



SMART EDUCATION LEADS TO A SMART CITY

P.Pallavi

Student

Bhavan's Vivekananda College
Sainikpuri, Secunderabad,
Telangana, India.

K.Madhurank

Student

Bhavan's Vivekananda College
Sainikpuri, Secunderabad,
Telangana, India

ABSTRACT: : Smart education leads to smart cities is a prevailing aspect which is inter related to each other, wherein smart education deals with the development of new technologies that enables us to learn more effectively, efficiently, flexibly and comfortably. Smart education is a concept that describes learning in digital era, has gained increased attention. Hence, using the concept of smart education, we are moving forth for the development of smart cities.

Smart cities, on the other hand are cities which are well planned and provides the cost efficient services, environmental services and technological sound services.

In this paper, we are focusing on the smart education and the measures to be taken for the implementation of smart education through the latest technology such as the IOT which gives the way for the development of smart cities. As a part of our proposal, we will also discuss a few methods for the implementation of the ideas for smart cities.

KEYWORDS: Smart education, Smart cities, measures, technologies, implementations

INTRODUCTION:

In today's generation, everybody is having Crave to lead a comfortable and a satiable life. Everybody wants their daily tasks to be done automatically, accurately and instantly. For example, a homemaker expects that her house could get cleaned automatically; the lights could turn off automatically if nobody was present in the room. A busy employee expects that he could get his daily routine managed automatically and perfectly, such as getting up on time and reaching his workplace on time and so on. Likewise there are many more examples that could be quoted or related where we wish to make our life automated.

This can be accomplished by making our lives digitalized using smart technologies. Such as the homemaker could have a device in which she could set the time and the place to be cleaned, the device starts working and stops automatically after finishing the work.

The employee could have a thermostat that could sense his sleeping hours and make him sleep and wake up on time and also manage his other activities such as checking his health, maintaining his daily routines and so on. Therefore by implementing smart technologies in life we can live a better life.

In this paper we are going to discuss about the major components i.e., smart education and smart cities that help in achieve a desirable life. These two components are such that they are interrelated to each other i.e., having knowledge on how to use the smart technologies can help in building smart cities and

having a smart and innovative thinking capacity will help in transforming the cities into smart cities.

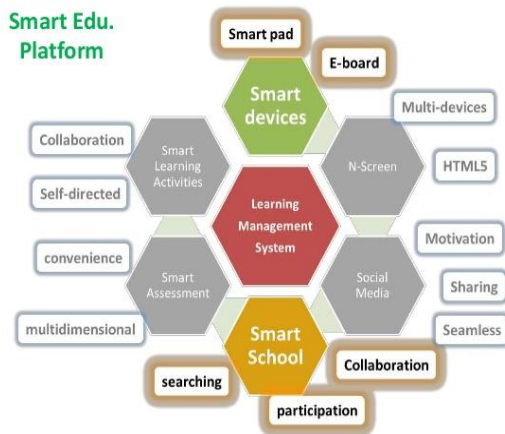
WHAT IS SMART EDUCATION?

Globally many countries have researched and made projects on smart education, but there is no one definition given for smart education.

Here the word "smart" in smart education may be defined into two terminologies, the one which deals with "smart technology" and the other which deals with "smart brains".

Smart technology refers to the implementation of smart devices such as laptops, smart phones, Mac books, notepads all related to technology with better accessibility. Whereas "smart brains" refers to the active and innovative thinking capacity of an individual i.e., an inspiration

or a thought that is lateral or out of the box In this paper, we are going to discuss about the two terminologies of smart education and how can this lead to the development of smart cities using various technologies such as Internet Of Things (IOT), Cloud Computing and many more.



WHAT IS INTERNET OF THINGS (IOT)?

Internet is one of the most important and transformative technologies ever invented. Internet is like a digital fabric that's woven into the lives of all of us in one way or the other. Internet is not just about connecting people, it's about connecting things and so it is named as "THE INTERNET OF THINGS" (IOT) in which the things can start to share their experience with other things.



CAN THINGS SHARE AND COMMUNICATE WITH EACH OTHER?

Yes, they do. This can be done by taking things and adding the ability to sense, control and communicate and there you get an opportunity for things to interact and collaborate with other things. Therefore this is how internet of people and internet of things intersect.

HOW BIG IS THE INTERNET OF THINGS?

Well, it's said that the IOT was born at the time when there were more things on the internet than people and that occurred in

2008. Today there are more than 10 billion devices on the internet and this is expected to boom to 50 billion by 2020.

WHY DO WE CARE FOR INTERNET OF THINGS?

We all want to live better lives and the technologies that are inherited in the IOT, like the ability to sense, communicate, acquire data and so on will help us build processes and systems that will deliver better health care through remote diagnostics and monitoring and bring us safer environments. It will also help in saving resources like electricity and water.

I believe internet of things is the perfect thing to collect a lot of data and turn it into wisdom and move the human race forward to live a better and comfortable life.

WHAT IS SMART CITY?

A smart city is urban developed city that provides sustainable economic development with basic infrastructure to give a decent quality of life with clean and livable environment. It uses digital technology, internet of things (IOT), and



information and communication technologies which enable the citizens to live a comfortable life. On the other hand, a smart city also means to use the available resources smartly and in an appropriate manner which does not lead any destruction to the environment. For the accomplishment of smart cities through smart education, there must be smart some changes inculcated in the education factor. Some measures that could be taken in smart education



using IOT that can lead to the development of smart cities are:

- **MOBILITY IN EDUCATION**
- **SMART WAYS OF TEACHING**

Now, Let us look into these methods in detail.

MOBILITY IN EDUCATION:

As we are fond of food trucks in our areas, we can also use the trucks for the use of education. Moving education can be a great approach for many schools where they do not have the facility of computer labs. In such cases, these moving trucks can transform as moving labs where in a week, each day a particular Van will go and teach the students. For example: say a truck **A** is given the responsibility of an area **X** then the truck finds out all the schools in the areas which does not have the access to the computer labs, they will teach in a different school on each day in a week of six days. If the truck **A** in the area **X** visits a school **P** on Monday the same truck would visit the same school on the next Monday. Likewise there would be **n** trucks assigned to a particular area as per the requirement.

The concept of moving education deals with cloud computing. This method of smart education can lead to the reduction of unemployment wherein many teachers are required for this method of education. This process can be mostly used as there are many engineering students suffering with unemployment.

SMART WAYS OF TEACHING:

Nowadays, we find most of the schools introducing smart infrastructure in their schools but very less accessibility is given to the students. It is a good initiative to inculcate smart infrastructure, but the accessibility should be made more approachable to the students. This can be done by involving the students to make use of the technology, such as, every educational institute should have its personal website or a personal app in which only the respective college members can access it. Through the use of this app, the institute can upload their assignments, tasks, class videos (which will be helpful in case the student is absent or wants to listen to the class again) cultural fest videos. The track of the student's progress in all the factors such as academics and extracurricular activities can be made through this app. Many workshops regarding the technology should also be taught in schools, so that from the very young age children will have enough knowledge on the technology.

SMART ATTENDANCE can play a vital role in smart education. In schools a device should be given for the student which keeps the track of the presence

of the students in and around the school area. The same device can also be used to track the presence of the students by their parents by connecting it to their smart phones. In institutes where phones are allowed, the college app can be used to keep a record of their attendance.

This concept can be used by IOT beacons or the sensors that can capture the connection the student's device. This particular app can also be used to protect the student from any danger.

By inculcating the habit of using technology the students can easily adapt the environment of smart education which will also be a leading factor of smart cities.

OTHER TERMINOLOGY OF SMART:

Now, discussing about the other terminology of "smart" in smart education, i.e., smart in thinking innovatively and out of the box. This concept always plays a very crucial role in terms of developing smart cities. As we know today's students are tomorrow's future we should make it a habit to encourage students to think differently. A smart thinker always thinks about all perspectives be it a minor aspect or a major aspect. Thinking innovatively in the field of technology can bring a vast change in the cities. Some of them can be:

SMART TRANSPORTATION (SMART BUSES):

In today's generation we are facing a lot of inconvenience in using RTC buses due to over crowdedness and the conductor moving in the bus causing disturbance. To avoid this problem a ticket device can be invented, which should be kept in every bus stop. The device should work on codes for every particular area. The device should be build with Wi-Fi facility and detector and sensors that can detect the explosives. It can also have the facility of smoke detectors so that no smoker's will smoke in the bus stop thereby protecting people from harmful toxins

Ticket booking can also be done through an app. The app should be designed in such a way that not only ticket booking, it can also have other facilities such as route maps (that can track your location and share your location) emergency requests such as medical facilities, urgent requirement of transportation (special squad) in case of vehicle problems. The person should scan the ticket or the mobile ticket code to the device connected on the entrance of the bus, therefore having the allowance to enter the bus.

There might raise a question of unemployment of the conductors which can be solved by placing them in the special transportation squad, where they drive two wheeler vehicles which eventually reduces the unemployment.

SMART MAINTENANCE: The major problem regarding maintenance in some countries is a person urinating in public places which causes a lot of inconvenience. To avoid this problem, we can use the sensor technology. For example, small radium lights that are embedded with a sensor capability that senses a person or an animal and makes a sound when comes in contact with it are to be fixed in the corners of the roads or places where people mostly tend to urinate and therefore the person will not micturate in public places. According to biology, urine is one of the fastest and most excellent sources of minerals and nutrients for the plants. Therefore an invention should be made in such a way that freshly obtained urine can be used by plants.

Another important aspect is garbage management, smart garbage systems should be introduced where in the dumping store should be buried inside the ground and only a small opening with two divisions should be visible on the top through which we can throw the wet and the dry waste separately into the bin. The bin should be able to transform the wet waste into organic matter that can be used again. The bins should be installed with sensor capacity to detect that the bin is getting loaded and then send a notification to the municipality corporation. Hence to get a notification, the municipality corporation should have an app that can also be used by normal citizens to inform or give notification about the overloading of the bin in case of technical problems in the bin and also other issues such as sewage problems, pot holes on the roads or any other damage occurred to the roads, electricity breakdowns water problems, stray dogs and any other concerned issues. We must be able to access this app socially.

Not only creating an app the service through this app should be provided within 24 to 48 hours.

COCLUSION:

There are many other areas also such as smart traffic, smart parking, smart gardening, smart health care systems etc that can be developed using smart thinking.

In order to make the best use of smart technologies in smart cities smart education has to be provided everywhere irrespective of place person or age.

Propaganda of the concept of smart cities can also be provided using the technology such as the moving vans which can conduct workshops on the importance of smart cities on how to use the technologies used in smart cities. The education again can also be used here by creating websites that help in knowing about smart cities.

Here for any of the concept government plays an important role in taking an initiative in building smart

cities or inculcating smart education. On the other hand people are also equally having the responsibility in maintaining the city and developing it, embedding smart thinking in their everyday life.

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