INTERNET OF THINGS IN EDUCATION

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Traditional vs. Modern:

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Modern</th>
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<tbody>
<tr>
<td>Physical attendance with teachers</td>
<td>Scale teachers and best quality of instruction-any device. anywhere</td>
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<td>One-time instruction in one location</td>
<td>Scale content recordable and replicable instruction, any time, any venue</td>
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<td>Static, linear content with low control</td>
<td>Learn at your own pace, focus on relevant content only, richer, interactive content</td>
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<td>Costly instructional resources, &quot;one size fits all'</td>
<td>Access to crowd-sourced content, ability to customize curriculum</td>
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<td>Ad hoc decision making</td>
<td>Data-driven decision</td>
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NEED OF IOT

- Investing to *Improve Quality*
  - Improving student performance measures
  - Increasing research capability and reputation
  - Differentiating the institution

- Investing to *Increase Access*
  - Increasing student access to quality resources
  - Reducing “gaps” across learner segments
  - Increasing educational opportunity
  - Improving services to constituents
  - Enhancing information to parents and the community

- Investing to *Reduce Costs*
  - Becoming more efficient at administrative processes
  - “Doing more with less”
STUDENT MATERIALS

- Tablets
- Desktops
- Laptops
- Smartphones
- Etextbooks
- Online content
PERSONALIZED READING

- Self learning sites
  - https://www.coursera.org/
  - https://swayam.gov.in/
  - https://www.khanacademy.org/
  - http://www.e-learningforkids.org/
  - https://www.schoology.com/

- Video recordings for lecture capture
- Digital class rooms, white boards, and displays
- Iqboards
- Ibeacons
IQBOARDS

- IQBoard IT is our wireless interactive tablet that allows you to wirelessly interact with your computer or interactive whiteboard.
- You can use the interactive digital pen to perform mouse functions, write notes, or control computer programs directly on the active area of the table.
IQBOARD ADVANTAGES

- Teach wherever you want
- Involve every student
- Save your work
- Create digital art
- Natural way to work
## iBeacon

- iBeacon is the name for Apple’s technology standard, which allows Mobile Apps (running on both iOS and Android devices) to listen for signals from beacons in the physical world and react accordingly.
SENSORS IN EDUCATIONS

RFID for attendance
RFID FOR ACCESS CONTROL
**Biometrics**

- Biometrics are the biological measurements that all people have and that are specific to them alone.
- Biometric data includes your height, your iris, and your fingerprint, all aspects of yourself that are perfectly visible.
Robot’s for STEM

- iPad Air 2
- Camera Kit
- Audio Kit
- 6-8 hr Battery
- Lateral Stability Control
- Self-Balancing
- Dual Kickstands
- Charging Dock
Robots for cleaning
Augmented Reality

- Combines real and virtual elements
- Interactive in real time
- Registered in 3D
AR Displays -
AR Displays - Hand-Held
AR Displays - Spatial
AR System Design

- Fiducial Marker
Files and Storage Local or Cloud

- International collaboration and exchange
- LMS, CMS, SMS
- Social media
- Educational programs and applications
INTERACTIVE SITES

- https://www.edmodo.com/
- https://www.surveymonkey.com
- Google sites
- Research
  - Scholar.google.com
  - Sci-hub
LMS
LMS

- Online study
- Online Exam
- Online validation of Exams
- Online student grading
- Online notification
- Online guidelines to the student.
- Online attendance.
CMS

- A content management system (CMS) is a computer application that supports the creation and modification of digital content.
- It typically supports multiple users in a collaborative environment.
- CMS features vary widely.
- Most CMSs include Web-based publishing, format management, history editing and version control,
SMS

- Short Message Service
- Communicating between students staff and the parents with SMS.
- Attendance report
- Marks updates
- Holidays intimation.
SURVEILLANCE CAMERAS

- Safeguarding the well being of all students and staff is a primary concern for schools today.
- A properly installed system of school security cameras is an important tool for ensuring safety on school premises and grounds.
- Keep stock of every event
- Discipline is no more an issue
- Teachers’ behaviour can be monitored
- Students are monitored individually
- Help in investigation
- Emergencies can be tackled
- Helps avert ragging
**WI-FI COVERAGE**

- Easier Collaboration
- Learning Beyond the Classroom Walls
- Personalized Instruction
- Accelerating Project Completion
- Cost Savings
- Making Education More Interactive
- Increased Engagement
Wearable's

- Fitness bands
- Narrative Clip

- Google Glass and Augmented Reality Headsets

- Muse, the Brain Sensing Headband
Supplies and inventory Tracking
HEATING, VENTILATION, AND AIR CONDITIONING
TEACHERS

- Designing curriculum, to teach, to grade papers and communicate with parents.
- Sharing and collaboration with students is easy and fast.
- Reusability of course materials
- Timely availability of data
- Online attendance
- Avoids manual work.
ASSISTANCE FOR SPECIAL CHILDREN

- Automating text to speech machines to aid visually handicapped.
- IOT for assisting in walking
- Voice assistance in the corridors
STUDENT PROJECTS

- Install IoT sensors on doors.
- Wi-Fi wireless door control limited to a few interior doors.
- Set up interior environment monitoring and control using Wi-Fi temperature and light sensors to track how well the system is performing and even how it correlates to student engagement.
- Program selected classroom or common space lighting (e.g., with Philips Hue or Hue Lux) to vary lighting over the course of the day (dimming bulbs when natural lighting is strong)
- Track the results.
- Monitor activity at a receiving dock or movement in a lobby.
- Put Wi-Fi moisture IoT sensors in office plant pots to provide an alert when plants need watering.
CONCLUSION

• Technology will change the way of life
• Tremendous opportunity to build great careers.
• IOT as part of curriculum encourages students and make them makers.
• Build on the basics, get hands-on and improve in multiple ways.