Smart university: A Case Study of Shah Abdul Latif University Khairpur

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Abstract— In education technologies play a vital role to empower a student. Technological innovation and student demands are the better way of learning are dramatically changing the nature of education. The smart university is the best approach to give an interactive environment to the students for better learning and a place where knowledge is shared between students, teachers, employees and all stakeholders in their own way. The goal of undertaken study to present the aims and objectives of Smart University, Smart Classrooms and also addressed a way to covert simple learning environment in to Smart Education System. The primary focus of this study is to introduce a secure and smart infrastructure for “SHAH ABDUL Latif UNIVERSITY”. The introduced infrastructure has covered all aspect regarding secure education such as E-learning, management, administration, security and environmental protection. This study will be helpful for the scholars, researchers and academicians.

Keywords—Smart University, smart classrooms, smart system, Smart technology, Infrastructure.

1. INTRODUCTION

Smart University and smart campus can make numerous open doors for students to learn in assortment of ways. Smart University gives condition to change of straight method for teaching method for current strategies for learning by utilizing data and correspondence advancements. Smart University not only provide the better learning system but also provide the secure environment for the learners. The rapid progress of mobile, remote communication and sensing technologies has empowered the developed of ubiquitous learning environments. [1].

1.1 Smart University:
Smart University is an attitude not an undertaking and has clear advantages. The concentration of smart college is to enhance student’s engagement and learning encounters, security and administration. [2] The Objectives of smart University are: Analytics, Technological techniques for teaching method, Biometric participation, secure condition Better learning results and Application to enhance understudies learning.

1.2 Smart Classrooms: Smart classroom is a learning place which increment enthusiasm for learning and attention to the significance of what is being educated. Smart class rooms may contain the IOT (internet of things) devices to initiate E-learning for the learners. [3] The objectives of Smart classrooms are: Students approach high thickness fast remote (up to gigabit speed802.11ac), Students downloads “My SCAMP App” students have quite recently gotten a warning their task is expected for the current week and change of area of the class. Students checks timetable and is offered bearings to new classrooms. Lecturer has quite recently posted HD recordings contents on LMS student to be streaming on their tablet. Role based access speaker, administrator, analyst, understudies all have their diverse level of web get to. Multipurpose labs, understudies can get to various applications from the pc. Social coordinated effort instrument CSU answer gadget and working framework freedom understudies utilizes click IM and meet. Students at that point elevates this to a video call and connects with tutor in the call who is accessible by means of essence. The goal of undertaken study to present the aims and objectives of Smart University, Smart Classrooms and also addressed a way to covert simple learning environment in to Smart Education System. The
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II RELATED PAST WORK

Lot of research has been done regarding the initiatives of Smart University as well as infrastructure for making the smart campuses. [4] Describes the infrastructure for Smart Campus called “Scalable Architecture for Interactive Learning” (SAIL) that utilizes the logical learning strategies to student’s physical cooperation and spatial situating inside a room to assume a solid part in scripting. [5] [6] [7] Describes the features Smart University using the (RFAID) radio frequency identification and also describes the advantages of these technologies and Smart Campuses. [8] And [9] describes the classrooms as the intelligent classrooms as the intelligent classrooms whereas [10] [11] [12] addressed the capabilities and benefits of Internet of Things technologies and pervasive computing to fabricate a Smart Campus. Some researcher’s presents the outcomes of Smart University aimed on analysis of disabled students. [13] [14] Describes the present status of smart campus and show the distinction between smart campus and digital campus. By the methods for raising the model and application system of smart campus base on the distributed computing and the IOT, they investigation its capacity apply. Also discuss the issues while implementing such models. [15] Examine the present circumstance of education in universities, with specific reference to the European situation. Some researchers established the framework and their usage strategy as an online systems which are help full for programmers in the platform of smart campus. [16] [17] Discusses the developed ontology of next generation smart classrooms.

III TOWARDS BUILDING THE SMART UNIVERSITY

Most of the universities all over the world try to change the traditional learning system in to Smart learning system to provide a better way of learning to the student. The Government of Pakistan taken a recent initiative to adopt the concept of Smart University also in Pakistan by awarding the laptops among the talented students. Accordingly half of a million of laptops are being awarded to the students in Pakistan. Furthermore Higher Education Commission has taken a door step to achieving the objective of transformation of Smart University in to Smart Education. Higher Education Commission has stepped up with regards to Smart Campuses under which cover Wi-Fi scope is being given as to supplement the activity of Smart Bags, i.e. Portable PC (2-in-1 separable) PCs. Following this transformational approach, the normal subsequent stage is the presentation of Smart Classrooms at every institute. The Smart Classrooms system is a learning activity that helps instructors to make ICT necessary to learning. The system is tied in with drawing in the advanced age, enhancing individualized learning openings, starting development in picking up, improving instructors' computerized teaching method and getting the best from the ICT speculations. The concept of Smart Education given by Higher Education Commission is described in Figure-1.

IV INFRASTRUCTURE OF SHAH ABDUL LATIF UNIVERSTY AS SMART CAMPUS

This section describes the infrastructure of “SHAH ABDUL LATIF UNIVERSITY”. To start with several asserts and actors should be tagged.

- Entry Point of university.
- Each department will be equipped with reader node.
- Employees and students will be tagged by using smart cards.
- Entry point will be equipped with emotion tracking system.
- Staff and students attendance record is controlled by biometric system.
- Staff and students will also be tagged having their registration account to access the network.
- Integration of learning management system.
- The whole data is collected in “Data Entry Centre”

A – Use cases: There are several use cases for smart university like identifications, Tracking systems, smart lectures rooms, Office automations, smart labs, rooms security, smart attendance etc. Some important
use cases are discussed below:

a- Employees and students identification:

The entry point of university and department is equipped with reader node and face recognition/emotion tracking system. The students and employees will have their smart I’d cards when they enter in university and in the concerned department he/she sweeps the for identification and reader node reads the data and tracking system identify the person by authenticating the data from data entry center then allow that student or employ. 

b- Smart attendance and its maintenance:

The attendance record of students and staff will be maintained by biometric attendance system and the record will be kept in the databases in data entry center.

c- Smart devices and registration:

Every student will have its own smart device and also have a registration account on the online learning application named as “SALU CAMP APP” to communicate with teachers and to get the notification for assignments and video lectures.

d- Integration of learning management system:

Lectures, assignments, Quizzes will be just posted on HD video contents of “SALU CAMP APP” students will stream on their smart device.

e- Network access: Every teacher and student should have their own registration to get the access on network. Students have access to high density high speed wireless (up to gigabit speed 802.11ac) illustrated in Figure-2.

Figure-2 Infrastructure of “SHAH ABDUL LATIF UNIVERSITY” as Smart Campus.
V DISCUSSION

From this study it is found that Smart University and Smart Campus can make open entry ways for students to learn in variety of ways. Smart University offers conditions to change of straight strategy for showing technique of current methodology for learning by using information and correspondence progressions. The Objectives of Smart University project is to not only provide a better technological way of learning but also provide security, management and administration to students, teachers and employees. It also provide an intellectual pedagogic way of learning students. We should try to initiate this concept in all the institutes of world. As we have taken a case study of “Shah Abdul Latif University” it is accepted that its environment is technological but still there are some gaps which can be overcome by using the ubiquitous computing and Internet of Things (IOT). The proposed infrastructure for “Shah Abdul Latif University” will be helpful for transferring the today’s University into Smart University.

VI CONCLUSION

The goal of this study is to illustrate the aims and objectives of Smart University. Smart Classrooms and also addressed a way to covert simple learning environment into Smart Education System. The primary focus of this study is to introduce a secure and smart infrastructure for “SHAH ABDUL LATIF UNIVERSITY” to make it a Smart University of Pakistan. The performed research helped us to provide better, technological, secure, managed, well organized smart learning environment to the students of Shah Abdul Latif University, and the future work is to evaluate the impact of smart learning on students of “SHAH ABDUL LATIF UNIVERSITY” and to give comparative analysis on traditional learning system and smart learning system.

REFERENCES


