

Improving Self Directed Learning (SDL) through technology

Prof. Dr. A. V. Jamkar

MS. PhD FICS ,FAMS, FIAGES, FAIMER fellow

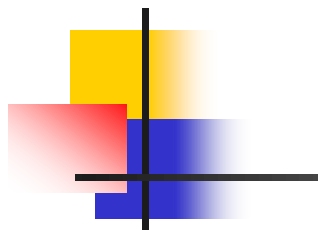
**Director,
Post graduate programme, Research
and Development,
MIT Group of Medical colleges Pune

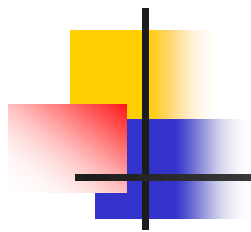
♦

- Ex Vice Chancellor,
Maharashtra university of Health sciences, Nashik
- Consultant , Persistent system Ltd
- Chair, National Bioethics Curriculum
implementation; UNESCO Chair in bioethics Haifa
- Ex Dean, B J Medical College Pune and
RCSM Govt. Medical College Kolhapur
- Ex Professor of surgery ,B J Medical College Pune

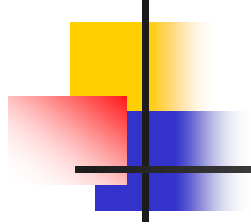
Co Authors

- **Dr. Maya Jamkar**
Professor in Anaesthesia
B J Medical college Pune
- **Dr. Hitesh Vyas**
Associate Professor in Ophthalmology
GMERS MC Gandhinagar





■ MEDICAL Education
is
Adult LEARNING



How is
Adult learning
different
than kids learning?



Adults want to ...

- Learn it, then use it
- Learn only when it is relevant
- Solve problems to learn concepts
- Learn at their own pace
- Set their own learning objectives
- Preserve self-esteem
- Have different ideas about what is important to learn

Evolution of teaching learning

- ❑ **Hard copy generation**
- ❑ **Digital world revolution**
- ❑ **Video revolution**
 - Mobile
 - 3G network
 - U tube, Websurg
 - Khan academy.org

Knowledge Transfer a Growing Challenge

- Effective knowledge transfer is of paramount importance for the maintenance and advancement of our health care system



Teacher ----- Facilitator

- Industry Model ----- Collaborative Model
- IT explosion has changed the role of Facilitator to give justice to this process
- Charisma and charm of teaching



The half of knowledge is to
know where to find knowledge

Quote over the entrance to
Dodd Hall, FSU



Self Directed Learning (SDL)

Objectives

- **Definition**
- **History**
- **Stages in SDL**
- **SDL in medical colleges**
- **Promote self directed learning in students**
- **Use of technology to improve self directed learning**

Story of Eklavya

The Epitome of Guru Bhakti



OnlineTemples



- **“The hardest thing to get into the mind of the beginner is that the education upon which he is engaged is . . . a life course, for which the work of a few years under teachers is a preparation.”**



"He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all."

William Osler

Definition

- In 1975, **Malcolm Knowles** defined self-directed learning as a “process in which individuals take initiative,
- with or without the help of others, in diagnosing their own learning needs,
- formulating goals, identifying human and material resources for
- learning, choosing and implementing appropriate learning
- strategies and evaluating learning outcomes.”

Self -Directed Learning Definition

- **“Self directed learning is any knowledge, skill, accomplishment, or personal development that an individual selects and brings about by his or her own efforts using any method in any circumstances at any time”**

(GIBBONS, 2002)

- **Any knowledge, skill, accomplishment, or personal development that**
- **An individual selects and brings about by his or her own efforts**
- **Using any method in any circumstances at any time” (GIBBONS, 2002)**

Allen tough /Malcolm Knowles

By Malcolm Shepherd
Knowles - Self-Directed
Learning: A Guide for
Learners and Teachers:
1st (first) Edition

Malcolm Shepherd Knowles

Note: This is not the actual book cover



SDL , LIMITED TO ADULTS ?.....

Newborn



Six Months



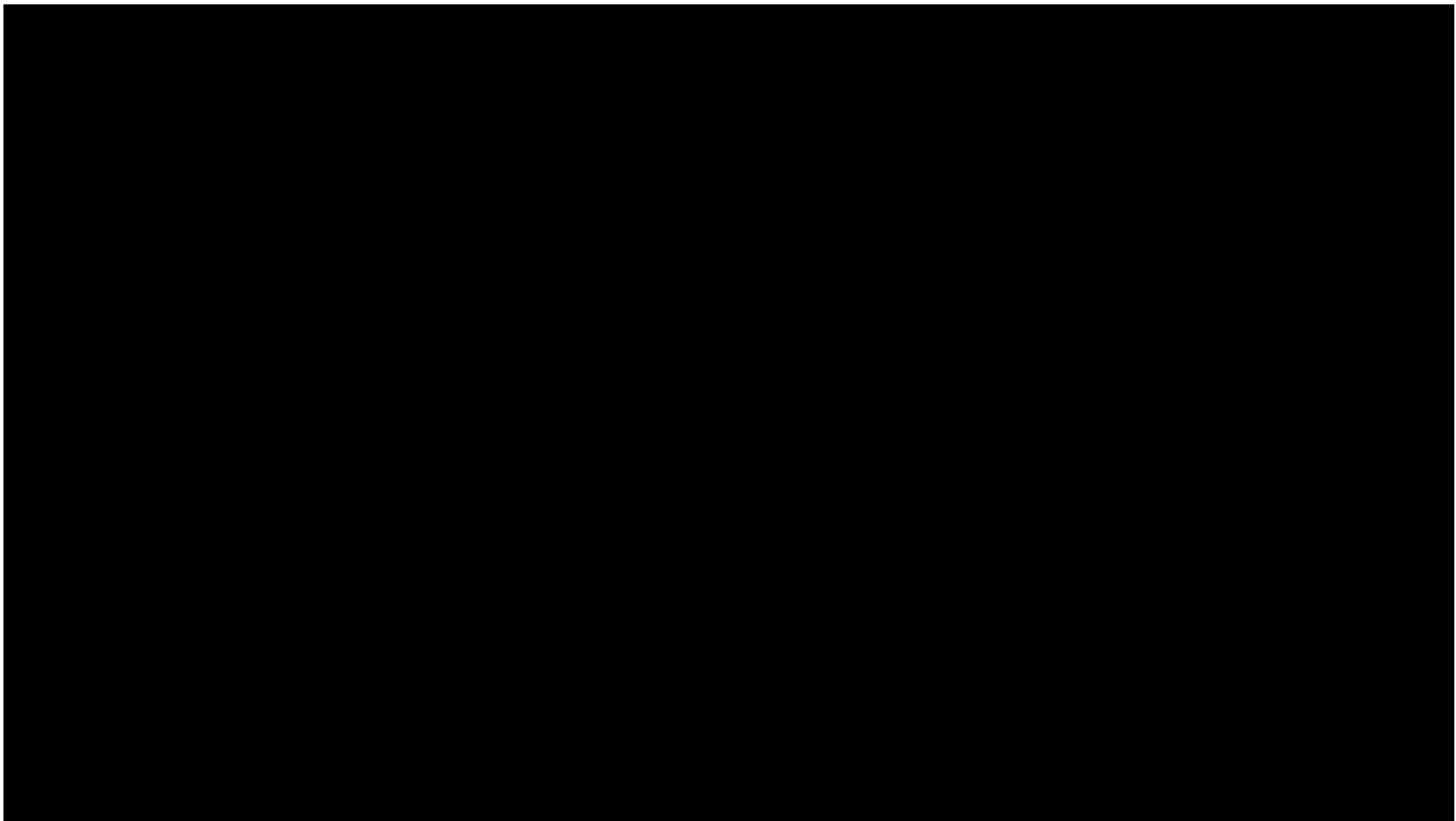
One Year

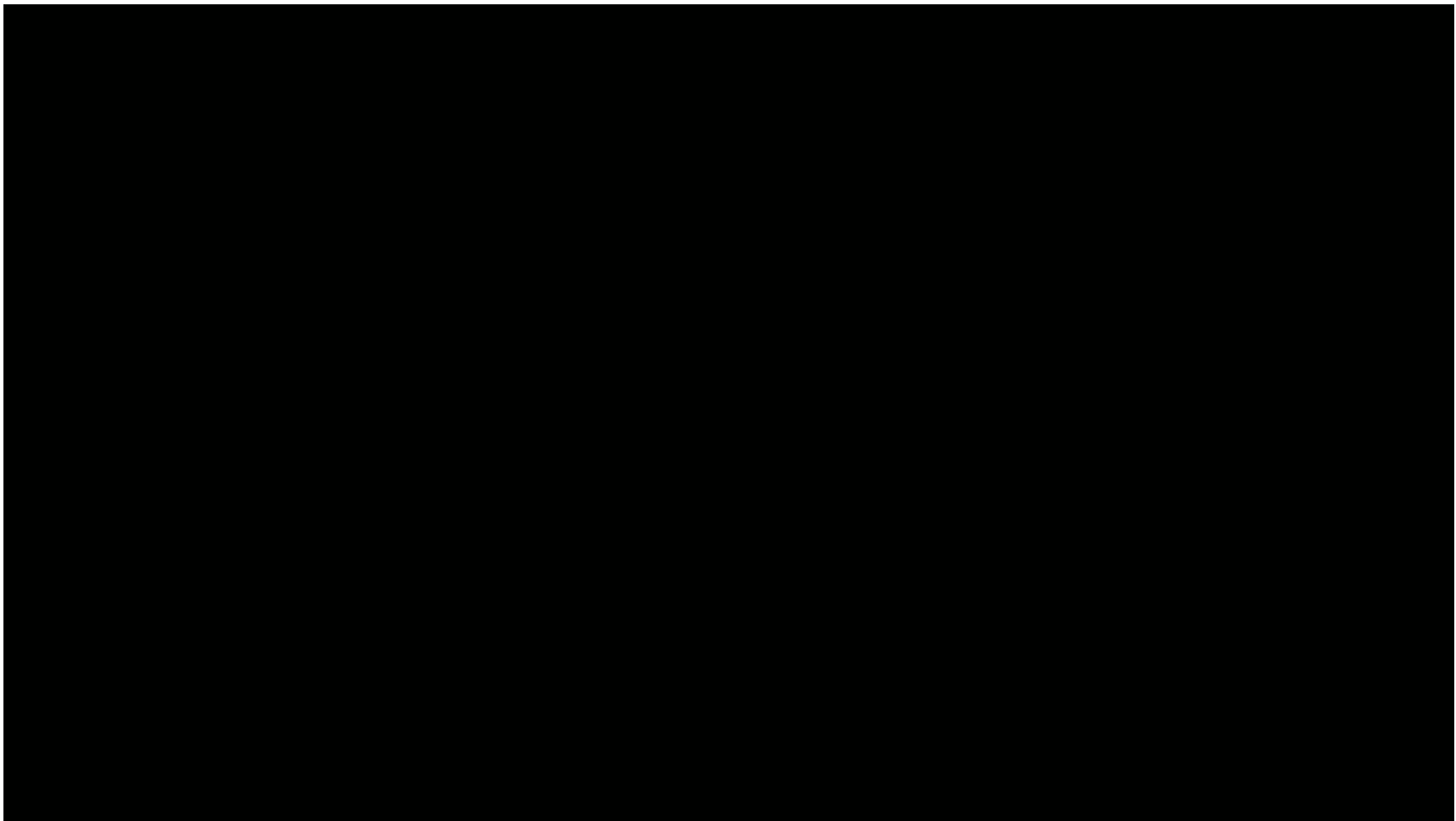


Consider how much a child learns during his first year of life

What is self directed learning (SDL)?

- The process of learning in which the learner assumes primary responsibility for
 - planning,
 - Implementing
 - evaluating a learning project.
- Learner chooses what to learn and how to learn, and also decides
 - when to continue and
 - when to end the learning project.





Steps : How to impart to learners

To evaluate the learning & provide feedback

To engage in learning process

To assess readiness to learn

To set the learning objectives and goal

Stages in SDL

Stage	Student	Teacher	Examples
Stage 1	Dependent	Authority Coach	Coaching with immediate feedback. Drill. Informational lecture. Overcoming deficiencies and resistance
Stage 2	Interested	Motivator, Guide	Inspiring lecture plus guided discussion. Goal-setting and learning strategies.
Stage 3	Involved	Facilitator	Discussion facilitated by teacher who participates as equal. Seminar. Group projects
Stage 4	Self-Directed	Consultant, Delegator	Internship, dissertation, individual work or self-directed study-group.

GROW'S MODEL how teachers can promote SDL

- **Stage I : dependent learner : teacher**
- **Stage II : interested learner: motivated but not informed of the subject matter**
- **Stage III: involved learner: more knowledgeable of subject matter and ready to explore with help**
- **Stage IV: self directed learner: plan, execute and evaluate their own learning with or with no help**

ROLE OF STUDENT	ROLE OF A TEACHER	EX:
Dependent	Authority , coach	Coach with immediate feedback, lecture



ROLE OF STUDENT	ROLE OF A TEACHER	EX:
Interested	Motivator, guide	Inspiring lecture , guided discussion



ROLE OF STUDENT	ROLE OF A TEACHER	EX:
Involved	Facilitator	Seminar , group projects , discussion



Classical Andragogy

ROLE OF STUDENT	ROLE OF A TEACHER	EX:
Self directed	Consultant /delegator	Dissertation, internship /self directed study group



LEVELS OF SELF-DIRECTED LEARNING

Student Success Space

SDL in Medical Colleges

- **WHY???**
- **How???**
- **What we will achieve???**



**Medical schools have a
moral obligation**

**to prepare graduates who are
“expert” self-directed learners**

Why in medical education

Knowledge that medical students acquire at school may become obsolete when they join for medical practice.

- Medical students are likely to work in different contexts during their professional career.
- Doctors thus need to keep learning and engaging in continuing education.

- The field of medical education has witnessed a change in a student's role from passive to active learner
- this moves the centre of gravity away from the teacher and closer to the student

Advantages

- **Learn more things and learn better than people who sit at the feet of teachers passively waiting to be taught**
- **Heightened curiosity**
- **Enhanced critical reasoning skills**
- **Better retention of acquired knowledge**
- **Enhanced ability to recognize knowledge deficits and need**
- **Greater enthusiasm for learning**
- **More initiative, ask more questions, more reading**

Teacher-----Facilitator

- **Concept should change from that of 'teacher' to that of**
 - **Facilitator**
 - **Motivator**
 - **Designer of the learning situation**
 - **Continuing co-learner**

How??

- **Integrate basic and clinical disciplines**
 - **Students to meet patients early**
- **Small group teaching**
- **Problem base learning**

problem
based
learning



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Problem Based Learning

What is problem based learning?

The Elements of PBL -

- **Problem:** Description of phenomena or events or a clinical scenario
 - 'Triggers' from problem cases define learning objectives
- **Tutorial Group:** Analysis of a problem under the guidance of a tutor
 - Group discussions on identified problems
- **Learning Objectives:** Concrete goals for study defined by the group decided by syllabus and Curriculum
- **Independent Self-directed Study by Students:** using multiple resources

Problem Based Learning

What is problem based learning?

- **Examples of trigger material for PBL scenarios**
 - Paper based clinical scenarios
 - Experimental or clinical laboratory data
 - Photographs
 - Video clips
 - Newspaper articles
 - All or part of an article from a scientific journal
 - *A real or simulated patient* : Case based Learning
 - A family tree showing an inherited disorder

NOT ALLOWED 11:00
8 AM. TO 10 AM

WARD 01
← →



- We should utilize the large no of patients for teaching

Whose pulse is this, please !

Problem Based Learning

What is problem based learning?

■ **Characteristics of a PBL Tutorial Group**

- Small group teaching (8-10 students)
- Rotary role playing by students
 - Chair
 - Scribe
 - Presenter
 - Time keeper
 - Group member
- Facilitator (Tutor)

Problem Based Learning

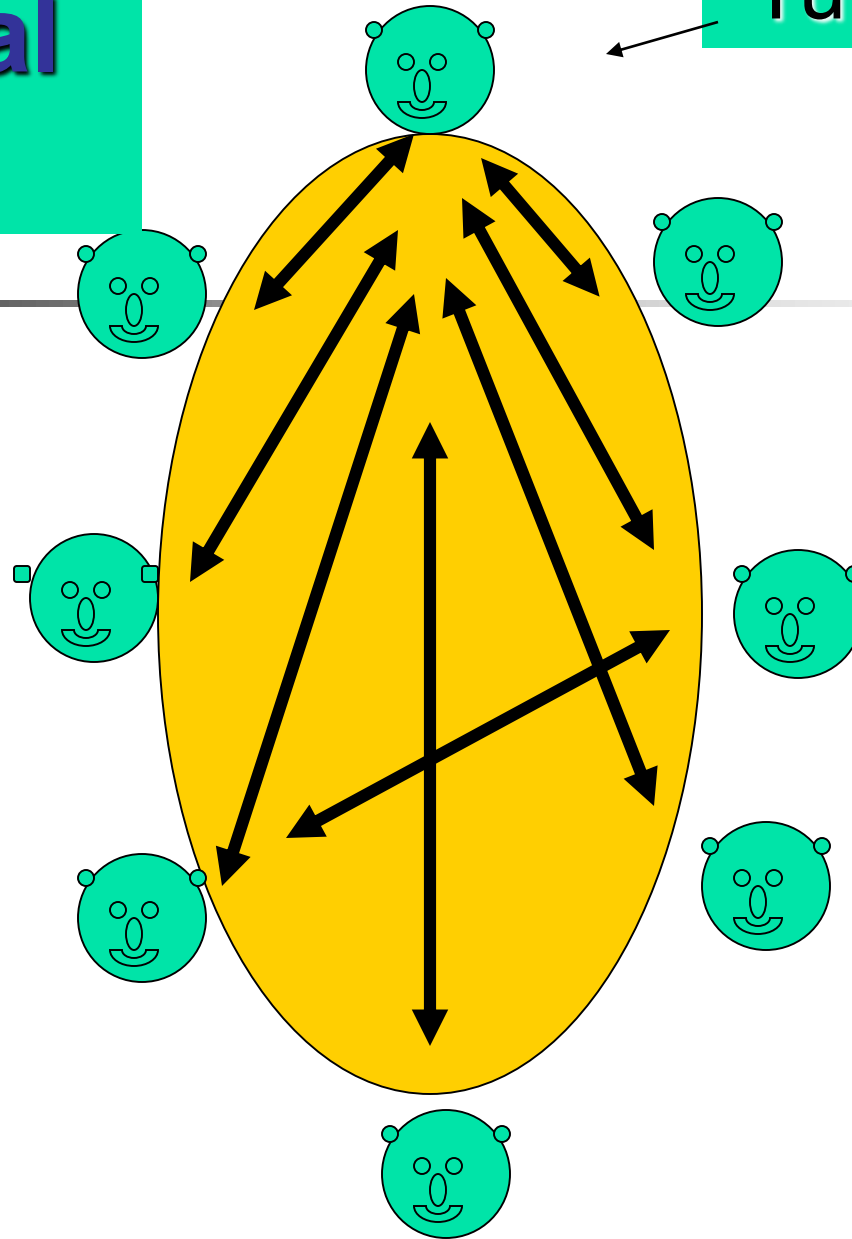
What is problem based learning?

Generic skills and attitudes acquired during PBL Sessions

- Teamwork
- Chairing a group
- Listening
- Recording
- Cooperation and sharing of knowledge/information
- Respect for colleagues views, knowledge and person
- Critical review of literature
- Self-directed learning and use of resources
- Presentation skills

Traditional Tutorial

“Tutor”

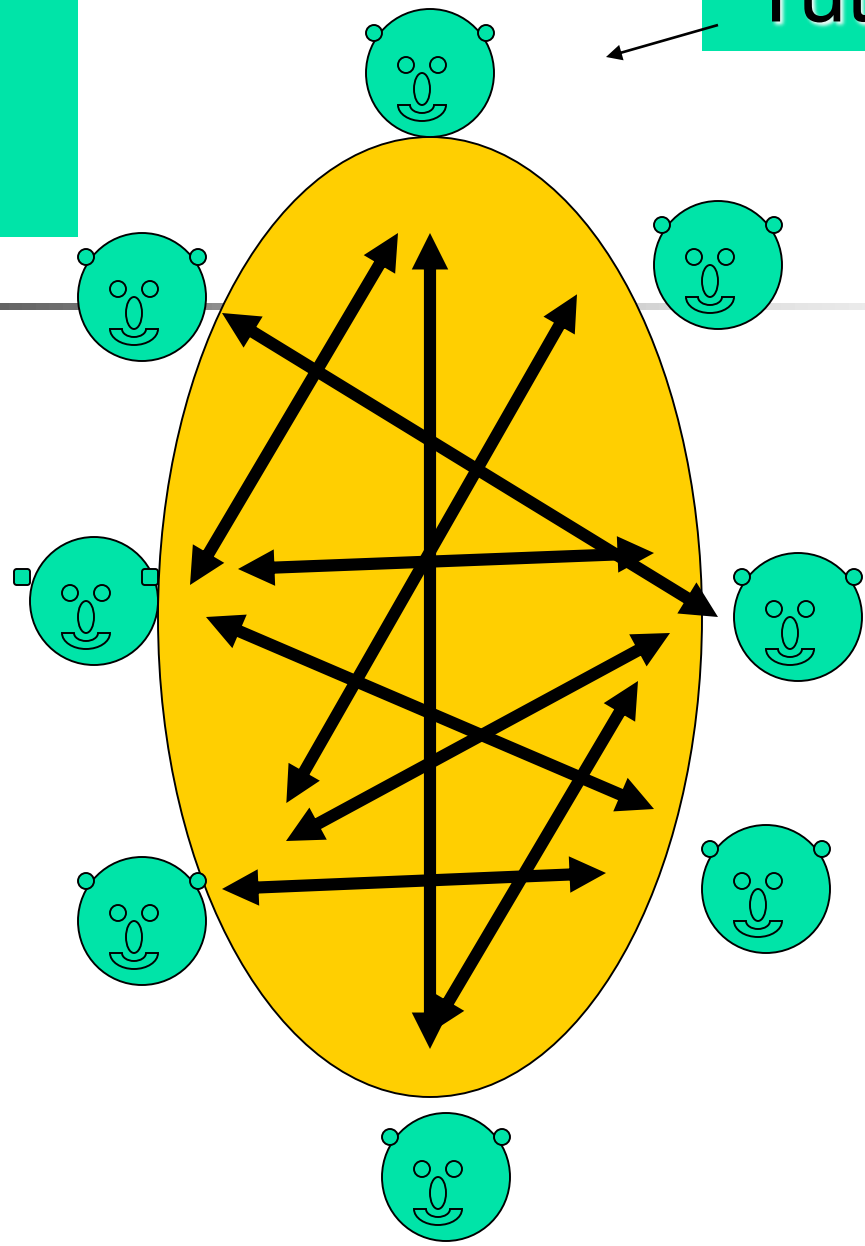


“Students”

PBL Tutorial

“Tutor”

“Students”



Problem Based Learning

Requirements for PBL Curriculum - 2

■ Faculty

- Knowledge of educational strategy and curriculum
- Knowledge of methods of assessment and evaluation
- Training on PBL
 - Small group facilitators instead of providers of information
 - Facilitating (not directing) PBL sessions i.e. talking less
 - Case design
- Reduction in didactic lectures/Increase in tutorial sessions
- Familiarity with 'community medicine'
- Familiarity with resources available to students
- Availability of counseling
- **Increase in workload**

Problem Based Learning

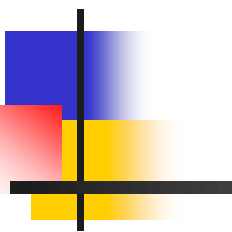
Requirements for PBL Curriculum - 3



■ **Students**


- Ability to take responsibility for own learning
- Must acquire prior knowledge through private study
 - Adaptation to reduction in lectures and increase in tutorial sessions
 - Maximization of research resources available
- Training on PBL
 - Small group teachings and dynamics
 - Participation in academic group discussions / Role playing
- Clinical skills acquisition in Teaching Hospital and Community medicine'
- **Increase in workload**

Ausubel's *subsumption theory*



"...The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly."

Ausubel, 1968)



Best Method of interactive learning

Students use a deep learning approach

Improvement of general problem-solving skills

Claimed Advantages Of Problem Based Learning

Meaningful Learning

lifelong learning skills

Development of self-directed learning skills.

It is more fun

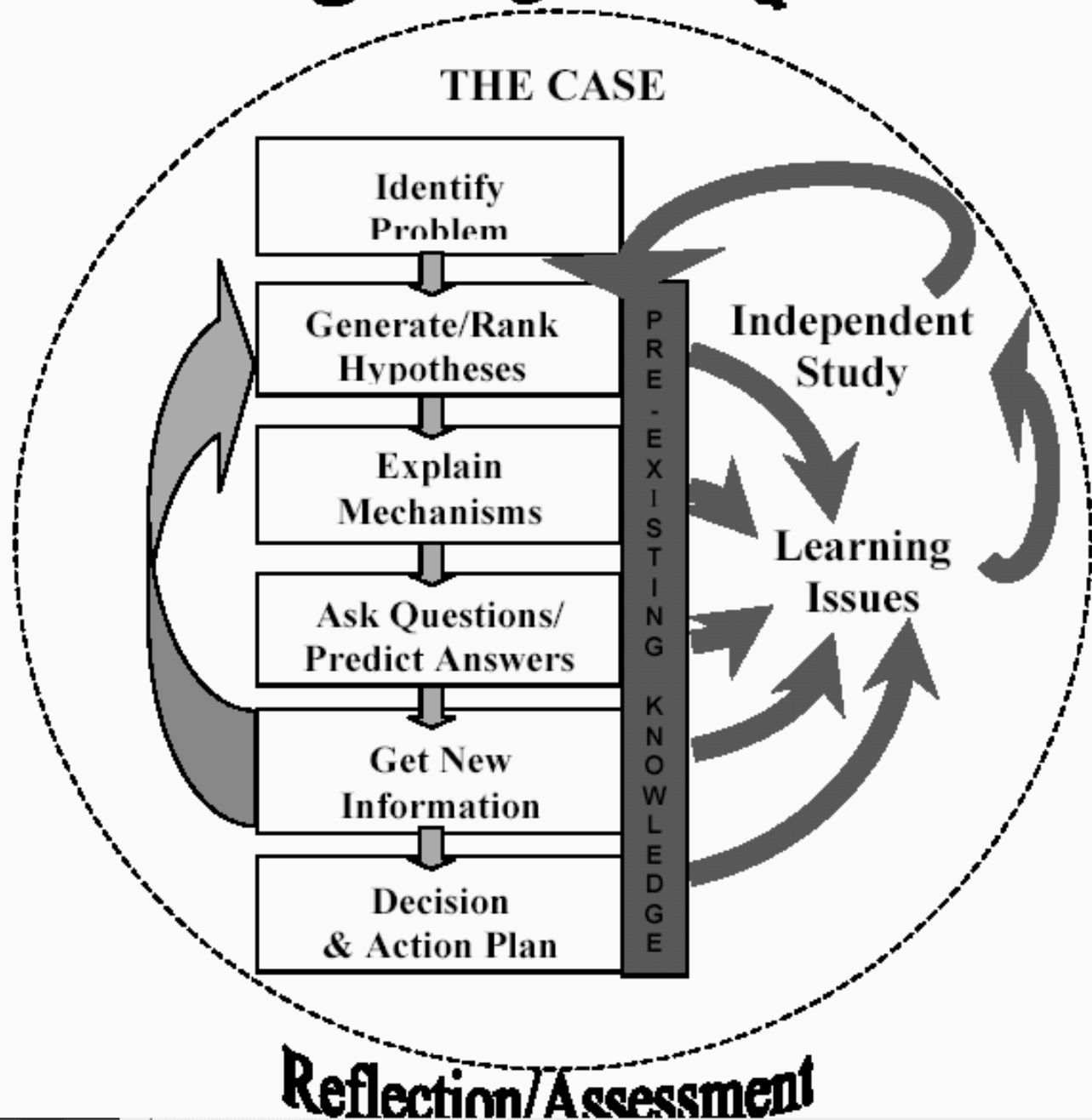
Increased retention of knowledge

Better Presentation skills

Resource utilisation

motivation for studying

Getting Started



Case Based Learning Process

Tutors took actual clinical cases in the ward.

Acute cases admitted in emergency were also taken

All suitable cases from ward were taken

Charted down learning objectives and were modified to meet the demands of the existing syllabus of the University

Session 1

The students were given the history of the patient with progressive disclosure. And after they hypothesized, they raised learning issues



Students examined Real patient in front of the facilitator

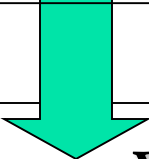


Tutor confirmed their findings and formatively corrected the students for clinical skills



Students given investigation details

Students develop the hypothesis and decide about learning issue. Facilitator finalizes



Chairman allotted various learning issues amongst themselves



List of faculty for integration from all the departments



Conclusion

Students' determination of their own "level of ignorance" (Learning Issues), *by themselves*, is fundamental to PBL

Intersession period



Students used all the resources including faculty from different fields to form a concise knowledge about the topic.

The faculty
For
Integration

Students also witnessed the actual management of the patient in the surgical wards and the surgical procedure Performed.

The faculty was acting only as facilitators and gave them a formed opinion based on experience

Students prepare consolidated knowledge about learning issue allotted to them

Session 2

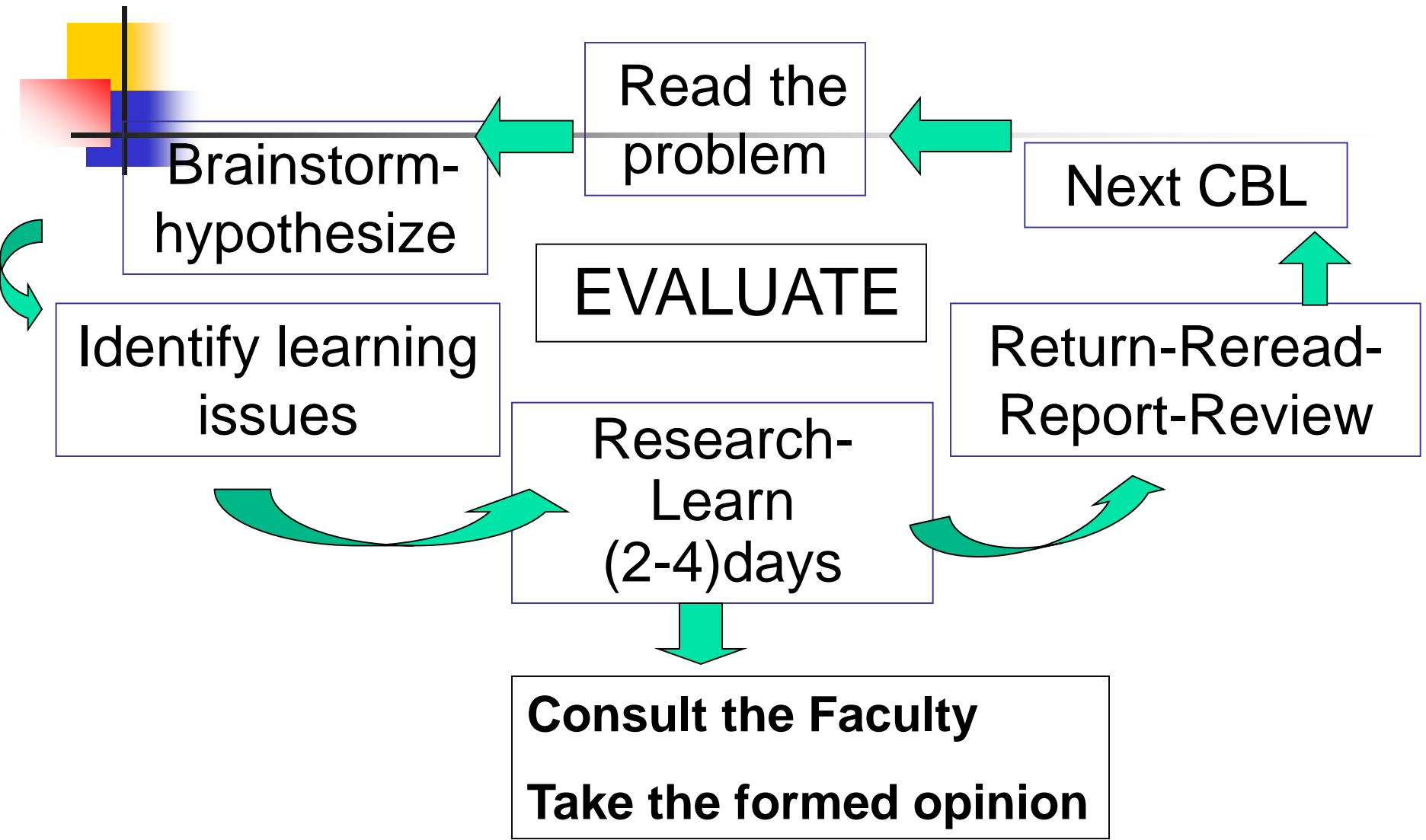
Students reported the problems solved to the group and the facilitators.

Tutor refined the knowledge in case required

Consolidation of knowledge by Senior surgeon was done

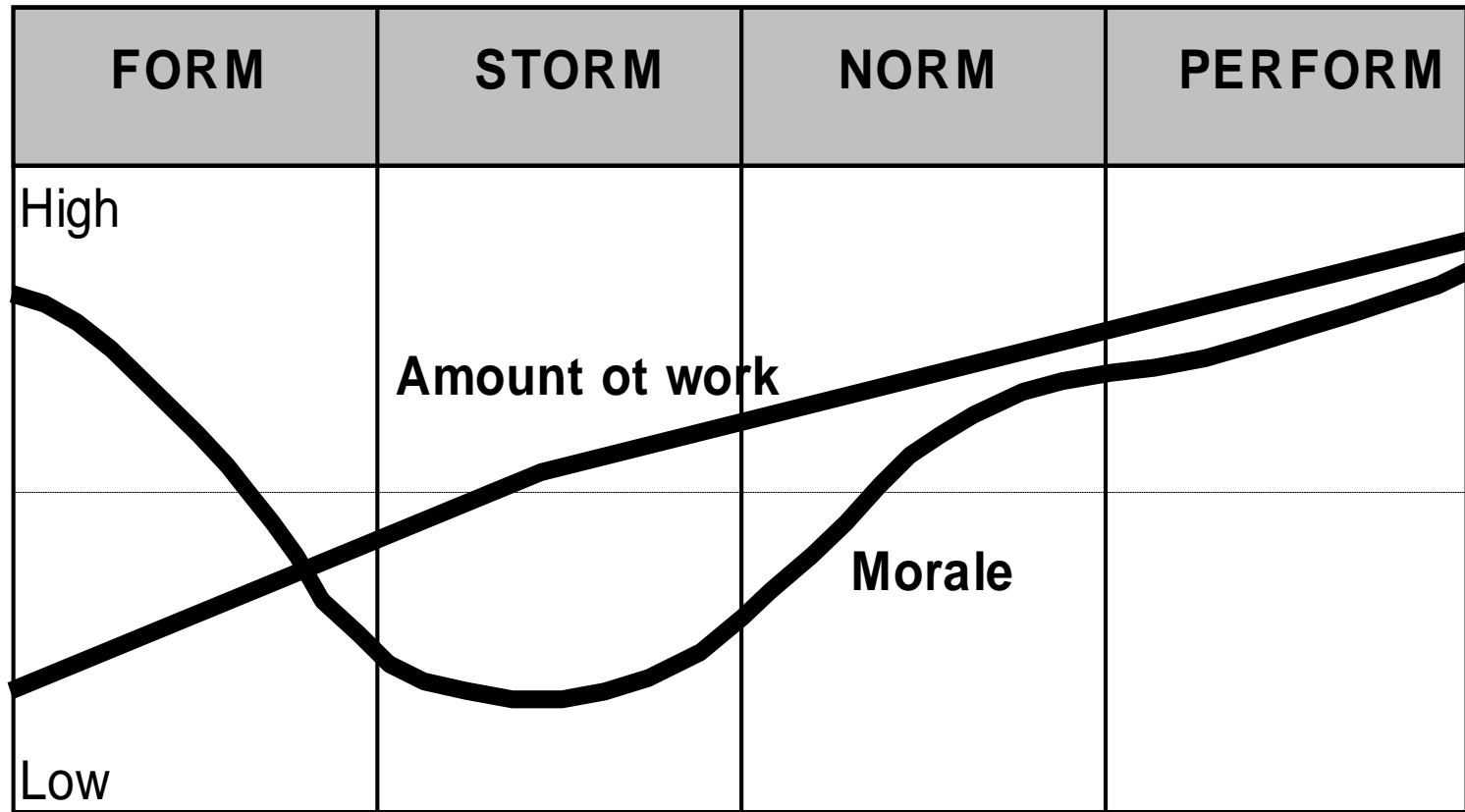
Develop a concept map of protocol for the disease

The Iterative Process of PBL



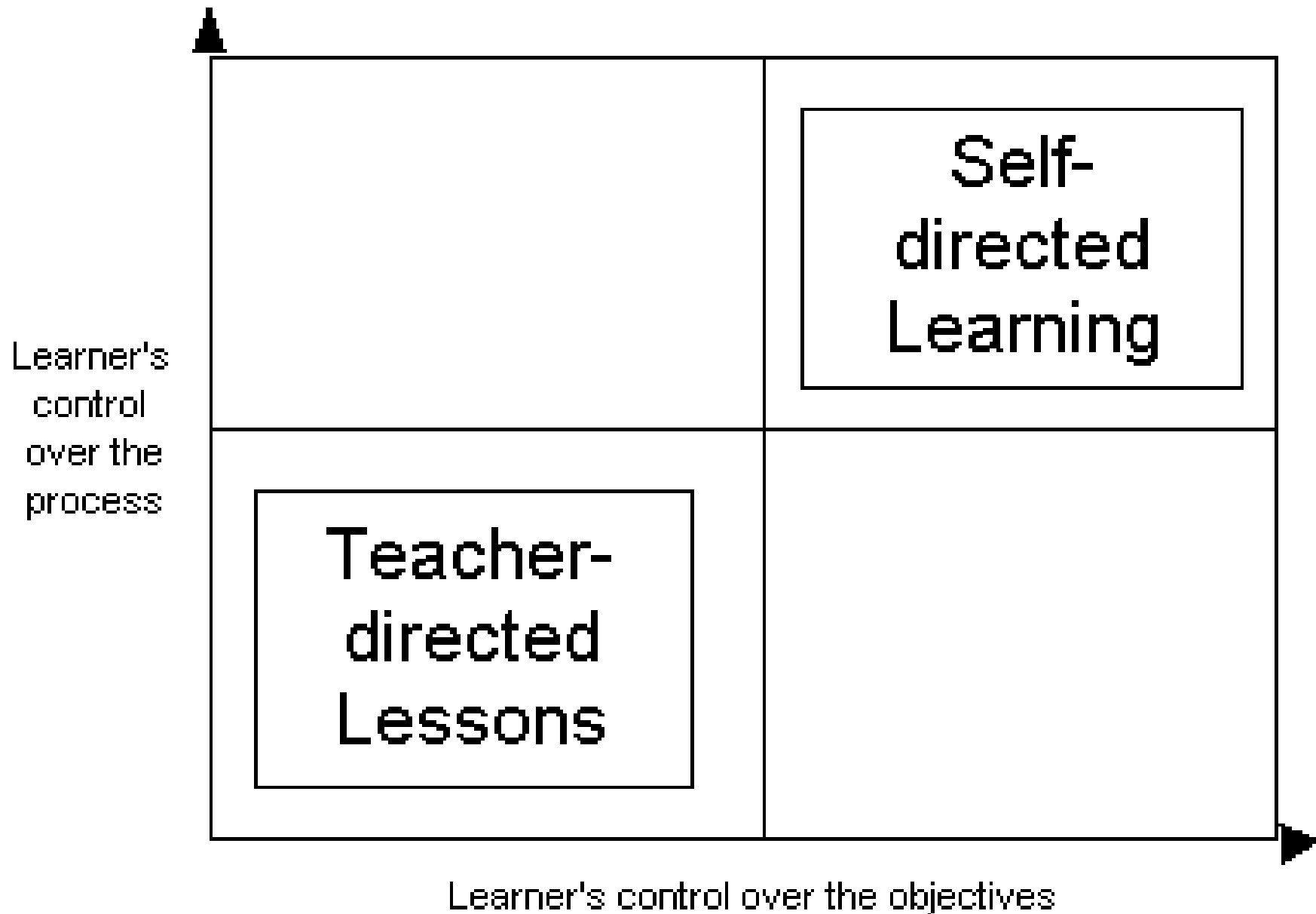
Attitudes & Behaviors of Group Members

Change in Work Group Development



The greatest sign of success for a teacher is to be able to say, "The children are now working as if I did not exist."

- Maria Montessori



Self-Directed Learning

Ownership of Learning

Extension of Own Learning

Management and Monitoring of Own Learning

- Articulate learning gaps
- Set learning goals and identify learning tasks to achieve the goals

- Apply learning in new contexts
- Learn beyond the curriculum

- Explore alternatives and make sound decisions
- Formulate questions and generate own inquiries
- Plan and manage workload and time effectively and efficiently
- Reflect on their learning and use feedback to improve their schoolwork

Reasons people engage in SDL

- **Time management/family obligations**
- **Cost of traditional learning**
- **Transportation**
- **Learner's own learning styles**
- **Prefer informal learning structure**

Technology helps in SDL

- **Author stream/Slide share**
- **Learning management system**
- **Free OER (Open Educational Resources)**
- **Personal Learning Networks**
 - **Social networks such as, Face book, Google group**
- **Video-conferencing tools**
 - **Skype and other...**
- **You Tube/iTunes**

Give a man a fish and you
feed him for a day.

Teach a man to fish and
you feed him for a lifetime.

Make a man a better
learner and he'll have a
varied menu for the rest of
his life.

"None of the world's problems
will have a solution until
the world's individuals become
thoroughly self-educated."

Buckminster Fuller

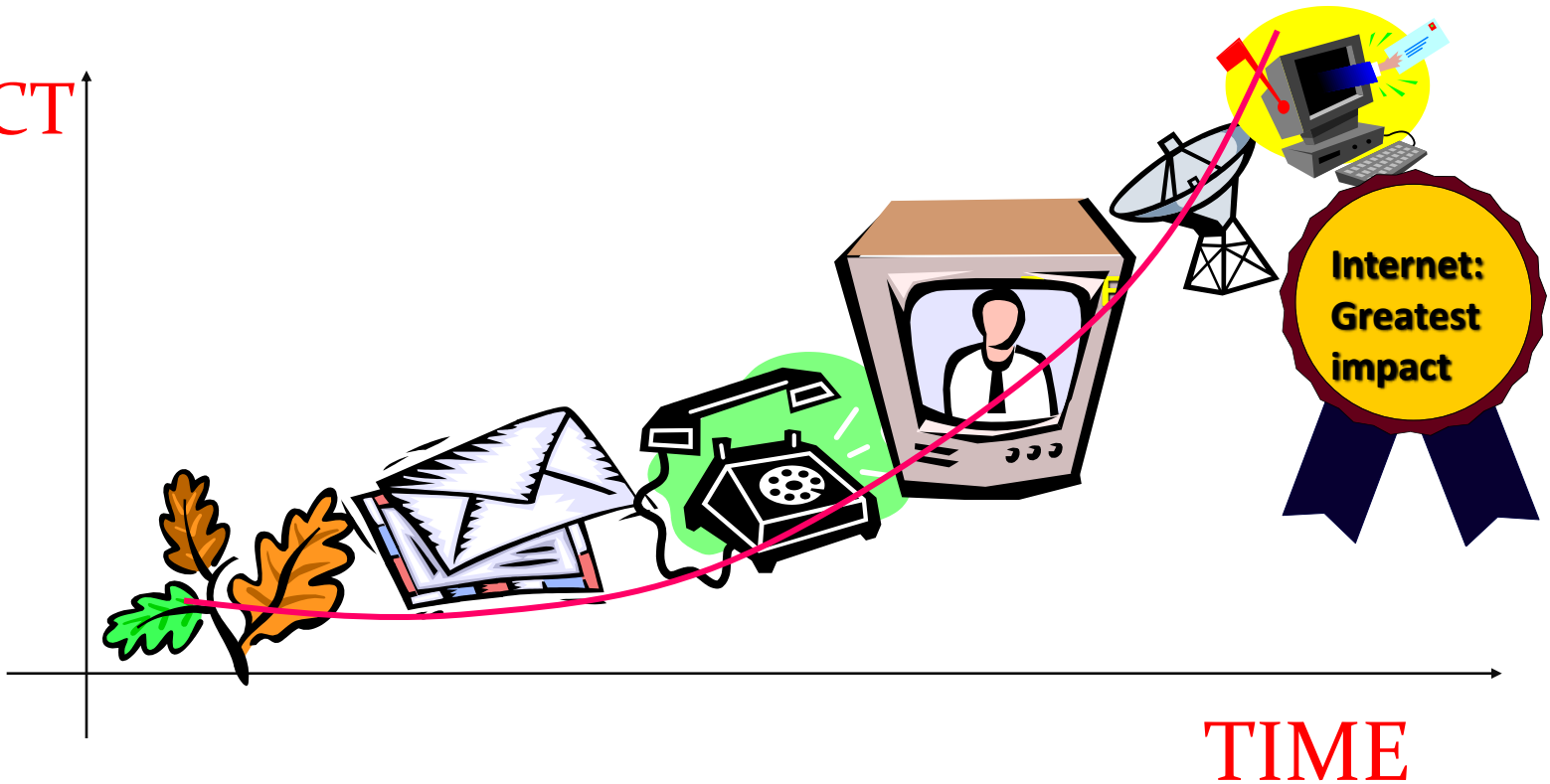
www.LifeLearningMagazine.com

Role of teacher in producing expert self-directed, life-long learners

- Role model for SDL
- Use all available technology
- Incorporate 'old' and 'new'
- Provide “authentic” environment to practice SDL skills
- Provide feedback and progressive challenge
- Create autonomy supportive environment
 - Take learner’s perspective into account
 - Provide opportunities for choice and provide information needed to make informed choices
 - Encourage learners to accept more responsibility

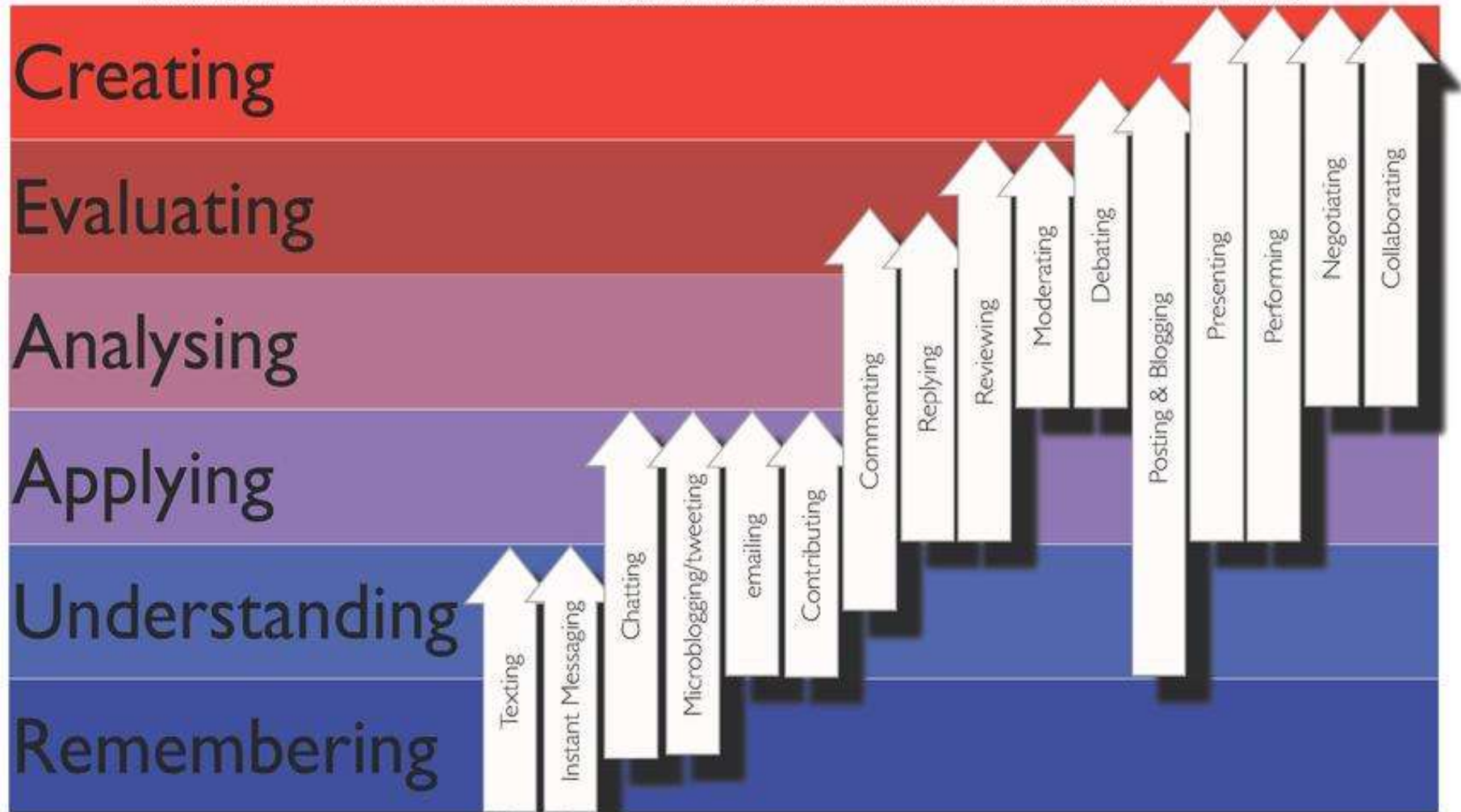
IMPACT OF TECHNOLOGY ON EDUCATION

IMPACT



Bloom's **Digital** Taxonomy & the **Communication** Spectrum

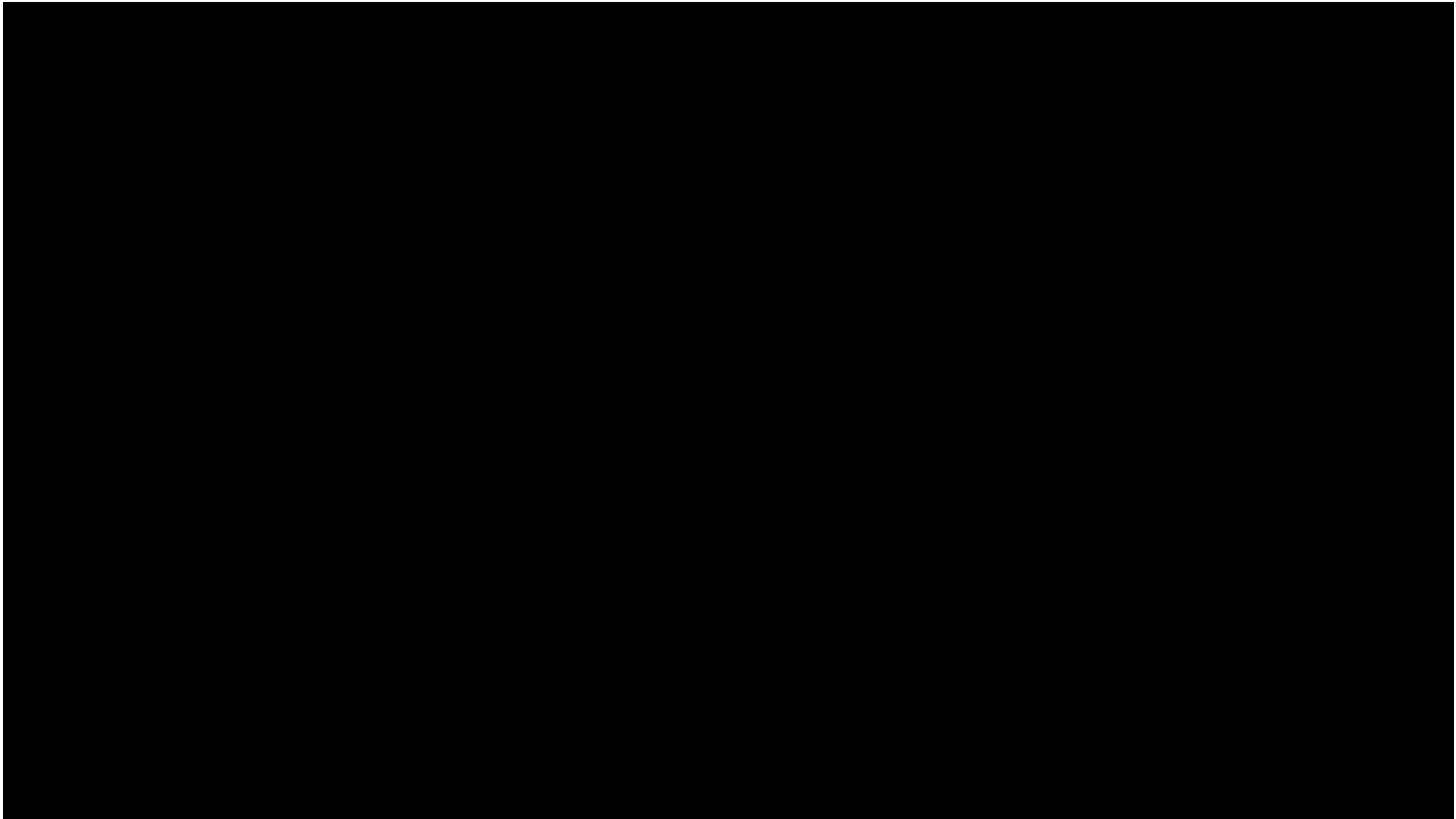
In Human history we have seen many different ages, the dark ages, the middle ages and more recently the space and information ages. We live in a time that might best be described as the **communication age**. We are always connected, always available and constantly communicating and collaborating across a spectrum of activities with increasing levels of complexity and creativity.



Collaboration is not a 21st Century skill, it is a 21st Century essential.

Andrew Churches

We live in exponential times



E- learning

- **Delivery of learning, training or education programs by electronic means which involves the use of a computer or any other electronic device to provide training, educational or learning material with the help of virtual learning environment.**

e-learning: **ELECTRONIC** learning

- ***e-learning*** : Computers and interactive networks simultaneously.
- e-learning is also called Web-based learning, online learning, distributed learning, computer-assisted instruction, or Internet-based learning.
- In an electronic on-line multimedia learning environment:
 - **interactive**
 - **learner-centered**
 - **Learner can be monitored & graded**

Types of e-learning

- **Synchronous learning**
- **Asynchronous learning**

Synchronous learning

- Learning and teaching takes place in real time (same time) while the teacher and learners are at different place.
- VIRTUAL creation of classroom.
- Examples include:
 - Live online lectures
 - Online CME's
 - listening to a live radio broadcast
 - watching live television broadcast
 - audio/video conferencing

Asynchronous learning

- Teacher prepares the courseware material before the course takes place. The learner is free to decide when he wants to study the courseware.
- Examples include:
 - self paced courses taken via Internet or CD-Rom
 - videotaped classes
 - stored audio/video Web presentations or seminars
 - recorded audio tapes
 - e-mail messages



E-LEARNING TOOLS

- **e-mail**
- **Audio chats**
- **Online forum**
- **Web**
- **Video conferencing**

Scope of e-mail

- **Every teacher & student should have an e-mail account**
- **Communicate with students**
- **Students can submit assignment**
- **Can upload / download attachments**
- **Create a paperless environment**
- **Efficient and cost effective**



E-learning tools: Audio Chat

- Synchronous communication tool
- Communicate with students



E-learning tools: Online Forum

- ❑ Asynchronous discussion forum
- ❑ Teacher can create discussion groups
- ❑ Teacher could post a question and request students to comment
- ❑ Students can post their comments
- ❑ Can encourage community participation
- ❑ Feedback

E-learning Tools: Web

- Wide range of materials available
- Resource centre
- Sharing of resources
- Supported by images, audio, simulation and multimedia
- Teacher: **facilitators**

E-learning tools: Video Conference

- ❑ Can conduct a live lecture
 - ❑ Communication with students
 - ❑ Support by audio, chat and whiteboard
 - ❑ Can be recorded and later be used for on demand lectures
- * Latest is **m-learning**.

THE MEDICAL COUNCIL OF INDIA (2008)

- Medical colleges must have a skills lab and adopt information technology in medicine.
- Colleges must have provision for e-library, computer room and Internet facility.
- Lecture theatres must have provision for e-classes / virtual classes.

Learning Management System (LMS)

Software application for the

- administration,
- documentation,
- tracking,
- Reporting
- delivery

Of e-learning education courses or training programs.

- Eg. TYRO.

Medical Education with Moodle

- Home
- Dashboard
- Calendar
- Private files
- Site administration

Course categories

▶ Expand all

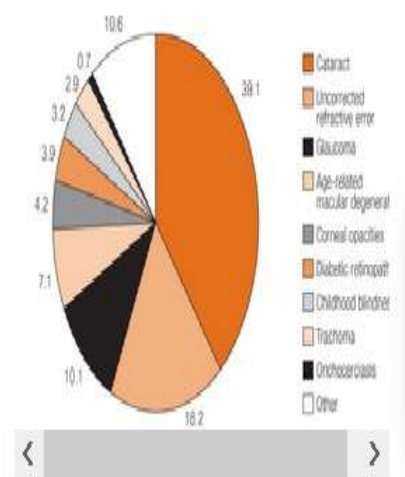
- ▶ Ophthalmology (6)
- ▶ Moodle (1)

Available courses

▶ Steve Chalazion Ptervium

BLINDNESS DATA

Fig. 1. Global causes of blindness as a percentage of total blindness, 2004





Home

Browse All Courses

Search

ATION

PHYSIOLOGY > CONTENT

Type	Document
	General Physiology
	Muscle and Nerve System
	Haematology
	Cardiovascular System
	Renal System
	Respiratory System
	Gastrointestinal System
	Endocrine System
	Reproductive System
	CNS - Sensory System
	CNS - Motor System
	CNS - Higher Functions
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15

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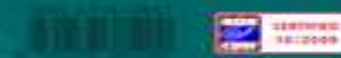
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A Healthcare Marketing Blog



Featured Content



Features of LMS

- Embedded videos
- PPTs
- Quizzes
- viewing grades
- item analysis
- announcements
- schedules
- evaluation
- evaluation reports



DISSOLUTION OF TIME

DISSOLUTION OF DISTANCE

Collaborative teaching

- INDEPENDENT OF TIME AND GEOGRAPHY
- Mass production ----- --- -Mass customization

Definition of intelligence is changing



Intelligence is no longer same as memory.

It is adaptability to change.

- 
- Learning has become DEMOCRATIC
 - First time in h/o civilization

Learning becomes personal



- Searching, browsing: use of computer power
- Information resources: new forms possible
- Services: new & new forms possible
- Costs: may save effort, money

- course content Exchange
- course content collaboration
- course content innovation
 - Knowledge creation
 - Intellectual capital

ADVANTAGES OF e-learning

- **Eliminates geographic constrains**
- Reduces travel cost and time
- Option to select learning materials that meets the level of knowledge and interest of the learner
- Study wherever they have access to a computer and Internet
- Self-paced learning modules allow learners to work at their **own pace**

ADVANTAGES OF e-learning (cond.)

- Different teaching learning styles can be adopted and facilitation of learning occurs through varied activities
- Development of computer and Internet skills that are transferable to other facets of learner's lives
- Builds self-knowledge and self-confidence and encourages students to take responsibility for their learning
- For research

**Learn everything you can,
anytime you can,
from anyone you can.
You will be grateful you did.**

- Unknown



Limitations of e-learning

- Unmotivated learners or those with poor study habits may fall behind
- Lack of familiar structure and routine may hamper learning
- Students may feel *isolated* or miss social interaction
- Instructor may not always be available on demand
- Slow or unreliable Internet connections can be frustrating
- Some courses such as traditional hands-on courses can be difficult to simulate

LIMITATIONS e-learning (Contd.)


- Access, knowledge and comfort with the Internet is required
- Proper time management is necessary
- * Giving more importance to the interface compared to the actual content.
- * Copyright issues (where plagiarized materials are freely uploaded)

For effective medical e-learning

*** Study materials**

- **have to be validated for construct and content**
 - **Easily accessible.**
 - **Easy to download.**
 - **Easy to understand (written in a language suited to the level of the students).**
- * Learning objectives should be clear and the course designed to meet those objectives.**

E-learning

e-source	USE
	Videosharing
Google docs	Collaborative projects
Skype	Messaging, internet telephony
Moodle	Course management system
Slideshare	Presentation sharing
Dropbox	File syncing software
Wikipedia	Collaborative encyclopedia
Linkedin	Professional networking
Evernote	Note taking tool
Edublogs	Educational blogging tool
Kindle	E-book reader
Authorstream	Uploading and embedding presentations

Smart phones

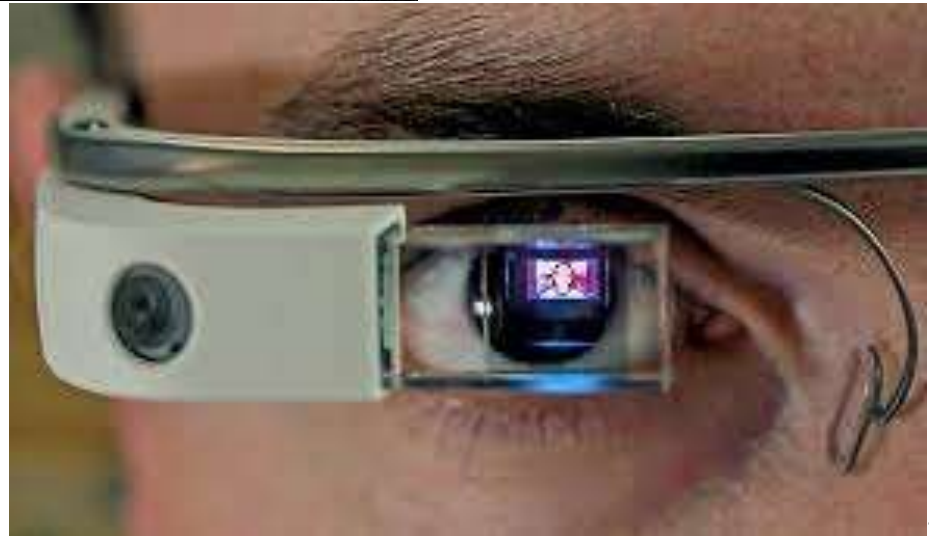


Technology changes how we **perceive** the world



@gleonhard

GOOGLE GLASSES





- A blog (a truncation of the expression weblog)
= Diary type content sites
- → discussion or informational site published on the World Wide Web and consisting of discrete entries ("posts") typically displayed in reverse chronological order (the most recent post appears first).

jamkarstudents - Dr Jamkar's students



[Join This Group!](#)

Activity within 7 days: [New Questions](#)

Description

This yahoo group is about surgical education specially made for medical students for Maharashtra University of Health sciences Nashik By and large I will put all my notes in the files section so that you will be able to understand the topic of lecture better, and need not take down the notes in class In addition I will put useful reading material. You also can upload any reading material on the site to make the site interesting

Happy learning
 Prof Dr Arun Jamkar
 Vice Chancellor,
 Maharashtra University of Health sciences nashik



- Home
- Messages
- Attachments
- Members Only
- Files
- Photos
- Links
- Database
- Polls
- members
- Calendar
- Promote
- Groups Labs (Beta)
- Chat

[Info](#) [Settings](#)

Group Information

Members: 252
 Category: [Students](#)
 Founded: Feb 24, 2002
 Language: English

Already a member? [Sign in to Yahoo!](#)

Yahoo! Groups Tips

Did you know...
 You can search the group for older messages.

Message archive by month: [\(View All\)](#)
(Group by Topic)

Search: [Advanced](#) [Start Topic](#)

Check out my photos on Facebook

Hi Jamkar, I set up a Facebook profile where I can post my pictures, videos and events and I want to add you as a friend so you can see it. First, you need to

Posted - Tue Jun 14, 2011 7:24 pm

Arun Jamkar
[drjamkar](#)
 Offline
 Send Email

Message History

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011						1						
2008	35	29	3									
2007	2	1	6	11	47	36	19	4	3	43	34	

NOTES FOR STUDENTS OF PROF DR ARUN JAMKAR

THESE PAGES ARE NOTES OF LECTURE DELIVERED BY PROF DR ARUN JAMKAR FOR STUDENTS OF III MBBS AT B J MEDICAL COLLEGE PUNE. THEY ARE EXPECTED TO GO THROUGH AND ADD /GIVE COMMENTS BUT BY ANY MEANS THESE NOTES ARE SUBSTITUTE FOR LECTURE

THURSDAY, JUNE 17, 2004

THE ADRENAL CORTEX

Embryology: Unlike the medulla, which is of ectodermal origin, the cortex of the adrenal is mesodermal in origin. It arises in a ridge, which appears just by the side of the mesonephros (Wolffian body).

Structure: The adrenal cortex is composed of large polyhedral cells, rich in lipoids, and the cells are arranged in three different layers, which, from outside inwards are named:-

- 1.Zona glomerulosa which produces Aldosterone
- 2.Zona fasciculate which is store house of Steroids
- 3.Zona reticularis.which manufactures rest of coricoid hormones

Adrenal Cortical Hormones: The hormones of the adrenal cortex are all esters of cholesterol; the polyyclic nucleus of

ABOUT ME

DR ARUN

[VIEW MY COMPLETE PROFILE](#)

PREVIOUS POSTS

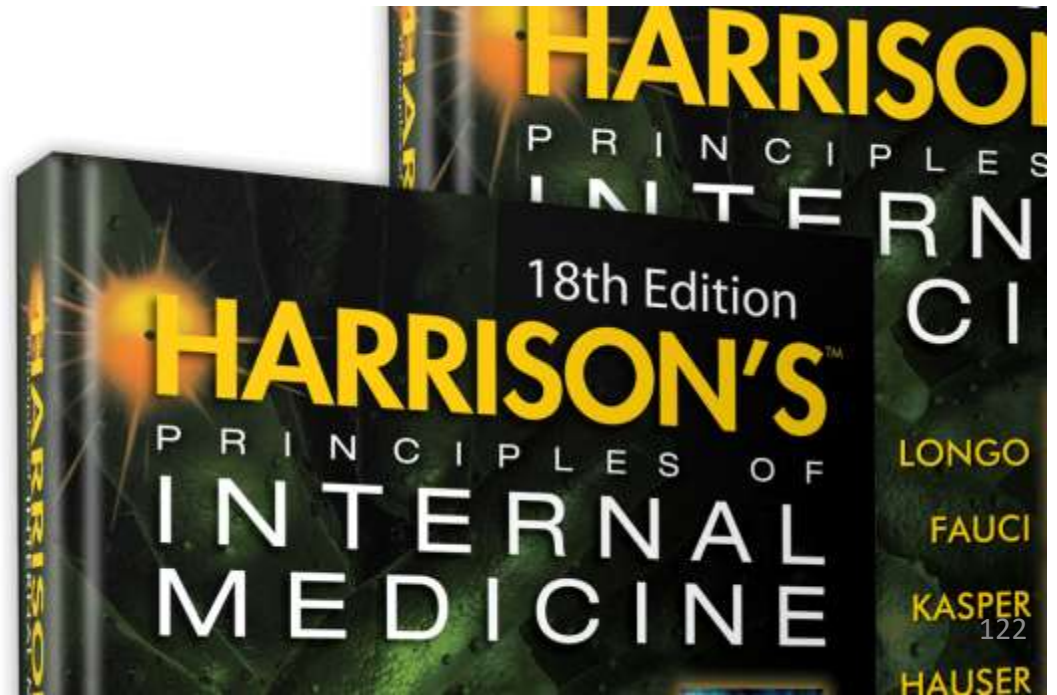
[Notes on Endocrine Surgery : Adrenal Medula](#)





- Mobile applications

Soft copy of books are available



Flipped classroom

- **Is a classroom in which students view the lecture components of the class at home, then work with the teacher in class on projects and what previously would have been called homework.**
- **Students watch lectures at home at their own pace, communicating with peers and teaching via online discussions.**

Traditional Classroom



+



- Instructor prepares material to be delivered in class.
- Students listen to lectures and other guided instruction in class and take notes.
- Homework is assigned to demonstrate understanding.

Flipped Classroom



- Instructor records and shares lectures outside of class.
- Students watch / listen to lectures before coming to class.
- Class time is devoted to applied learning activities and more higher-order thinking tasks.
- Students receive support from instructor and peers as needed



IN A NUT SHELL

- **E-Learning**
 - **It is not a cup of web pages! It is a complex learning environment!**
 - **We need a professional LMS system, which should be compatible with all e-learning modules.**
 - **We need motivated students as well as teachers!**
 - **And A LOT OF OPTIMISM 😊**

Summary

- SDL requires motivation.
- Teacher becomes facilitator.
- Technology greatly helps in SDL.
- Judicious use of e-learning is needed.

Knowledge is not merely about **information**, data, facts and numbers....





THANK YOU