Improving the Education for Undergraduate Students in Saudi Arabia Universities

Final Project Presentation

Professor: Dr. Arnold J. Galloway

Ahmed Aleisa
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Background Information

- The education system in Saudi Arabia has greatly improved since its establishment in 1932.
- Initially, access to education was a reserve of the wealthy.
- This has changed and now education is free and hence accessible to all.
- This has been facilitated by the establishment of over 25 public and over 27 private universities.
- This free system of education has brought numerous challenges which need to be addressed in order for the system to be effective.
Problem Statement

- A number of problems are attributed to the current system of Education in KSA.
- The first problem is lack of public speaking skills.
- The second problem is poor or weak study and interpersonal skills.
- The third problem is lack of comprehension of the material due to memorization of subjects.
- The last problem is lack of focus due to poor study skills.
Differences between the Education System in the United States and Saudi Arabia

- The education systems in USA and Saudi Arabia have a number of differences.
- One of the differences is that education in Saudi Arabia is free while it’s a costly affair in USA.
- Secondly, men and women are not allowed to share classes in Saudi Arabia while in the United States people mix accordingly.
- Thirdly, in Saudi Arabia, there are jobs that women are not supposed to do and places women cannot go. This has resulted in gender bias. This is not the case in USA.
System’s Requirements

The new system shall have the following capabilities:

- The new system shall encourage students to question more and do more research.
- The new system shall require vigorous use of Information Technology.
- The new system shall require that students be encouraged to experiment and research on new things.
- The system shall require that teachers and students work in collaboration to find answer to questions.
System’s Requirements

- Students shall be encouraged to practically implement skills learned through internships and apprenticeships.
Stakeholders Description

The stakeholders of the new system include:

- Ministry of higher education in Saudi Arabia.
- University students
- University teaching staff
- University managements/Faculties
System Architecture
Current System:

- Currently, teaching methods in Saudi Arabia are primarily centered on passing exams.
- This makes students ill prepared to face real-life challenges.
- This is unlike the education system in US which ensures that students are well prepare to face real-life challenges.
- It is therefore vital for the university to ensure that there exists a symbiotic relation among various participants in the university.
System Architecture
New system:

- Lean methodology is the basic concept that will be applied in this new system.
- Presentations (public speaking)
- Open book exam
- Cheat sheet
- Online quizzes
- Take home exam
- Blackboard
System Architecture
Lean Education Flowchart/ activity Diagram

1. Students look at program, course, and their personal information
   - Register for courses
   - Receive schedule of first class meeting
   - Attending the first class meeting
   - Studying and teaching as plan in each course
   - Students take unit tests until pass all the units
   - Pass all units
   - Final exam and/or project

2. Student records and information
   - The college receives student register information
   - Teacher notifies students about the first class meeting
   - Teacher gets ready for the first class and gets all the information needed ready
   - Teacher and students engage in communication groups: questions, study group, meeting, test schedule, etc.
   - Student information is recorded
   - Teacher monitors the progress of each student and take actions to help students if they needed

3. Program and course information
   - Faculty decides which class they are responsible for
   - Teacher looks at the class details, the instruction, study guide, and some additional information

4. Instruction, test, exam, study guide
   - Create instruction, test, exam, course plan, and study guide

5. Faculty meeting to create curriculum
   - Functions taken into account such as student benefits and ABET
System Architecture
Lean Education Flowchart/ activity diagram

- Referencing the diagram above, the new system will enable teachers to quickly monitor and respond to student needs.
- The teacher can also determine the units that students are struggling to understand and take appropriate action.
- A university faculty can also access the system and obtain information such as the courses taken by various students
System Architecture
Lean Education System View Points

- Based on the lean education activity diagram shown previously, the following view points can be derived:
System Architecture
Lean Education System view Points

Diagram showing relationships between Student, Lecturer, Faculty, and Students' Records Database.
System Architecture
Lean Education System view Points

Based on the above view points:

- Students can access the database for various purposes such as registration of courses.
- Lecturers can access the database to assess student information.
- Lecturers can communicate with students pertaining to student progress.
- Faculty members can communicate with both students and lecturers pertaining to student progress as per the information contained in the database.
System Architecture
Lean System Requirements/ Use case View Point

<<Requirement>>
The system should have a database

<<Requirement>>
Every actor should have an interface to connect to database

<<Requirement>>
The database should have a backup system

Database should be available always
## Risk Management

<table>
<thead>
<tr>
<th>Risk</th>
<th>Likelihood of occurrence</th>
<th>consequence</th>
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<tbody>
<tr>
<td>1. Poor implementation by the ministry of education and higher institutions of learning.</td>
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<tr>
<td>2. Stakeholders view the introduction of the lean method as a disruption from the normal way of doing things</td>
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## Risk Management

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<tr>
<th>Risk</th>
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<td>3. There are complexities that exist within the lean method of education.</td>
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<td>4. High chances of disagreements among the stakeholders in the education sector.</td>
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<th>Risk</th>
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<td>5. Universities operating under unique set of rules which may hamper the successful implementation of the system</td>
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## Risk Management

### Risk analyses Key

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<th>Likelihood</th>
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Risk Management
The information above is presented in a matrix as shown below

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consequence
Risk Management

Risk: Poor implementation by the ministry of education and higher institutions of learning
Result: Failure to achieve effective learning such as public speaking skills.
Action: Penalties for the institutions that fail to adhere to the lean method.

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consequence
**Risk Management**

Risk: lean method viewed as a disruption from the normal way of doing things.

Result: Absence of support would result in continued poor learning systems in Saudi Arabia.

Action: informing Stakeholders and the students on expected changes of lean methodology.

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consequence
Risk Management

Risk: There are complexities that exist within the lean method of education.
Result: negatively affects effective implementation of the new system.
Action: It can be effectively managed through education and increased awareness.
Risk Management

Risk: High chances of disagreements among the stakeholders in the education sector.

Result: Delayed implementation of the system requirements.

Action: Proper education after which the stakeholders should be allowed to take a vote on the way forward.
Risk Management

Risk: Unique set of rules by different universities
Result: absence of a standard way to implement the system
Action: Leaders from various institutions should be called upon to adopt a common approach.

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Lean Methods

- Lean methods are also applicable in the education system.
- The basic concept behind lean methods is reduction of waste in processes that create something that is of value to the customer.
- University students in this context are the customers of the university.
- Lean methods are therefore a perfect way Saudi Arabia University can use in delivering values to their students.
Quality Management

- The concept of “garbage in, garbage out” also applies in the adoption and implementation of programs in the education sector.
- Quality management in this context facilitates effective teaching methods and provision of the required support.
- The first step is acknowledging that the current system is faulty.
- The second step entails understanding and stabilizing the process.
- The final step involves maintaining consistency from the implementation stage to the conclusion.
Quality Management

- Quality management should be practiced from the implementation stage and applied in all sectors in the undergraduate education system in Saudi Arabia.
- Examples of these sectors include curriculums, academic infrastructure, the supply of administrative and academic systems for improvements to be made, strategic planning, and research and publication.
- A proposed quality management model that can be used in the universities in Saudi Arabia to effectively adopt the process is as shown below:
Quality Management

Where are we now and where do we want to be?

Design and redesign

Customer research

STAKEHOLDER
SUPPLIERS

Families
High schools
Two year colleges
Business sector

INPUTS
Students
Academic staff
Administrative staff
Employees
Material and Equipment

STAKEHOLDER
CUSTOMERS

Government
Business
Families
Students

OUTPUTS
Able students
New knowledge/skills
Research findings

Teaching program,
Student's learning counseling,
scientific research

PROCESSES
Quality Management

- Based on the above model, it is clear that suppliers and the customers are the stakeholders in the higher education sector. On the other hand, the suppliers include businesses, families as well as college students.

- On the other hand, customers are made up of different groups of such as the society at large, graduate school, business community, families and the state sector.
Quality Management

- The student is the customer and this means that the institutions of learning have diverse customers.
- It is important for the university to reconcile and balance the varying interests of the diverse students.
- The first step should be the assessment of the students’ needs that is done with regards to the present knowledge, career opportunities, the community’s needs as well as the future developments in the education section.
Quality Management

- Quality in the processes can be assessed by establishing the students’ performance as well as the access of the resources that are needed in their studies.
- There are various inputs in the education sector such as equipment, buildings, support staff, faculty as well as the students.
- On the other hand, outputs include abilities and acquisition of knowledge. In the present area of study, the outputs are aimed at improved study skills, better communication and interpersonal skills as well as improved public speaking.
Quality Management

- In conclusion, quality management is needed in the education system in Saudi Arabia and it can be attained through the adoption of the TQM that has been successfully adopted in the US.
Ethical considerations

- A number of ethical considerations need to be followed when implementing the new system. These include:
  - Adaptation: the implementation of the new system may result in students and teachers participating freely regardless of their age.
  - Confidentiality: information pertaining to the system might get leaked. Confidential student information may get leaked and this would be a breach of security.
Ethical considerations

- Gender disparity: it is a requirement in Saudi Arabia that men and women should not share a classroom.
- However, the new system emphasizes on gender equality and this might result in conflicts of interest.
Verification and Validation

- No tests will be carried out on the system.
- The system will be used on the students directly.
- Depending on the results, the necessary changes will be made after every semester.
Conclusion

- The information presented in this project is a detailed assessment of higher education system in Saudi Arabia.
- Based on the weaknesses presented in this project, the study concludes that lean methods are the most suitable in addressing them.
- The comparisons provided for other countries such as the US shows the practicality of using lean methods.
Lessons Learned

- The first lesson is that the Kingdom of Saudi Arabia has a long way to go in enhancing effective university education.
- Another vital lesson leaned pertains to the importance of relationships. It is vital for the teaching staff to understand the learning needs for their students in order to effectively address these needs.
Lessons Learned

- Another lesson learned is that information technology is highly vital in the learning environment. The introduction of the internet has made it possible for students to interact with other students and their lecturers freely.

- The final lesson learned is that a single person cannot make any meaningful change. It is a process that needs all stakeholders in the university.
Thank you..