

# **Improving Quality in Higher Education: Considering Surrounding Factors**

**Suleman Alammary & Bandar A. Alkhayyal\***

Department of Engineering Management

College of Engineering

Prince Sultan University

Riyadh, Saudi Arabia

\*[balkhayyal@psu.edu.sa](mailto:balkhayyal@psu.edu.sa)

## **Abstract**

Education is a basic human right, and when talking about the quality of it, several aspects have to be taken into consideration to know exactly how to improve it. Quality of education means the method or approach used to teach students how to develop their skills and attributes to achieve the potential they desire. It allows students to maximize their positive influences on society and obtain the knowledge they seek. Education quality consists of a group of factors: environment, teachers, curriculum, and students. This paper discusses these factors in detail, as well as provide examples that are based on original practical surveys that were conducted specifically for the purpose of analyzing and comparing different educational experiences in order to understand what leads to a better educational experience.

## **Keywords**

Quality, Education, Improvement, University, Curriculum.

## **1. Introduction**

There are no doubts about the advancement in teaching methods. Over the years, changes can be easily noticed in the classrooms, and in the network information is exchanged. Having technology as the main factor (with applications such as WhatsApp and google drive), information became extremely easy to reach. However, reaching information easily does not necessarily improve the quality of education, even if the information is of high value. Quality of education consists of four main factors, and analyzing these factors separately while balancing them out is the key towards top quality education.

## **2. Factors of quality education**

### **2.1 ENVIRONMENT**

Learning should take place in a comfortable environment where people could stay focused and relaxed when taking in a lot of new information. Being discomforted and let down either by the lack of air conditioning, lighting, or even seating affects students more than most people think. A question from the survey asked “For your average classroom, what do you think needs to be done to keep you more focused in terms of cleanliness and comfort?” and formed a variety of answers such as the addition of hand sanitizers, as well as tissue boxes. The most common reply given, however, is that the classrooms needed more comfortable seating and larger desks where students could have all that they need prepared in front of them. Solutions include that the chairs be fitted with cushions and placed in sets with a large table connected to all of them with access to drawers or empty spots under the table where students can place their pens, calculators, and side notes efficiently.

## **2.2 TEACHERS**

Teachers undergo years of practice to master the subject they are teaching, and teaching a subject, is not as simple as learning it. There are of course no completely identical teachers, but methods could be similar in many ways. Some methods include practical work to help the student better understand what he or she is learning, instead of memorizing and taking theoretical tests, practical work help teachers to easily evaluate student's work instantaneously. Other teaching methods include online videos with Q&A sections, and the use of challenging projects to give a student inspiration to excel for extra grading. The survey test asked the students what method would be better in their point of view and more than %90 said that they would prefer practical methods over theoretical, and say that they would rather be prepared for their actual work by experiencing it, rather than just reading about it.

## **2.3 CURRICULUM**

Going through education to obtain an engineering or a medical degree means conducting many field reports, the use of equipment or machinery is essential to understanding the methodology that should be used. In engineering, for example, there are needs for machinery to explore soils and surveying equipment. However, not every university has the proper equipment that is dated for modern students. Machines could also be broken or in need of maintenance before students can use it safely. On the same survey conducted, students were asked if their campuses had the proper equipment for their education, surprisingly, 40% percent from the sample of student stated that equipment for them was unavailable or outdated or broken. Therefore, universities should give importance to these machines that could help the students practice in a safe environment before using it in the field.

## **2.4 STUDENTS**

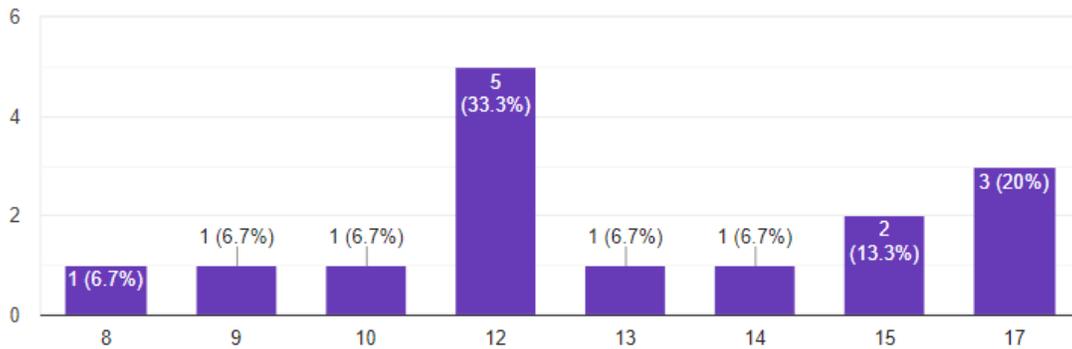
Schools are not the only places where students learn, they also obtain their knowledge and skills from family and friends. The quality of students in schools depends mainly by their background and what they were taught from a young age. Their sense of right or wrong could differ from others, and if those morals had a negative influence, it could cause harm to the school's students if it spreads from one friend to another, which causes bullying and a sense of discomfort around other students. Around 60% of the surveyed individuals experienced bullying that affected their comfort in education. A solution would be to focus mainly on helping the student get a sense of ethical behavior and to teach surround them with morally acceptable behavior.

## **3. Case Study**

A survey test was given to 15 students with no specific major or university with questions regarding their satisfaction with their current education, and were asked to rate their overall opinion based on the factors discussed, and stating what they thought their universities lacked to improve their education or would have helped them reach their current knowledge easier.

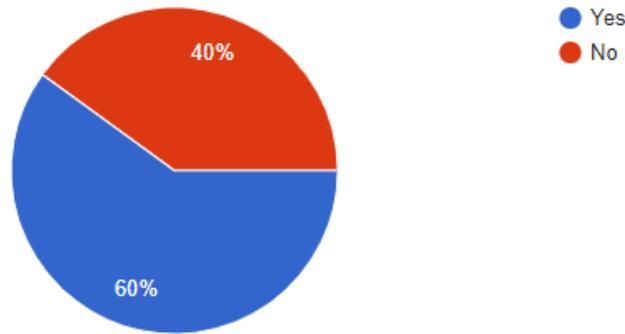
### 3.1. Data

15 responses



[Chart 1: for overall satisfaction with the quality of education rated from 1-20]

15 responses



[Chart 2: of overall outcome of the availability, and accessibility of labs, and machines]

## 4. Results and Discussion

As a result for this test, many students were not generally satisfied with their education system. About 40% of the sample stated that their equipment or machines were outdated, or were not functioning the way they are intended. The results here show that to improve the quality of education, these factors have to be studied thoroughly and improved to meet standards, as well as stimulate the information the student receives.

## 5. Conclusion

There is a clear issue in the quality of education that needs to be improved to reach the standard of each level of education or excel beyond it to improve the education of future generations. A student should be completely comfortable in their school environment and have all tools and services being provided them whenever they need it, as well as make sure that teachers know the correct method to use for teaching different types of students. The solutions provided here are only one way of looking at quality improvement, but there are yet to be changes and different approaches to improve it.

## **Acknowledgements**

The author would like to thank Prince Sultan University, Riyadh, Saudi Arabia for their financial support.

## **References**

Evidence-Based Teaching. Available online: <https://www.evidencebasedteaching.org.au> (accessed 09-09-2019).

Korthagen, Fred AJ, Jos Kessels, Bob Koster, Bram Lagerwerf, and Theo Wubbels. *Linking practice and theory: The pedagogy of realistic teacher education*. Routledge, 2001.

National Institute of Child Health and Human Development. Available online: <https://www.nichd.nih.gov/> (accessed 10-09-2019).

Unite for Quality Education. Available online: <https://www.unite4education.org> (accessed 16-08-2019).

Concordia University-Portland. Available online: <https://education.cu-portland.edu> (accessed 29-08-2019).

## **Biography**

**Suleman A. Alammary** is a senior Construction Management student at Prince Sultan University, Riyadh, Saudi Arabia. As a student, he has a habit of competing in competitions and challenging himself with research and practical tests.

**Dr. Bandar A. Alkhayyal** is an Assistant Professor and the Director of the Master Program in the College of Engineering at Prince Sultan University (PSU), Riyadh, Saudi Arabia. Dr. Alkhayyal received his B.S. degree in Computer Science with a minor in Industrial Engineering from the Eastern Michigan University, Ypsilanti, Michigan, USA, in June 2010. December 2011, he received his M.S. degree in Engineering Management specializing in Project Management from the same school in Michigan, and in May 2013 he received his M.S. degree in Industrial Engineering from New Mexico State University, Las Cruces, New Mexico, USA, later he earned his PhD degree in Industrial Engineering specializing in Supply Chain Engineering and Logistics from Northeastern University, Boston, USA on December 2016. Dr. Alkhayyal has certifications in Project MGMT, Lean Six Sigma Green Belt, Lean Enterprise Systems, and Lean Concepts and Applications.

His research interests are in the areas of environmentally conscious manufacturing, product recovery, reverse logistics, closed-loop supply chains (CLSC), sustainable operations and sustainability, modeling with applications in CLSC and multiple lifecycle products, environmental engineering and sustainability, life cycle assessment, and energy efficiency and emission modeling. He has co-authored several technical papers published in journals and presented at various national and international conferences, and also working as a reviewer for professional journals. Dr. Alkhayyal is teaching undergraduate and graduate courses on PSU, on Supply Chain, Logistics, Project MGMT, and Quality. Dr. Alkhayyal is the Faculty Advisor of PSU-IEOM Student Chapter, and member of Scientific and Technical Committees in supply chain conferences. Dr. Alkhayyal is the conference chair for 1st GCC International Conference on Industrial Engineering and Operations Management which will be on November 2019.