnaire

Starting by the analysis of the first questionnaire dealing with the staff member's opinions, it is divided into four parts which cover the main four inputs of the higher education process including questions related to quality of staff members, students, course content and facilities.

First part, quality of staff members:

The first part in the questionnaire deals with the quality of staff members in the College of Management and Technology. There are five main questions in this part.

Table (6) Analysis of variance for the three branches towards the opinion of staff members in the quality of staff members.

ANOVA

Qsm					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.209	2	2.105	6.711	.002
Within Groups	29.791	95	.314		
Total	34.000	97			

Table (7) multiple comparisons between the three branches towards the opinion of staff members in the quality of staff members.

Multiple Comparisons

Dependent Variable: Qsm

LSD

(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Sheraton-Staff	Dokki-Staff	-.05632	.14583	.700	-.3458	.2332
	Alex-Staff	-.44872*	.13599	.001	-.7187	-.1787
Dokki-Staff	Sheraton-Staff	.05632	.14583	.700	-.2332	.3458
	Alex-Staff	-.39240*	.13731	.005	-.6650	-.1198
Alex-Staff	Sheraton-Staff	.44872*	.13599	.001	.1787	.7187
	Dokki-Staff	.39240*	.13731	.005	.1198	.6650

*. The mean difference is significant at the .05 level.

A comparison is drawn between the opinion of the staff members in the three branches with respect to their options towards the questions which affect the quality of staff members in the College of Management and Technology, AASTMT. This is done by using the analysis of variance (ANOVA) test to test if there is a significant difference between that mean response of the staff members towards these questions in the three branches or not or in other words we need to test $H_0: \mu_s = \mu_d = \mu_a$ there is no significance difference (null hypothesis) against (alternative hypothesis) H_1 : at least one of the mean response differ than the others.

- $F_{cal} = 6.711$ and its P -value = 0.002 therefore we reject H_0 at any significance level. i.e: we conclude that there is a significance difference between the opinions of the staff members in the three branches.
- To find which branch is the source of difference the researcher make a multiple comparisons

Second part, quality of Students

between each two branches by using the least square difference (LSD) method. From this test we obtain.

$H_0: \mu_s = \mu_d$ $H_1: \mu_s \neq \mu_d$
 P -Value = 0.7 which means we cant reject H_0 at any significance level.

$H_0: \mu_s = \mu_a$ $H_1: \mu_s \neq \mu_a$
 P -Value = 0.001 which means that we reject H_0 and cant reject H_1 at any significance level.

$H_0: \mu_d = \mu_a$ $H_1: \mu_d \neq \mu_a$
 P -Value = 0.005 which means that we reject H_0 and can't reject H_1 at any significance level.

From the LSD test it can be concluded that the mean response of staff members in Alex differ from the mean response of the staff members in Dokki and Sheraton but there is no significance difference between the opinions of the staff members in both Sheraton and Dokki branches towards the questions which affect the quality of staff members.

ANOVA

qs

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.231	2	.115	.870	.422
Within Groups	12.584	95	.132		
Total	12.814	97			

Table (9) multiple comparisons between the three branches towards the opinion of staff members in the quality of students.

Multiple Comparisons

Dependent Variable: qs

LSD

(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Sheraton-Staff	Dokki-Staff	-.01034	.09478	.913	-.1985	.1778
	Alex-Staff	-.10385	.08838	.243	-.2793	.0716
Dokki-Staff	Sheraton-Staff	.01034	.09478	.913	-.1778	.1985
	Alex-Staff	-.09350	.08924	.297	-.2707	.0837
Alex-Staff	Sheraton-Staff	.10385	.08838	.243	-.0716	.2793
	Dokki-Staff	.09350	.08924	.297	-.0837	.2707

A comparison is drawn between the opinion of the staff members in the three branches about the questions which affect the quality of students in the College of Management and Technology by using analysis of variance (ANOVA) test to test if there is a significance difference between the mean response of the staff members towards these questions in the three branches or not.

Ho: $\mu_s = \mu_d = \mu_a$ (there is no significance differences)

H1: at least one of the mean responses differs than the other. And its P-value= 0.422

Therefore we accept the Ho at any significance level. i.e.: we conclude that there is no significance difference between the opinions of the staff members towards the quality of student's questions quality.

Third part, quality of course content

Table (11) multiple comparisons between the three branches towards the opinion of

ANOVA

qc

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.556	2	1.778	6.789	.002
Within Groups	24.880	95	.262		
Total	28.435	97			

staff members in the quality of course content.

Multiple Comparisons

Dependent Variable: qc
LSD

(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Sheraton-Staff	Dokki-Staff	-.29195*	.13327	.031	-.5565	-.0274
	Alex-Staff	-.45641*	.12428	.000	-.7031	-.2097
Dokki-Staff	Sheraton-Staff	.29195*	.13327	.031	.0274	.5565
	Alex-Staff	-.16446	.12548	.193	-.4136	.0847
Alex-Staff	Sheraton-Staff	.45641*	.12428	.000	.2097	.7031
	Dokki-Staff	.16446	.12548	.193	-.0847	.4136

*. The mean difference is significant at the .05 level.

A comparison is drawn between the opinion of the staff members in the three branches towards their options towards the questions which affect the quality of course content in the College of management in the AAST by using the analysis of variance (ANOVA) test to test if there is a significance between that mean response of the staff members towards these questions in the three branches or not or in other words we need to test $H_0: \mu_s = \mu_d = \mu_a$ there is no significance difference (null hypothesis) against (alternative hypothesis) H_1 : at least one of the mean response differ than the others.

- $F_{cal} = 6.78$ and its P-value= 0.002 therefore we reject H_0 at any significance level. i.e: we conclude that there is a significance difference between the opinions of the staff members in the three branches.
- To find which branch is the source of difference the researcher make a

multiple comparisons between each two branches by using the least square difference (LSD) method. From this test we obtain:

$H_0: \mu_s = \mu_d$ $H_1: \mu_s \neq \mu_d$
P-Value= 0.031 which means we can't reject H_0 at any significance level.

$H_0: \mu_s = \mu_a$ $H_1: \mu_s \neq \mu_a$
P-Value= 0.000 which means that we reject H_0 and can't reject H_1 at any significance level.

$H_0: \mu_d = \mu_a$ $H_1: \mu_d \neq \mu_a$
P-Value= 0.193 which means that we can't reject H_0 and at any significance level.

From the LSD test we conclude that the mean response of staff members in Alexandria differ than the mean response of the staff members in Sheraton but there is no significance difference between the opinions of the staff members Alexandria with Dokki opinions and between Sheraton and Dokki opinions.

Forth part, quality of facilities

ANOVA

Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2	5.979	31.263	.000
Within Groups	95	.191		
Total	97			

Table (13) multiple comparisons between the three branches towards the opinion of staff members in the quality of facilities.

A comparison is made between the opinion of the staff members in the three branches towards their options toward the staff members opinions about the facilities in the College of management in the AAST by using the analysis of variance (ANOVA) test to test if there is a significance between that mean response of the staff members towards these questions in the three branches or

not or in other words we need to test $H_0: \mu_s = \mu_d = \mu_a$ there is no significance difference (null hypothesis) against (alternative hypothesis) H_1 : at least one of the mean response differ than the others.

- $F_{cal} = 31.26$ and its P-value= 0.000 therefore we reject H_0 at any significance level. i.e: we conclude that there is a significance difference

between the opinions of the staff members in the three branches.

- To find which branch is the source of difference the researcher make a multiple comparisons between each two branches by using the least square difference (LSD) method. From this test we obtain.

Ho: $\mu_s = \mu_d$

H1: $\mu_s \neq \mu_d$

P-Value= 0.7 which means we can't reject Ho at any significance level.

Ho: $\mu_s = \mu_a$

H1: $\mu_s \neq \mu_a$

P-Value= 0.001 which means that we can't reject Ho at any significance level.

Ho: $\mu_d = \mu_a$

H1: $\mu_d \neq \mu_a$

P-Value= 0.005 which means that we can't reject Ho at any significance level.

From the LSD test we conclude that the mean response of staff members in the three branches have different opinions towards the quality of facilities.

4.2.1 First part, quality of staff members:

As a conclusion of the four parts of this questionnaire the researcher tries to know the staff members opinions towards the higher education inputs in the College of Management and Technology and to find if there any

differences between different branches of the academy to know the weak points in each branch and try to give good recommendations for better quality environment in the College of management.

4.2 Analysis of the Students Questionnaire

By analyzing the second questionnaire dealing with the students' opinions, this questionnaire is divided into three parts which cover the main inputs of the higher education process including questions related to quality of staff members, course content and facilities.

ANOVA

Staff Quality Mean					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.265	2	4.632	25.177	.000
Within Groups	63.843	347	.184		
Total	73.108	349			

Multiple Comparisons

Dependent Variable: Staff Quality Mean

LSD

(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Dokki-Student	Sheraton-Student	.21668*	.06610	.001	.0867	.3467
	Alex-	.43449*	.06380	.000	.3090	.5600
Sheraton-Student	Dokki-Student	-.21668*	.06610	.001	-.3467	-.0867
	Alex-	.21781*	.05098	.000	.1175	.3181
Alex-	Dokki-Student	-.43449*	.06380	.000	-.5600	-.3090
	Sheraton-Student	-.21781*	.05098	.000	-.3181	-.1175

*. The mean difference is significant at the .05

A comparison is drawn between the opinion of the students in the three branches towards their options towards the questions which affect the quality of staff members in the College of Management and Technology by using the analysis of variance (ANOVA) test to test if there is a significant difference between that mean response of the students towards these questions in the three branches or not or in other

words we need to test Ho: $\mu_s = \mu_d = \mu_a$ there is no significance difference (null hypothesis) against (alternative hypothesis) H1: at least one of the mean response differ than the others.

- Fcal= 25.2 and its P-value= 0.000 therefore we reject Ho at any significance level. i.e: we conclude that there is a significance difference between the opinions of the students towards

the quality of staff members in the three branches.

- To find which branch is the source of difference the researcher make a multiple comparisons between each two branches by using the least square difference (LSD) method. From this test we obtain:

Ho: $\mu_s = \mu_d$

H1: $\mu_s \neq \mu_d$

P-Value= 0.01 which means we reject Ho and can't reject H1 at any significance level.

Ho: $\mu_s = \mu_a$

H1: $\mu_s \neq \mu_a$

P-Value= 0.000 which means that we reject Ho and

can't reject H1 at any significance level.

Ho: $\mu_d = \mu_a$

H1: $\mu_d \neq \mu_a$

P-Value= 0.000 which means that we reject Ho and can't reject H1 at any significance level.

From the LSD test we conclude that the mean responses of students in the three branches are different from each other.

ANOVA

Course Quality Mean					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.119	2	.559	1.236	.292
Within Groups	157.066	347	.453		
Total	158.185	349			

Multiple Comparisons

Dependent Variable: Course Quality Mean

LSD

(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Dokki-Student	Sheraton-Student	.15277	.10368	.142	-.0511	.3567
	Alex-Student	.14170	.10007	.158	-.0551	.3385
Sheraton-Student	Dokki-Student	-.15277	.10368	.142	-.3567	.0511
	Alex-Student	-.01107	.07996	.890	-.1683	.1462
Alex-Student	Dokki-Student	-.14170	.10007	.158	-.3385	.0551
	Sheraton-Student	.01107	.07996	.890	-.1462	.1683

Second part, quality of course content

Table (17) multiple comparisons between the three branches towards the opinion of students in the quality of course content

A comparison is drawn between the opinion of the students in the three branches towards their options towards the questions which affect the quality of course content in the College of Management and Technology by using the

analysis of variance (ANOVA) test to test if there is a significant difference between that mean response of the students towards these

questions in the three branches or not or in other words we need to test Ho: $\mu_s = \mu_d = \mu_a$ there is no significance difference (null hypothesis) against (alternative hypothesis) H1: at least one of the mean response differ than the others.

- Fcal= 1.236 and its P-value= 0.292 therefore we can't reject Ho at any significance level. i.e: we conclude that there is a no significance difference between the opinions of the students in the three branches.

Third part, quality of facilities

ANOVA

Facilities Quality Mean					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.027	2	1.013	11.342	.000
Within Groups	31.005	347	.089		
Total	33.031	349			

Table (19) multiple comparisons between the three branches towards the opinion of students in the quality of facilities

Multiple Comparisons

Dependent Variable: Facilities Quality Mean
LSD

(I) Type	(J) Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Dokki-Student	Sheraton-Student	-.14466*	.04606	.002	-.2353	-.0541
	Alex-Student	.01815	.04446	.683	-.0693	.1056
Sheraton-Student	Dokki-Student	.14466*	.04606	.002	.0541	.2353
	Alex-Student	.16281*	.03552	.000	.0929	.2327
Alex-Student	Dokki-Student	-.01815	.04446	.683	-.1056	.0693
	Sheraton-Student	-.16281*	.03552	.000	-.2327	-.0929

*. The mean difference is significant at the .05 level.

A comparison is drawn between the opinion of the students in the three branches towards their options towards the questions which affect the quality of facilities in the College of Management and Technology by using the analysis of variance (ANOVA) test to test if there is a difference between that mean response of the students towards these questions in the three branches or not or in other words we need to test $H_0: \mu_s = \mu_d = \mu_a$ there is no significance difference (null hypothesis) against (alternative hypothesis) H_1 : at least one of the mean response differ than the others.

- $F_{cal} = 11.34$ and its $P\text{-value} = 0.000$ therefore we reject H_0 at any significance level. i.e: we conclude that there is a significance difference between the opinions of the students towards the facilities in the three branches.
- To find which branch is the source of difference the researcher make a multiple comparisons between each two branches by using the least square difference (LSD) method. From this test we obtain.

$H_0: \mu_s = \mu_d$ $H_1: \mu_s \neq \mu_d$

$P\text{-Value} = 0.02$ which means we reject H_0 and can't reject H_1 at any significance level.

$H_0: \mu_s = \mu_a$ $H_1: \mu_s \neq \mu_a$

$P\text{-Value} = 0.000$ which means that we reject H_0 and can't reject H_1 at any significance level.

$H_0: \mu_d = \mu_a$ $H_1: \mu_d \neq \mu_a$

$P\text{-Value} = 0.683$ which means that we can't reject H_0 at any significance level.

From the LSD test we conclude that the mean responses of students in Alexandria and Dokki are the same, but Sheraton is different from other branches this means that the difference is in the opinion of the Sheraton students towards the quality of facilities.

VIII. CONCLUSION

As an overall conclusion, in relation to the questions asked to students and staff members in the three branches of the Colleges of Management and Technology about the quality of staff members, students, course content and facilities, some are accepted and some are negatively look upon the quality of each variable, which is a main factor in improving the quality of educational output. Their answers show the importance of improving the quality of the four variables in order to have better output. Therefore, the researcher will accept the four hypotheses, which entail that there is a significant relationship between the quality of staff members, students, course content and the higher educational output in the College of Management & Technology (AASTMT) through some important elements that should be taken into consideration in order to enhance the quality of higher education.

IX. RECOMMENDATIONS

Recommendations for each branch

The researcher will discuss the weak points in each branch after analyzing the two questionnaires

which reflects the opinions of the staff members and students in each branch in order to improve the weak points in each branch.

Recommendations for Sheraton branch

1. Training programs for developing staff member's performance should be enhanced by the College to improve quality of teaching process.
2. The staff members should enhance communication process with students either in the classroom or outside.
3. The College should work more on developing student attitudes and characters.
4. The number of students in each class should decrease for allowing personal attention for students.
5. Administrative staff should be more helpful in dealing with student's problems and complaints.

Recommendations for Dokki branch

6. The academy should work more hard in improving the campus layout and appearance.
7. The College should care more about the computer labs and internet facilities for better education.
8. The College should increase the amount of facilities given for students including restaurant, activities etc...
9. The College should care more for the library as its one of the most important elements in the educational process.

Recommendations for Alexandria branch

10. Academic staff should be more helpful in dealing with students problems in the College.
11. The staff members enhance communication process with students either in the classroom or outside.
12. The College should find a solution for the parking problem as the College is in a very crowded place, a private parking for the College will be a good idea.

General Recommendations for the Three Branches

The researcher will discuss some general recommendation for improving the higher education inputs in the College of Management and Technology based on quality concepts of higher education process. This is done in order to improve the higher education output, from these recommendations that are collected through the statistical analysis of the two questionnaires which helps the researcher design a quality management system for improving the higher educational output.

Recommendations deal with course content quality

1-Evaluation process for the course content should be enhanced includes 7 steps:

- a) Select the course to be evaluated.
- b) Prepare the terms of references for course evaluation.
- c) Conduct course evaluation.
- d) Prepare an evaluate report of finding.
- e) Prepare action plan with improvement measure.
- f) Implement action plan for continuous improvement.
- g) Monitor action plan for continuous improvement.

2-Improve the number and quality of required courses: the academy would do well to review their current general education and add additional required courses in areas that are weak, providing a wide range of programs with various specifications and Provide Programs with flexible syllabus and structure.

3-Universities should be required to revise or restructure curricula at least once in three years, in order to have better and up to date course contents.

Recommendation deals with staff members Quality

4-Creating better and suitable environment within staff members: the College should work on creating better and suitable environment between staff members in order to enhance quality of teaching through providing better facilities for them including place, lab tops, internet, data shows etc...

5-Training programs for staff development: the College should provide the staff members with training courses including seminars, training programs continuous improvement and personal development.

6-Motivation for more creativity and efficiency through merit pays: the College should provide the staff members with more merit pays for motivating them for creativity and efficiency of work.

7-Willingness to help students in their studies and self-development: the College should always enhance staff members for helping students in their studies and in developing their skills, attitudes and characters.

8-Staff members should use quality techniques in teaching process such as active learning, cooperative learning.

Recommendation deals with student's quality

9-Enhance selection process for better student quality: the selection process is very important process based on quality procedures including the

grading in the high school, attitudes, personality etc.. Interview would be administered for all the applicants, admission test is recommended before entering, the performance in that would be taken into account along, with the marks scored to be tracked in the right place.

10-*Evaluation process should be implemented and monitored.* Students should be evaluated and monitored by the College in order to put them on the right track, through advising process, through monitoring student's performance and grading in each semester etc...

11- *Prepare students to deal with real life situations* through providing them with a degree of responsibility about their duties regarding the work given to them through providing case studies, assignments, and quizzes.

12- *Giving students in depth information in every filled related to their studies* in order to be able to analyze and take decisions related to their work in the future through covering more amount of materials in each subject in his/her study.

Recommendation deals with facilities quality

13-*Class sizes should kept minimal to allow personal attention:* the number of students in the class is an important element that affect the teaching process from both sides either the student who need to concentrate of the staff member who need to control the lecture.

14-*Campus layout and appearance:* it's very important for the academy to have a good campus layout and appearance for students, staff members and for the efficiency of education as is place is the power of knowledge it should look good from outside and inside including buildings and cleanness .

15-*computer labs and internet facilities:* computer labs and internet facilities is very important for education process as information now became the power of knowledge.

16-*Library updates for books and periodicals:* there should be a good library contains all kinds of data and information needed by the students in order to increase the educational effectiveness.

17-*Health services should be provided more efficiently for students:* health service is a very important element in a College or institution as there is a lot of students and employees that need healthcare in anytime, so there should be good doctors and nurses and facilities for treatment.

18-*Encouragement and promotion of student's union:* any institute should enhance student unions as it's a main part of the educational activities including sports, seminars, parties, trips etc...

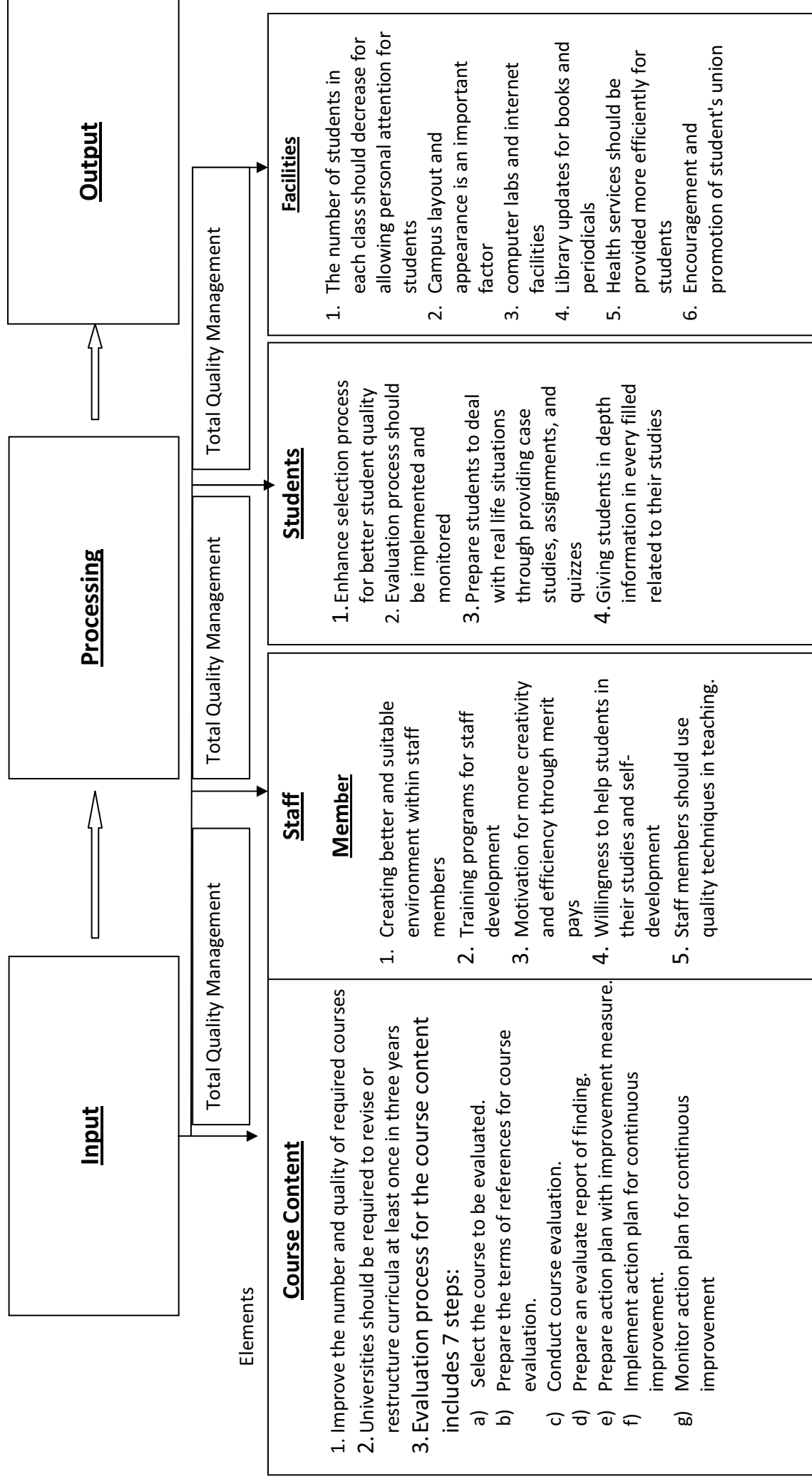
An integrated model in higher education

An integrated model in higher education is the combination of processes used to ensure that the degree of excellence specified is achieved in higher education process. This model is the sum of the activities and information an organization uses to enable it to better and more consistently deliver products and services that meet and exceed the needs and expectations of its customers and beneficiaries, more cost effectively and cost efficiently, today and in the future.

The researcher designed this model to improve the higher education inputs which is the staff members, course content, students and facilities in order to reach desired output in the long term effect based on total quality management concept in each part of the model.

These 18 activities should be covered by the Colleges of Management and Technology (AASTMT) in order to meet or exceed the needs and expectations of the customers (students) to get better and effective output in the future.

An Integrated model for improving the higher education process in the AAST (College of Management and Technology)



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