



Becoming a Rockstar Teacher

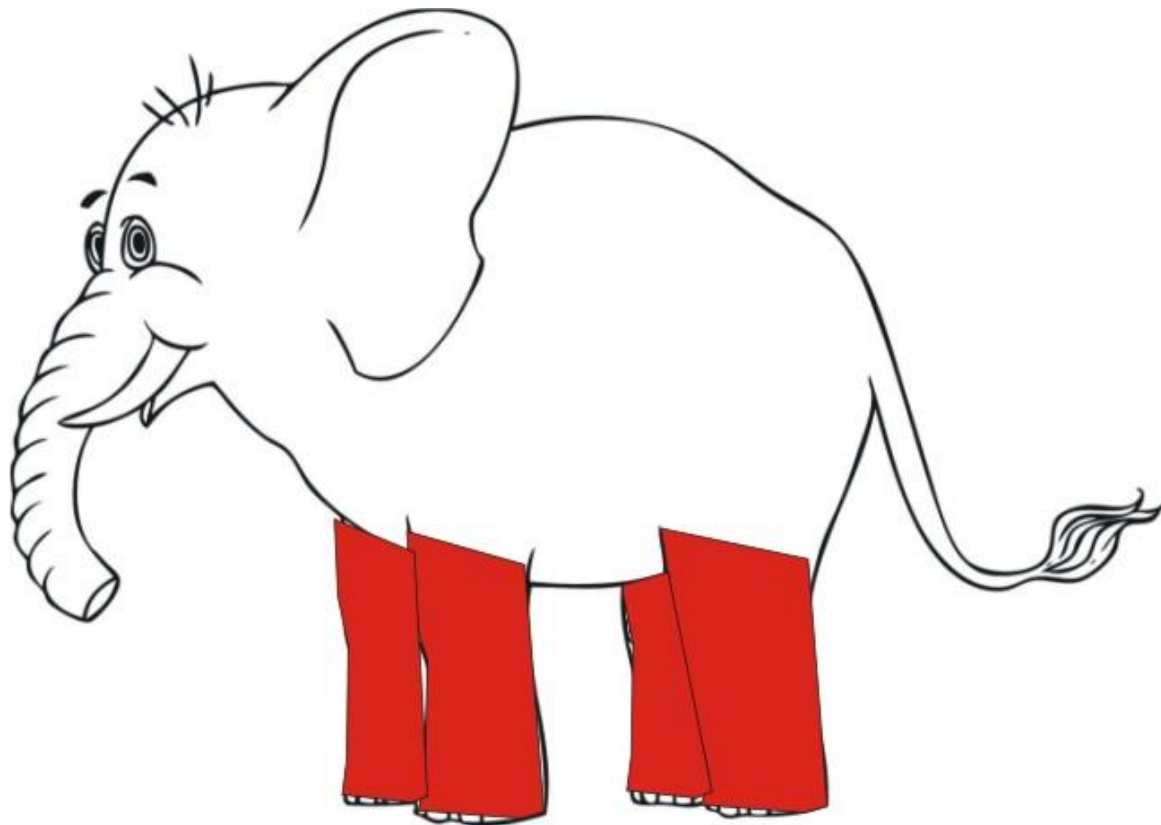
Prof. M.M. Pant

What is the Education Discourse about?



First Man

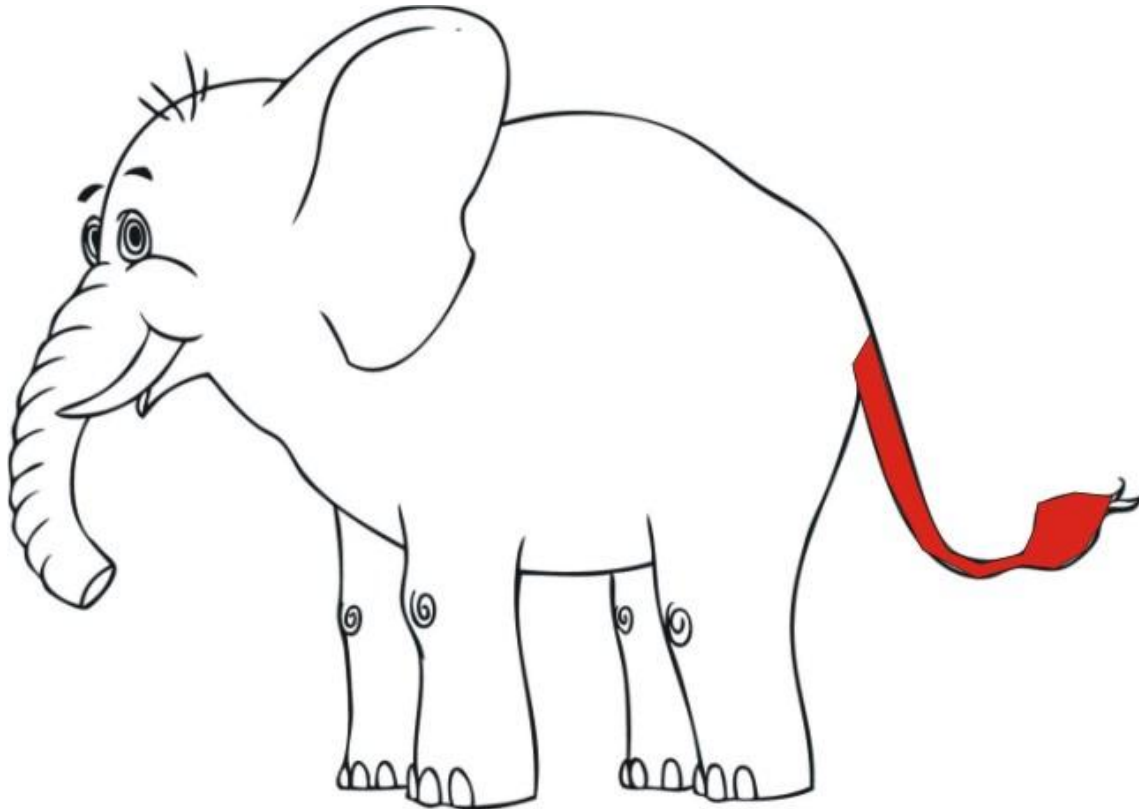
"Hey, the elephant is a pillar,"
— said the first man who touched his leg.



2nd Man

"Oh, no! it is like a rope"

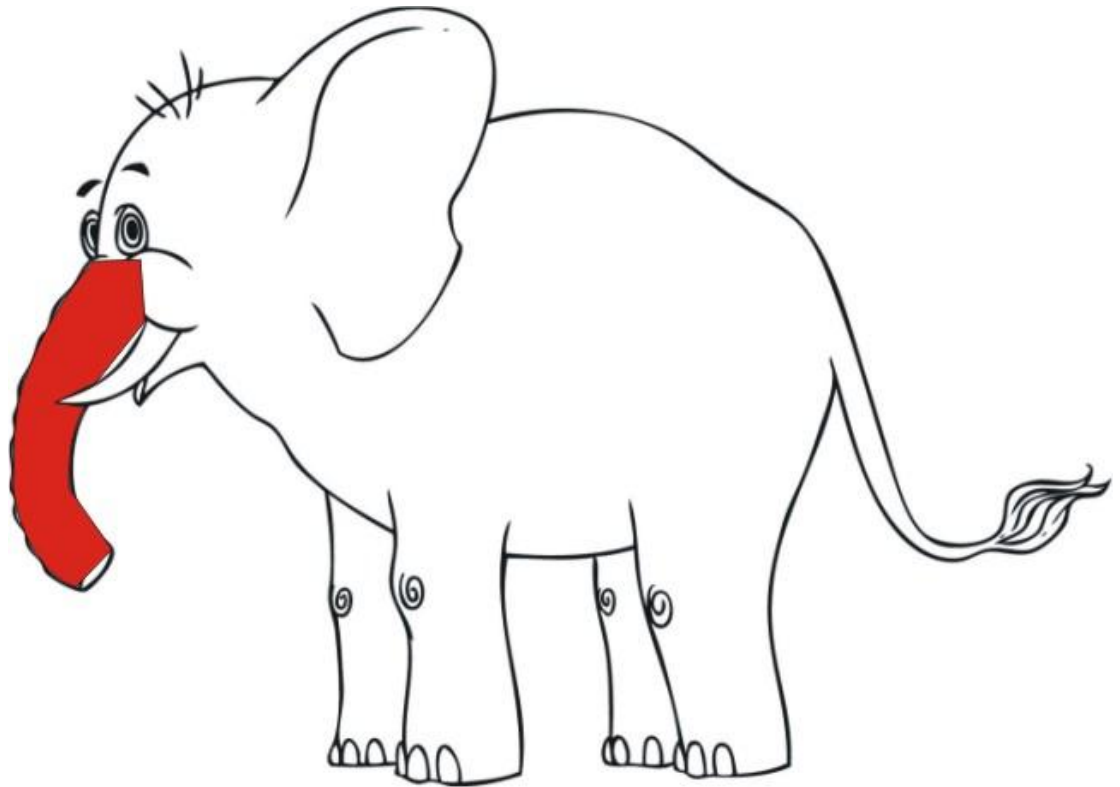
—said the second man who touched the tail.



3rd Man

"Oh, no! it is like a thick branch of a tree"

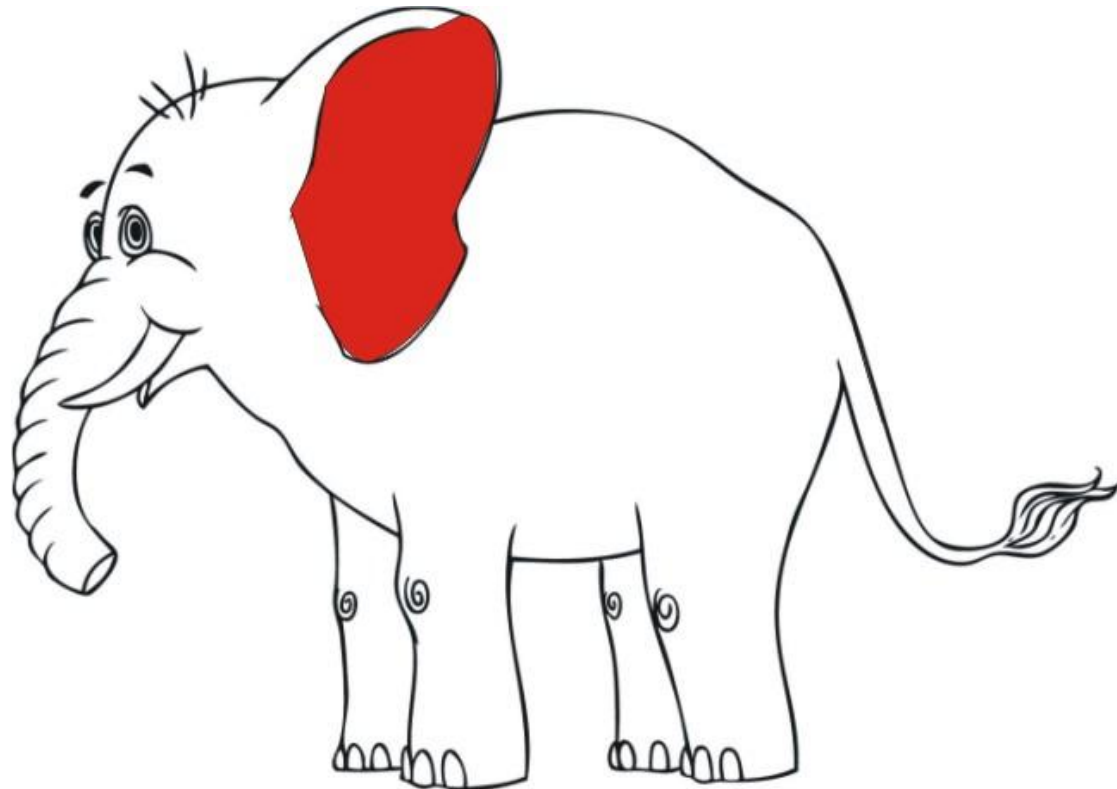
—said the third man who touched the trunk of the elephant.



4th Man

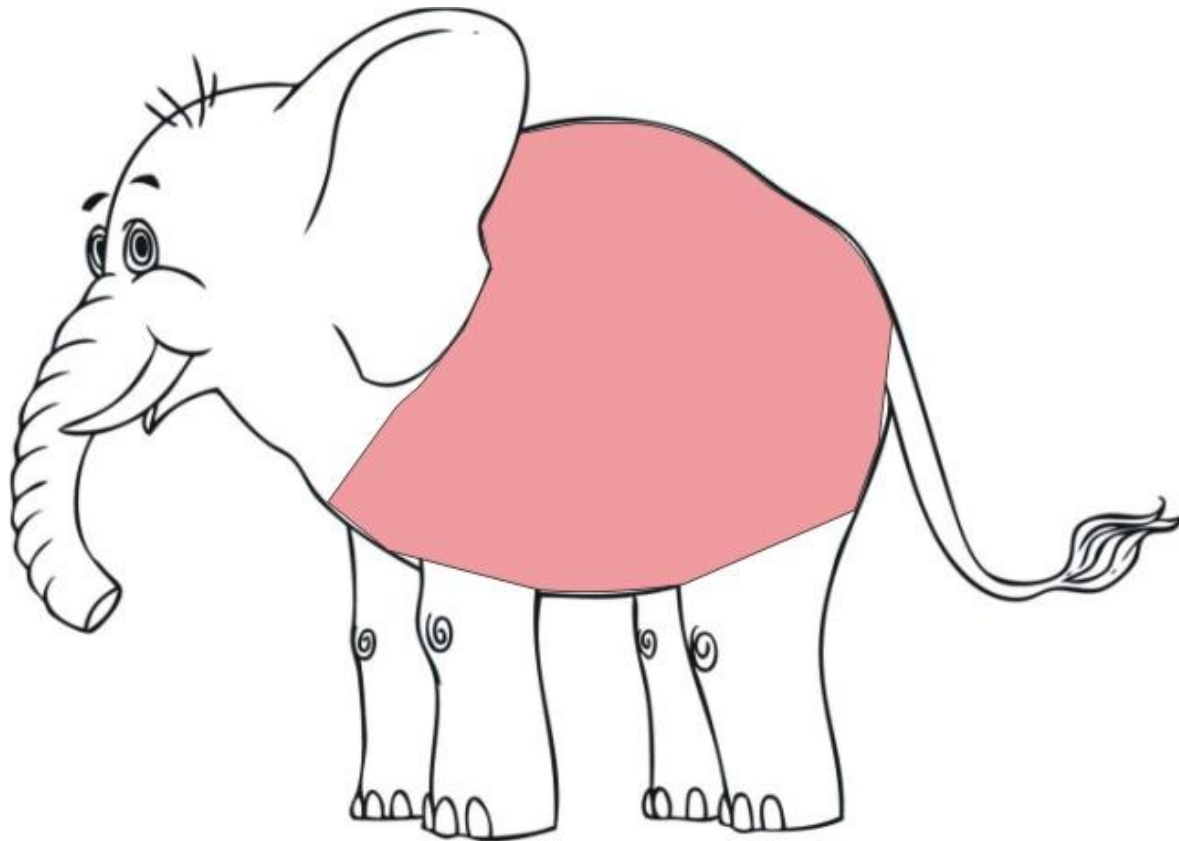
"It is like a big hand fan"

—said the fourth man who touched the ear of the elephant.



5th Man

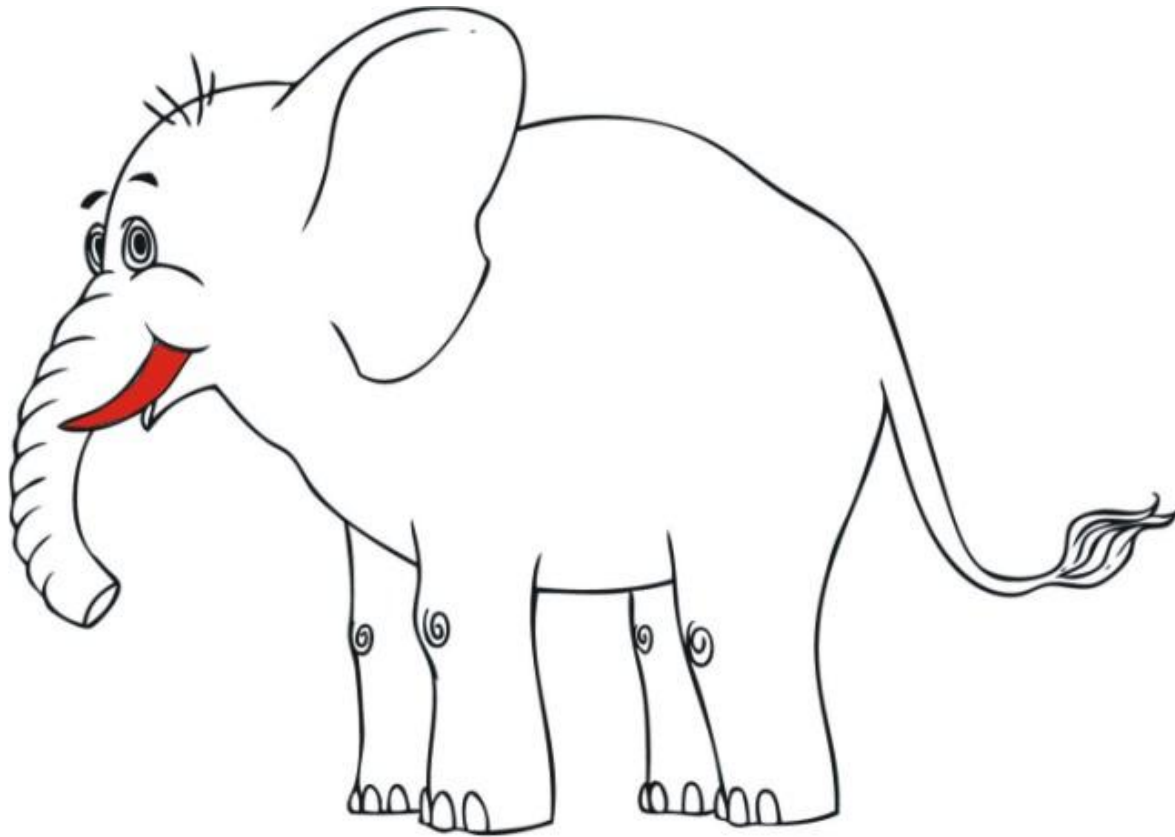
- **"It is like a huge wall"**
— said the fifth man who touched the belly of the elephant.



6th Man

"It is like a solid pipe"

— said the sixth man who touched the tusk of the elephant.



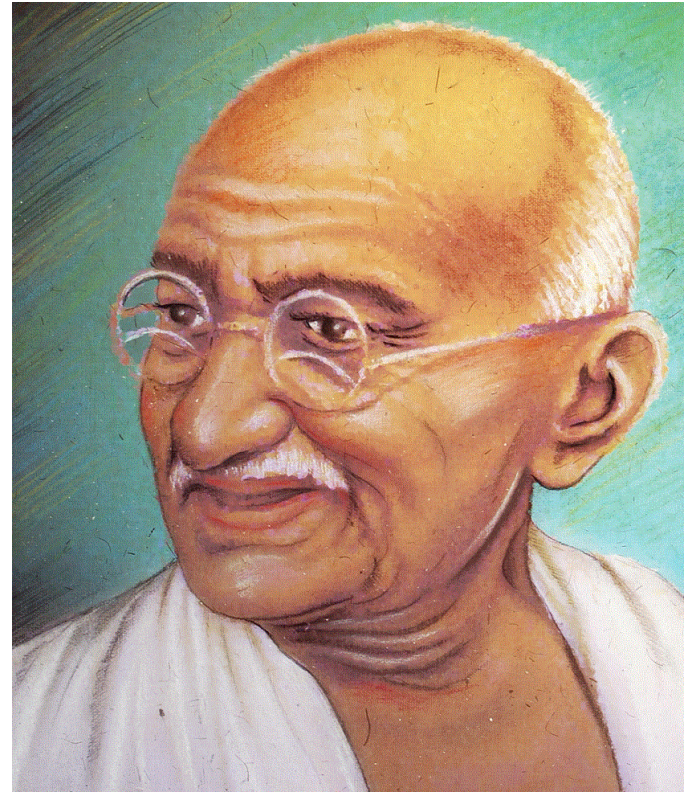
Swami Vivekanand

“Learning and wisdom are superfluities, the surface glitter merely, but it is the heart that is the seat of all power. It is not in the brain but in the heart that the Atman, possessed of knowledge, power, and activity, has its seat.”



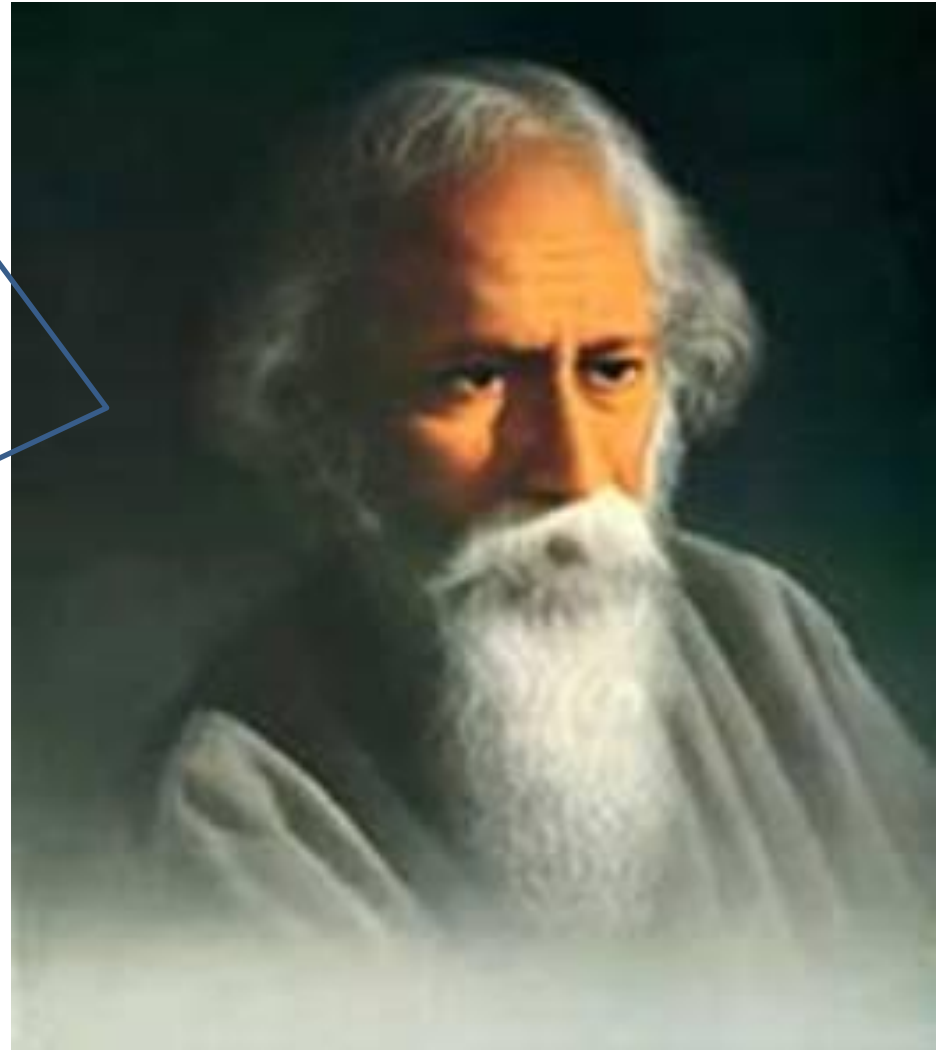
Mahatma Gandhi

"The real difficulty is that people have no idea of what education truly is. We assess the value of education in the same manner as we assess the value of land or of shares in the stock-exchange market. We want to provide only such education as would enable the student to earn more. We hardly give any thought to the improvement of the character of the educated. The girls, we say, do not have to earn; so why should they be educated? As long as such ideas persist there is no hope of our ever knowing the true value of education."



Rabindranath Tagore

"The highest education is that which does not merely give us information but makes our life in harmony with all existence."



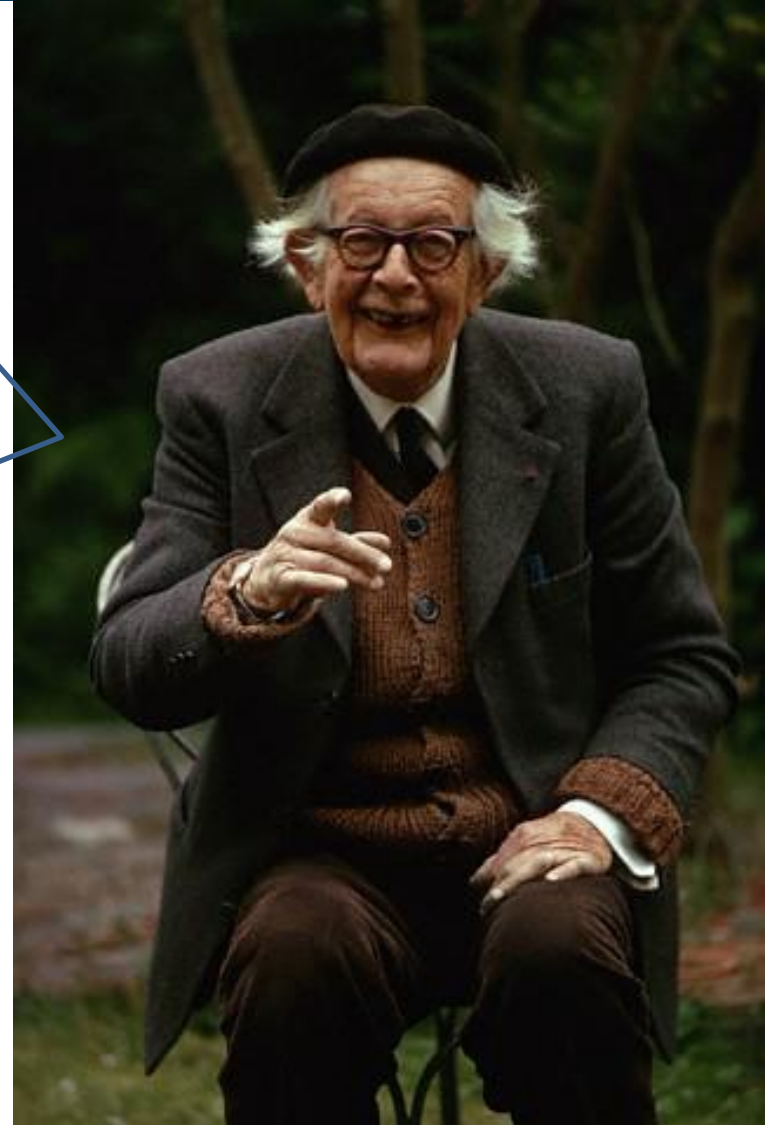
Lev Vygotsky

"The teacher must orient his work not on yesterday's development in the child but on tomorrow's."



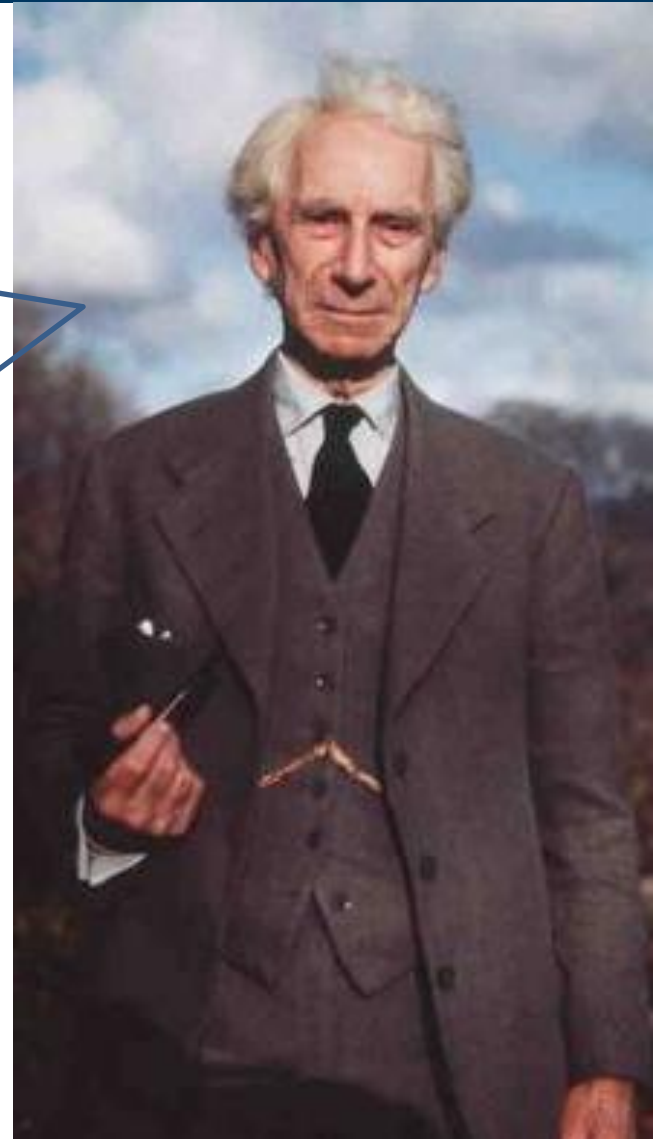
Jean Piaget

“The principle goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done - men who are creative, inventive and discoverers”



Bertrand Russell

“We are faced with the paradoxical fact that education has become one of the chief obstacles to intelligence and freedom of thought.”



What would be the attributes/character of a 'Well Educated' person in 2050 ?

- Education is increasingly not so much about knowing the right answers to a set of questions, but more about continually questioning the answers.
- And therefore asking the right questions is the first and most important step.



Three Questions for this age?

What does it mean to know (something)?

How does a learner know that he has learnt (what he set out to learn)?

What are the attributes of 'an educated person' in the 2nd half of the 21st Century?



Clayton M. Christensen

Disrupting Class

Clayton Christensen's Insights just might shake many of us in education out of our complacency and into a long needed disruptive discourse about really fixing our schools.



Summarize our Aspiration As:

- Maximize human potential.
- Facilitate a vibrant, participative democracy in which we have an informed electorate that is capable of not being “spun” by self-interested leaders.
- Hone the skills, capabilities, and attitudes that will help our economy remain prosperous and economically competitive.
- Nurture the understanding that people can see things differently – and that those differences merit respect rather than persecution.

Goals / Objectives of Education

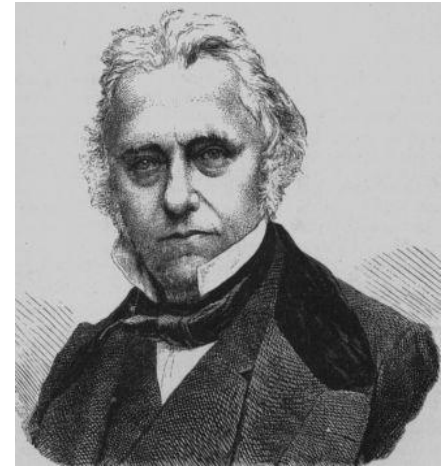
- Helping the learner to be able to rise to the full height as a human being.
- Making the learner a “well educated person” for the latter half of the 21st century.
- “Awakening the learner within”
- Remove learning phobias
- When the student (learner) is ready, the teacher will appear.



Macaulay's Statement

on February 2, 1835 in the British Parliament, Macaulay was:

"I have travelled the length and breadth of India and I did not meet a single person who was a thief. I have seen such affluence in that country, such competent individuals and such talent that I do not think we will be able to conquer that land so long as we do not break its cultural and ethical backbone. I therefore state that we change the ancient education system and culture of India because if the inhabitants of India begin to think that the ideas and thoughts of foreigners, of Englishmen, are better than and superior to their own, then they will lose their culture and self-respect and they will become a dependent nation, which is what we need."



Prof. Elinor Ostrom

Nobel Prize in Economic Sciences (2009)

- American economist Elinor Ostrom has officially become the first woman awarded the the Nobel Prize in Economic Science.
- Professor Ostrom is a leading scholar in common pool resources.
- A common pool resource (in economics) is a natural or human-made resource system that is considered a 'common property' resource.
- The Nobel judges cited Ostrom's 'analysis of economic governance, especially the commons' as the reason why Ostrom was awarded this coveted prize.
- Ostrom teaches at Indiana University.



Quotes by Prof. Elinor Ostrom

“Centrally designed and externally implemented rules-based incentives – both positive and negative – are seen as universally needed to overcome all types of social dilemmas.... The state is viewed as a substitute for the short-comings of individual behavior and the presumed failure of community. The universal need for externally implemented incentives is based, however, on a single model of rational behavior which presumes short-term, self-interested pursuit of material outcomes as the only mode of behavior adopted by individuals.”

“Leviathan is alive and well in our policy textbooks.”

A young child with light skin and blonde hair, wearing a blue long-sleeved shirt, is sitting on a light-colored, textured carpet. The child is looking down intently at a white smartphone held in both hands. The phone's screen displays a colorful, abstract image. The background is slightly out of focus, showing a beige wall and some cables on the floor.

Nurturing a Future-ready 21st Century Learners

Effective *Learners* are...

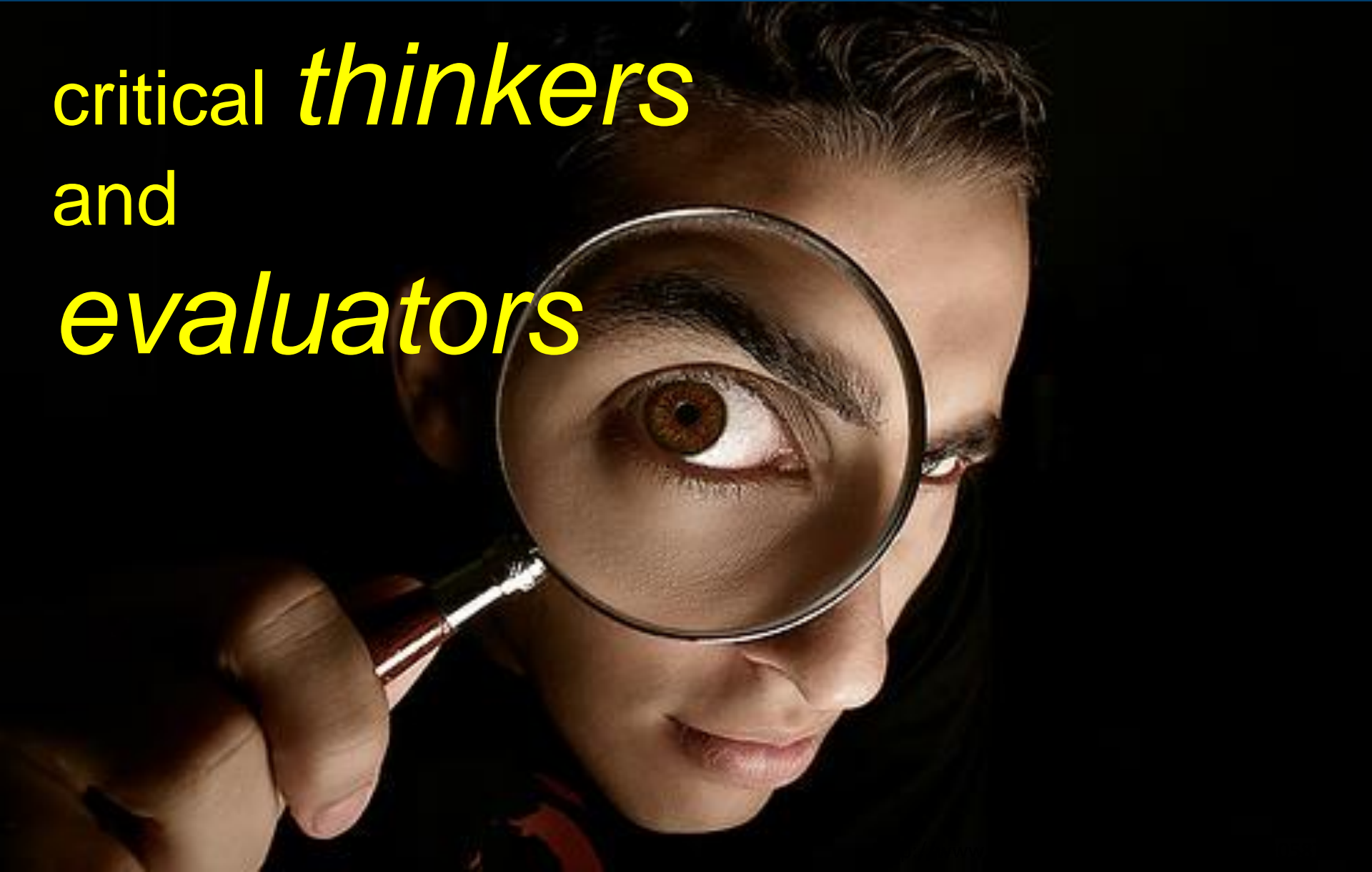
Life-long

Learners



Effective *Learners* are...

critical *thinkers*
and
evaluators



Effective *Communicators & Creators* are...



able to create something *new*

Effective *Global Collaborators* are...

able to collaborate to reach
common
goals



Effective *Global Collaborators* are...



able to *lead* or *follow*

21st Century Skills Defined

LEARNING & INNOVATION

- Creativity & Innovation
- Critical Thinking & Problem-solving
- Communication & Collaboration

INFORMATION & TECHNOLOGY

- Information Literacy
- Media Literacy
- ICT Literacy

LIFE & CAREER

- Flexibility & Adaptability
- Initiative & Self-direction
- Social & Cross-cultural Skills
- Productivity & Accountability
- Leadership & Responsibility

The Learning Cycle of an enquiring mind

- Asking the Right Question (s)?
- Seeking Information
- Analyzing Information
- Organizing Information
- Presenting Information
- Persuading others about one's views
- Reflecting & Raising New Questions



Asking Questions is the first step:

- Learners have to be aware of their lack of relevant knowledge and be prepared to explore the area of their ignorance with suitable questions and participation by other learners in the group.
- Hence questions raised by the group are very important.



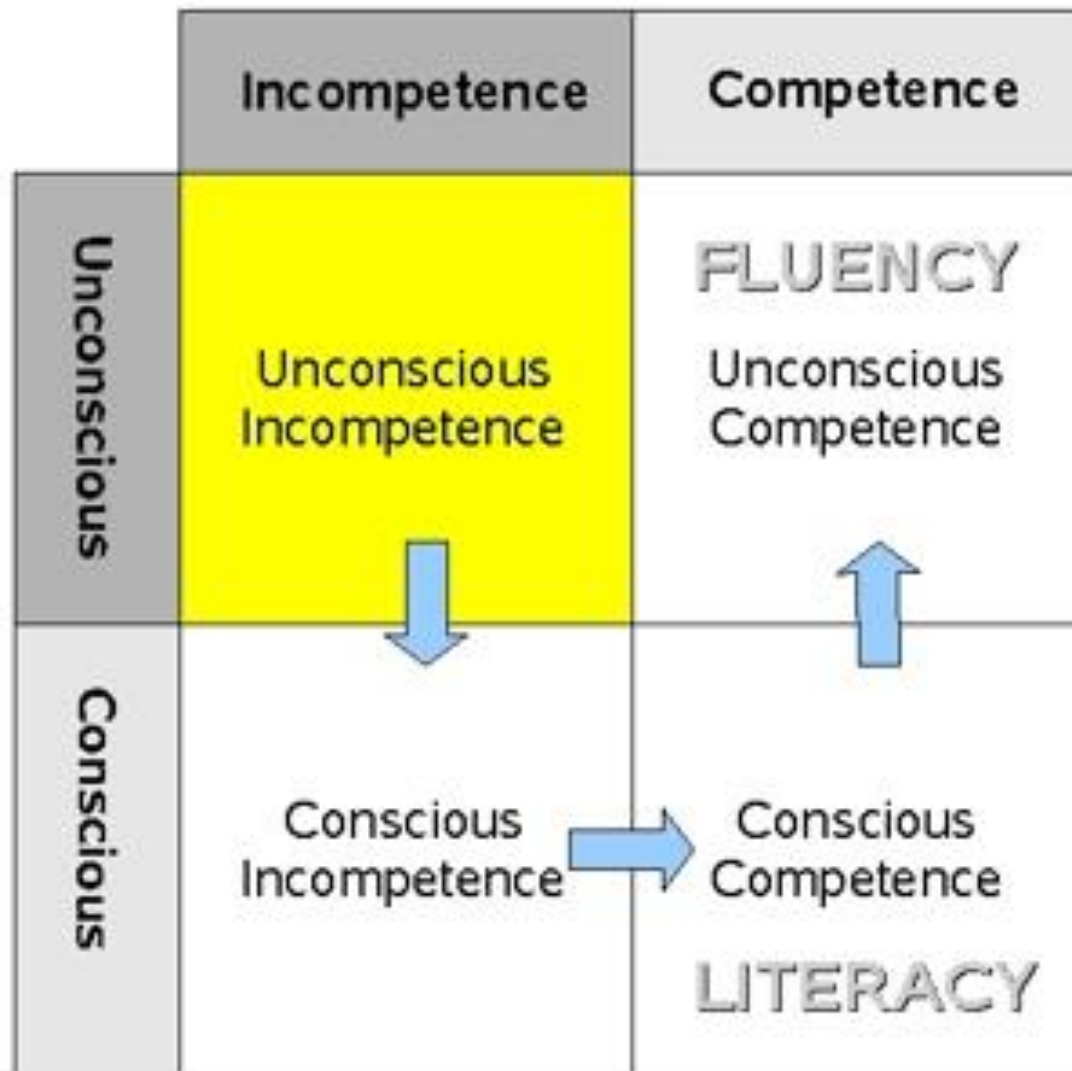
Asking the Right Question (s) ?

Taxonomy of questions: :

- "closed" questions:
 - who?
 - what?
- "objective" questions:
 - how much or how many?
- "relative" questions:
 - where
 - when
- "open questions"
 - why?
 - how?



Developing Expertise



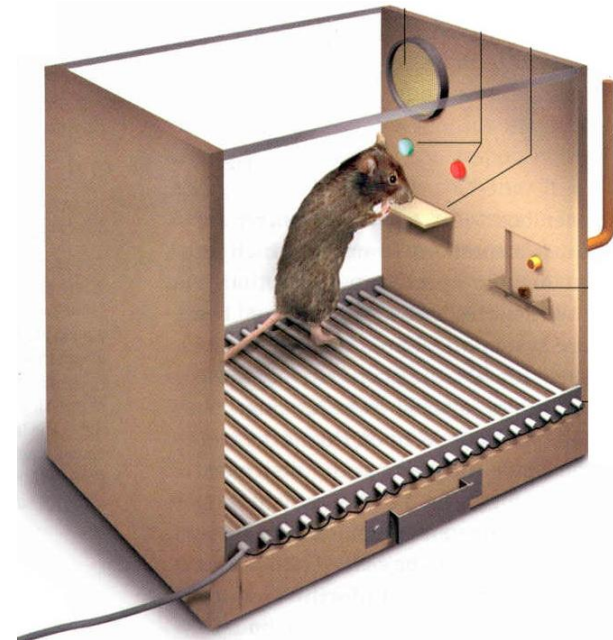
Traditional Learning Theories

- Behaviorism,
- Cognitivism,
- Constructivism
- These theories, however, were developed in a time when learning was not impacted through technology.



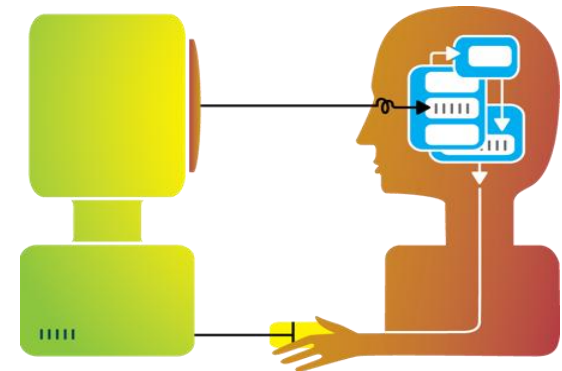
Behaviourism

- Chief Proponent: B.F. Skinner ; also Edward Thorndike, Tolman, Guthrie, and Hull.
- For behaviorism, learning is the acquisition of new behavior through conditioning
- Classical Conditioning (Pavlov)
- Operant Conditioning (Skinner)
- Within this framework, behaviorists are particularly interested in measurable changes in behavior



Cognitivism

- The memory system is an active organized processor of information.
- Prior knowledge plays an important role in learning.
- Concepts like cognitive load and information processing models, led to development of Instructional Design.



Gagne's 9 events of Instruction

- Gain attention
- Inform learner of objectives
- Stimulate recall of prior learning
- Present stimulus material
- Provide Learner Guidance
- Elicit Performance
- Provide Feedback
- Assess Performance
- Enhance Retention and Transfer



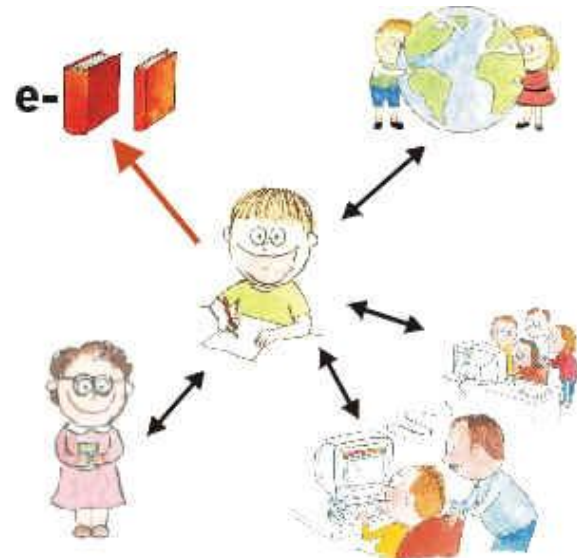
Constructivism

- Developed by : Jean Piaget, Jerome Bruner, Lev Vygotsky and John Dewey
- Constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge or experience.
- Variations in the theme: Social Learning, Active Learning, Discovery Learning, self-directed learning, transformational learning, experiential learning, situated cognition, and reflective practice.



Constructivism

- Learners learn by fitting new information to what they already know
- Thus prior knowledge, beliefs and attitudes of the learners plays an important role
- Collaborative learning environments and contexts for team-work must be created



George Siemen's Principles of Connectivism

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known
- Nurturing and maintaining connections is needed to facilitate continual learning.



Some 21st Century Tools for Learning

- Search Engines: Google, Yahoo, Bing, Wolfram Alpha
- Wikis: Wikipedia, wikieducator
- Youtube, Ted talks, free sources
- Educational Apps
- Social Media: Facebook, Twitter



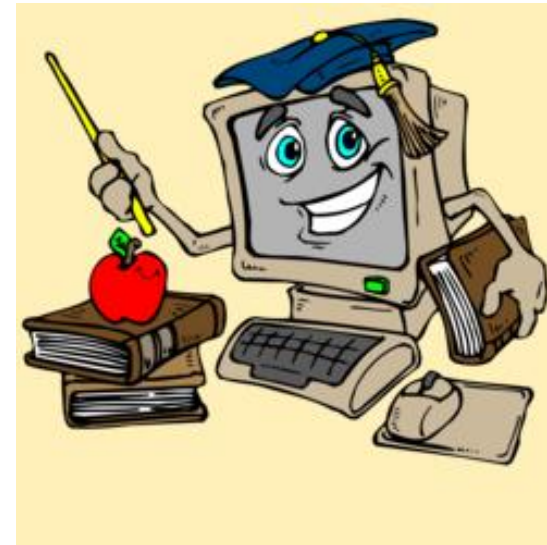
Varieties of Learning Objects

- Building a fact
- Building a concept
- Building a process
- Building a principle
- Building a procedure



The Future is Completely Different from the Past

- In the past, educated persons have demonstrated different knowledge and skill sets.
- I have been exploring what would be the attributes of an 'educated person' in the future.
- Some research led me to views of leading Institutions (Harvard and Princeton) and thought leaders on the same.
- Oliver Van Demille's [American author and Educator] 'A Thomas Jefferson Education' included Harvard's list, in addition to two others.



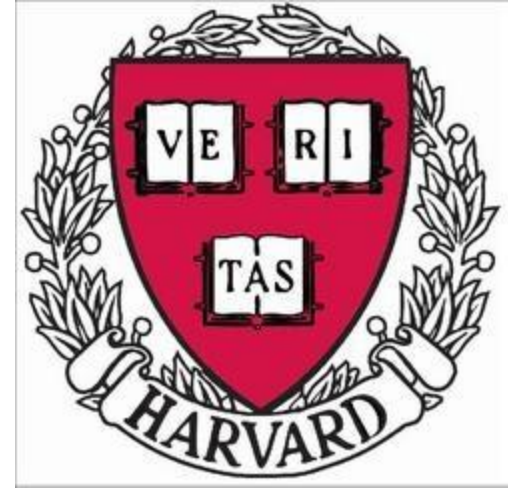
Harvard's list of 10 Skills of an educated person (1 to 5)

1. The ability to define problems without a guide.
2. The ability to ask hard questions which challenge prevailing assumptions.
3. The ability to quickly assimilate needed data from masses of irrelevant information.
4. The ability to work in teams without guidance.
5. The ability to work absolutely alone.



Harvard's List (6 to 10)

6. The ability to persuade others that your course is the right one.
7. The ability to conceptualize and reorganize information into new patterns.
8. The ability to discuss ideas with an eye toward application.
9. The ability to think inductively, deductively and dialectically.
10. The ability to attack problems heuristically.



Princeton's list of Skills

- The ability to think, speak, and write clearly.
- The ability to reason critically and systematically.
- The ability to conceptualize and solve problems.
- The ability to think independently.
- The ability to take initiative and work independently.
- The ability to work in cooperation with others and learn collaboratively



Princeton's list.....continued

- The ability to judge what it means to understand something thoroughly.
- The ability to distinguish the important from the trivial, the enduring from the ephemeral.
- Familiarity with the different modes of thought (including quantitative, historical, scientific, and aesthetic.)
- Depth of knowledge in a particular field.
- The ability to see connections among disciplines, ideas and cultures.
- The ability to pursue life long learning.



***"In 5 years from now, the best
education will come from the web."
— Bill Gates (6th August 2010)***



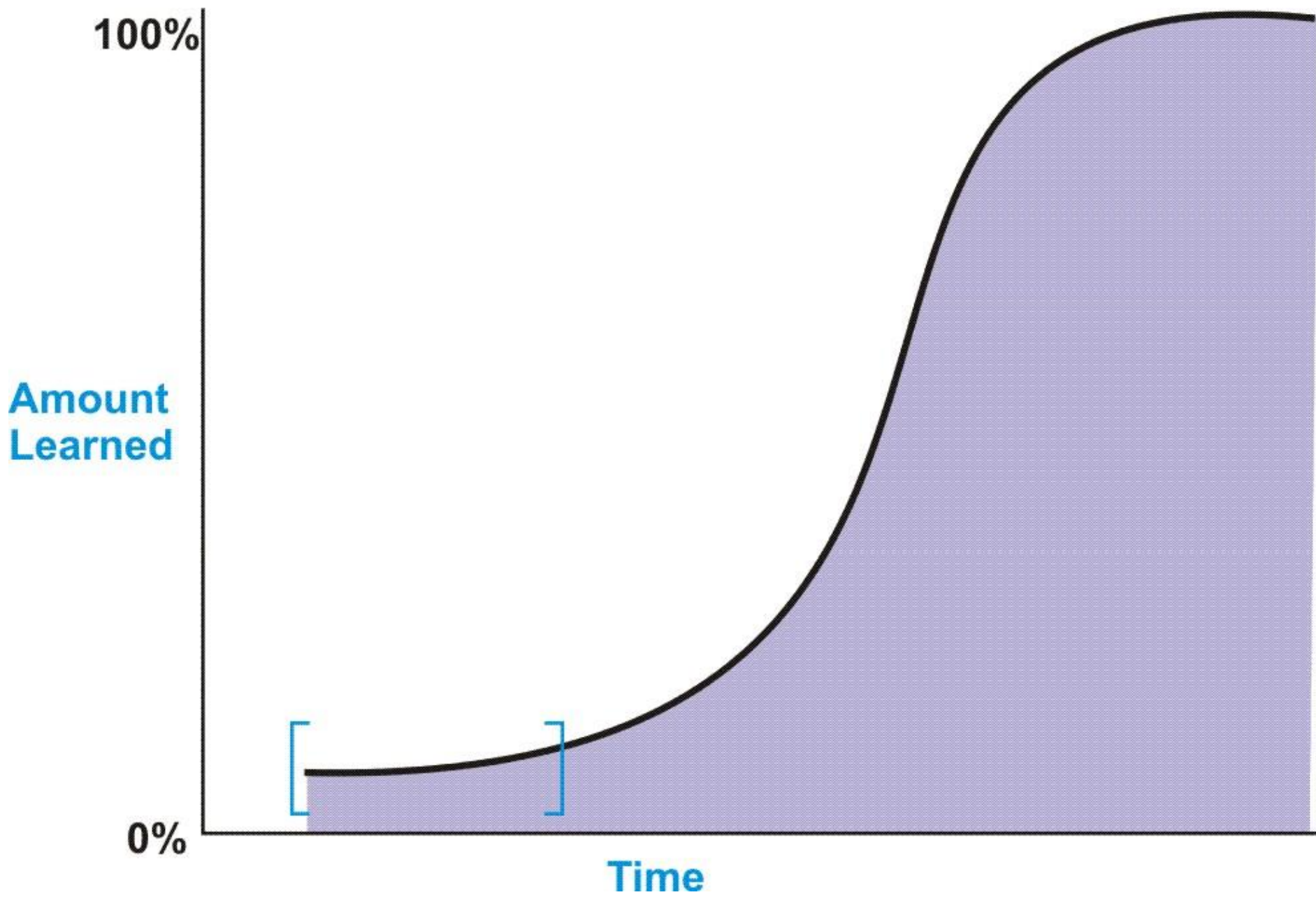
But why?

- He believes the web is where people will be learning in five years from now, not Colleges and University.
- During his chat he said: Five years from (6th August 2010) now on the web for free you'll be able to find the best lectures in the world. It will be better than any single University.
- Gates' reasoning is based on the assumption that education away from the classroom should count as credit. So if MIT release courses on the web, a student should be able to study them at home and get credit for doing so.

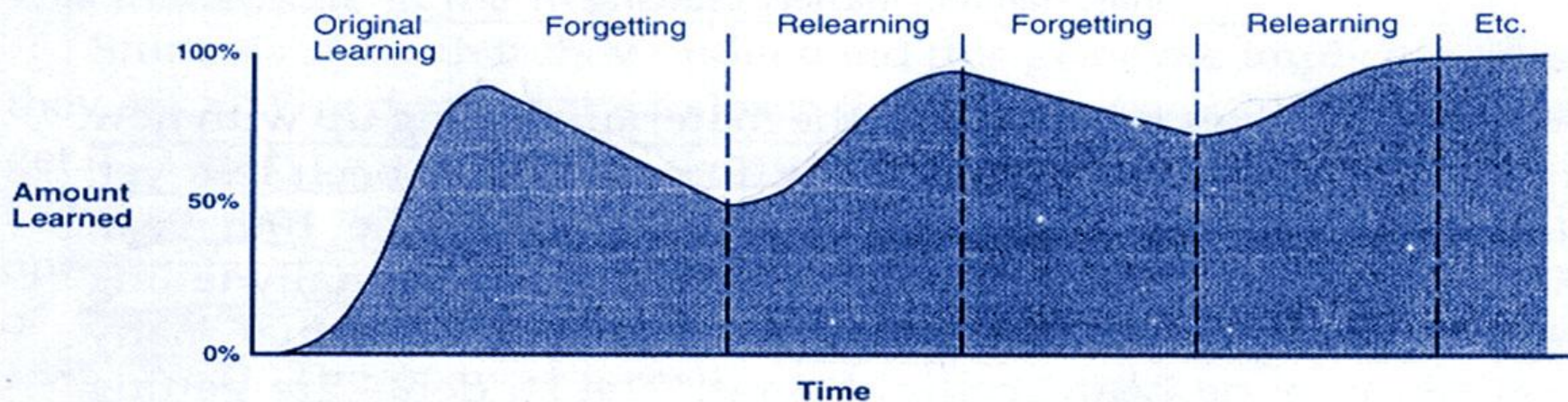
Why Students Fail to Learn?

- Learned helplessness
- Learning goals not articulated
- Not ready for the present learning intervention
- Lack of adequate reading and comprehension rate
- Not devoting time required for the learning tasks
- Inadequacy of available learning technologies

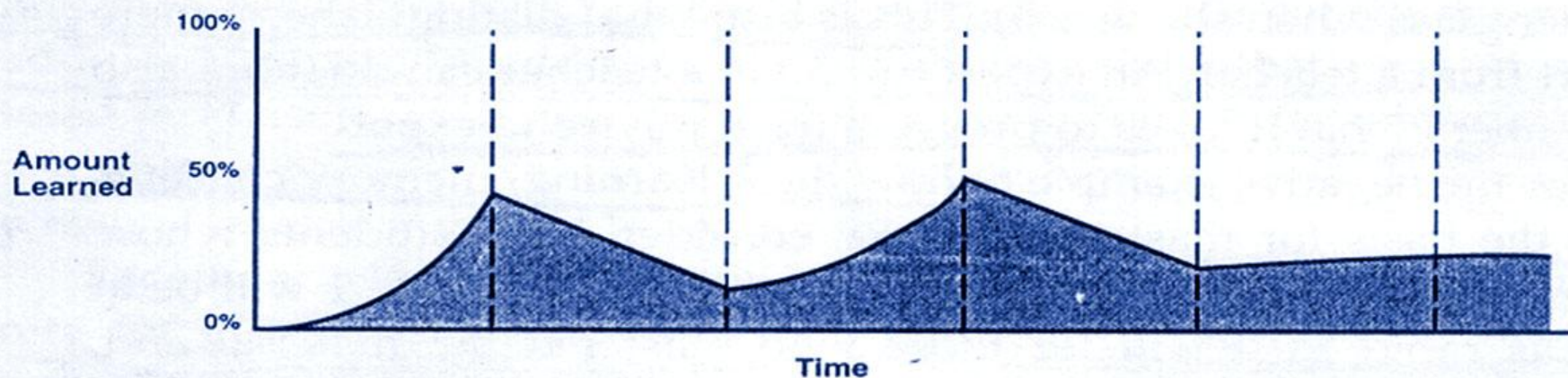




A. When Original Learning is Adequate (Mastery)



B. When Original Learning is Inadequate (Nonmastery)

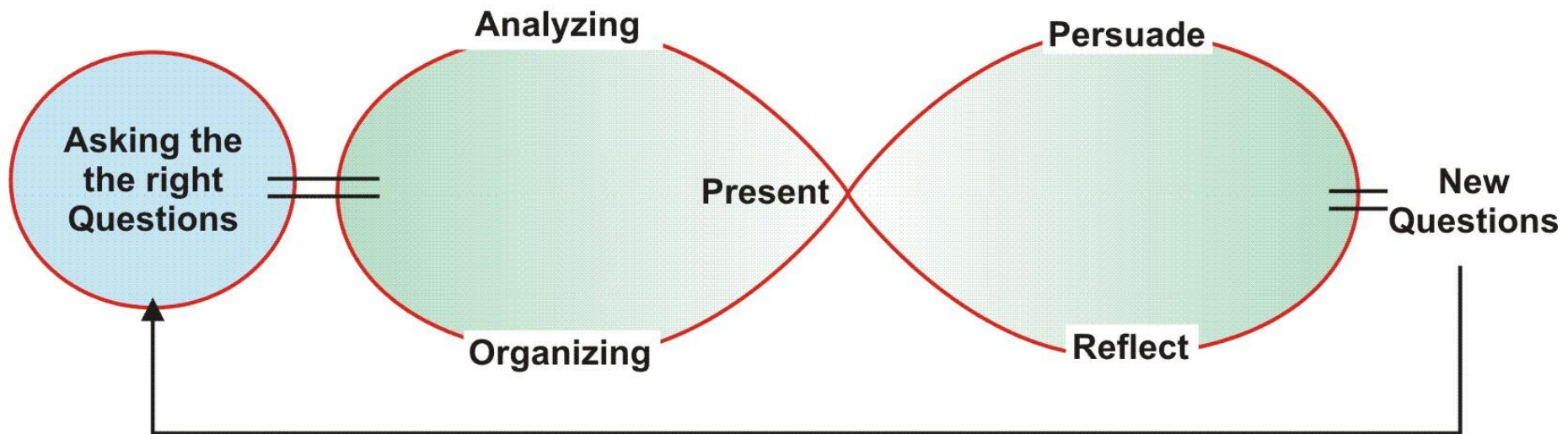


Education for Behavioral Change

- Traditionally education refers to cognitive, psychomotor and affective domain.
- The affective domain is the one that gets least attention.
- In the future behavioral patterns and soft skills of people will be considered more important and significant than their discipline knowledge or technical operational skills.



The Live Learning Cycle



Tell me

- Excite me about what I am going to learn, and describe it in clear terms, and then tell me about it.



Show me

- Videos
- Demos
- Animations
- Pictures
- Images
- Diagrams
- Mindmaps



Let me

- Give me tasks to provide evidence of my learning



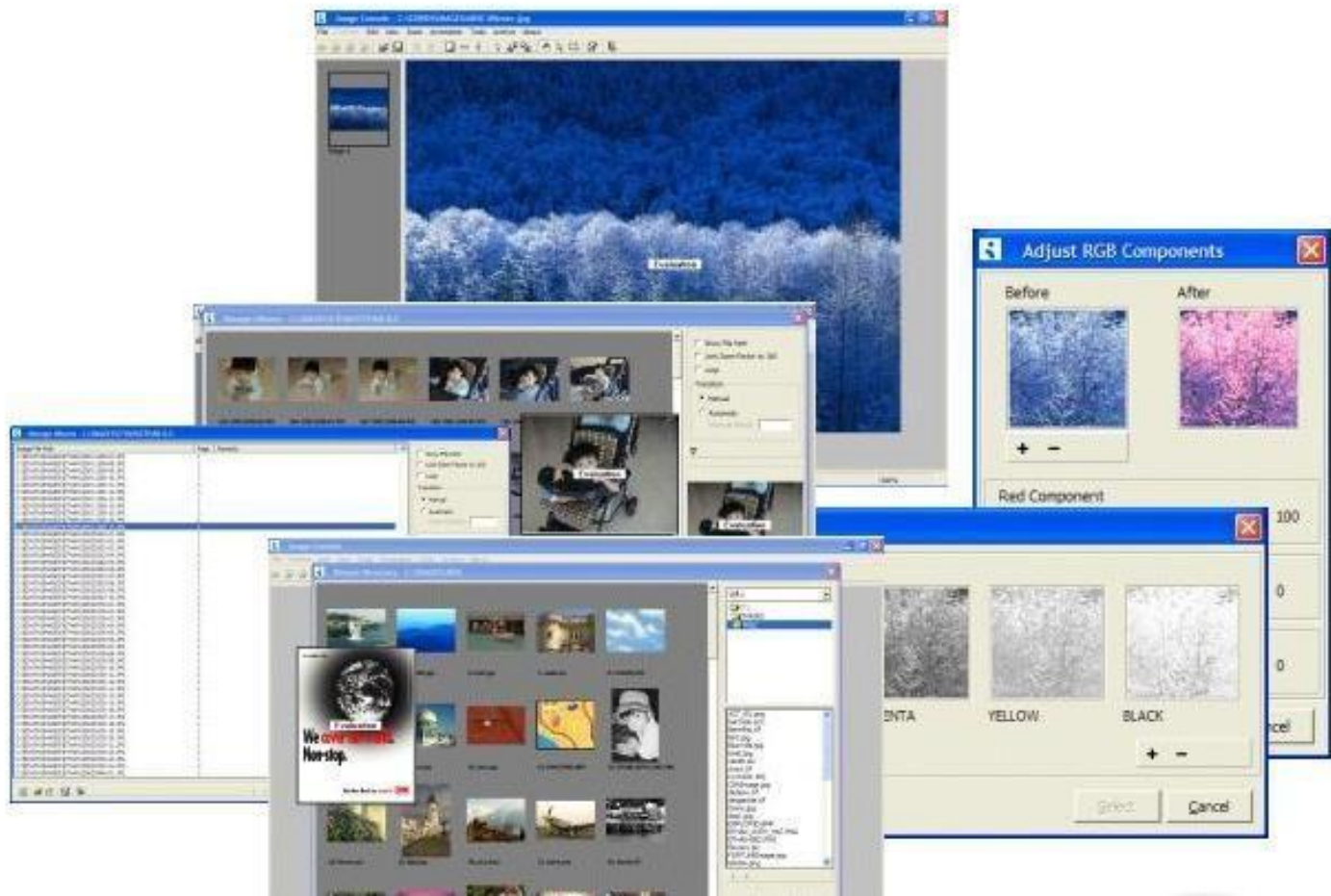
Tell me more

- Give me feedback for me to improve my learning



Show me more

- Extensions and Applications



Let me explore

- Let me find out more on my own and also reflect upon my learning



Teacher & Learner Support System



Modern Classroom



Virtual Classroom



Classroom anywhere



New Age Teacher



Access Device



Social Media



Linked in

Moving from a Mere Lecture to the Creation of a Learning Event

- It is not enough that a lecture was taken
- What about the learning transactions?
- Did learning take place?
- Did an interest in learning take place?
- Did the learner learn how to learn?
- Did the learner learn how to think?
- Can the learner find meaning in large amounts of data?

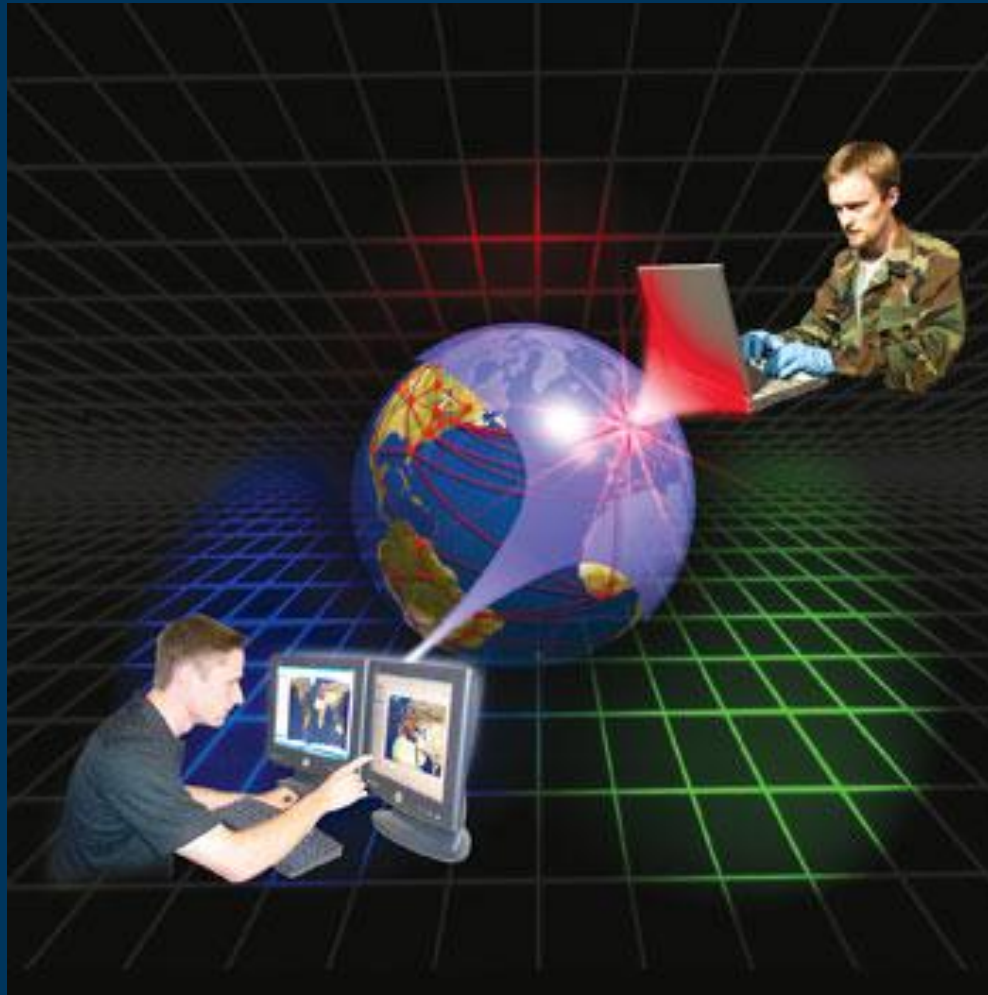


When the Learner is Ready, the Teacher will Appear

- Learning moments
- Epiphanic moment
- Eureka moment
- Jaw-dropping moment
- The moment of truth
- The Sputnik moment
- The 'aha' moment



Technologies that have a direct impact on Teaching-Learning



Open Courseware Movement

- OpenCourseWare is a term applied to course materials created by universities and shared freely with the world via the internet.
- The movement started in 1999 when the University of Tübingen in Germany published videos of lectures online in the context of its timms initiative.
- The OCW movement only took off, however, with the launch of MIT OpenCourseWare at MIT in October 2002.



Tablets and Mobiles

- No classrooms are needed for m-learning, which creates just the right kind of environment for today's students.
- With devices such as smartphones and tablets making their way to every hand, mobile learning has also begun to spread its wings.
- Conveying educational content through mobile phones, smartphones and tablets is known as mobile learning.
- Mobile learning allows one to attend lectures, read, and ask teachers questions from any where and at any time.



6 Reasons Tablets are ready for the Classroom



1

Tablets Are the Best Way to Show Textbooks

- Tablets are capable of offering enhanced eBooks featuring images, video and audio.
- These elements are impossible to include in print or in a standard eBook.



2

Classrooms are ready for Tablets

- Though tablets are a recent phenomenon, many students have been using smartphones for years, and are already well-acquainted with touch-screen technology.



3

Tablets Fit Students' Lifestyles

- The appeal of tablets to students is obvious: They're thin, lightweight, and spring to life without delay, making them much easier to use for learning than a desktop in a computer laboratory.



4

Tablets are a great way to access the web

- Some of the most innovative software around is being developed specifically for tablets.
- Many exciting educational apps are now available
- In fact, tablets' current shortcoming — limited multitasking — could be their greatest asset in education, as it forces students to focus on one task at a time



5

Tablets Integrate with Education IT Trends

- Cloud-based solutions have become ever more popular with colleges and universities, which are looking to deliver synchronized experiences that are device agnostic.
- Tablets align well with this trend, given their portability and options for constant connectivity.
- With tablets and cloud-based systems, students can work anywhere on campus and make sure that their work is saved in a central location and accessible from all of their devices.

6

Tablets are Becoming More Available

- One of the primary reasons that tablets have been slow to penetrate the higher education market was their limited availability.
- As these issues are resolved over the coming year, expect to see more and more tablets popping up on campuses.
- Lower price points will make tablets even more appealing to colleges and universities.

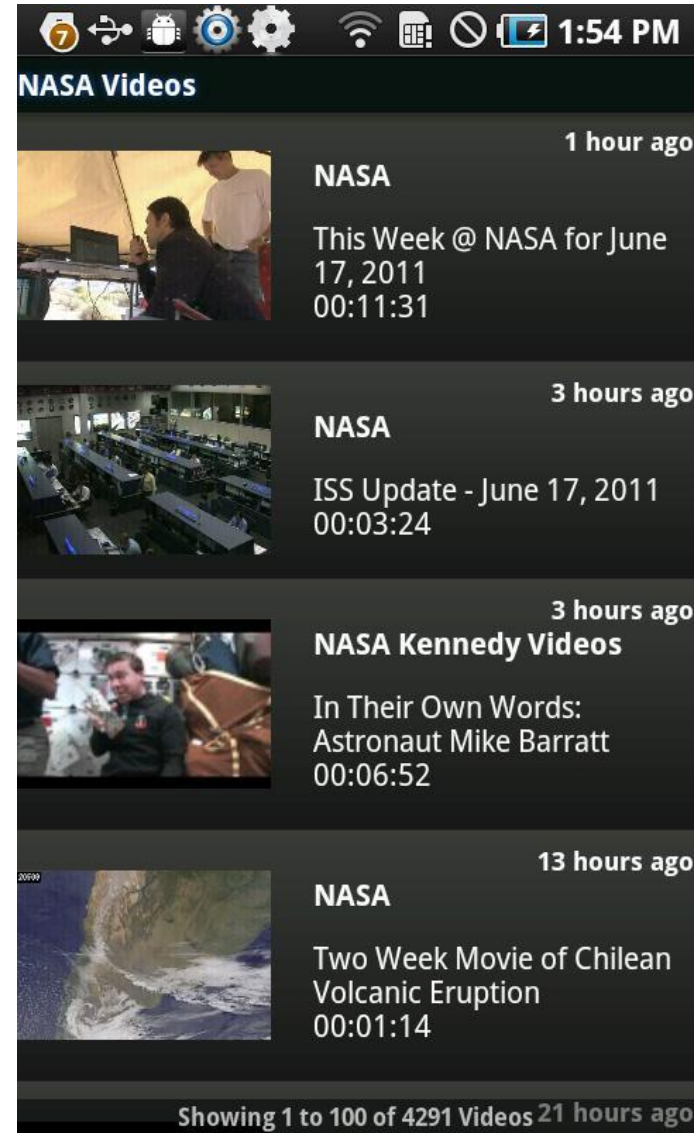
Apps for Learning

- Apps is an abbreviation for application.
- An app is a piece of software.
- It can run on the Internet, on your computer, or on your phone or other electronic device.



NASA App HD (Free)

- The app is packed full of information from NASA's proud history of space travel.
- One of the best features is the ability to check mission paths via Google Maps.
- The amount of content on offer here is incredible.



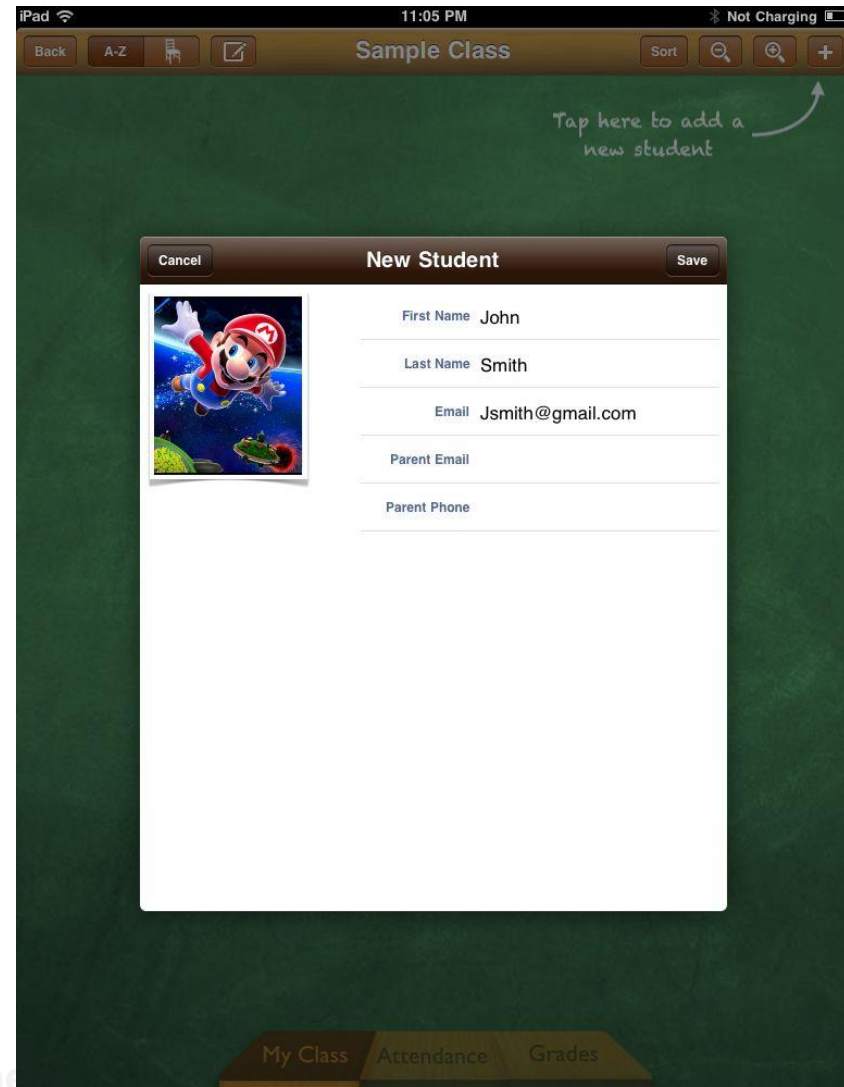
TED (Free)

- This app allows you to search through TED's catalogue and watch talks and seminars from a range of different speakers for instant inspiration.
- There are more than 900 videos to view.
- You can even stream the videos onto the big screen via AirPlay – which is handy for the boardroom or the classroom when attempting to inspire young and impressionable minds.



TeacherPal (Free)

- Creating classed is easy: one tap, add a name, choose an icon and the first class is added.
- Adding grades, creating attendance records and noting behaviour is easy, although the attendance option is not so obvious, and creation and population is a time-consuming task just for one class.



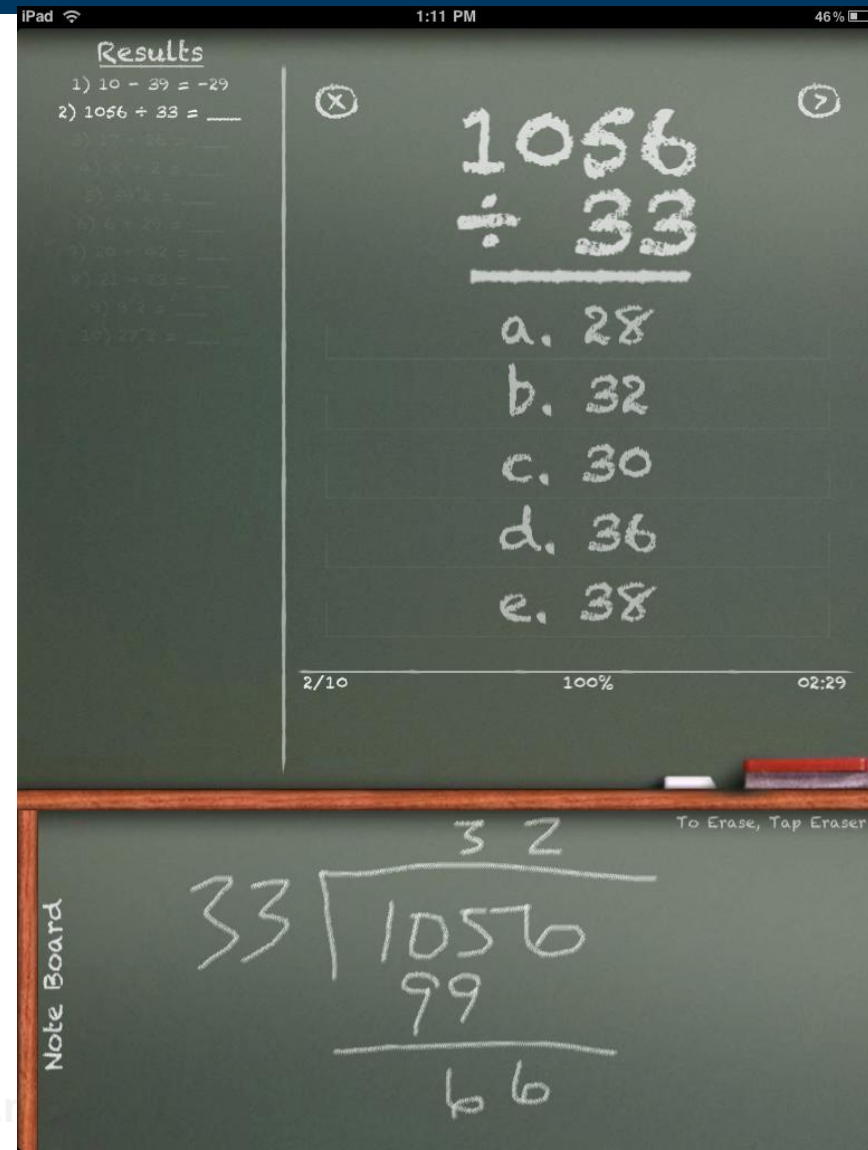
My Translator UK (\$0.99)

- Enter words or phrases, and the text will instantly translate as you type thanks to the auto-complete system, which is invaluable when you need result fast.
- Your translated text will be read aloud by a native speaker, giving you the option to either practice until you've got the pronunciation perfect, or use the app to do the speaking for you.



Mathboard (\$0.99)

- It offers addition, subtraction, multiplication, division, squares, cube and square root.
- It's all presented on an old-school style chalkboard format and you have enough space on the board to do your working out.
- The timed element enables students to compete against each other, even if the questions are easy.
- For more complex questions there's a neat bit of chalkboard for working out.



Math Bingo (0.99)

- Children simply love practising addition, subtraction, multiplication and division with this fun app.
- With three different difficulty levels, it can help any child learn to love maths.
- Now you can view high scores by individual player



Math Reference (\$0.99)

- Useful for quick and easy access to math formulas.
- Includes basic and advanced math.
- Basic math covers arithmetic, algebra, geometry, & measurement. Advanced math covers trigonometry, derivatives, integration, statistics, series and sequences, conversions and probability.

Geometry/Surfaces

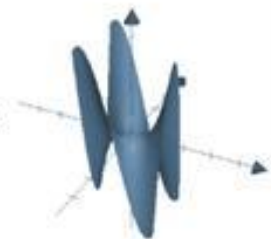
Elliptic Paraboloid

$$z = \frac{x^2}{a^2} + \frac{y^2}{b^2}$$



Monkey Saddle

$$z = x^3 - 3xy^2$$



Hyperbolic Paraboloid

$$z = \frac{x^2}{a^2} - \frac{y^2}{b^2}$$



Hyperboloid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = \begin{cases} 1 & \text{One Sheet} \\ -1 & \text{Two Sheets} \end{cases}$$

Bird Encyclopedia+ (\$4.99)

- Bird Encyclopedia+ is a searchable database of birds around the globe.
- The information on offer is decent enough, but the overall quality of the app is sadly lacking.
- It's very easy to use, simply type in the name of the breed to be presented with its vital statistics.



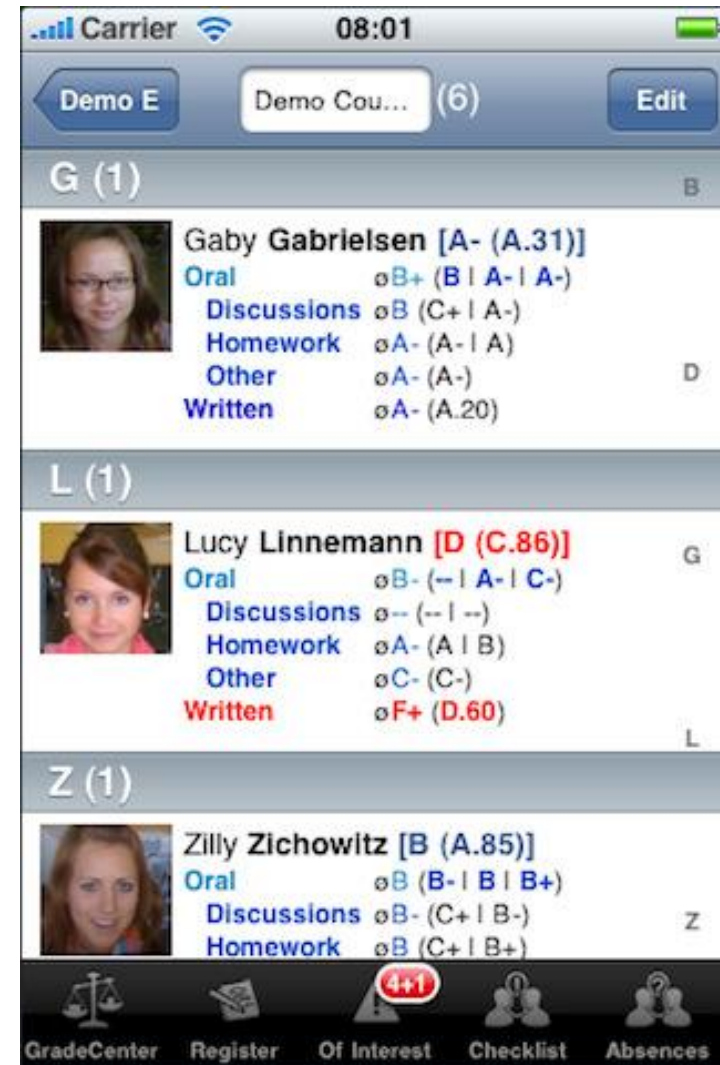
Solar Walk (\$2.99)

- A melancholy flow of notes immerses you into the solar system and you realize that this application is like no other.
- Solar Walk pieces together each planet in real time and real location to give a fully accurate view of where things are, where things have been and where things are going in space.
- The various moons are supported and the best feature is the graphics with a 3D option



Teacher Tool (Free)

- TeacherTool saves grades and makes suggestions for grades.
- TeacherTool saves your remarks about students and presents them to you in the upcoming lesson.
- It remembers the date of any grade and lets you store comments along with it.
- TeacherTool keeps track of your students' absences.
- It is much safer than your traditional mark-book, as with every synchronization on your Mac, you save an up-to-date backup copy of all your data.



GradePad (\$2.99)

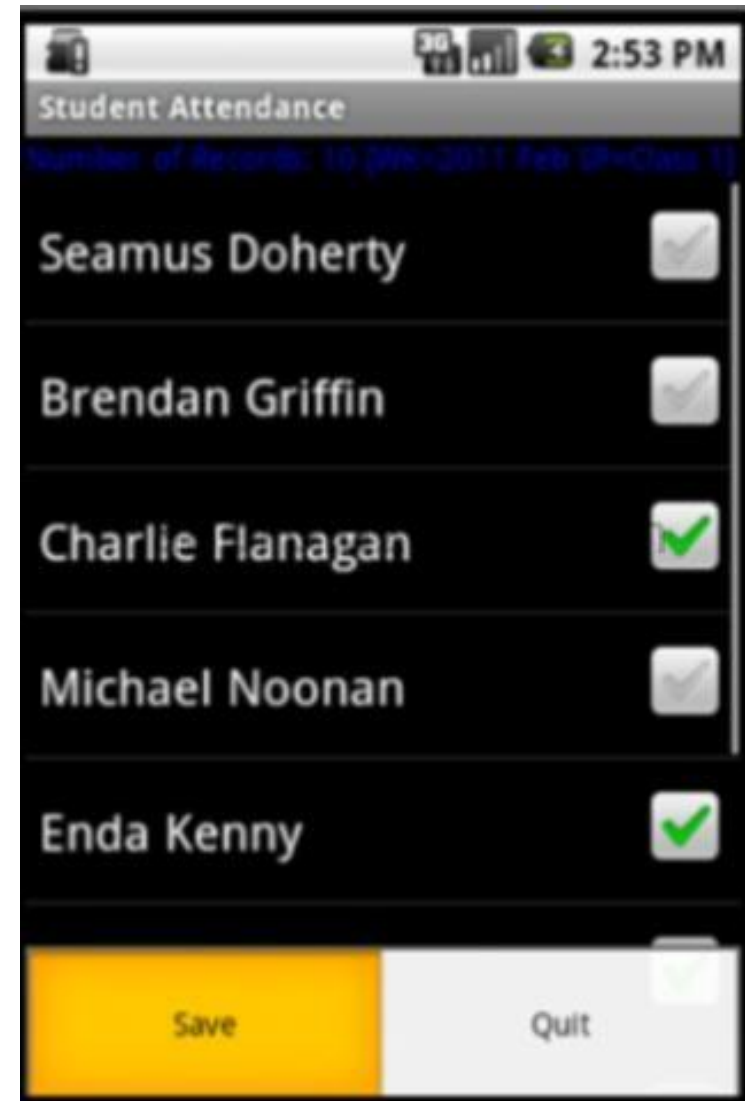
- The GradePad application allows you to grade your students' performance directly from your mobile device.
- The documentation from the application's website explains that with this app you can Manage Groups, Create GradePads, Do Assessments, Track Performance, and Share Data.

The screenshot displays the GradePad application interface for a student named Willie Fremont. The interface is divided into sections for different categories of performance. The 'Interpersonal' section includes 'Teamwork' and 'Project'. Below these, there are four rows of performance metrics: 'Listens', 'Respects', 'Reacts', and 'Responds'. Each row has a horizontal scale from 0 to 4, with a red square icon indicating the current score. The 'Comments' section is at the bottom.

Category	Score
Interpersonal	
Teamwork	
Project	
Listens	3
Respects	2
Reacts	1
Responds	2
Comments:	

Attendance (\$5.99)

- Attendance is a universal iOS touchscreen application.
- It allows you to take and keep attendance records.
- Its main intended use is for teachers to keep track of records for their classes, but it can also be used for meetings and group gatherings.
- Features include; unlimited courses, move students from one class to another, photo recognition, customisable attendance statuses.



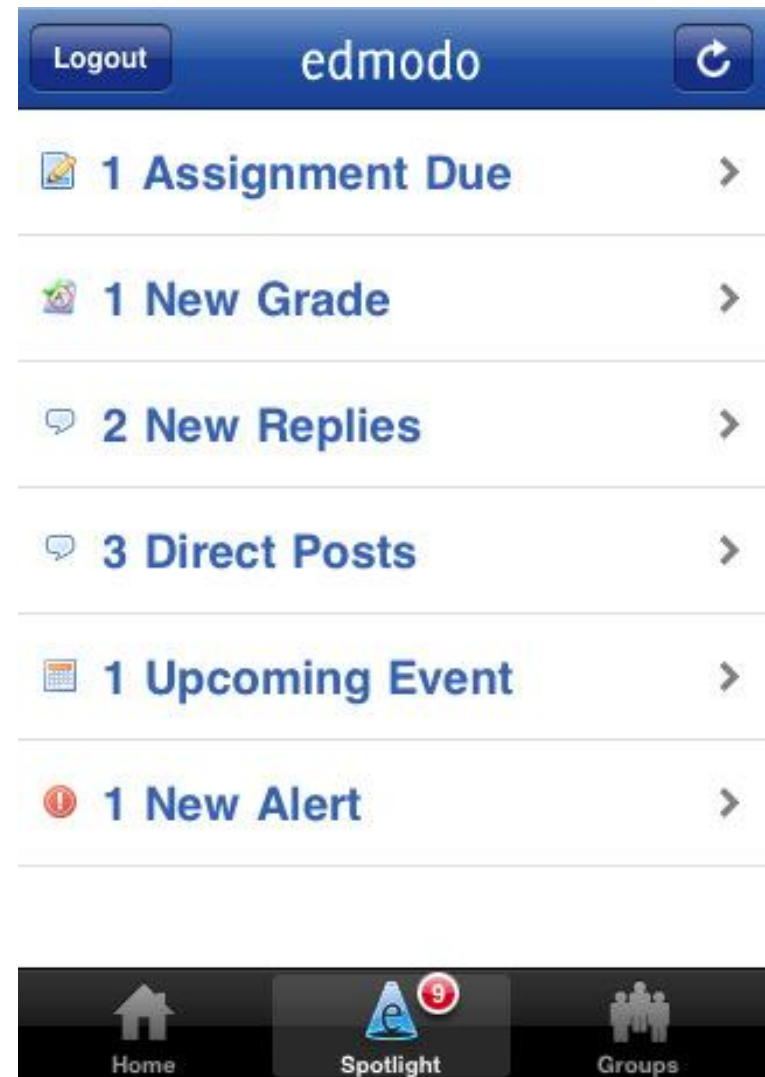
TeacherPal (Free)

- TeacherPal is a personal organizer for the teacher.
- It enables the teacher to organize classes, and students.
- Its simple and intuitive interface enables teachers to track the attendance, grades and behavior of their students.
- Features include; simple tap attendance, grade books, enter grade with an intuitive touchpad, import, export data files from and to CSV files.



Edmodo (Free)

- Here's an app for use outside of the classroom, to reinforce the lessons you've taught.
- Edmodo.com is a social networking site designed for teachers and students to interact, as well as for teachers to network with one another.
- The free, universal app makes it easy for teachers and students to interact in real time with their iDevices. Give out, manage, and grade student assignments.
- It's something like Facebook, but designed specifically for use by educators and students.



Essay Grader (\$ 5.99)

- Whether you are an English teacher or not, many courses have writing requirements and essay-style homework assignments.
- The app provides criteria checkboxes to quickly evaluate essays and writing assignments, which generate a graded evaluation form.
- The app then allows for exporting to your computer and emailing to the student.
- If you teach a subject with serious writing assignments, Essay Grader for iPad could save you time and enhance the feedback to your students.



Games based Learning

- Game based learning is a branch of serious games that deals with applications that have defined learning outcomes.
- Generally they are designed in order to balance the subject matter with the gameplay and the ability of the player to retain and apply said subject matter to the real world.
- Games often have a fantasy element that engages players in a learning activity through narrative or storylines.
- Educational video games can be motivating to children and allow them to develop an awareness to consequentiality.
- Children are allowed to express themselves as individuals while learning and engaging in social issues.



Animal Baby Match

- Animal Baby Match is the perfect educational game for your preschooler or toddler.
- Your child will love sliding the pictures to match the adult with its baby, and hearing the sounds each one makes.
- When the adult and baby pictures match, the app shows a new photo of the adult with its baby, along with their names

Animal Baby Match



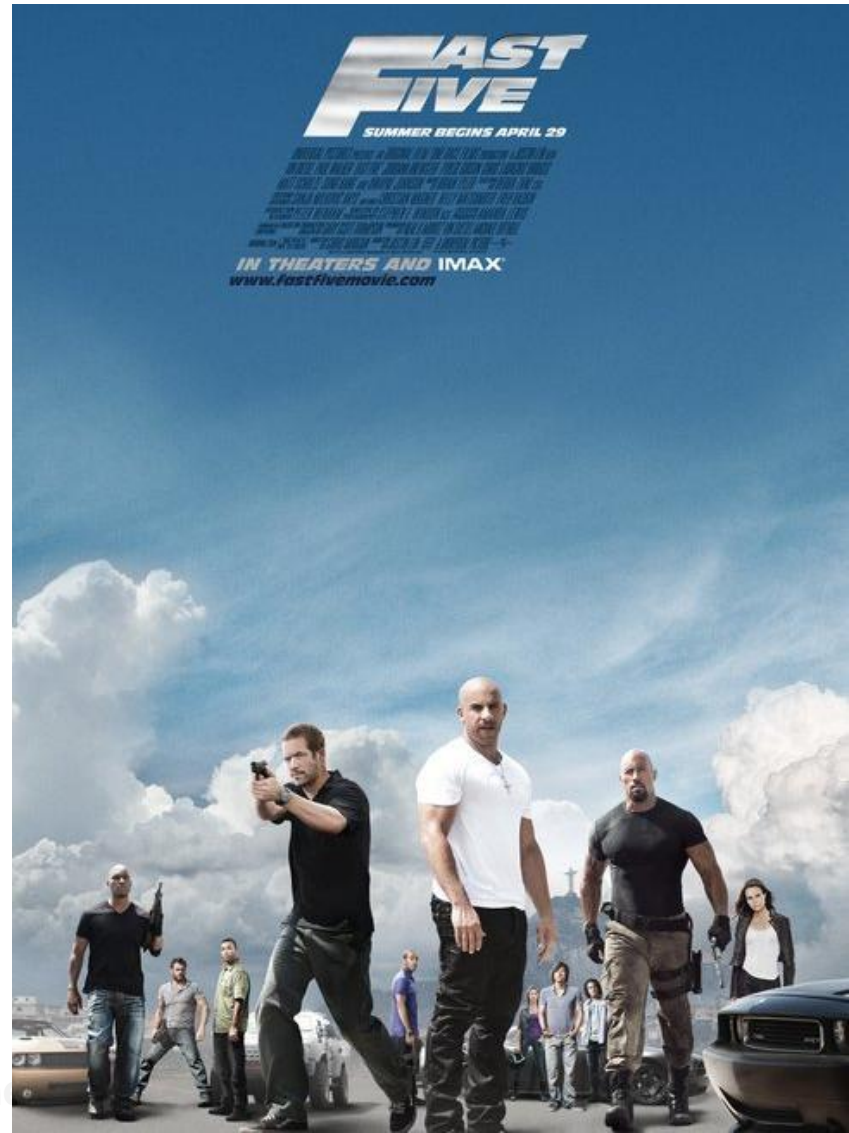
Froggy Math

- Freddy the Frog sits in the garden watching the flowers grow. But bugs keep eating the flowers!
- Froggy Math, children (and adults) can have fun while improving their math skills
- Easy to learn gameplay.... a math equation appears on the blackboard, you simply touch the bug with the right answer!



Fast Five (\$4.99)

- Fast Five is purely a racing game, so all of the on-foot action and shooting from the movies are nowhere to be seen, and only mentioned in mid-chapter conversations between O'conner and other characters.
- The Graphical filters are pretty cool, and aren't something that you'd expect in a game at this price point.



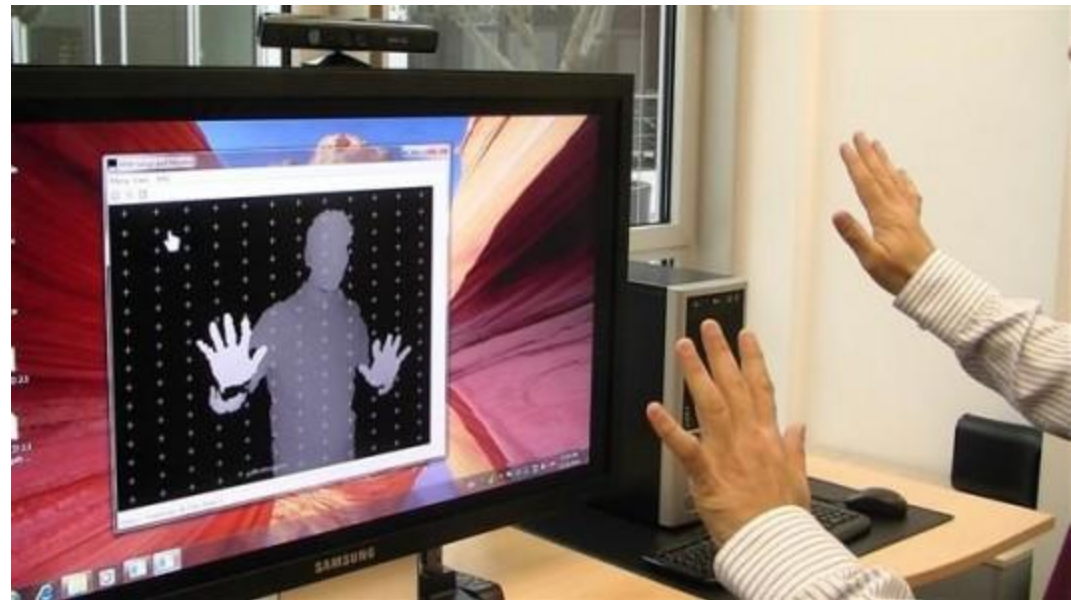
Fruit Juice Tycoon 2 (\$0.99)

- Here, the juice industry is defined by hostile takeovers, political backstabbings, dirty tricks and even kidnapping.
- The match-three gameplay is slightly disappointing compared the business dide.



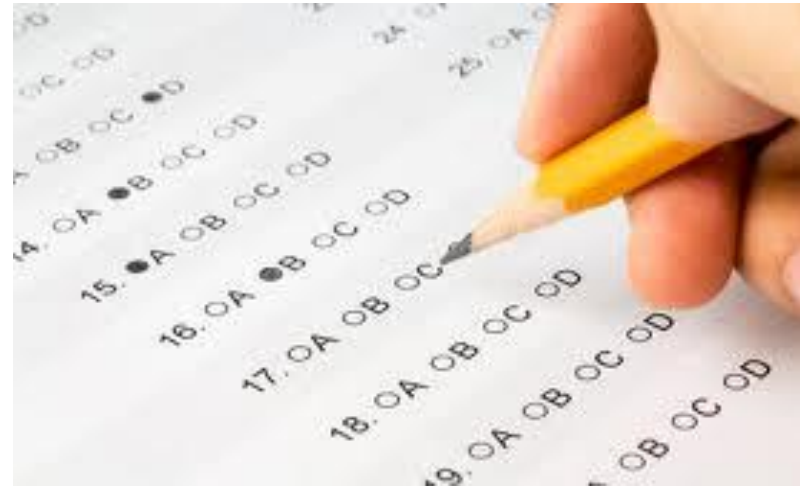
Educational Applications of Gesture Based Computing

- Gesture-based computing as a means for interacting with a computer.
- The proliferation of games and devices that incorporate easy and intuitive gestural interactions will certainly continue, bringing with it a new era of user interface design that moves well beyond the keyboard and mouse.



Learning Analytics

- **Learning analytics** is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning.
- Learning analytics is the use of intelligent data, learner-produced data, and analysis models to discover information and social connections for predicting and advising people's learning.



Augmented Reality

- Augmented reality is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data.
- It is related to a more general concept called mediated reality, in which a view of reality is modified (possibly even diminished rather than augmented) by a computer.
- As a result, the technology functions by enhancing one's current perception of reality. By contrast, virtual reality replaces the real world with a simulated one.
- Augmentation is conventionally in real-time and in semantic context with environmental elements, such as sports scores on TV during a match.



Virtual Reality

- Virtual reality is a term that applies to computer-simulated environments that can simulate physical presence in places in the real world, as well as in imaginary worlds.
- Most current virtual reality environments are primarily visual experiences, displayed either on a computer screen or through special stereoscopic displays, but some simulations include additional sensory information, such as sound through speakers or headphones.
- Some advanced, haptic systems now include tactile information, generally known as force feedback, in medical and gaming applications.
- Virtual reality is often used to describe a wide variety of applications commonly associated with immersive, highly visual, 3D environments.



The Emergence of the Rockstar Teacher



Who is Rockstar Teacher?

- A good teacher explains. The success of a good teacher is seen in the examination results and in the student's success in high stakes test and competitive exams.
- A great teacher inspires. The impact of a great teacher is seen in future leaders, who attribute their success in life to the inspirational wisdom that they received from their teachers.
- A Rockstar teacher uses 21st century ICT tools to create self-directed learners who are agents of change, who will transform the world in several different spheres of activities. Their students are achievers, creators, thinkers and innovators, who are driven by passion and commitment.



Where do they Teach?

- Traditionally teachers teach in classrooms in Schools, Colleges, Universities or other Institutions of Higher Learning.
- Long ago we had traditions of Gurukul where great teachers like Dronacharya taught the royalty.
- In Europe the Universities of Bologna in Italy, Paris in France and Oxford and Cambridge were seats of learning about a thousand years ago.
- Our own Nalanda and Takshila are also about a 800 year old tradition.
- But these teachers impacted a few learners every year and maybe a thousand over a lifetime.

Time is Ripe for Rockstar Teachers

- The Rockstar teacher of today and tomorrow teaches in cyberspace (World Wide Web and Internet) to life-long learners from across the globe and impacts thousands in a single cohort and millions over a lifetime.
- Gary Stager a Professor from Stanford put his course on linear Algebra on the Internet and had 7.3 million students do that course.
- The Khan Academy is used by millions of learners, including Bill Gates' son to learn Mathematics.
- The time is ripe for many more Rockstar Teachers to be successful.

How is a Rockstar Teacher Trained?

- Certainly not like a B.Ed in an NCTE approved training program.
- Though having done such a program is not a disqualification.
- But there would be a significant amount of unlearning and re-learning.
- The ideal candidate for being trained as a Rockstar teacher would be having a degree in an allied subject, with excellent communication skills and about 5 years teaching experience either in an educational Institute or with private learners.
- Those who have never done any teaching before, may find the going a bit difficult and those who have more than 5 years experience of teaching may find themselves somewhat inflexible in their ways, though agility or rigidity is not an attribute of any specific age.

Programme Structure for 6 Courses

- Asking the right questions? Developing an enquiring mind
- Teaching with Tablets, Mobiles and Handheld devices
- Co-operative and Collaborative Peer Learning with Social Media Tools
- Reputation, Image, Style and Ethics (RISE)
- Developing Innovative Teaching Methods
- Coaching for Success

Programme Structure for another 5

- Mentoring for Leadership
- Developing Thinking Skills
- Preparing Self-directed Learners
- Curating Learning Resources
- Developing Educational Apps

All those who complete these courses, submit their work for evaluation and pass the assessment requirements, will be awarded a "Diploma in Teaching Internationally" by QAI, a private awarding body in UK.

Design and Delivery of the Courses

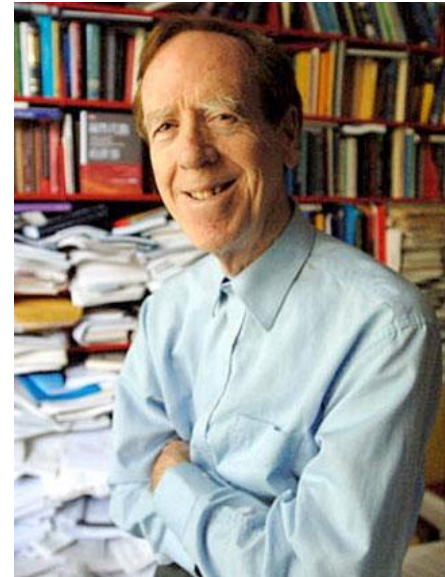
- Each course is nominally of 10 hours duration, and is delivered in a number of flexible ways to suit the participants.
- These range from a fully residential weekend program to entirely self-access through the Internet.
- There is also an option of a '**Hop ON Hop OFF**' (HOHO) model where one can choose to do part through the Internet and part through on-site face to face learning.

Examples of Rockstar Teachers



Gilbert Strang – Linear Algebra

- MIT's OpenCourseWare has released a new version of Linear Algebra, one of its most visited courses, in the innovative OCW Scholar format designed for independent learners.
- Taught by Professor Gilbert Strang, 18.06SC Linear Algebra addresses systems of linear equations and the properties of matrices.
- The concepts of linear algebra are used to solve problems in physics, economics, engineering and other disciplines.
- The first five of a planned 20 OCW Scholar courses were launched by MIT OpenCourseWare in January 2011, and have collectively received more than 800,000 visits in less than a year.
- Linear Algebra is the first of seven OCW Scholar courses that will be published in 2012.



Udacity – Stanford Professors

- Udacity was founded by three roboticists who believed much of the educational value of their university classes could be offered online.
- The instructors are Sebastian Thrun and Peter Norvig, two of the world's best-known artificial intelligence experts.
- In 2005 Dr. Thrun led a team of Stanford students and professors in building a robotic car that won a Pentagon-sponsored challenge by driving 132 miles over unpaved roads in a California desert.
- Dr. Norvig is a former NASA scientist who is now Google's director of research and the author of a leading textbook on artificial intelligence.
- A few weeks later, over 160,000 students in more than 190 countries enrolled in our first class, "Introduction to Artificial Intelligence." ...



Michael Sandel – Harvard Professor

- One of the Most Popular Courses in Harvard's History
- Nearly one thousand students pack Harvard's historic Sanders Theatre to hear Michael Sandel talk about justice, equality, democracy, and citizenship.
- Now it's your turn to take the same journey in moral reflection that has captivated more than **15,000** students, as Harvard opens its classroom to the world.



Michael Sandel – in the classroom



George Siemens - MOOC

- **George Siemens** is an internationally known writer, speaker, and researcher on learning, networks, technology and organizational effectiveness in digital environments.
- A **Massive Open Online Course (MOOC)** is a course where the participants are distributed and course materials also are dispersed across the web.
- The thinking behind and preparation for the MOOC, *Change: Education, Learning and Technology*.
- The course introduces participants to the major contributions being made to the field of instructional technology by researchers today.
- Each week, a new professor or researcher will introduce his or her central contribution to the field.
- Facilitated by Dave Cormier, George Siemens and Stephen Downs.



Khan Academy – Salman Khan

- The **Khan Academy** is a not-profit organization created in 2006 by American educator **Salman Khan**, a graduate of MIT with the goal of changing education for the better by providing a free world-class education to anyone anywhere.
- All of the site's resources (over 3000 videos) are available to anyone.
- The Khan Academy's materials and resources are available to you completely free of charge.
- Library of videos covers K-12 math, science topics such as biology, chemistry, and physics, and even reaches into the humanities with playlists on finance and history.



edX established by MIT and Harvard University

- An organization established by MIT and Harvard University that will develop an open-source technology platform to deliver online courses.
- EdX will support Harvard and MIT faculty in conducting research on teaching and learning on campus through tools that enrich classroom and laboratory experiences.
- At the same time, edX will also reach learners around the world through online course materials.
- The edX website will begin by hosting MITx and Harvardx content, with the goal of adding content from other universities interested in joining the platform.
- edX will also support the Harvard and MIT faculty in conducting research on teaching and learning.



What Technology will edX use?

- An open-source online learning platform that will feature teaching designed specifically for the Web.
- Features will include: self-paced learning, online discussion groups, wiki-based collaborative learning, assessment of learning as a student progresses through a course, and online laboratories.
- The platform will also serve as a laboratory from which data will be gathered to better understand how students learn.
- Because it is open-source, the platform will be improved continuously.

Why are MIT and Harvard doing this?

To improve education on campus and around the world:

- On campus, edX research will enhance our understanding of how students learn and how technologies can best be used as part of our larger efforts to improve teaching and learning.
- Beyond our campuses, edX will expand access to education, allow for certificates of mastery to be earned by able learners, and make the open-source platform available to other institutions.
- Why did Harvard and MIT decide to partner with each other?
- We share a vision for greater access to education. Based on our long history of collaboration, we know we can leverage our strengths to best serve the world.

OER (Open Education Resources) University

- The OER university is a virtual collaboration of like-minded institutions committed to creating flexible pathways for OER learners to gain formal academic credit.
- The OER university aims to provide free learning to all students worldwide using OER learning materials with pathways to gain credible qualifications from recognised education institutions.
- It is rooted in the community service and outreach mission to develop a parallel learning universe to augment and add value to traditional delivery systems in post-secondary education.
- Through the community service mission of participating institutions we will open pathways for OER learners to earn formal academic credit and pay reduced fees for assessment and credit.

Thank you !

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<http://mmpant.wordpress.com/>

