

# TECHNOLOGY ENABLED EDUCATION

Ghufraan A. W. Khan Sarguroh



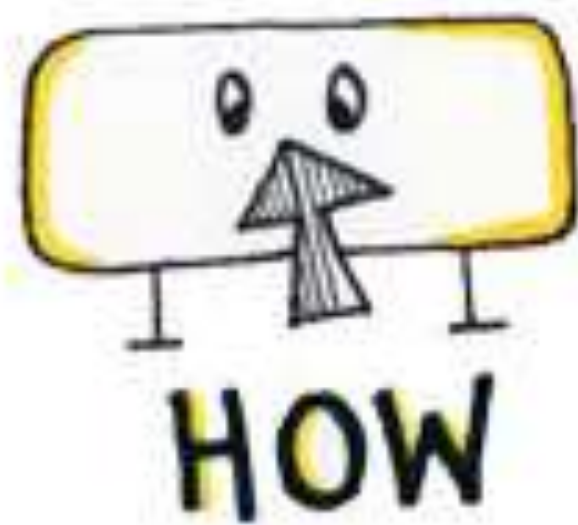
## ➤ **Avoiding the 2 extremes**

- Technology is the be all and end all of everything
- Teacher will be replaced by technology
- Teacher will be a caricature of the past
- Completely reject technology
- Unwilling to adapt
- Perceive technology as a tool of satan
- The balanced middle path

*Struggle for  
Shariah Compliance*

**Technology**

**From Sharr To Khair**





*Information Technology*

*Permeates Every Industry*

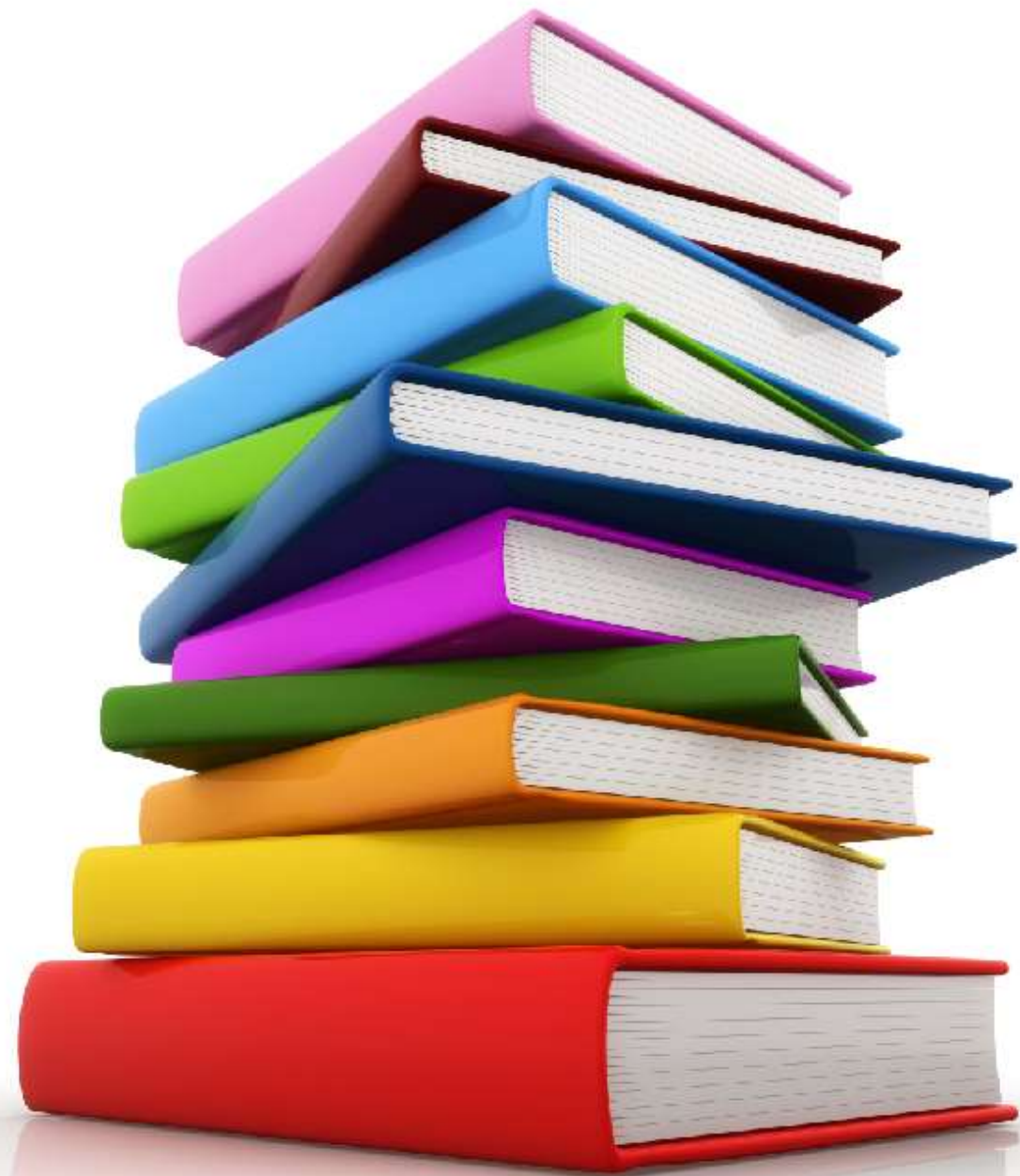
*Embracing Technology is*

*Inevitable*

DATA  
MINING

The image features the words "DATA" and "MINING" stacked vertically. The letters are filled with a green circuit board pattern, showing gold traces and black circular components. The letter 'A' in "DATA" is uniquely designed, with its right side extending into a long, thin, curved shape that points downwards and to the right, resembling a stylized arrow or a data stream. The overall aesthetic is technical and digital.





You **Tube**

Google



**WIKIPEDIA**  
*The Free Encyclopedia*



# the digital Library



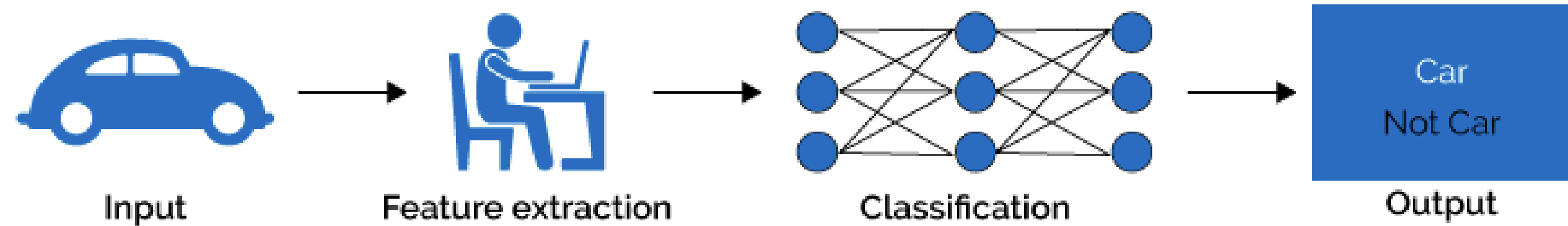


**FUTURE**  
TECHNOLOGIES

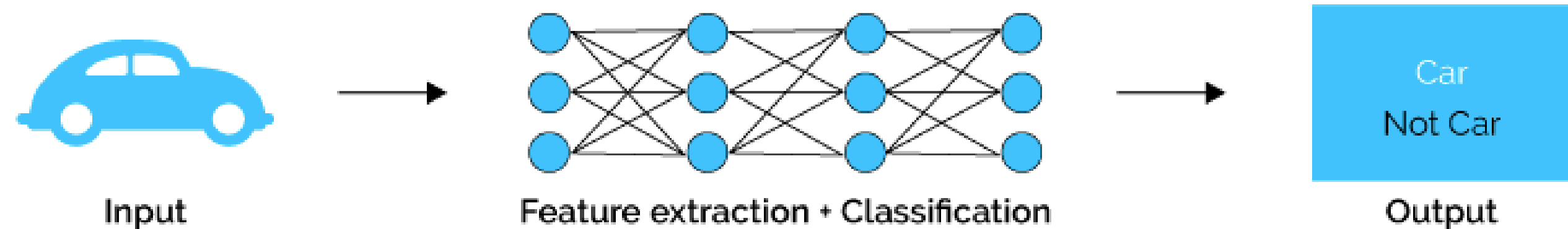
The image features a dark blue background with a complex, glowing digital design. On the left, a stylized human head is formed by a network of white lines and dots, with several points emitting bright blue light. To the right of the head, there are several interlocking gears of various sizes, some in shades of blue and others in white. Further to the right, a network of white lines and dots extends across the frame, with a prominent white arrow pointing to the right. The overall aesthetic is futuristic and technological.

# ARTIFICIAL INTELLIGENCE

# Machine Learning



# Deep Learning





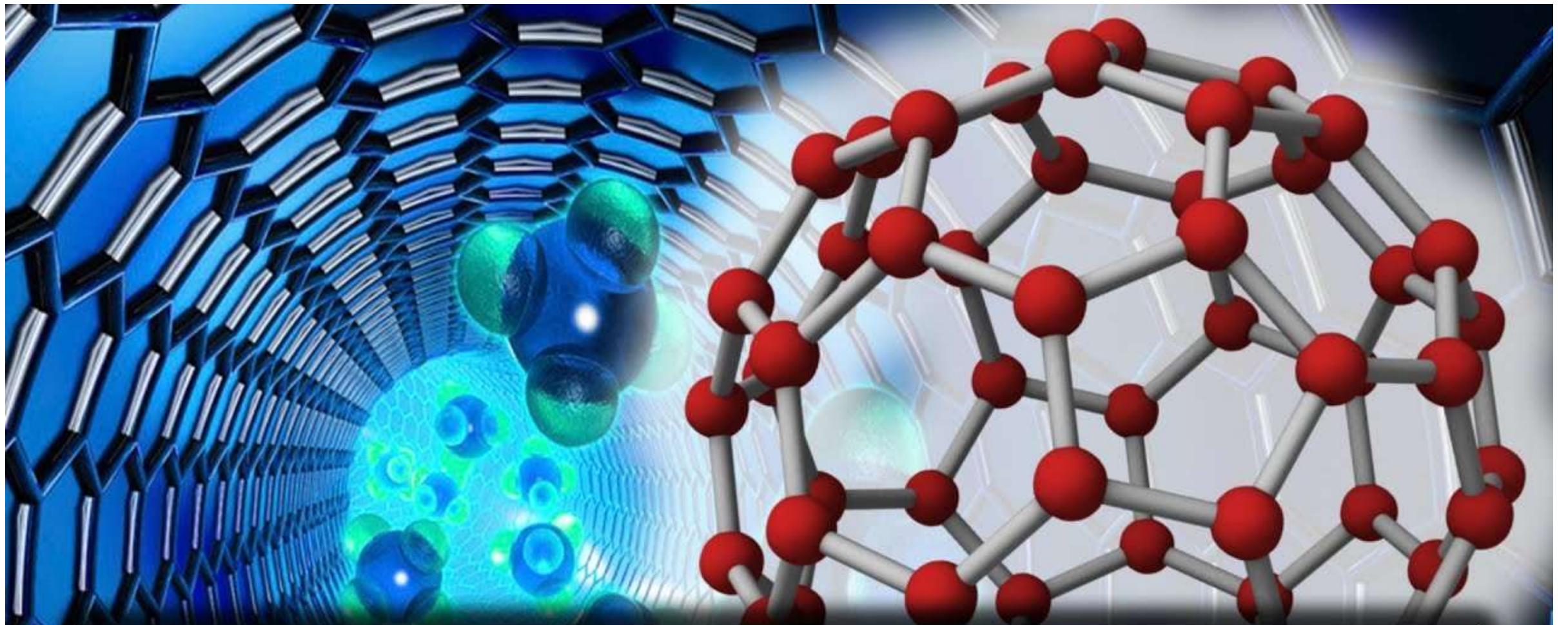
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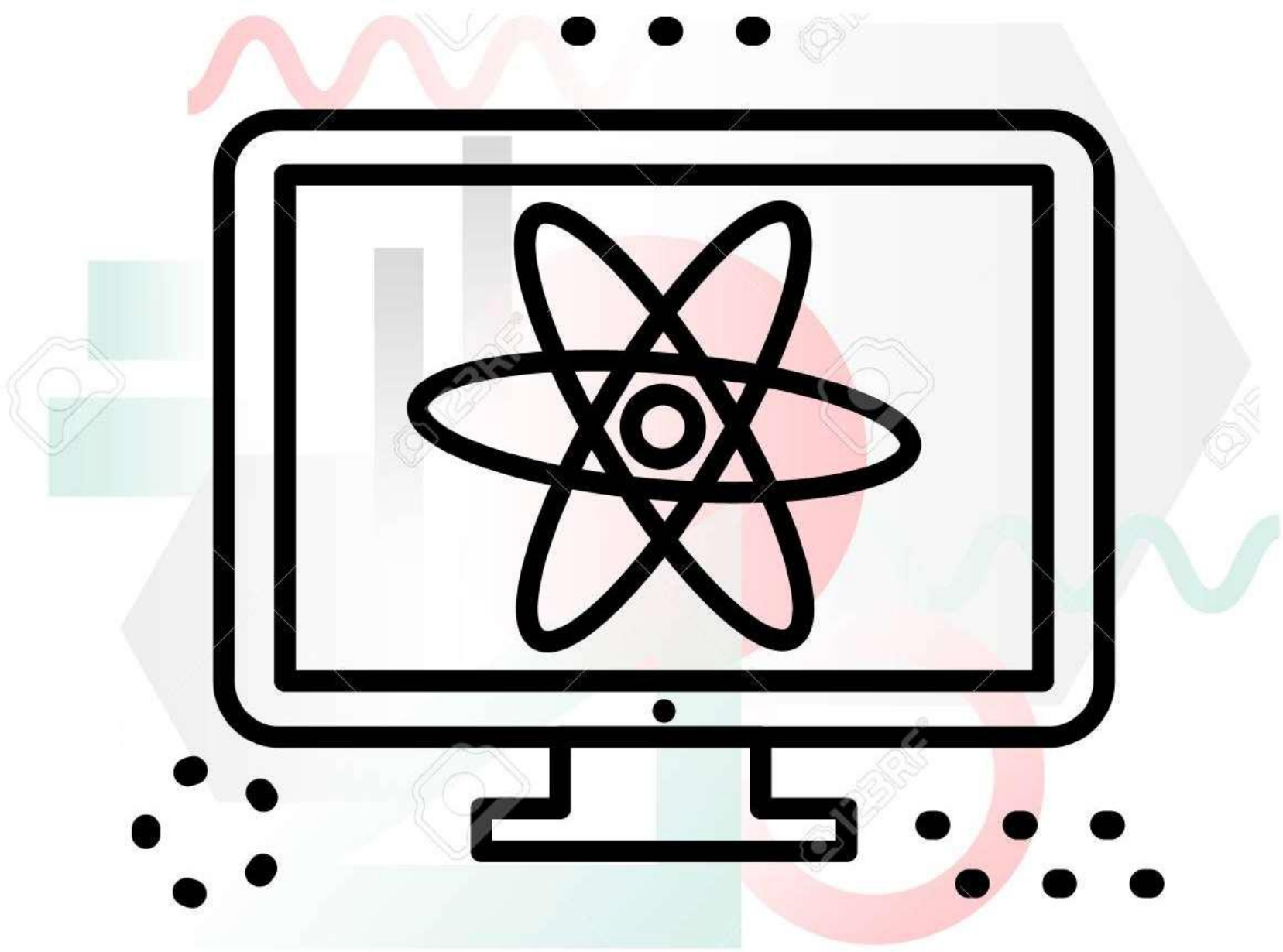
**BIO  
COMPUTER!**

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# NANOTECHNOLOGY



**QUANTUM COMPUTER**



**MASSIVE  
INCREASE IN  
COMPUTING POWER**

***“Information is the oil of  
the 21st century, and  
analytics is the combustion  
engine.”***

Peter Sondergaard, Gartner Research

# DEALING WITH DATA OVERLOAD

HOW TO COPE IN A WORLD OF BIG DATA









*“The Internet is becoming the town square for the global village of tomorrow.”*

**Bill Gates**







# The 10 Most Valuable Brands of 2020

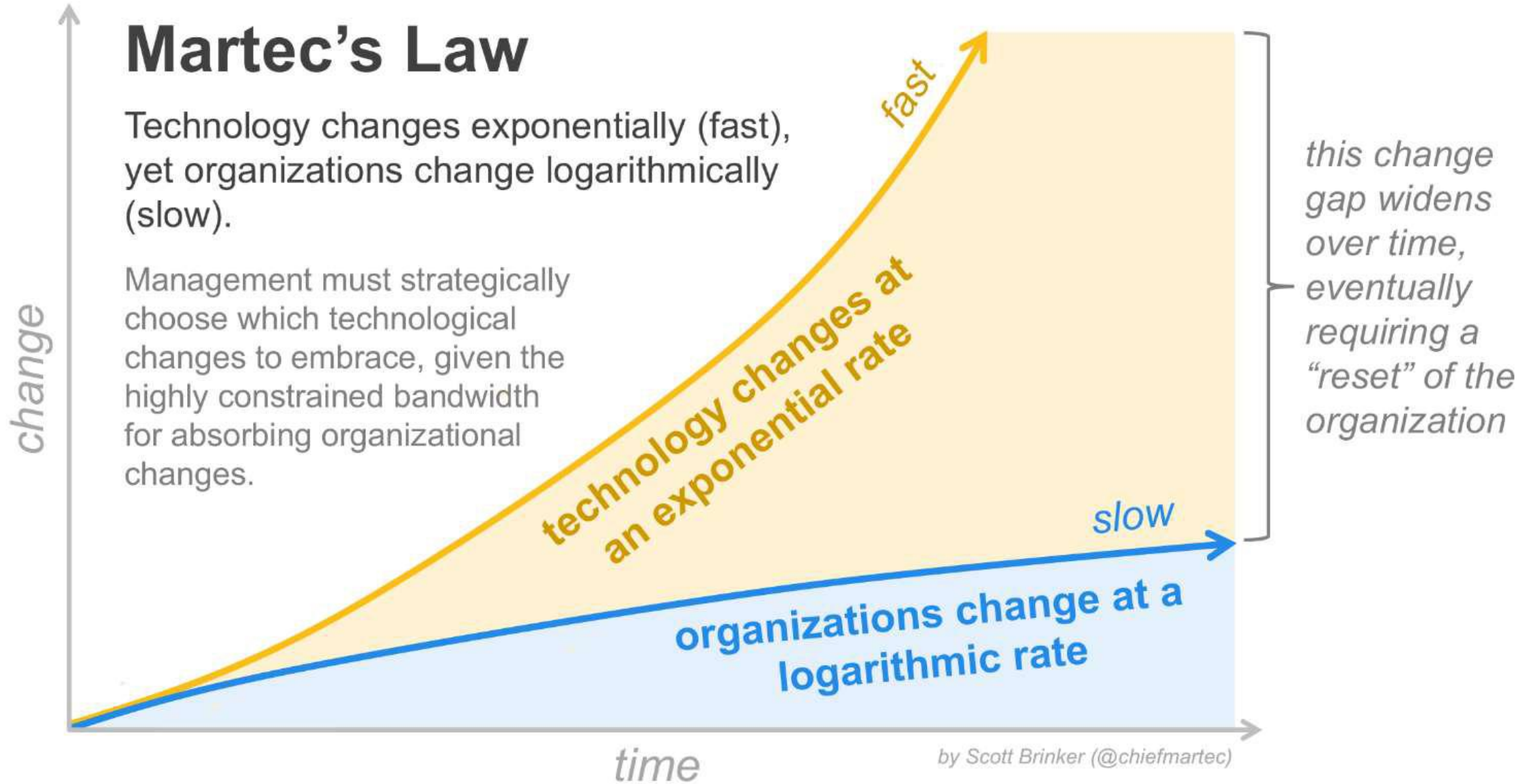




# Martec's Law

Technology changes exponentially (fast), yet organizations change logarithmically (slow).

Management must strategically choose which technological changes to embrace, given the highly constrained bandwidth for absorbing organizational changes.





**THE FUTURE BELONGS  
TO THOSE WHO PREPARE  
FOR IT TODAY.**

**- MALCOLM X**





**Artificial Intelligence**  
*VS*  
**Human Intelligence**









*Tasks associated with auditory and spatial abilities, reading, writing and manual dexterity will decline.*



*Relevant skills will include creativity, innovation, analytical thinking, problem solving, language comprehension and active learning.*

# ADMINISTRATIVE & CLERICAL JOBS



OFFICE



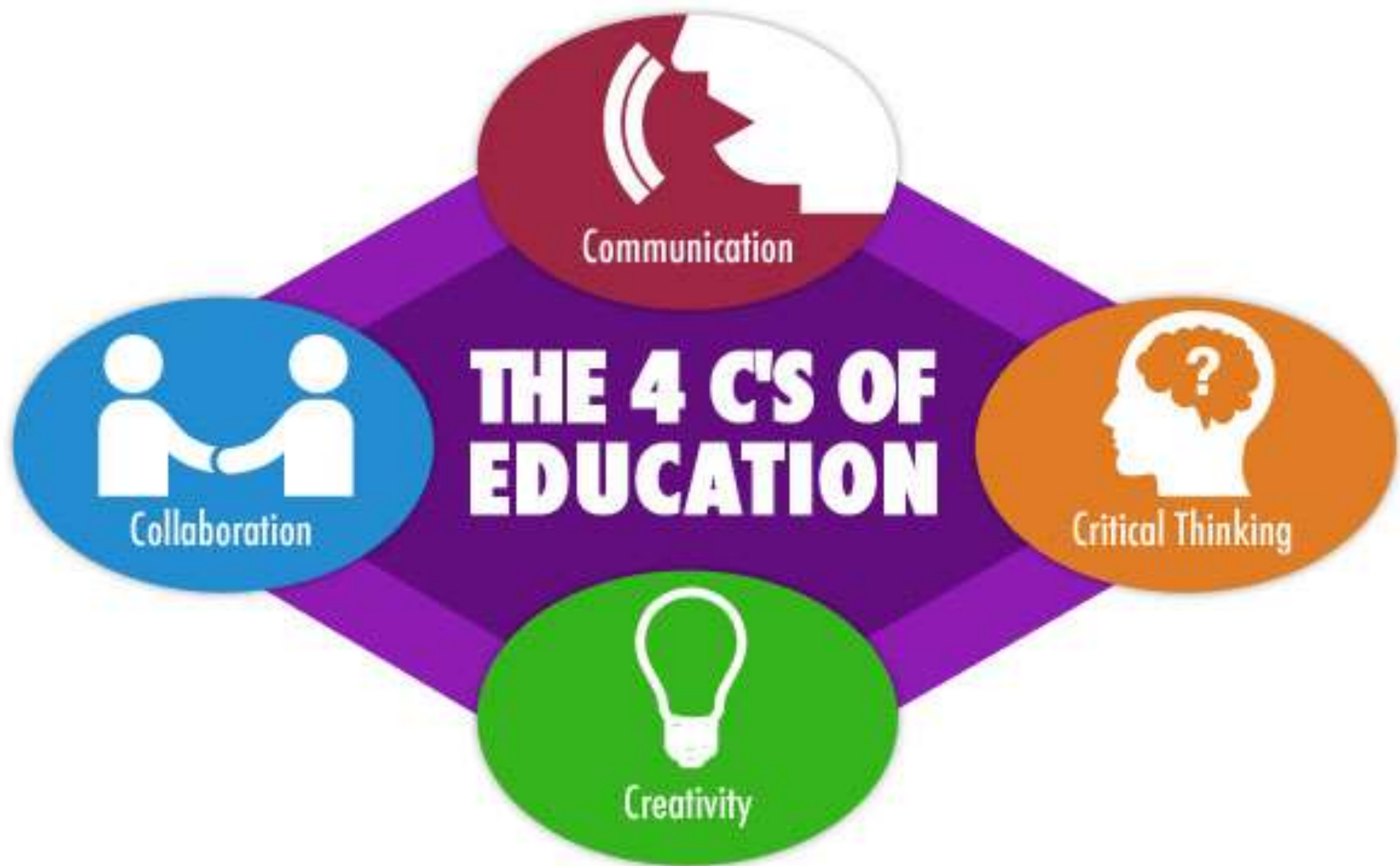
# Facets of the A.I. Revolution

- The best of students cannot match the exponential computing powers of AI.
- But AI can't comprehend context & emotions as well as humans do.
- The power of awareness, expression of emotions, managing interpersonal relations and being empathetic to the needs of varied customers, patients and other stakeholders will be a much sought after talent virtue.
- Remember, robots cannot calm angry customers or make small talk to cheer up depressed patients!

*One machine can do the work of fifty  
ordinary men.*

*No machine can do the work of one  
extraordinary man.*

*- Elbert Hubbard*





# HARD SKILLS



# SOFT SKILLS



**SKILLS:** Goal-directed, well-organised behaviours acquired through practice and performed with economy of effort

```
graph TD; A[SKILLS: Goal-directed, well-organised behaviours acquired through practice and performed with economy of effort] --> B[HARD SKILLS]; A --> C[SOFT SKILLS];
```

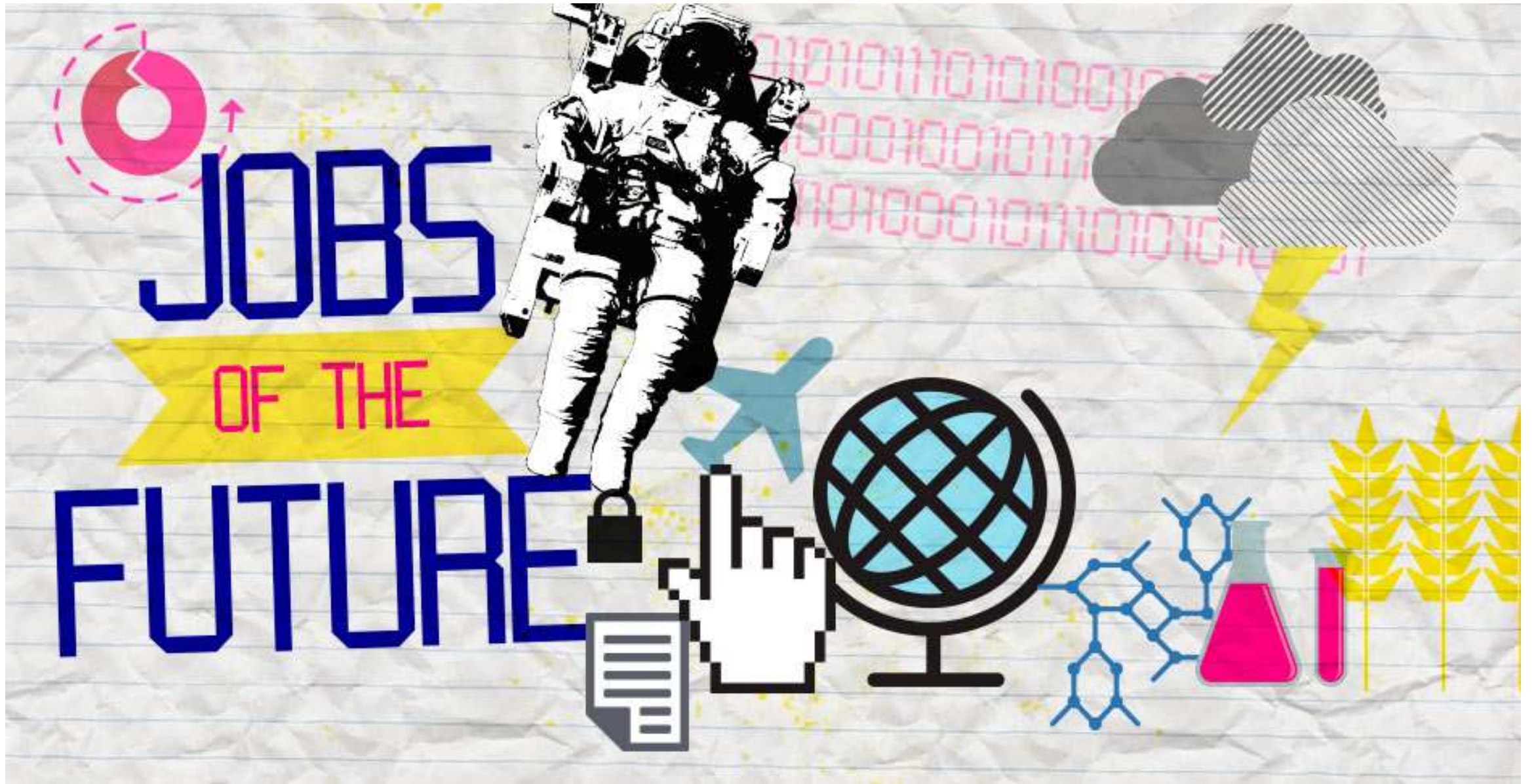
**HARD SKILLS**

Rule-based  
Technological/scientific  
Industrial/mechanical  
Tools/techniques  
Specialised  
Procedural/methodical  
Replicable  
Predictable  
Tangible

**SOFT SKILLS**

Experience-based  
People-related  
Attitudinal  
Behavioural  
Non-domain-specific  
General  
Trans-situational  
Non-technical  
Intangible





JOBS

OF THE

FUTURE



**Service Oriented  
New Technology Based  
Creative Designing Based**



**Analyst**  
system

**HR** MANAGER

*the* **Ag**riculturist **the advertiser**





**COUNSELLOR**



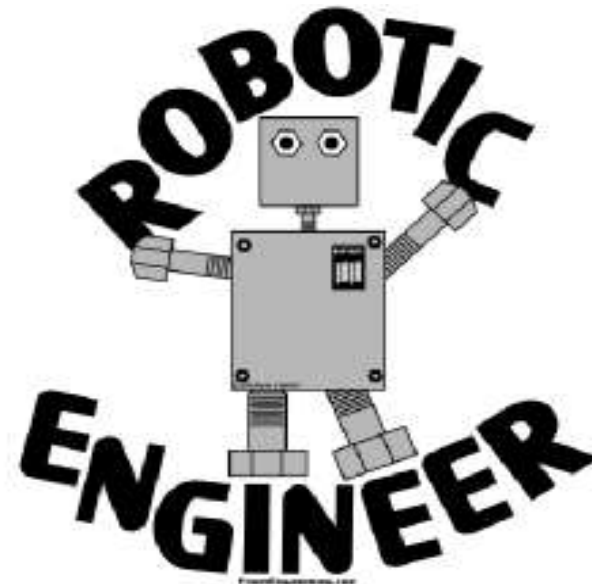
**DOCTOR**



ARCHITECT



**REGISTERED NURSE**



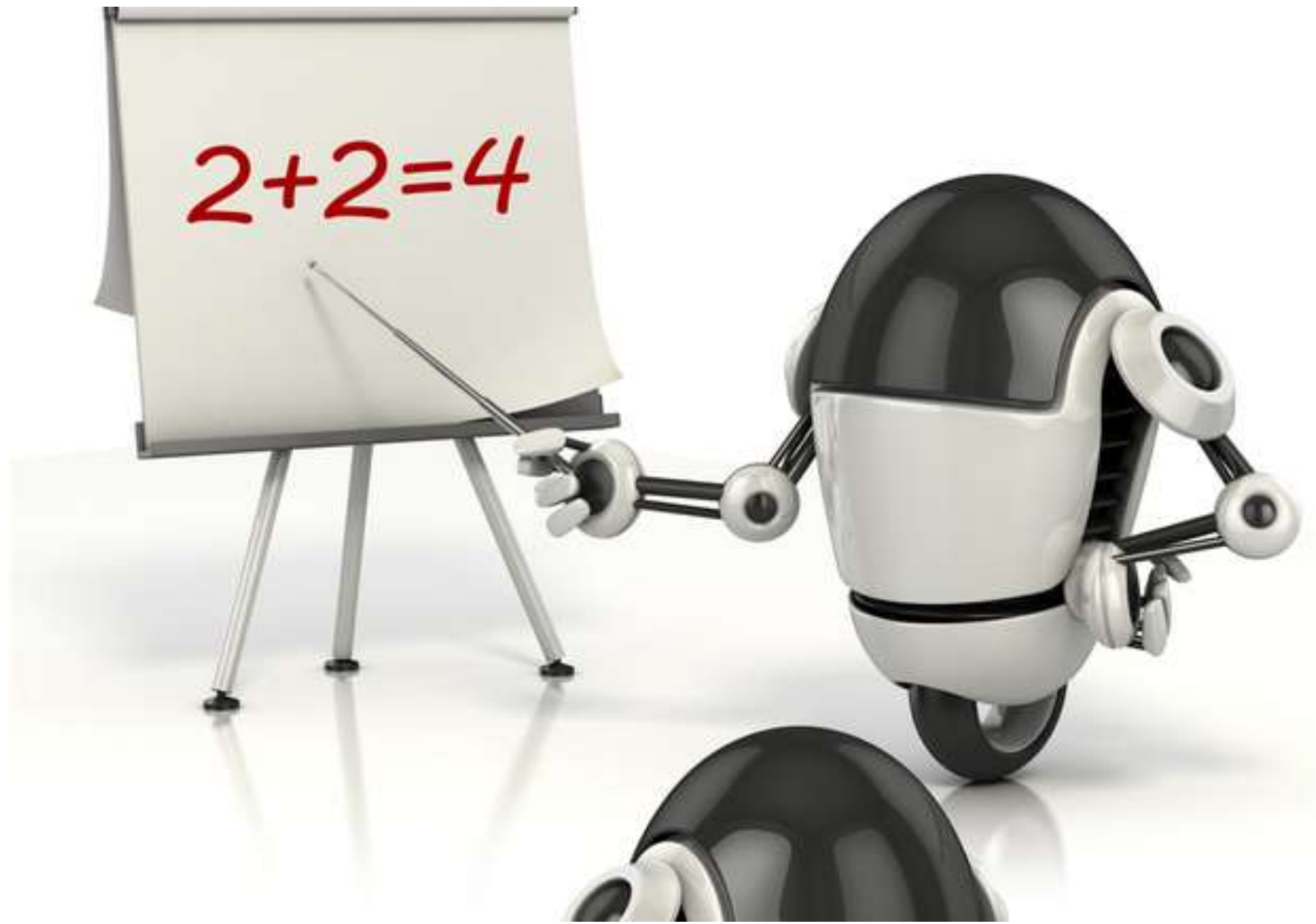
**BME**  
BIOMEDICAL ENGINEERING



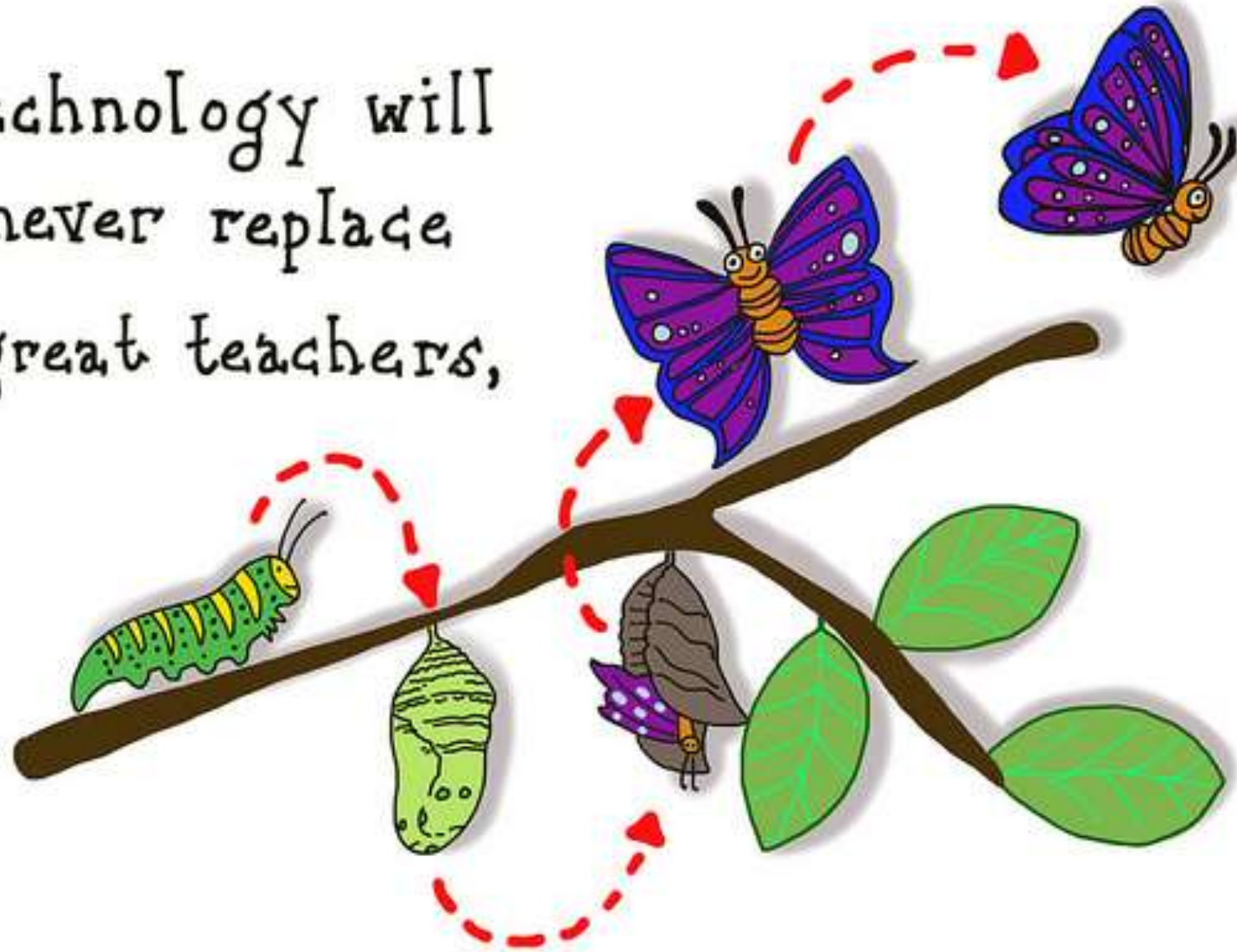




$$2+2=4$$



Technology will  
never replace  
great teachers,



@sylviaaduckworth

But technology in the hands of a great  
teacher can be transformational. *George Couros*

Technology is just a tool .  
In terms of getting the  
kids working together and  
motivating them, the  
teacher is the most  
important.

*~ Bill Gates.*





Technology  
has made  
*learning*

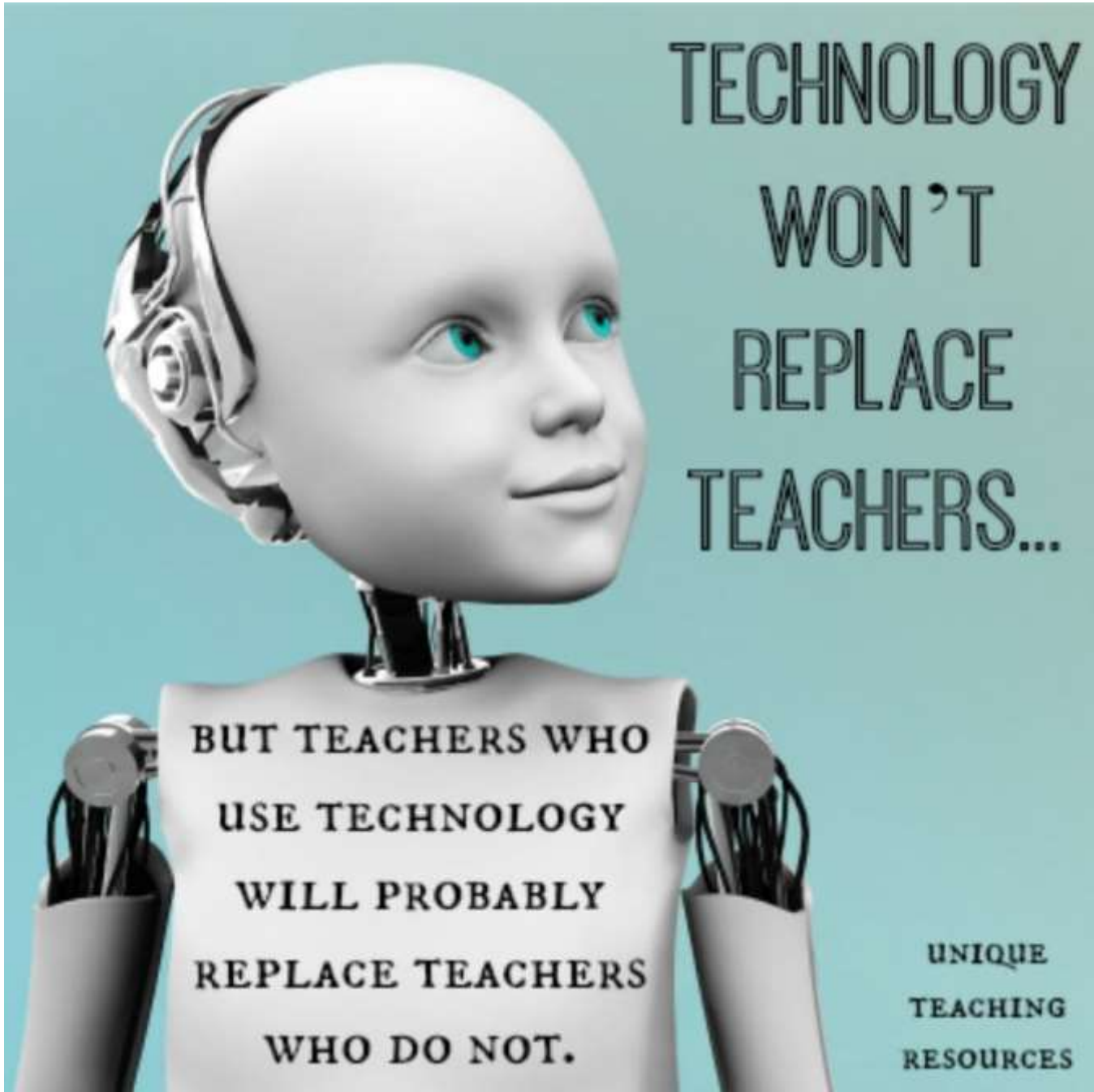
easy,

interactive,

and

interesting.





TECHNOLOGY  
WON'T  
REPLACE  
TEACHERS...

BUT TEACHERS WHO  
USE TECHNOLOGY  
WILL PROBABLY  
REPLACE TEACHERS  
WHO DO NOT.

UNIQUE  
TEACHING  
RESOURCES

➡ **Technology cannot transform a bad teacher into a good teacher.**

➡ **But it can make a good teacher even better.**







Portable Trolley



# VIRTUAL REALITY IN EDUCATION

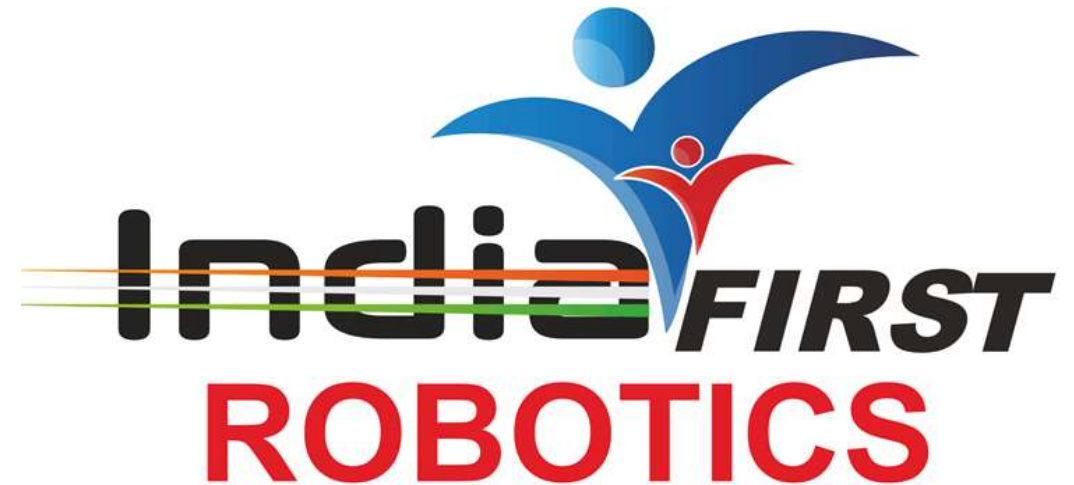




# Robotics Solutions For Schools

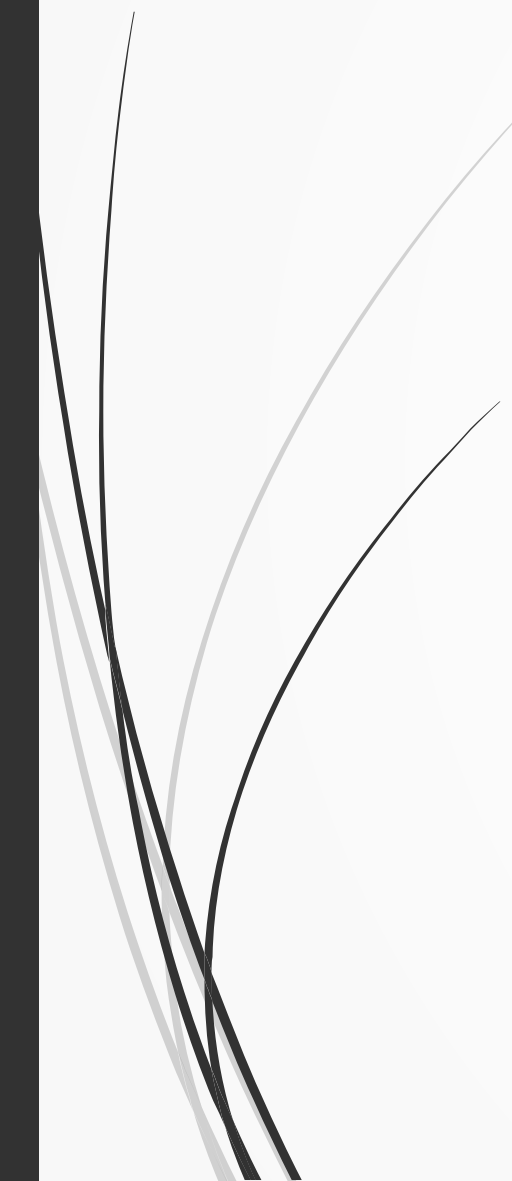
i robotKID

RoboGenius





# Benefits of Robotics

- 
- Creative & Innovative Thinking
  - Discriminative Thinking
  - Logical & Analytical Thinking
  - Learns Problem Solving approach
  - Builds Self Confidence
  - Develops motor skills
  - Industrial and commercial sense







**Open  
Educational  
Resources**



*Captivating & Engaging*

*Colorful*

*Graphical*

*3-Dimensional*

*Interactive*



Teaching  
RESOURCES

OpenLearn

Udemy

“academy of you”



*kolibri*



Virtual University

KHANACADEMY

UDACITY

coursera

edX



moodle

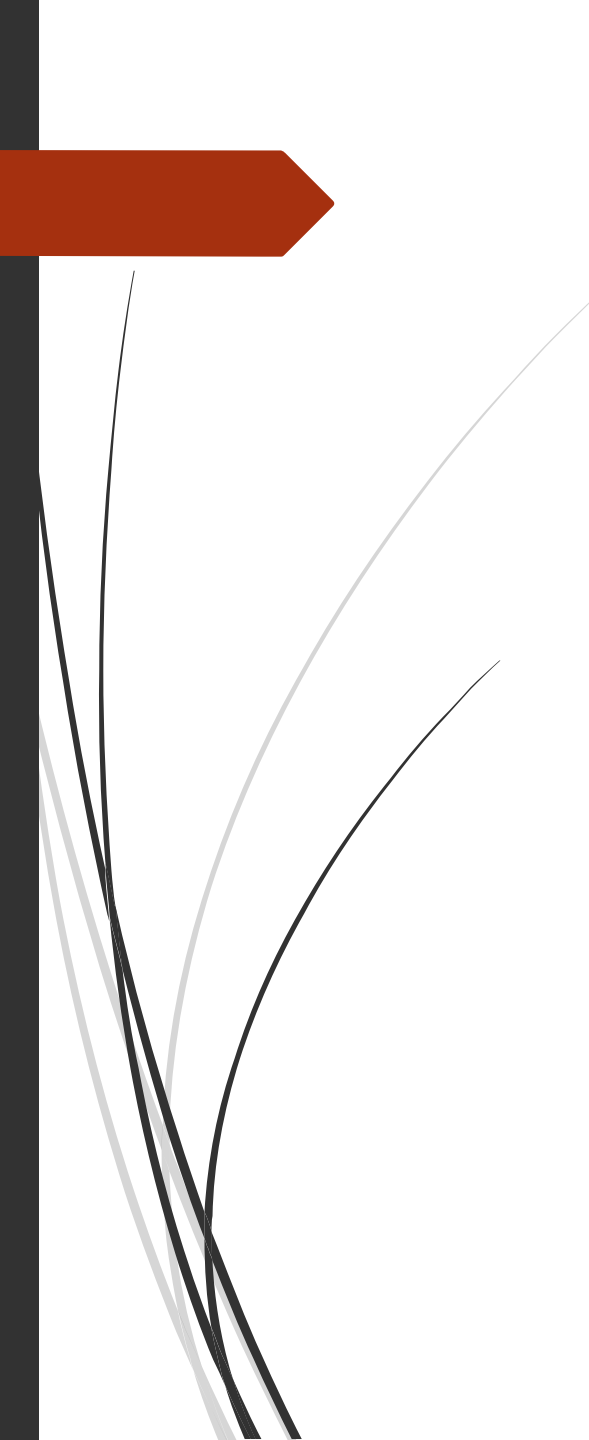
The word "moodle" is written in a bold, orange, lowercase sans-serif font. A black graduation cap with a red tassel is positioned on top of the first letter 'm'.



MOOC

The acronym "MOOC" is displayed in large, bold, overlapping letters. The 'M' is blue with the word "massive" written vertically inside it. The first 'O' is dark green with "open" written inside. The second 'O' is yellow with "online" written below it. The 'C' is green with "courses" written inside.

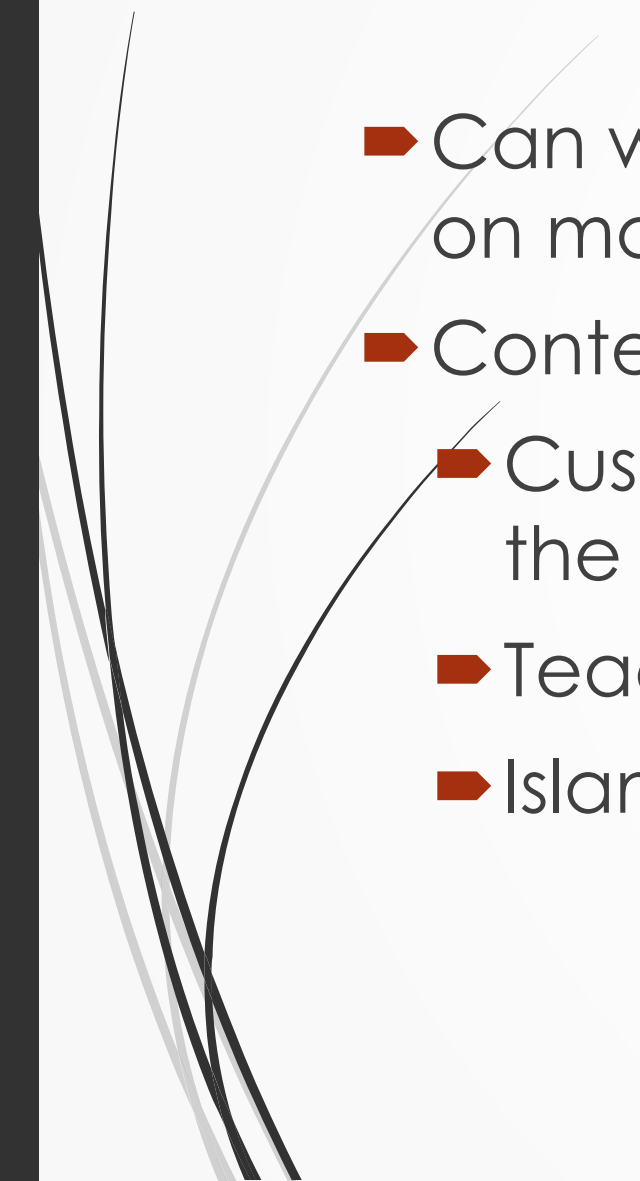


- 
- Cutting edge information & best educators
  - Varied learning resources
  - Differentiated, flexible & self-paced learning
  - Iterative, interactive & corrective testing
  - Boundaries of time, place & age
  - Democratisation of educational access
  - Consistent & standardized content delivery
  - Reversing the constant & the variable
  - Supplanting vs Supplementing
  - Blended Model (Best of both worlds)

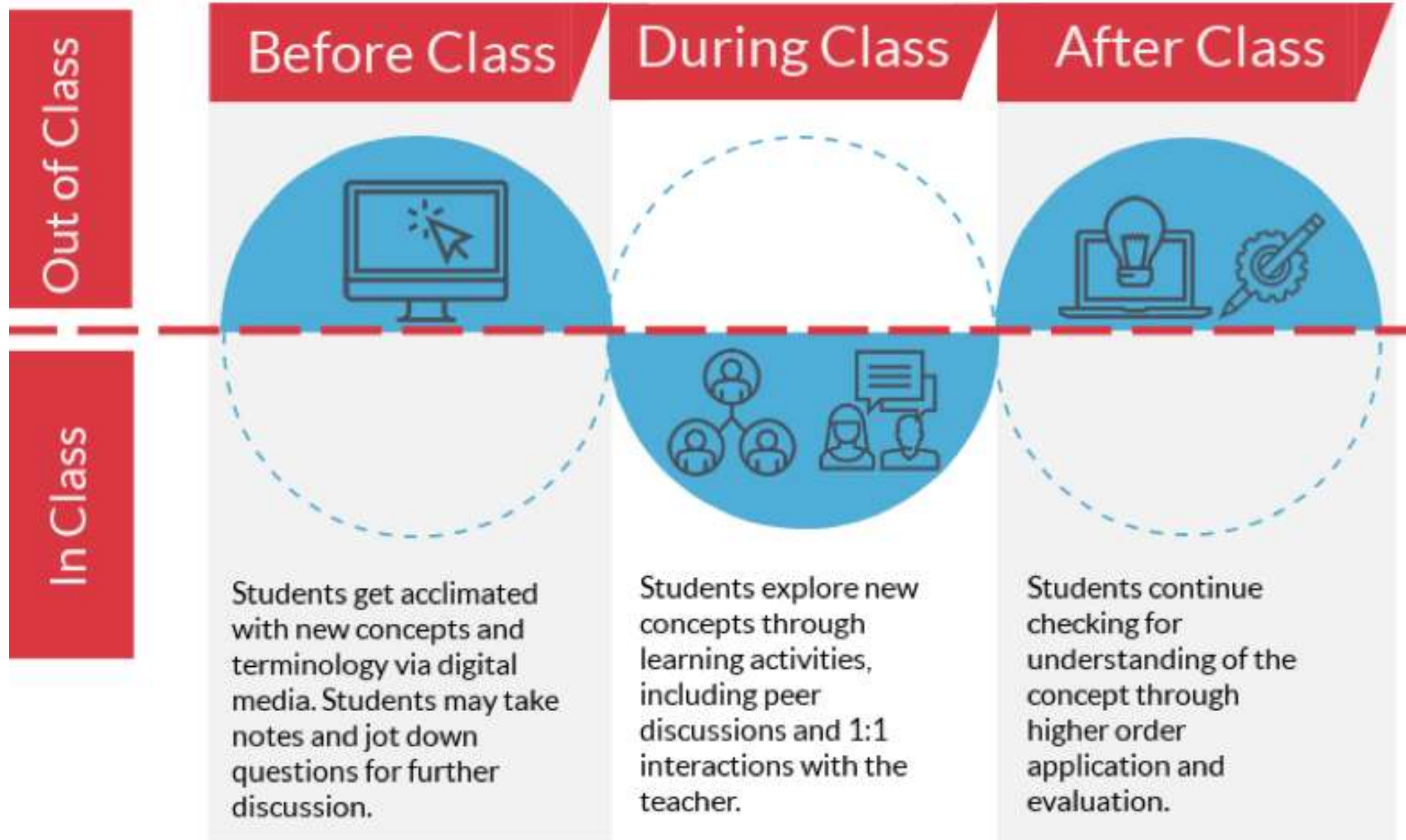


# Islamized MOOCs

## Are they possible???

- Can we have Islamized educational content developed on moodle or as a MOOC
  - Content may include
    - Customized subject teaching content delivered within the framework of Islamic paradigm
    - Teachers training module
    - Islamized interactive games for edutainment
- 

# The Flipped Classroom



**FLIPPED CLASSROOM  
FOR PARTICULAR TOPICS?**





Innovation  
—CENTRE—



Innovation Center

*Don't just play games. Make them!*

*Don't just use apps. Create them!*

*Don't just use machines. Build them!*

*Don't just browse websites. Develop them!*








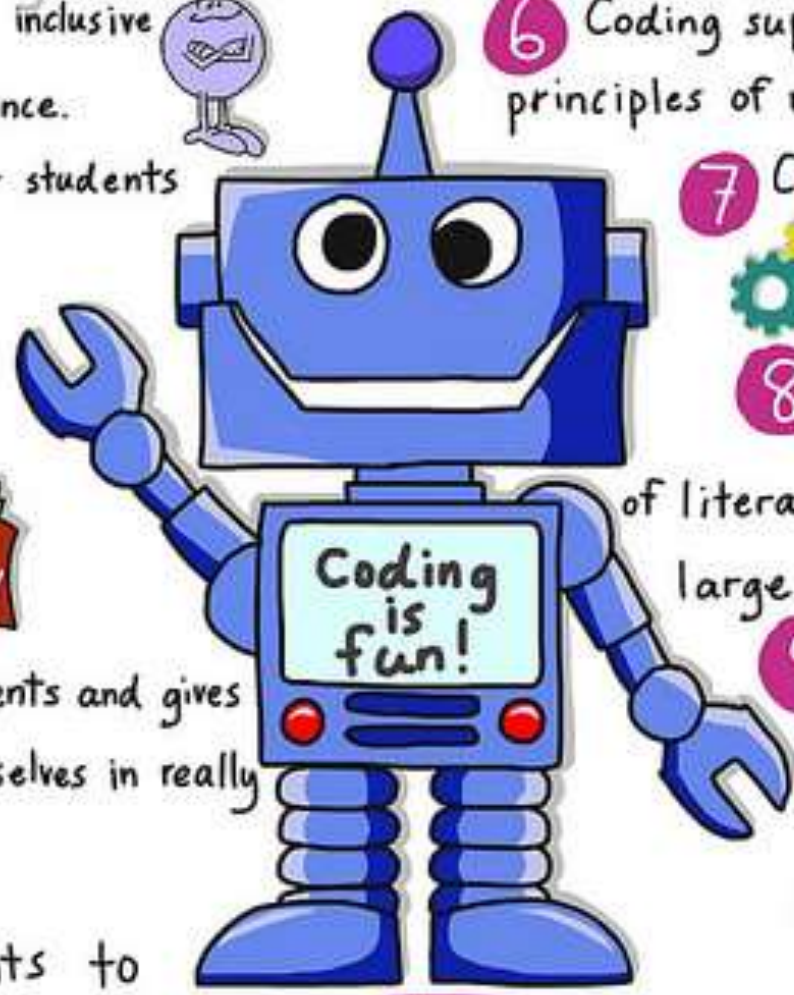
Coding for  
{kids}








# 10 Reasons to Teach Coding

By Brian Aspinall @mrspinall

- 5 Coding is inclusive & builds self-confidence. 
- 4 Coding is a place for students to take risks & fail safely. 
- 3 Coding teaches storytelling with games and animations. 
- 2 Coding empowers students and gives them tools to express themselves in really cool ways. 
- 1 Coding allows students to create content, not just consume it. 



- 6 Coding supports many principles of mathematics. 
- 7 Coding teaches problem-solving and critical/analytical thinking skills. 
- 8 Coding is a new type of literacy and will be a large part of future jobs. 
- 9 Coding develops teamwork & collaborative skills. 
- 10 Coding can help humanity. 

**BONUS:** Coding gives you SUPERPOWERS!







# Animation



DESTINATION  
**IMAGINATION.**





Welcome  
to the  
world  
of visual  
communication

Info-graphic



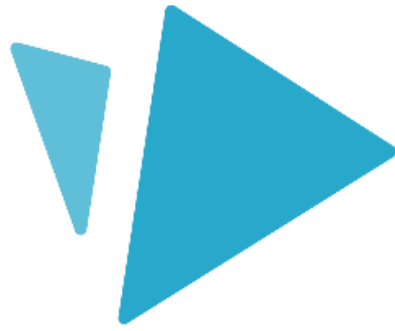




**VYOND**



**Biteable**



**VideoScribe**  
created by SPARKOL



**Prezi**





Become

An Animator



**open source**

*Softwares & Tutorials*

# Linux™



## debian

GNU/Linux



## redhat®

L I N U X



## Linux Mint

from freedom came elegance



## ubuntu



## openSUSE™



## GEEXBOX



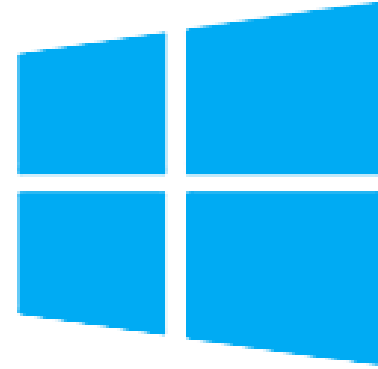
## fedora



## Mandriva



**VirtualBox**



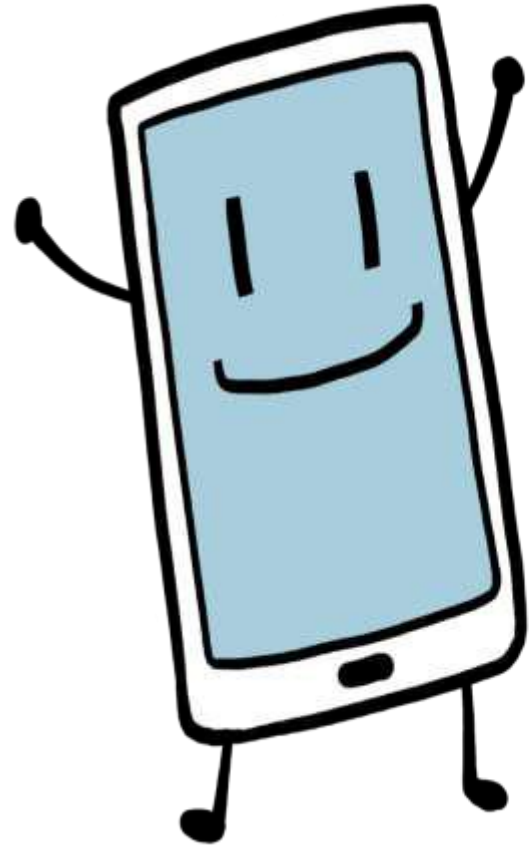
Microsoft  
Hyper-V

**Xen**<sup>®</sup>  
**Project**



vmware<sup>®</sup>





Learning  
Games

*Hand Writing*



QWZ!





**EDUCAGAMES**



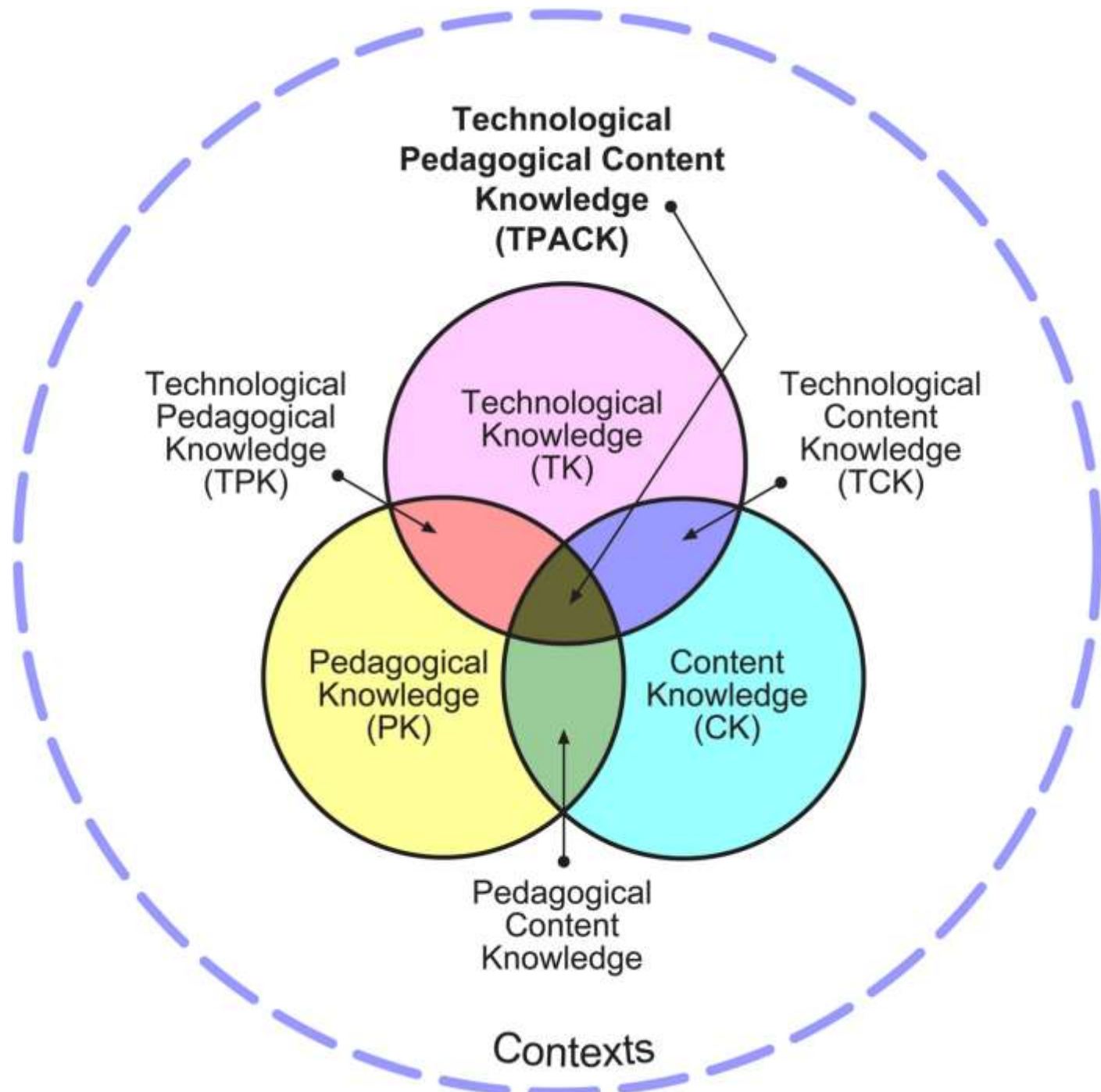
Critical



Thinking



BlueStacks



# The SAMR Model

**S**

**Substitution**

Tech acts as a direct tool substitute, with no functional change

**A**

**Augmentation**

Tech acts as a direct tool substitute, with functional improvement

**M**

**Modification**

Tech allows for significant task redesign

**R**

**Redefinition**

Tech allows for the creation of new tasks, previously inconceivable

*Classroom*



# INFORMATION TECHNOLOGY

*Ancillary Subject*

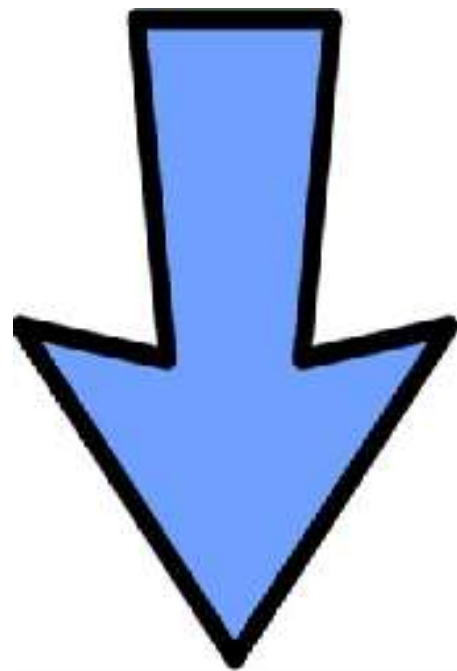
*Or*

*Integral Subject*

**Are Institutions**  
*In Sync With*  
**The Industry**



**E**xposure



**I**dentification of **S**kills

*Jack of Many*

*Or*

*Master of Any?*





# Considerations

*Evolving  
Industry Requirements*

*Individual  
skills & inclinations*



# IT Roadmap





# Overview of School ICT Curriculum

- Topics covered in the initial years
  - Introduction to computers
  - Parts of a computer
  - Usage of OS
  - Using notepad, MS paint
  - Usage of basic softwares like, winzip, AV players, calculator etc.
  - Introduction to browsers, the internet and email

# Overview of School ICT Curriculum

- MS (or Libra, Apache) Word
- Working with spreadsheets
- Developing & screen recording of presentations
- Conducting webinars, podcasts, etc.
- Blogging, Vlogging Projects
- Introduction to Microsoft Project, Visio, Smartdraw
- Template based web-designing projects
- Template based graphic designing & animation
- Introduction to designing & animation softwares





# Overview of School ICT Curriculum

- Linux operating system fundamentals
- Computer hardware fundamentals
- Networking fundamentals
- Algorithms & flowcharts
- Programming syntax
  - Scratch
  - HTML, CSS
  - C/C++, OOPs
  - Python



# Overview of School ICT Curriculum

- Introduction to IOT
- Introduction to Cloud Computing
- Introduction to Virtual machines
- Introduction to Server administration
- Introduction to Data Science
- Fundamentals of Database management
- Fundamentals of queries, forms, reports
- Awareness of latest emerging technologies
- Basic Robotics projects



# Edu *tainment*

- Usage of graphical content for subject learning
- Documentaries / Short Clips
- Edutainment/ Tarbiyah Cartoon series
- Subject based quizzes, games
- Skill based games
- Critical thinking games



- Provide links or QR Codes to
  - Content websites & YouTube channels
  - Subject based content
  - Edutainment clips, documentaries
  - Creative games
  - Programming language downloads



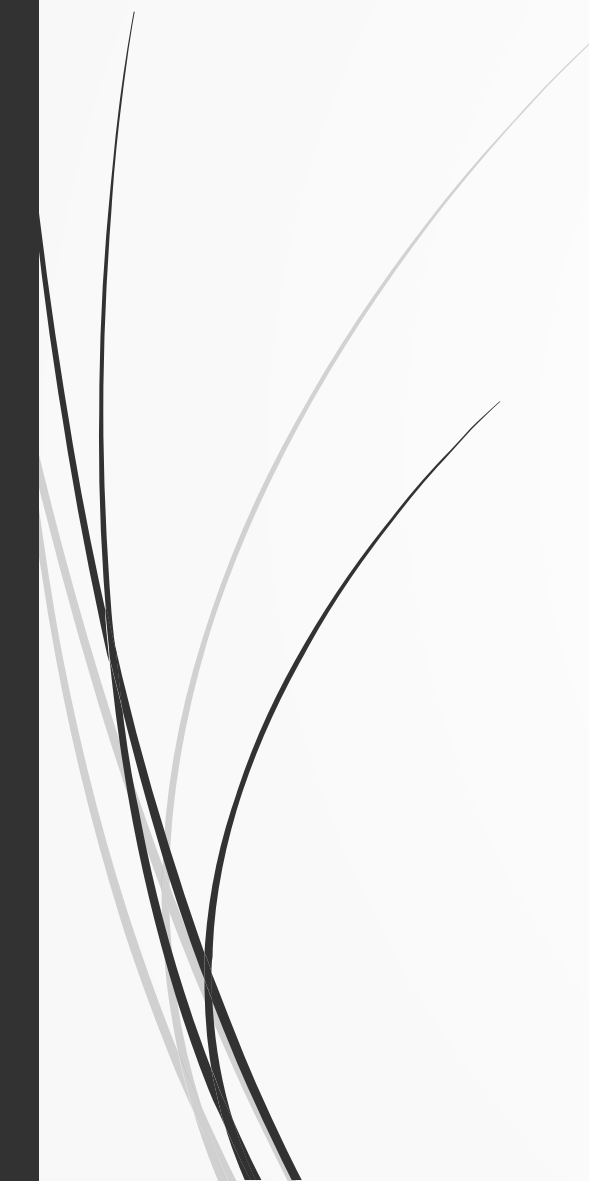


# feedback

- Evaluation schedule could vary depending upon the kind of assignment
  - It could be lesson / unit wise OR weekly / monthly
- Subject comprehension evaluation
  - Subject based presentations / vlogs, write-ups / blogs
  - Online or app based quiz scores
- Assessment of edutainment content
  - Presentation of major learnings



# feedback

- IT skills evaluation of assignments / projects
    - Graphic designing
    - Animation
    - Web development
    - Coding
- 

# Smart Scheduling

## Parameters

- End of every class / End of every day / Once a week
- Best tie to schedule IT based events
- When, What & How of IT based competitions
- Repetition of topics – Why & How
- Dividing sessions every month for computing skills of Coding, Hardware/Networking, Fundamentals of DBMS, Graphic Designing
- Scheduling of assignments / projects – Subject based or IT skills

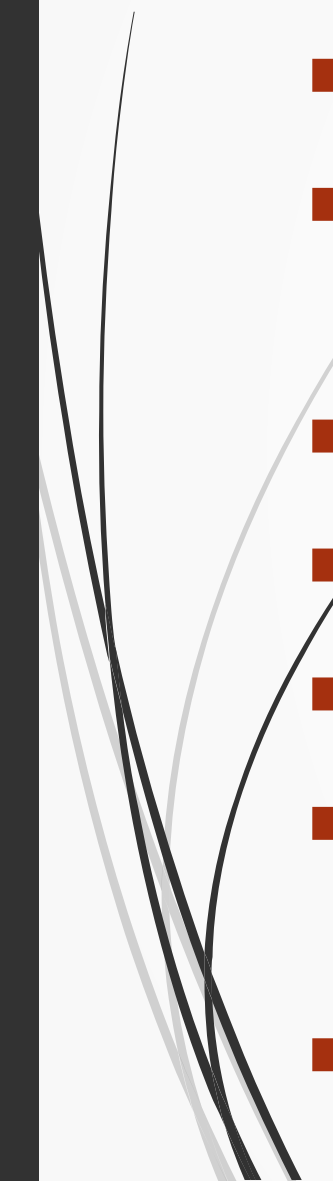
# TECHNOLOGY: advantages and disadvantages







# Benefits of IT Enabled Education

- Enjoyable, entertaining & engrossing
  - Provides intermittent breaks to monotonous traditional learning
  - Students look forward to IT enabled events
  - It keeps them interested in school
  - It develops creativity
  - It fosters better understanding of academic content
  - It makes them tech savvy & cultivates IT skills
- 

# Factors to Ponder

## Technological Integration & Upgradation

- Impact on academic performance
- Time constraints & scheduling of technological interventions
- Initial & maintenance cost
- Technological change management
- Customization & scalability
- Required infrastructure
- Shariah compliance



**BALANCE**



جَزَاكَ اللهُ خَيْرًا

Email: [ghufraansarguroh@gmail.com](mailto:ghufraansarguroh@gmail.com)  
Contact No.: +91 7039326423 / 9930129251