



CODE & PIXELS

Interactive Technologies Private Limited

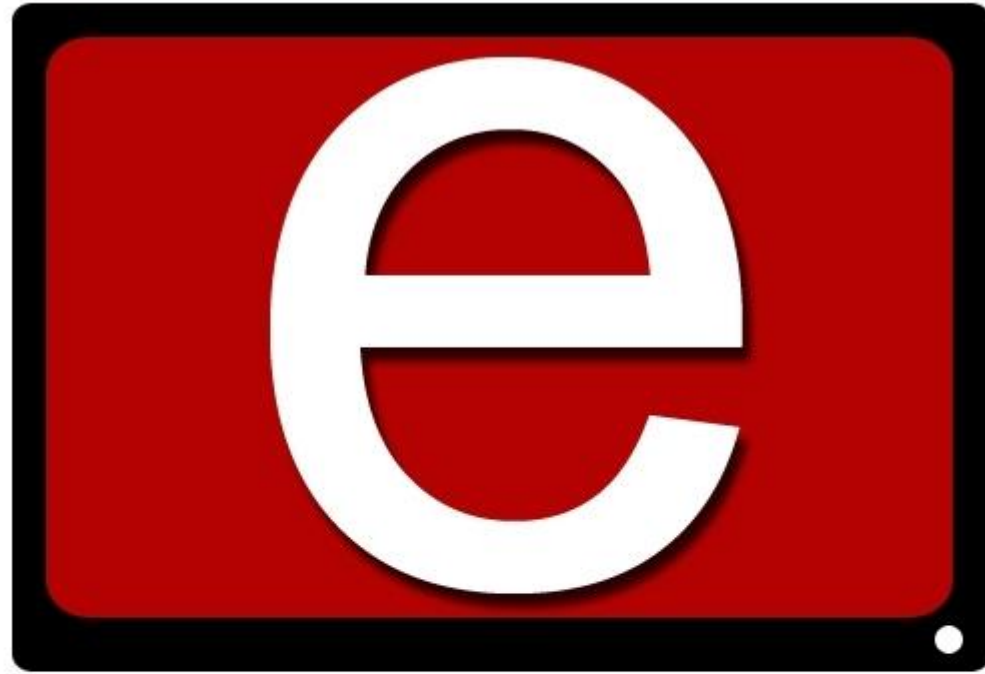
AN ISO 9001 : 2015 QUALITY CERTIFIED COMPANY

E-LEARNING PROCESS



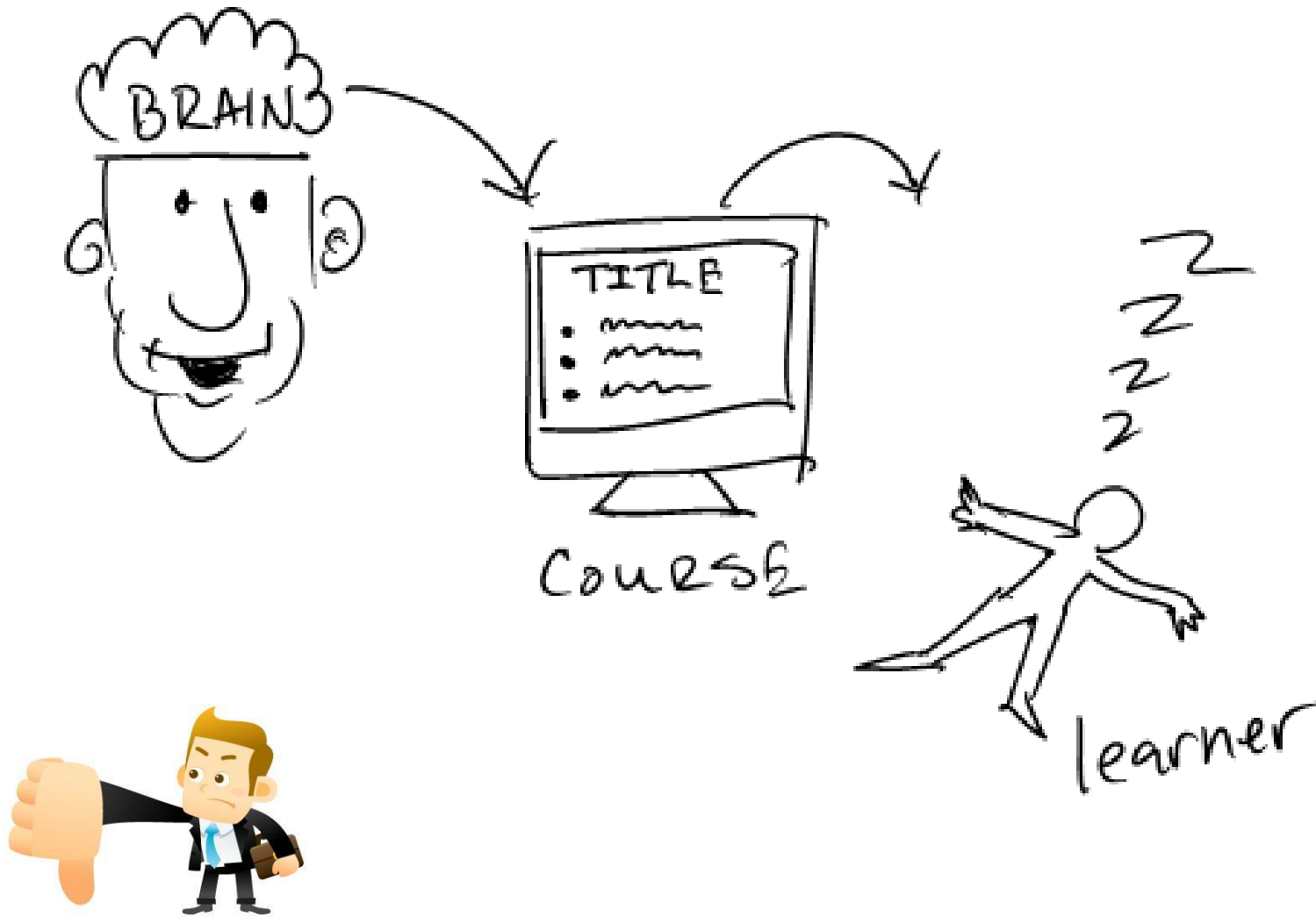
Types of E-Learning





COURSES





So, how's the
training?

Too technical,
boring.



Wow! This elearning
course helps me
sleep well!



Argh... I already
know this stuff!



~~FAILURE~~

SUCCESS





Let's create a best course



Objectives of any E-learning project :

- It's self-paced and Personalized learning
- Standardized Training
- Increase Productivity and Performance
- Higher retention - E-learning Promotes Knowledge - retention
- Any time and any where Learning. Just-in-time access to timely information.
- keep training costs low. Saves time and Money
- Necessity to train more employees within a short duration
- Measures Learning activity – elearning Keeps a track of learner performance
- Improved collaboration and interactivity among students.



Why E-learning projects fail to live up to the expectations ?

- Improper Identification of Course Objectives
- Improper identification of Audience and Pedagogy (Pedagogy and Andragogy)
- Lack of eLearning knowledge to SME
- Irrelevant or unhelpful Course content
- Lengthy courses i.e. more than 50 minutes
- Failure to keep all customers/stake holders involved and aligned with the e-learning goals of the organization
- Failure to dedicate reasonable time support to the e-learning initiative by SMEG /stake holder
- Technical Issues.
 - Not reachable to end users
 - Computer Literacy
 - Bandwidth constraints
 - Computer Lab timings (if not available in Online)



E- CONTENT



LEVEL -1

Simple slides/2-d graphics, illustrations, charts and standard GUI
Engagement achieved through point and click

LEVEL -2

Interaction and basic animations
2-d graphics, text, animation and option of audio narrative
MCQs, pop-ups, point and click, drag/drop,

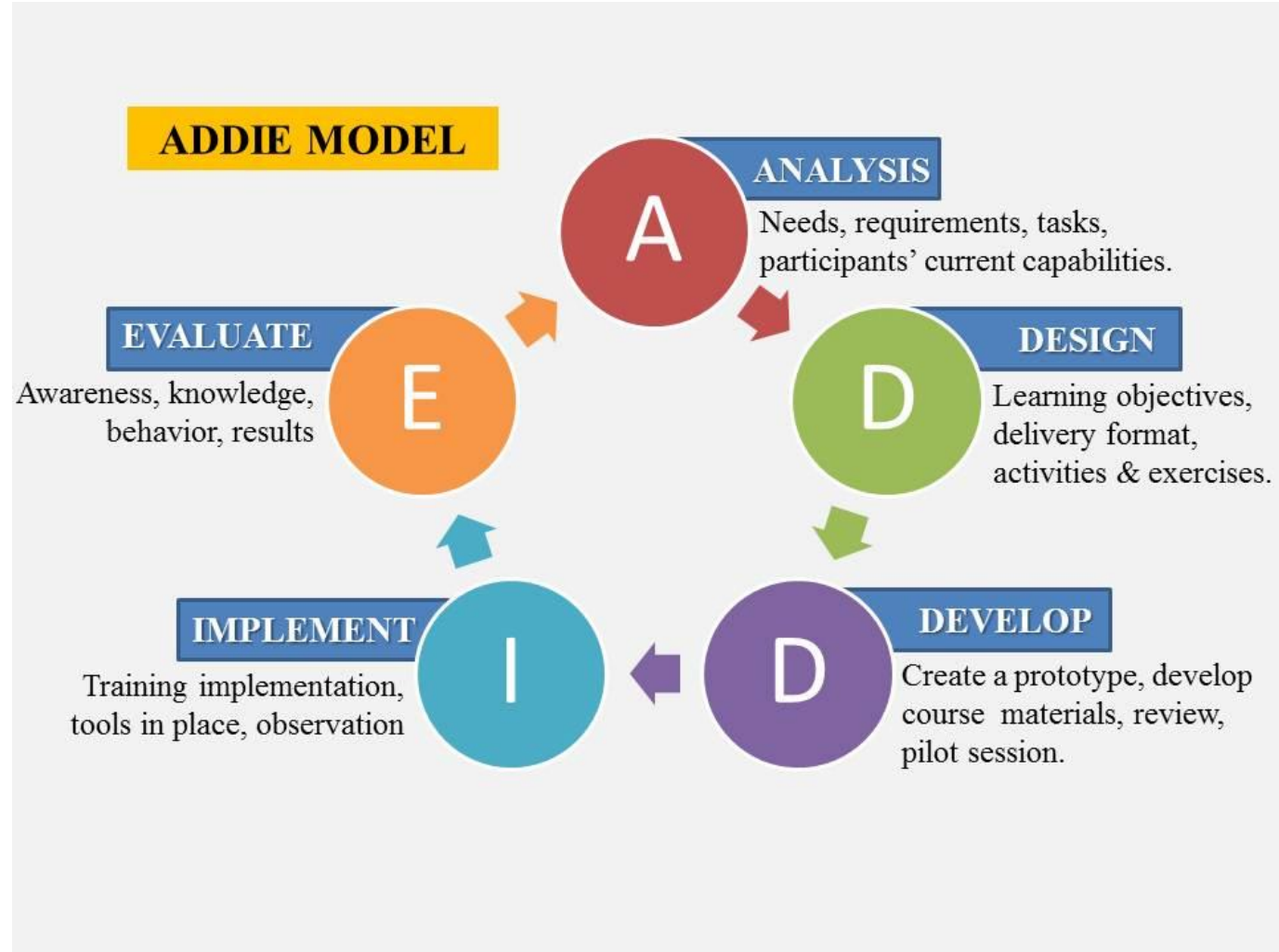
LEVEL -3

Advanced simulations, audio and video
Highly interactive and Game based e- learning.
Engagement with simulations that exactly mirrors the work situation.

Based on the learning need and Learning objective type of content is selected







Process :

a series of actions or steps taken in order to achieve a particular end.



Adult Learning Principles

for workplace learning

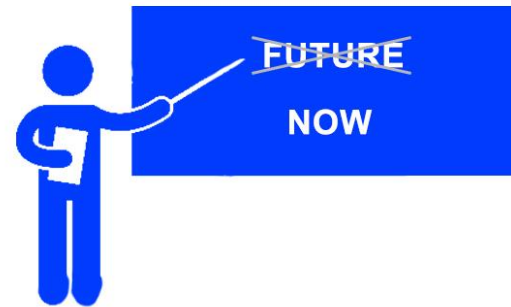
SELF DIRECTION

Adults want a say in the learning process



IMMEDIATELY APPLICABLE

Adults don't learn something because it might be useful in the future



EXPERIENTIAL

No sitting around listening to lectures

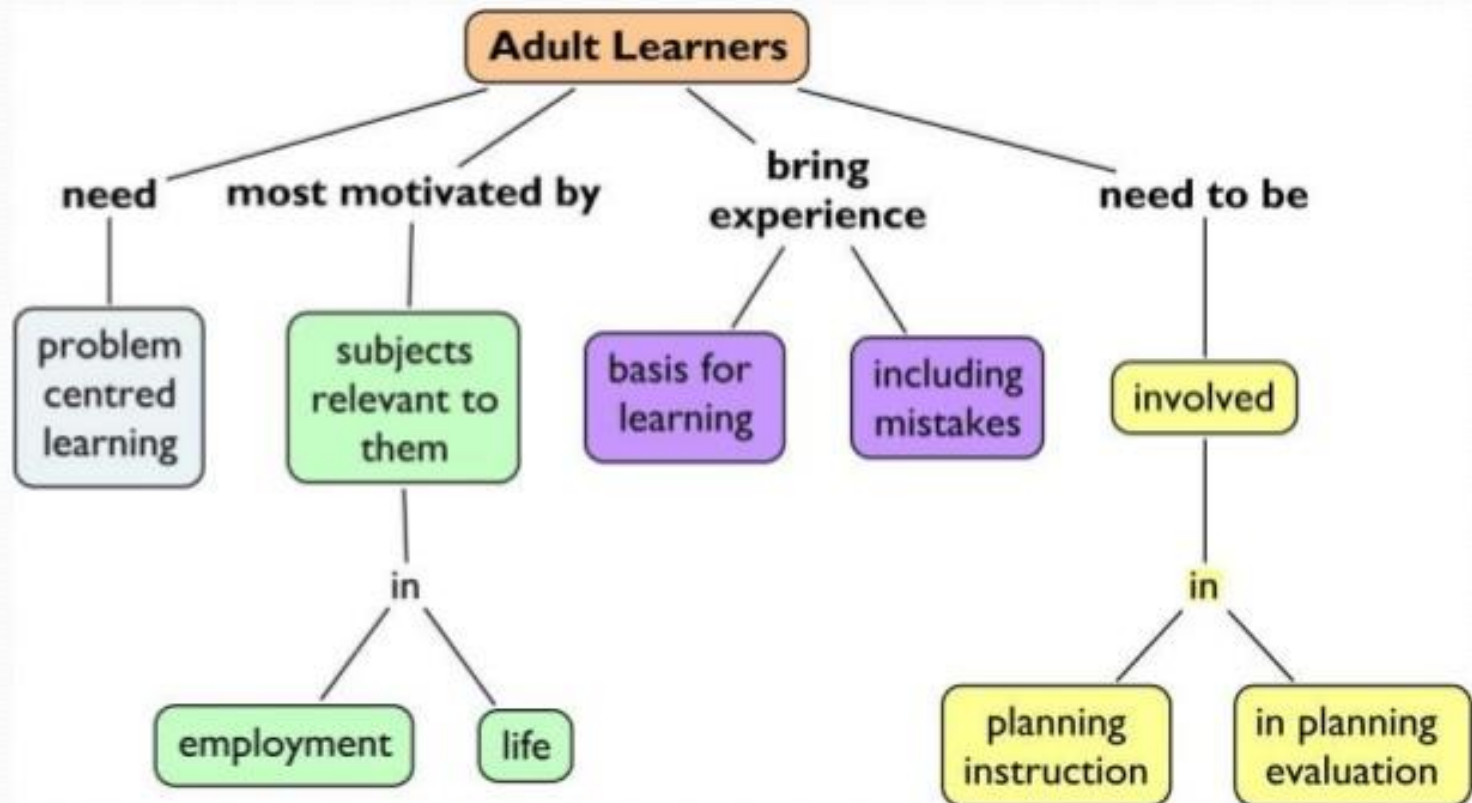


REAL LIFE

It is very hard to remember "stuff" without real-life application



Adult Learning Theory



Andragogical : Learner centered Learning method (Adult learners)

Pedagogical : Teacher centered Method (Schools/Colleges)



See it



Visual

Say it



Auditory

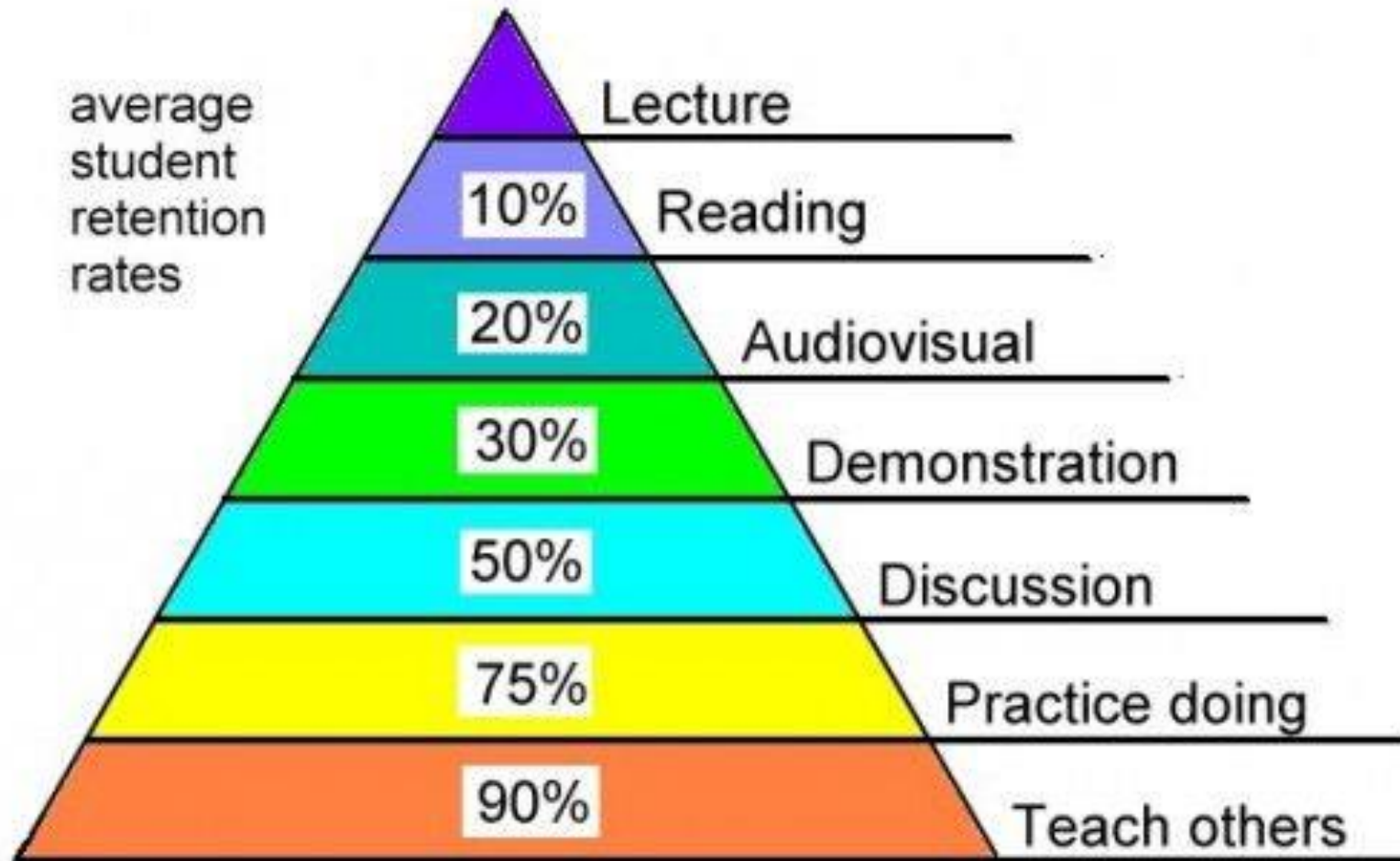
Do it



Kinesthetic



Learning Pyramid



Source: National Training Laboratories, Bethel, Maine



All these Instructional design Theories aims – Effective E-Learning course

Effective E-Learning course does not only mean :

- Rich graphics
- 3d / 2d animations
- Videos
- Scenarios
- Games
- Color full graphics
- Little text
- Interaction
- Simulation

CONTENT RICH???

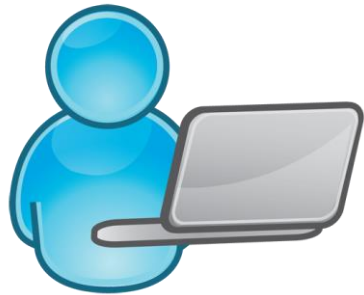
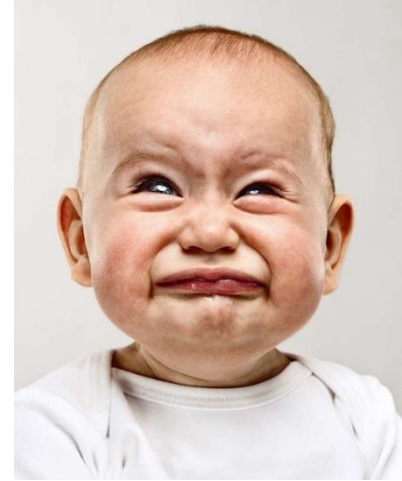
- Exact Course Objectives
- User Needs
- ~~Rich~~—Proper instructional design strategies

**AND Appropriate
Multimedia element**

(Text, Image, Audio, Video, Animation, 2d/3d



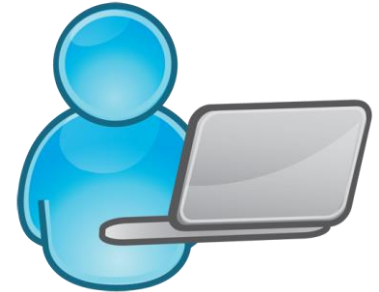
How to make Rich Course ?



Pre course

30 Minutes

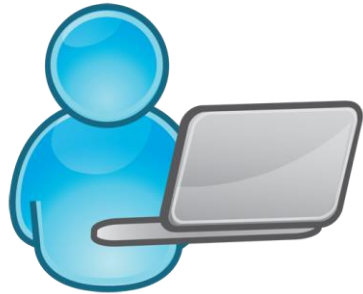
- User may get bored
- May feel sleepy
- May not understand
- Already known subject
- Not find interesting
- Confusion in Navigation
- Text Dump
- Over Graphics
- Clumsy / too loose
- Irritating sound / voice



Post course

**Attention Span is
VERY LESS**

To make Rich Course



Pre course

30 Minutes



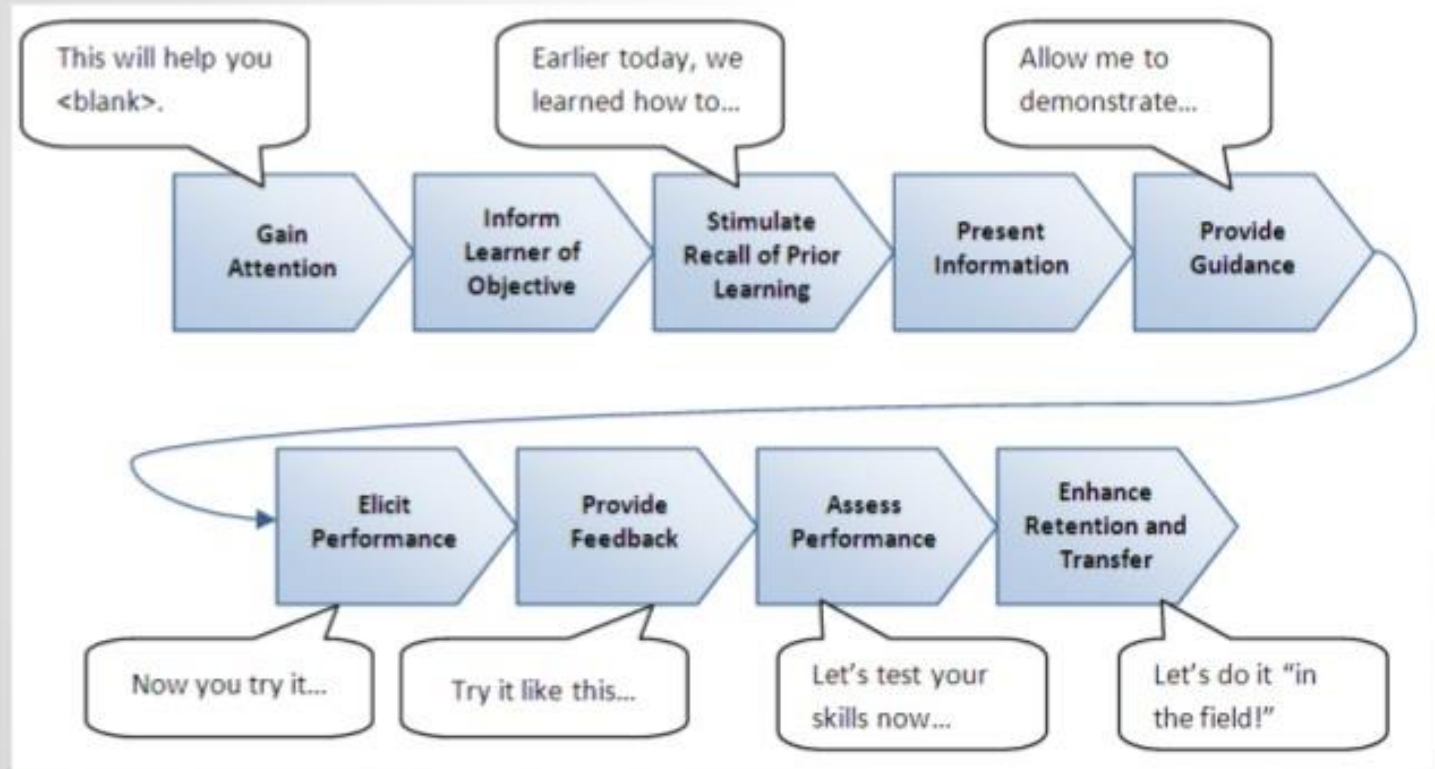
Post course

- Audience analysis (beginner , Advanced user)
- Proper course objectives must be defined
- Instructional designing strategies must be identified as per learning objective
- Like we say Screenplay is soul of film

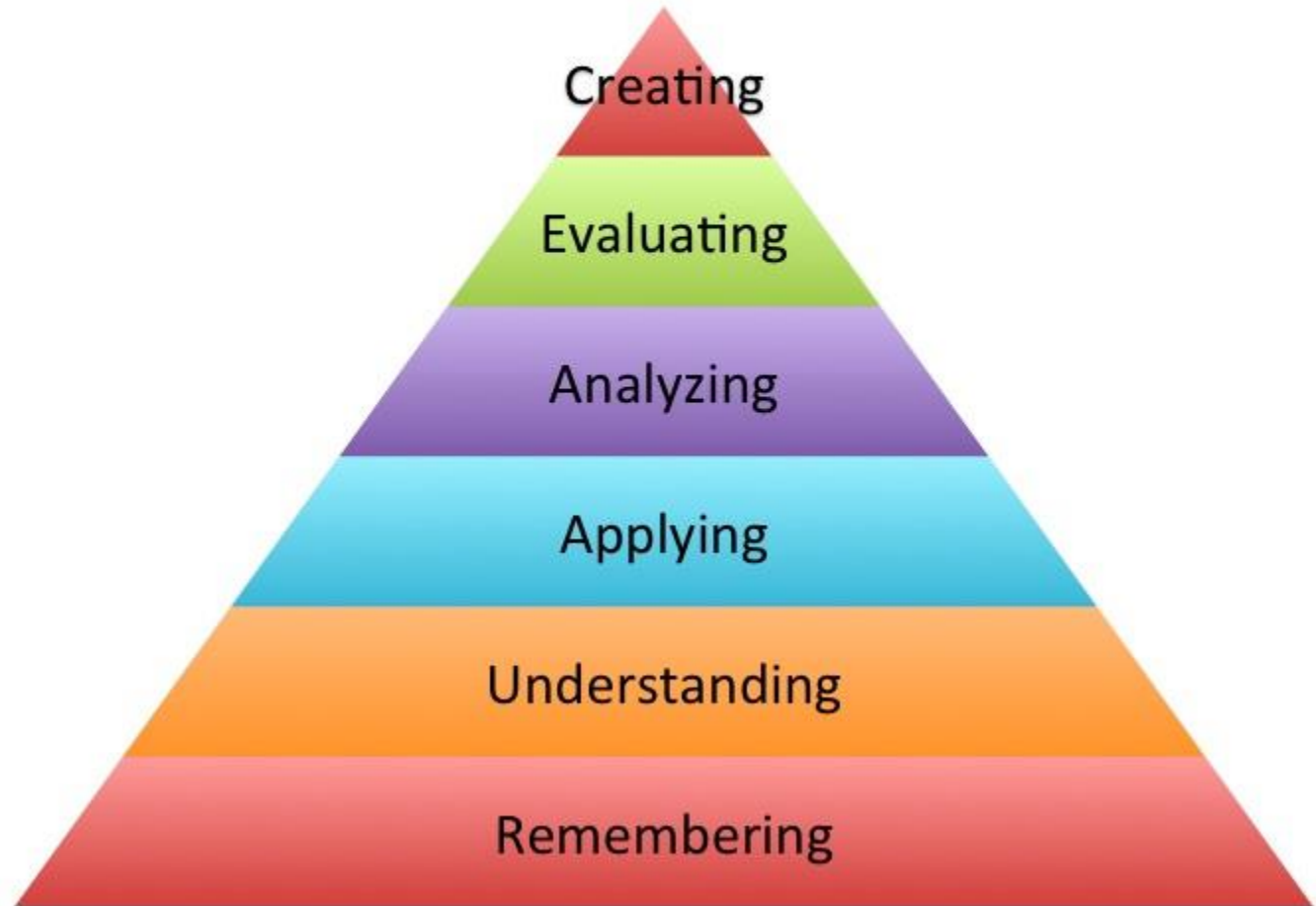
Effective **instructional designing** is soul of Course

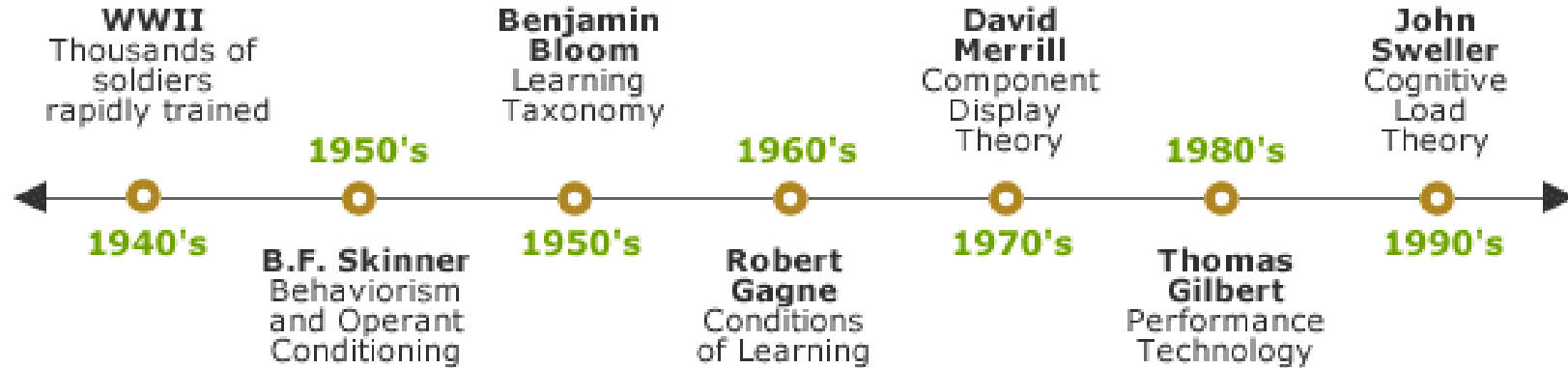
Instructional Systems Design

Gagne's Nine Events



The New Version of Bloom's Taxonomy





So many theories on Instructional designing / understand learners behavior

Even technology has changed but the challenge remain unchanged..

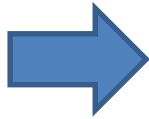
GAP between what is taught and what is understood



Appropriate usage of Levels

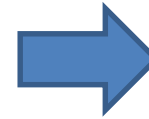
Media Elements

Graphic
Animation
Video
Text
Sound



Presentation Strategies

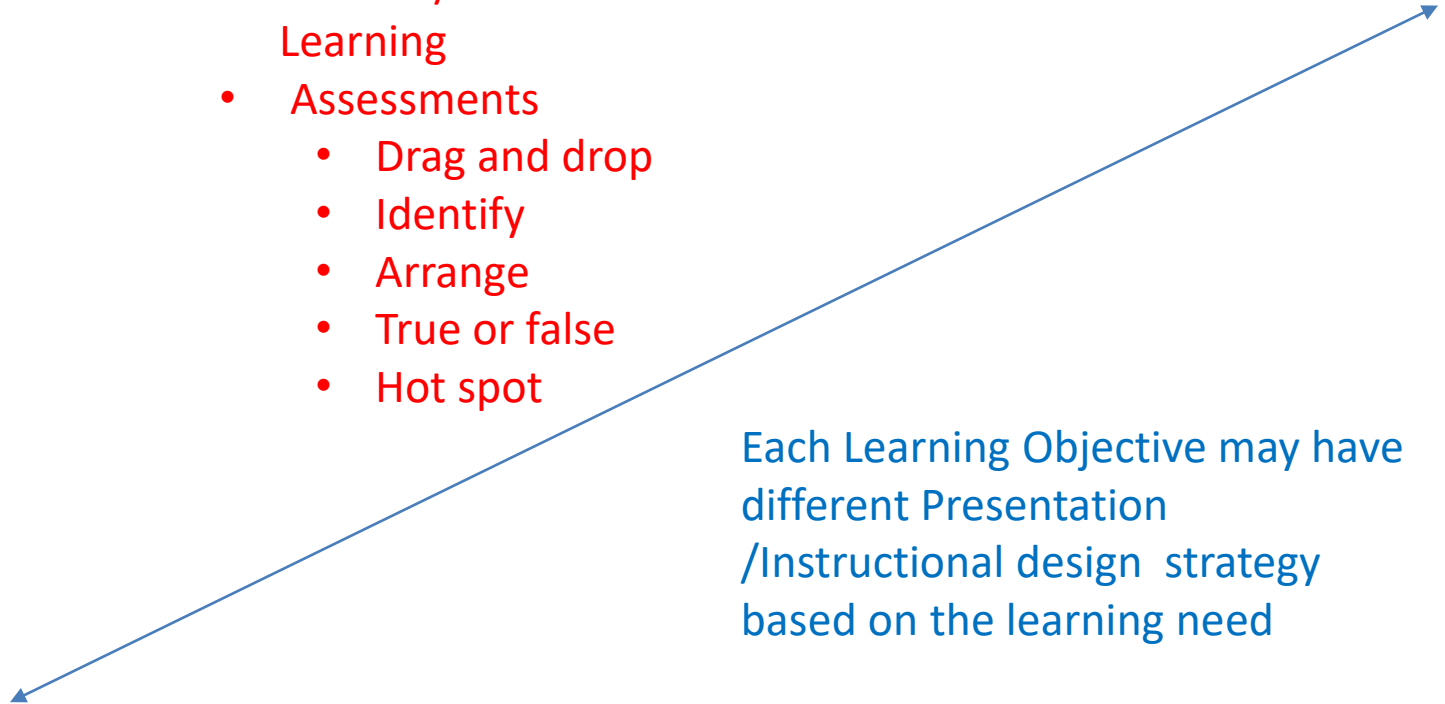
- Image Based Presentation
- Text Based
- Image and Text
- Image / Text/ Animation
- Animation
- Simulation/ Interactivity
- Stories / Scenario based Learning
- Assessments
 - Drag and drop
 - Identify
 - Arrange
 - True or false
 - Hot spot

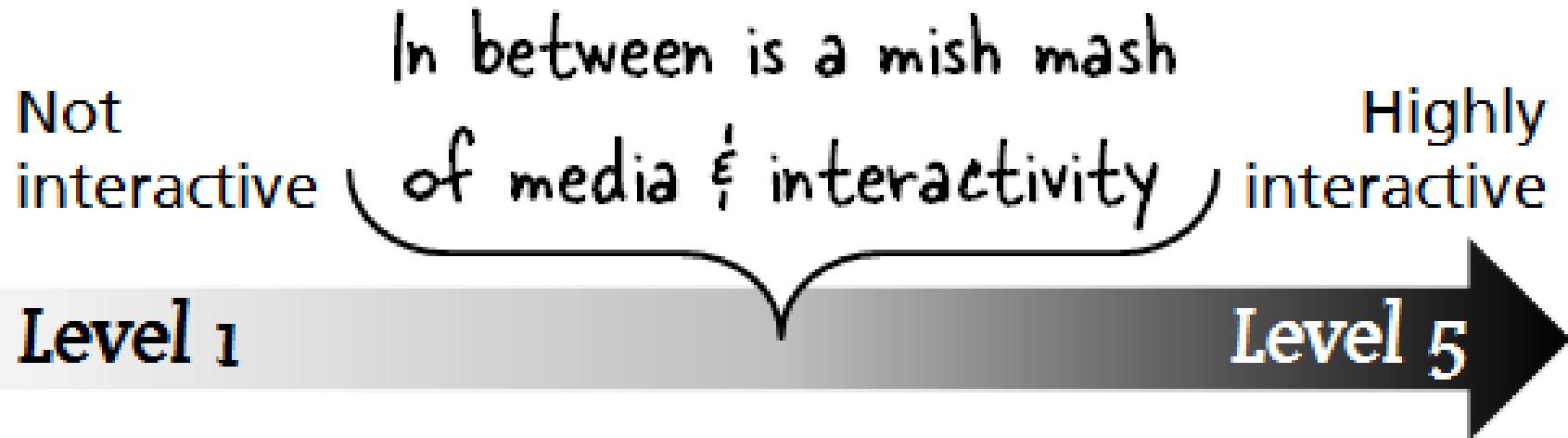


Learning Objective

- ❖ Concept -1
- ❖ Concept -2
- ❖ Concept -3
- ❖ Concept -4

Each Learning Objective may have different Presentation /Instructional design strategy based on the learning need





“page turner”

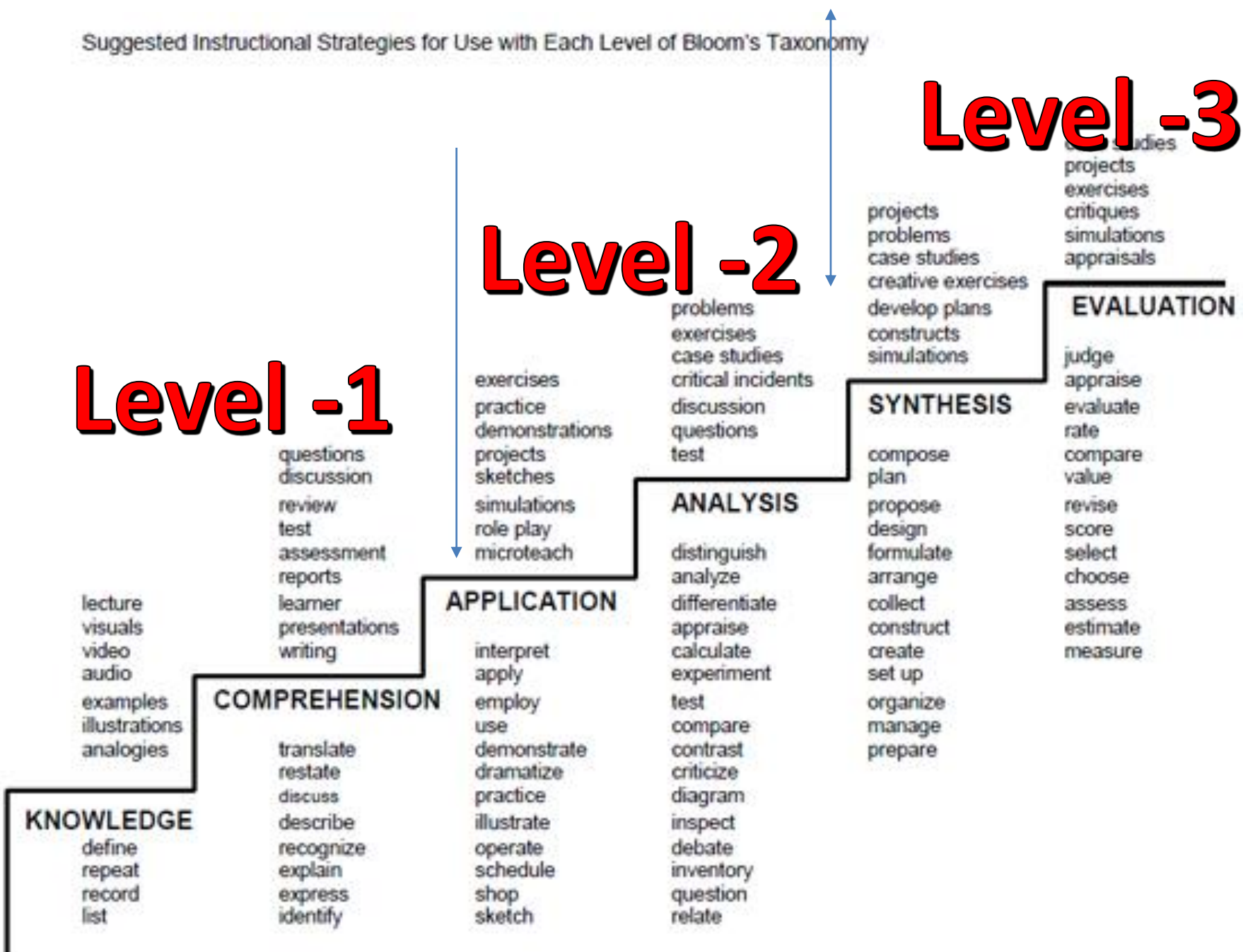


Suggested Instructional Strategies for Use with Each Level of Bloom's Taxonomy

Level -3

Level -2

Level -1



- Every course will be a combination of Level -1, Level 2 and Level 3
- Each learning objectives need specific level
- If correct Level is used for correct Learning Objective then E-Learning courses will become 100 % Functional / usable

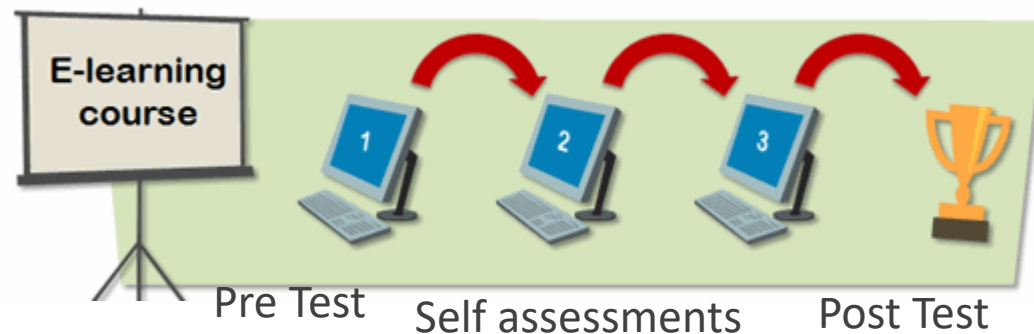


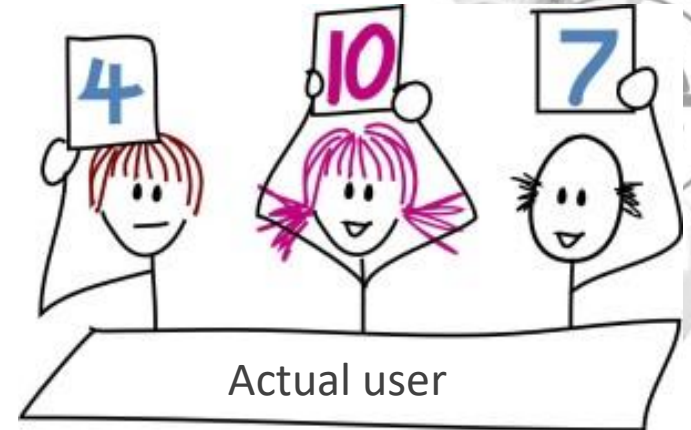
Quality Measurements

- There is no standard method / device to measure the quality of course
- We can not guarantee that Rich in Graphic course impresses the learner
- We also can not say that low graphic can be termed as poor course

HOW TO MEASURE THE QUALITY ??

- Pre tests , Intermediate self assessments and Post Test are very vital in assessing the quality.
- If the user has successfully answered questions in post test is the only option to measure the success of course

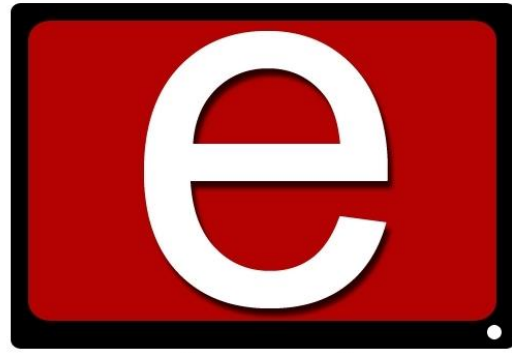




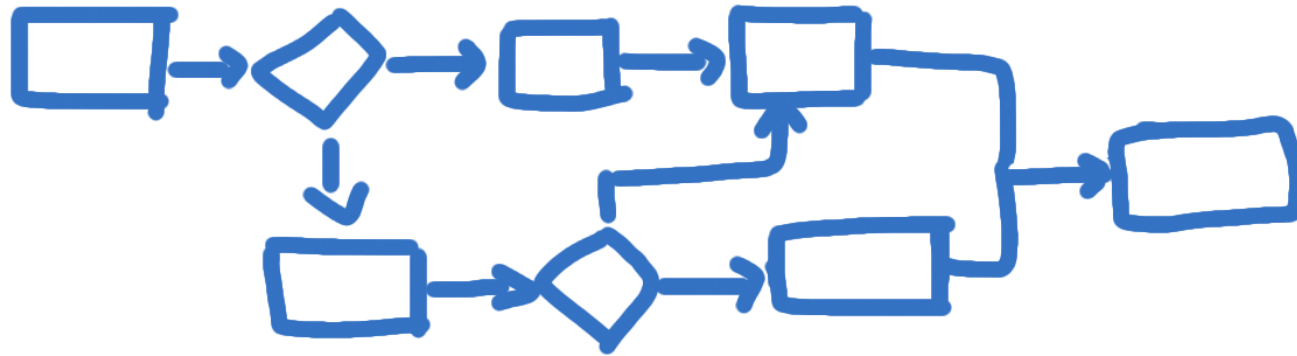
FROM CONTENT EXPERT OR FROM ACTUAL END USER ??



EXPERT REVIEW - USER FEED BACK



COURSES

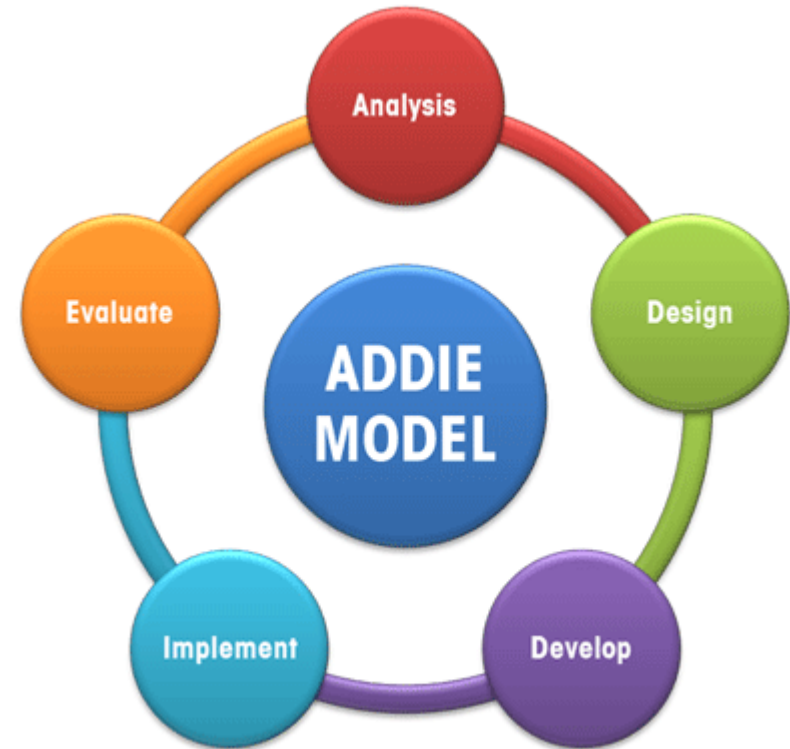


CONTENT DEVELOPMENT PROCESS



CONTENT DEVELOPMENT PROCESS

1. **Preparing Course Specific Document /DTOC**
2. **Collecting Raw content & Preparing Script**
3. **Designing of Story Board**
4. **Alpha version**
5. **Beta Version**
6. **Delivery of Gold Version**
7. **Implementation**
8. **Evaluation**



Any e-Learning project has to be developed as per Standard life cycle

No different process for different vendors / client

Standards and Requirements may differ



CSD - Preparing Detailed Table of Content

The first document that is to be prepared is Course Specific Document

- Document covers following Sections
 - Detailed Table of Content document (DTOC)
 - Name of the topic and approximate duration of each topic
 - Details of the Raw content provider for specific topic
 - Approximate duration of each course
 - Course wise /Topic wise reviewer details
 - Authorized approval authority details
 - Other stake holders if any
- Document nomenclature
- Change management information
- Story board format
- Graphical user interface format
- Quality Assurance Procedure document
- Development of 10 minutes Pilot



Workshop for all Stakeholders /SMEs on process

Analysis



Collection of Raw content and Preparation of Script document

Raw content shall be collected based on DTOC /CSD from all the stakeholder involved

Raw content

- Existing training material if any
- Word files, PPT files, PDF files
- Video lectures
- Video dump if any
- Audio lectures if any
- Presentations / case sheets/ other info if any

All the raw content shall be arranged sequentially in Word document as per Topic , Sub Topic, Sub –Sub Topic as defined in Detailed table of content and presented to approving authority.

Final text content will be freezed at this point that document is called Script Document.



SCRIPT DOCUMENT



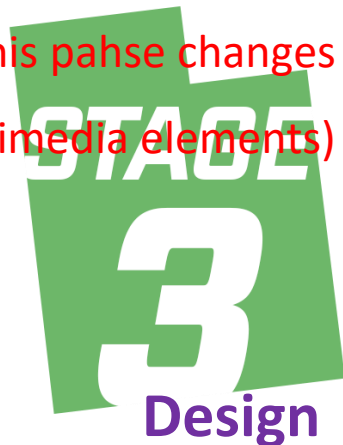
Preparation of Story Board

Based on the Script finalized, Story board shall be prepared and submitted for approval. Story board has visual description of final out put.



– Story Board Contains

- Course Objectives
 - Pre assessments
 - Content
 - Post assessments
 - Graphics description /Instructions to graphic designer
 - Images/Graphics used in final course
 - Animation description / instructions to animator
 - Videos to be captured / Video script/ screenplay
- Story Board is most crucial document in the project. It is Blue print of course.
 - Any changes or updations if any can be done in this phase only. (Up to this pahse changes are textual changes only from next phase onwards changes involve Multimedia elements)
 - It is like a screen play of a movie. After finalization of screenplay production starts.



STORY BOARD



DEVELOPMENT – ALPHA VERSION

- After approval SB by client, Production work starts.
- Development of Graphics, Animations, Video editing and integration will be done at this phase .
- GUI / style guide which is finalized in Pilot phase will be used to integrate content.
- Once the content is integrated then QC will be done internally end and shared to client for review
- This version will not have Voice over



STAGE
4

Development

ALPH VERSION



DEVELOPMENT – BETA VERSION

- Client Observations in Alpha will be fixed
- Sample voice over files shall be shared with client. Based on the selection, Voice recording will be done
- Voice will be integrated in to corrected alpha
- Audio integrated Alpha is called Beta
- Beta will be shared to client for review.



Development

BETA VERSION



DEVELOPMENT – FINAL VERSION

- Client Observations in Beta will be fixed
- Final version will be shared to client for re checking
- On the approval of Beta Gold Version will be delivered
- Gold version has following files
 - Raw content
 - Text documents
 - Voice over files
 - Videos captured if any
 - Final Script document
 - Final Story Board
 - Final Alpha
 - Final Beta
 - Source files



STAGE
6

Development

GOLD VERSION



Uploading in LMS

- SCORM version will be uploaded in LMS
- Training will be given to client
- Training manuals will be submitted
- Log in credentials will be generated and distributed
- Promo will be created and distributed amongst users
- Promotional activities if any shall be carried in this phase



Implementation

GOLD VERSION



Uploading in LMS

- SCORM version will be uploaded in LMS
- Training will be given to client
- Training manuals will be submitted
- Log in credentials will be generated and distributed
- Promo will be created and distributed amongst users
- Promotional activities if any shall be carried in this phase



Implementation

GOLD VERSION



Uploading in LMS

- SCORM version will be uploaded in LMS
- Training will be given to client
- Training manuals will be submitted
- Log in credentials will be generated and distributed
- Promo will be created and distributed amongst users
- Promotional activities if any shall be carried in this phase
- course is evaluated by taking feed back from users
- Evaluation sheet will be prepared

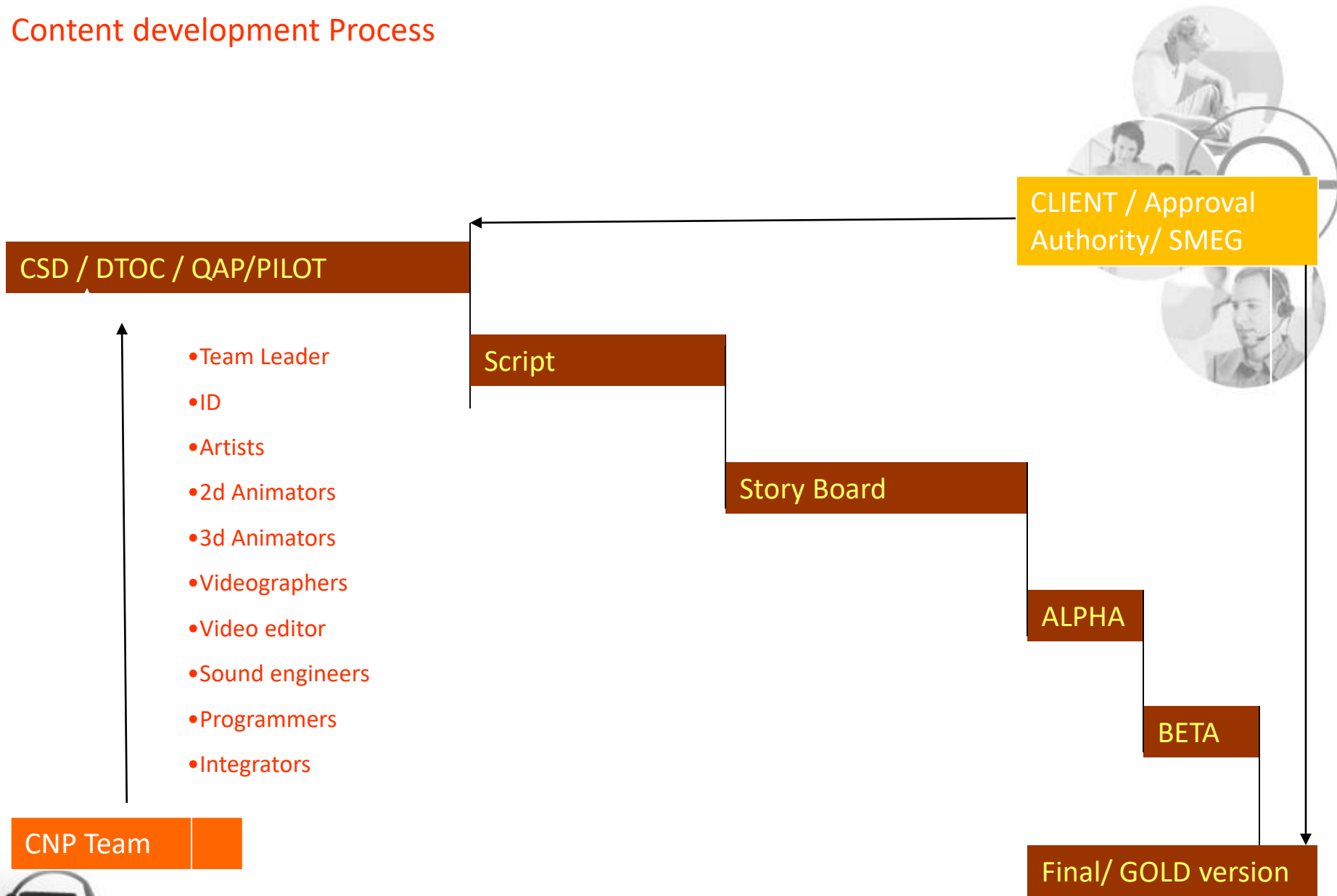


**Implementation &
Evaluation**

GOLD VERSION



Content development Process



Content development Process



CNP Team

Instructional Designer

Script Writer

In house SME

QC Manager

Delivery Manager

Project Manager

Course Specification Documents

Information Gathering / System Study

Needs analysis

Learners analysis

Technical analysis

Tasks analysis

Quality Assurance Procedure

Setting standards for

- TOC, Script, SB

- E-Content(ALPHA, BETA, GOLD)

 - Text , Images

 - Video, Audio

 - Animations, Navigation

- Prototype designing

 - Graphical user interface screen (GUI)

 - Pilot

**CLIENT / Approval
Authority /SMEG**



Development Methodology & Approach

We follow the proven five-step development process “ADDIE” which breaks down the entire development life cycle into 5 phases, with a series of activities corresponding to each phase.

This methodology is supported with defined processes, tools, templates, Quality Assurance and rich Project Management, that allow project teams to achieve project objectives on time and efficiently.

Analysis

- Need Analysis
- Learners Analysis
- Technical Analysis
- Tasks Analysis
- Scope Finalization
- Lesson Plan Preparation
- Approval of Lesson Plan

Design

- Define Instructional Strategy
- Understand the subject
- Storyboard Preparation & review
- Storyboard Approval
- GUI Interface design, Review & Approval
- Define Standards & Review

Development

- Media elements development
- Audio Recording & Editing
- Content Integration
- LMS Integration
- Testing – Graphics, Integration & LMS testing
- QC

Implementation

- Implementation Support
- Training
- Client Acceptance Testing
- Operational Manuals
- Client Acceptance

Evaluation

- Formative Evaluation
- Summative Evaluation

Content Development Flow Chart

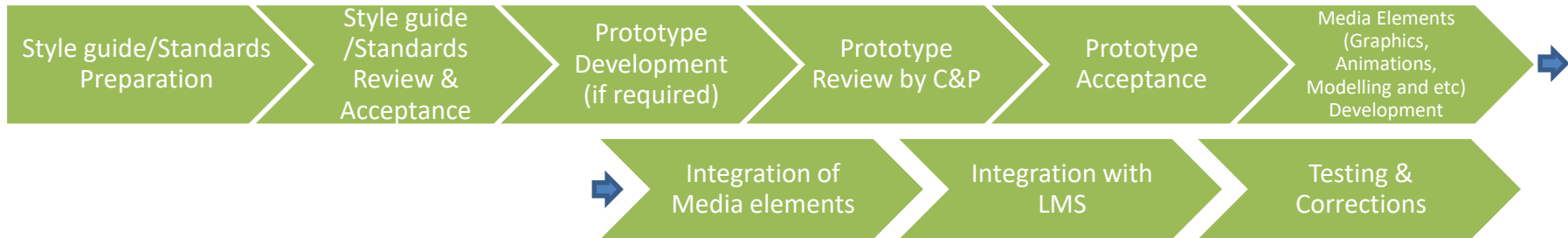
1. Scope of Work



2. CBT Design Methodology



3. CBT Development Methodology



4. Testing & Implementation Methodology



Our Team – Content Development

Instructional Designer

- Experts in usability
- Can conceptualize content
- Can conceptualize user interaction
- Can visualize final presentation
- Have excellent written communication skills
- Knowledgeable in key learning methodologies
- Knowledgeable in multimedia technologies
- Performs in research for content
- Experts in the creation of assessment and exams

Multimedia Engineers

- e-Learning engineering standards - (SCORM & AICC)
- Web standards
- Audio production, scrubbing dubbing and syncing
- Streaming video
- Flash action scripting
- JavaScript

Graphic Designers

- Layout
 - Interface design
 - Visual design
 - Page layout
- Graphics
 - Brainstorming / conceptualize
 - Animations
 - 2D, 3D
 - Special effects



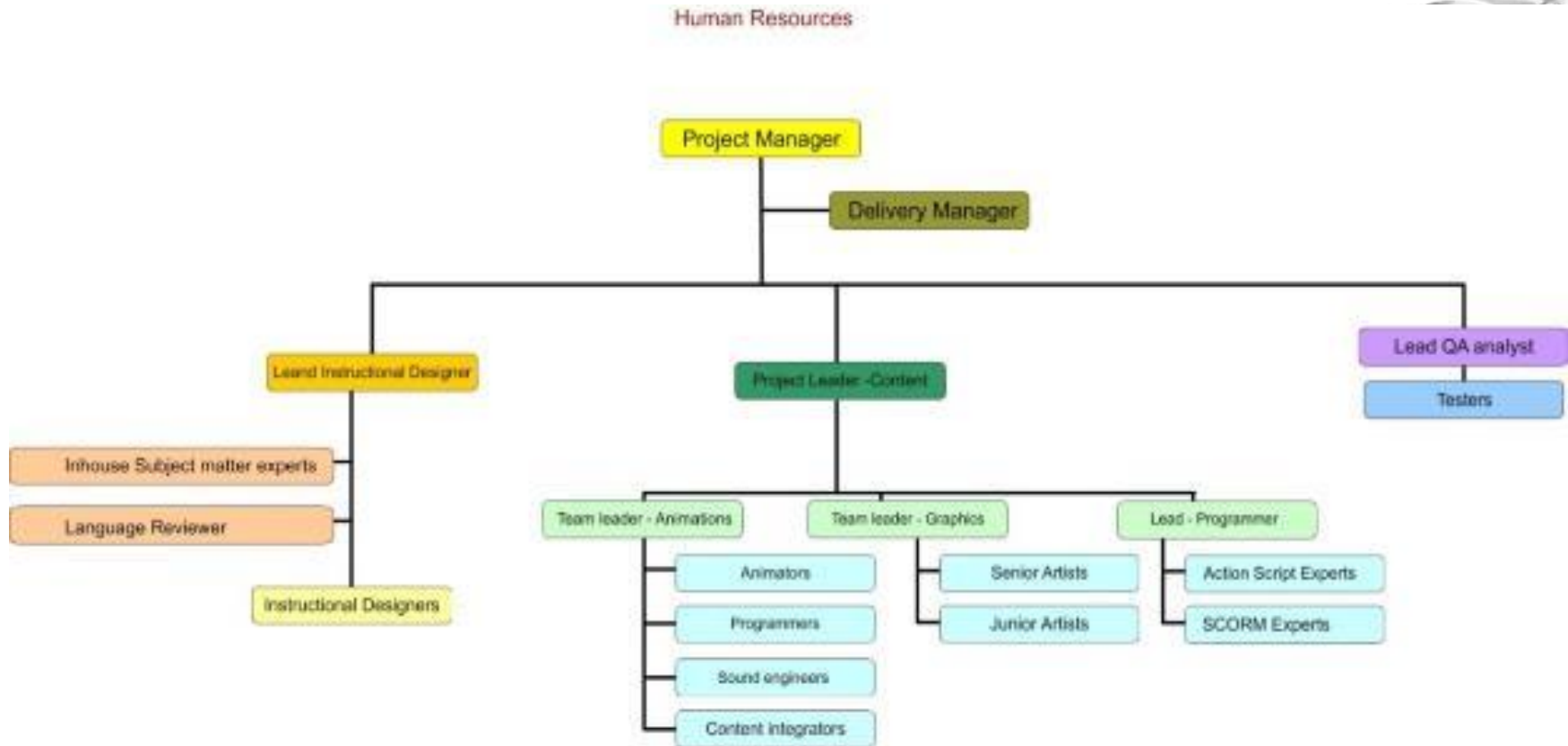
Details of Specialists

We are having strong team of 90+ resource expertise in developing multimedia rich engaging eLearning Content for various verticals. Our team of Instructional designers, visualisers, graphic artists and animators work closely together to ensure that each course is effective yet unique.

S.No	Skill Set	No. of Resources	Average length of service in eLearning
1	Project Managers	7	14+ Years
2	Project Leads	5	12+ Years
3	Instructional Designers Leads	4	10+ Years
4	Instructional Designers	15	3+ Years
5	Programmers /Designers	30	2+ Years
6	Flash Developers	15	8+ Years
7	QC team	8	6+ Years



Team Structure



Development tools used to Design and Develop e-Learning Packages

Sl. No.	Type of Content	Application / Software used
1	Project management and Planning	Microsoft Project
2	Story Boarding and Script Writing	MS Word and MS Power Point
3	Vector Graphics, Drawings, Illustrations and Graphs	<ul style="list-style-type: none"> • Adobe Illustrator , Adobe Flash • Corel Draw 11.0
4	Raster Graphics, Images, Photographs and Drawing Editing	<ul style="list-style-type: none"> • Adobe Photoshop
5	Scanned Images	<ul style="list-style-type: none"> • Adobe Photoshop
6	Text	<ul style="list-style-type: none"> • MS Word
7	2D Animations	<ul style="list-style-type: none"> • Adobe Flash and Adobe Director
8	3D Modeling	<ul style="list-style-type: none"> • 3D Studio MAX and Maya
9	3D Animations	<ul style="list-style-type: none"> • 3D Studio MAX , Maya and After Effects
10	Voice over, Background music, Audio Editing and Digital Audio	<ul style="list-style-type: none"> • Sound Forge 6.0 and GoldWave
11	Video editing, Composition, Digital Video and Digital Photography	<ul style="list-style-type: none"> • Adobe Premiere , Adobe AfterEffects and DVMPEG
12	Multimedia Authoring	<ul style="list-style-type: none"> • Adobe Flash, Captivate, Articulate
13	Programming Languages	<ul style="list-style-type: none"> • Adobe Action Script, HTML 5 ,.Net , Java, Javascript • C, C++
14	Simulation / Freeplay (2D and 3D)	<ul style="list-style-type: none"> • Captivate , Anark, Cult 3D, Adobe Flash & Adobe Authorware
15	SCORM Packages	<ul style="list-style-type: none"> • Reload Editor 1.2 and Reload Editor 2004
16	AICC and SCORM Test Suite	<ul style="list-style-type: none"> • SCORMTM Conformance TestSuite • AICC/CMI TestSuite

Deployment of the content

**E-learning
Content**

Video

Graphics

Voice over

Animations

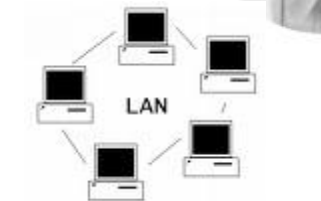
P
A
C
K
A
G
I
N
G

CD and DVD Version

Intranet / Internet Version
(LAN) (web)

Stand alone &
Client-Server environment

LMS Version



Security of the content

CD and DVD Version

User Name, Password
Hard ware Lock

LMS Version

User Name, Password





**We are Just
a Call away**

THANK YOU



Code and Pixels Interactive Technologies Pvt. Ltd.

266, South End Park, LB Nagar.

Hyderabad - 500068

Tel: +91 40 6515 27706, 9849527706

Email: gopikrishna@codeandpixels.net

www.codeandpixels.net



Knowledgeable Client /SME + Knowledgeable Vendor = Successful Course

Knowledgeable Client /SME + Vendor with Minimum Knowledge = Successful Course

Client /SME less knowledge+ Knowledgeable Vendor = Failure of Course /may not be

Client /SME less knowledge + Vendor with Minimum Knowledge = Failure of Course

If SME is knowledgeable than courses will be never be unsuccessful

Successful means 100% knowledge transformation!!

What is Knowledge ?? What do I mean my knowledge ??? – Lets see in next slides





Which building looks good ?

- Same budget
- Same area
- Same Contractor



Client's Specification Need Choice/Taste

It is Not a 100% capability of Vendor decides quality !!



Vendor



paid more money purchased
low quality vegetables



Wife



paid less money purchased
good quality vegetables

WHY

SME NEED TO HAVE GOOD KNOWLEDGE ABOUT INSTRUCTIONAL DESIGN STRATEGIES

HOW E-LEARNING WORKS ?



STUDENT LEVEL

KNOWLEDGE - TRANSFORMATION

HIGH LEVEL



SME

RAW CONTENT

- Text
- PPT
- PDF
- HTML
- IMAGE
- Video
- book

UN STRUCTURED
 CONTENT –
 RAW CONTENT



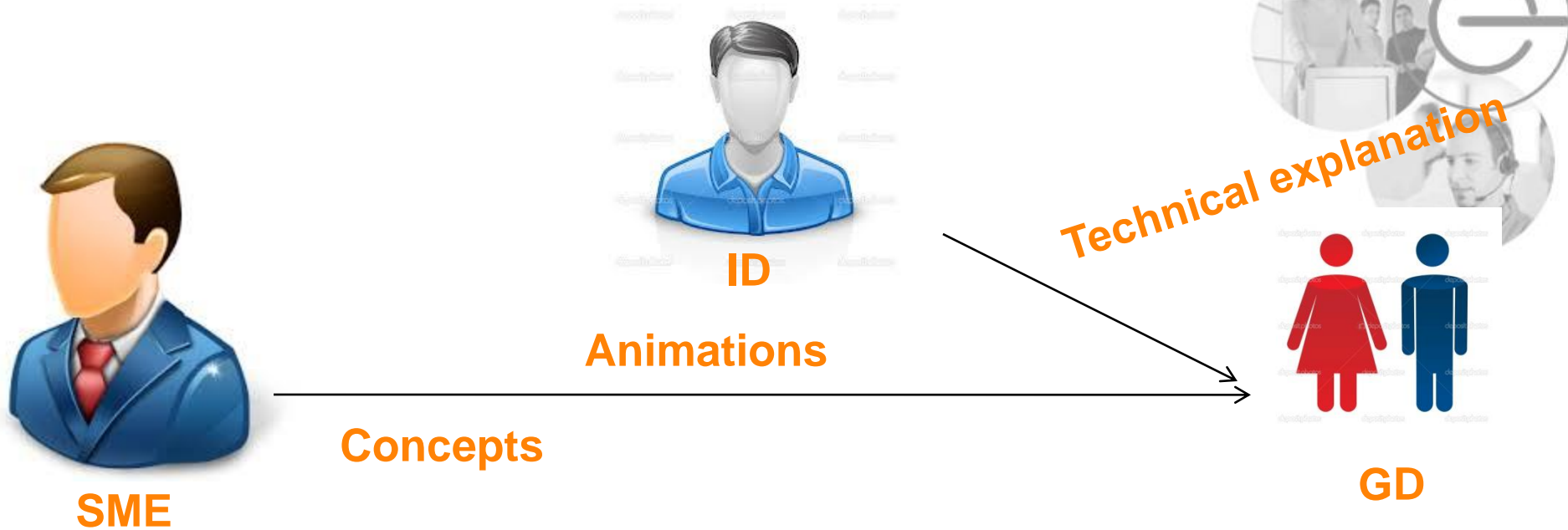
ID

STRUCTURED
 CONTENT –
 STORY BOARD



Students

content /knowledge transformation



BLUE PRINT – IS BASE FOR THE BUILDING

STORY BOARD – A BASE DOCUMENT FOR THE COURSE

RAW FOOD → PROCESSED FOOD



RAW ingredients



PROCESSED/ COOKED FOOD

- It is Cooks capability to make the food palatable.
- Client should make sure that all Raw ingredients are provided to Cook
- Without some Raw contents same dish can be prepared, but taste may or may not be as it should be !!

RAW FOOD IS MADE PALATABLE AFTER COOKING

Looks good – Stimulate interest

- Similarly, Raw content is converted to a “graphic rich” and “instructionally sound” e-lesson
- Food should look good & taste good with Nutritional values rich
- Similarly, E- Lesson should look good & create interest to learn and must be rich in the knowledge



Vegetables

Oil

Gas

Utensils

Salt

Pepper

Other masalas



Good Dish

Good content

Graphics

Images

Animations

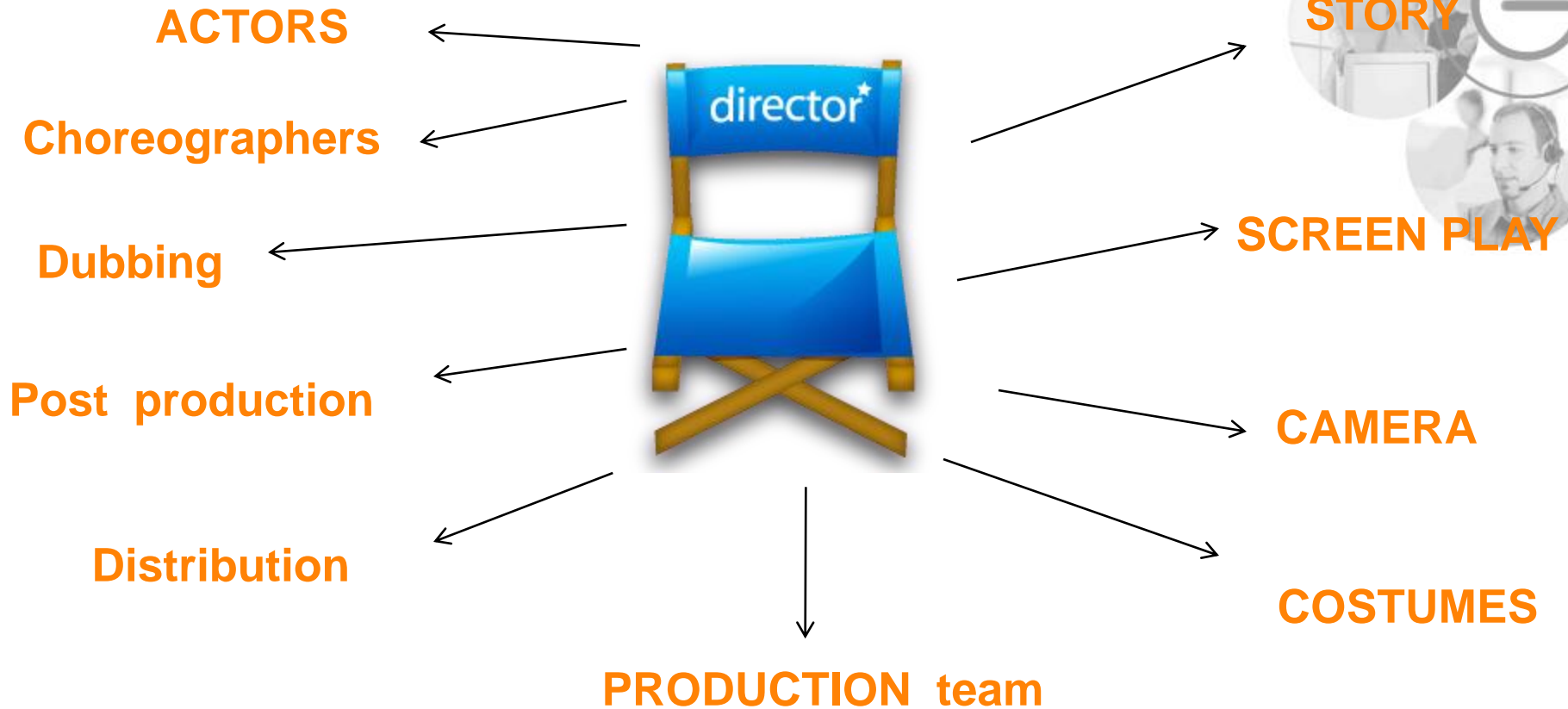
Lucid language



Good Module



Man behind **SUCCESSFUL** of a Film



Only good story, actor, direction Single ingredient can not make film success

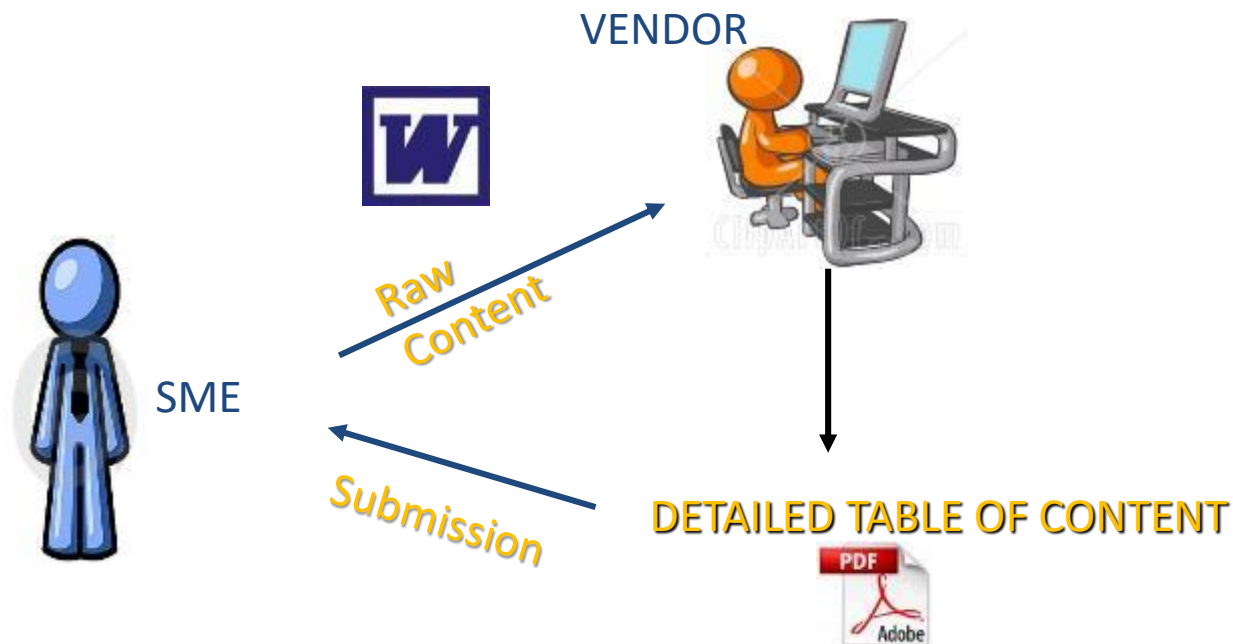
Only good (SME) content can not produce good module.

Development Approach & Methodology

PREPARATION OF TABLE OF CONTENT

The following points will be considered during development /production points are:

- ✓ Requirement study/ analysis in consultation with SME
- ✓ Understanding the content with the help of SME
- ✓ Prepare the Course Specification Document / Lesson Plan / Detailed TOC

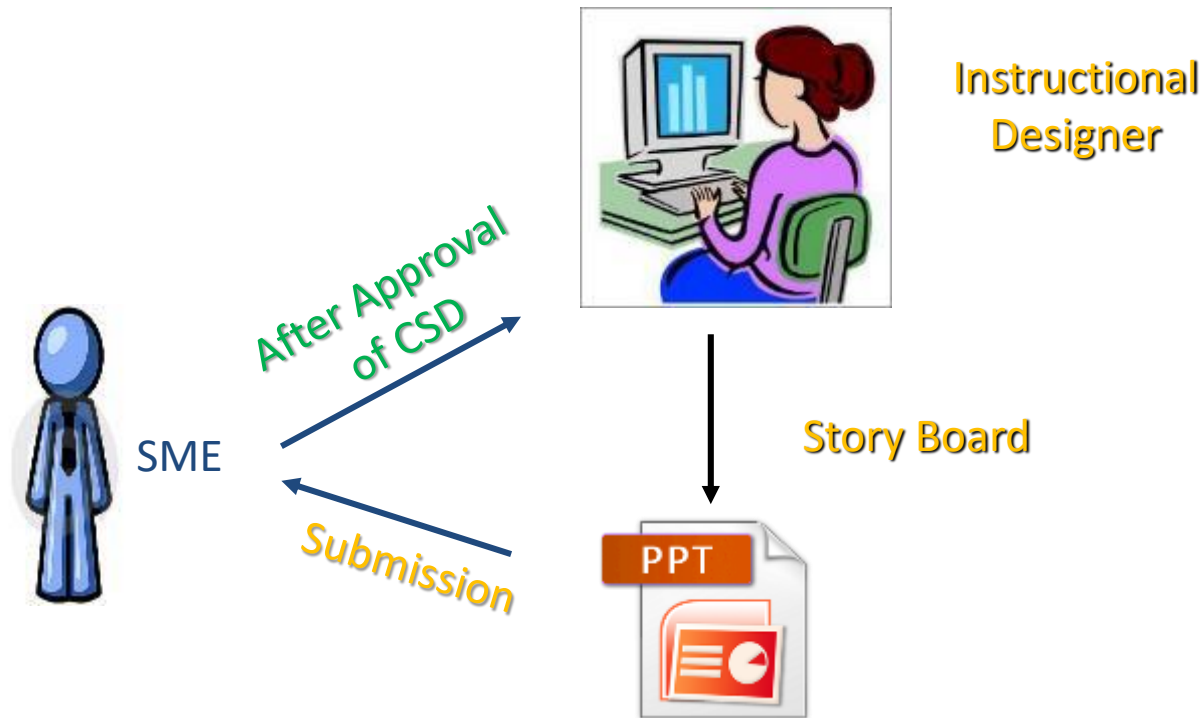


Development Approach & Methodology

Design and Development/Production Process:

The following points will be considered during development /production points are:

- ✓ Development of story board: explain in short both textually and graphically
- ✓ Test /evaluation the story board with the SME
- ✓ (STORY BOARD / SCRIPT) include details of every component that is seen and heard
- ✓ Test/evaluate the script with the SME

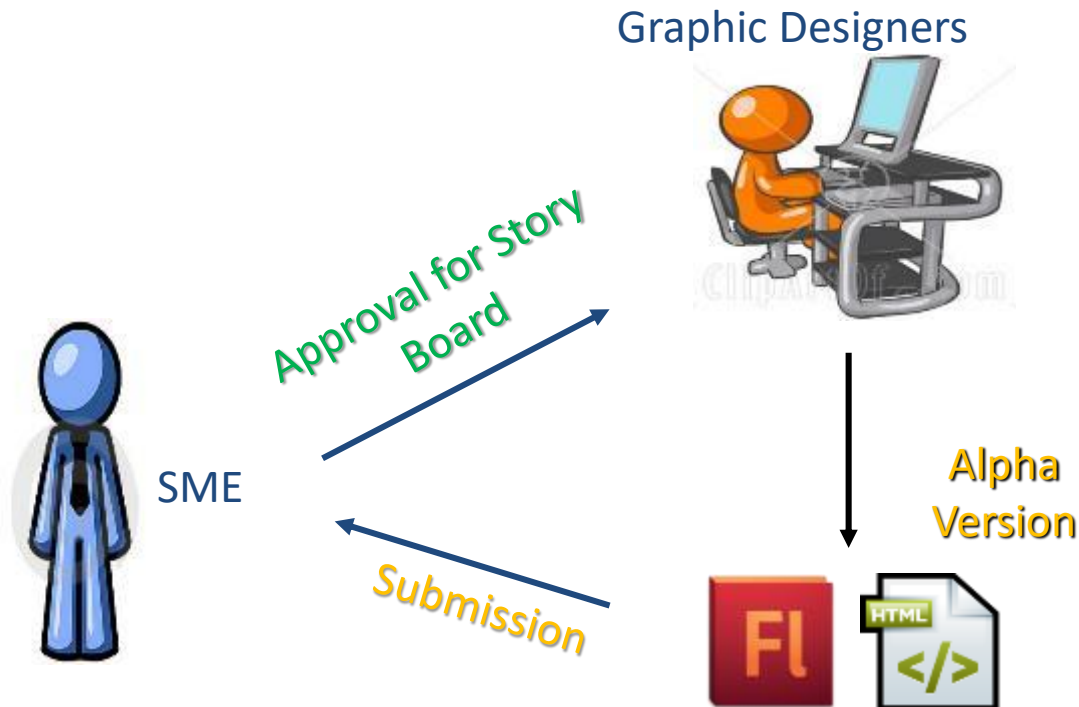


Development Approach & Methodology

Design and Development/Production Process:

The following points will be considered during development /production points are:

- ✓ Develop of Media elements (graphics and animation)
- ✓ Integrate Media elements and develop screens as per the SB
- ✓ Tests/evaluate the final product with client officials

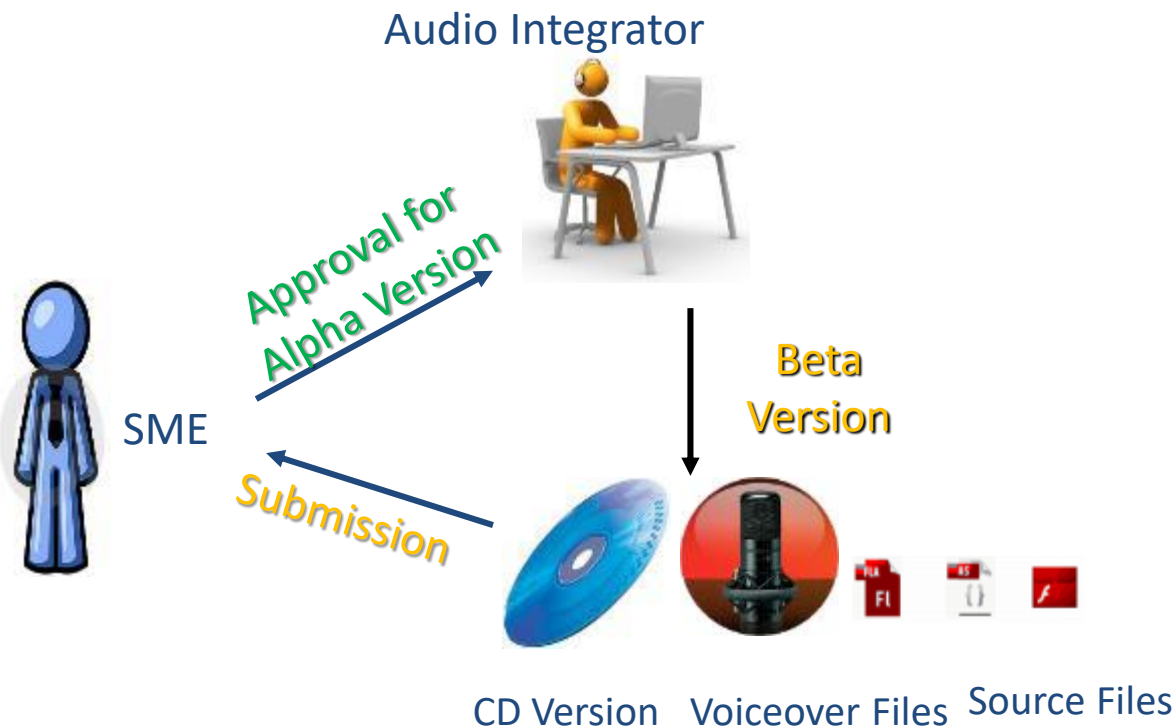


Development Approach & Methodology

Design and Development/Production Process:

The following points will be considered during development /production points are:

- ✓ Record, edit and sync the audio track with the video, animation and text
- ✓ Integrate the eLessons and add LMS feasibility
- ✓ Tests/evaluate the final product Beta Version with client officials



Instructional Design in E-learning



E-learning is the combination of **technology** and **education**, and most often, the **instructional designer's** greatest role is that of "**bridging**" concepts between the two worlds.

This vital role ensures that a subject matter expert's (SME) concepts are properly developed by graphic designers and programmers



Instructional designer – the captain

coordinates

Subject matter expert

Language reviewer

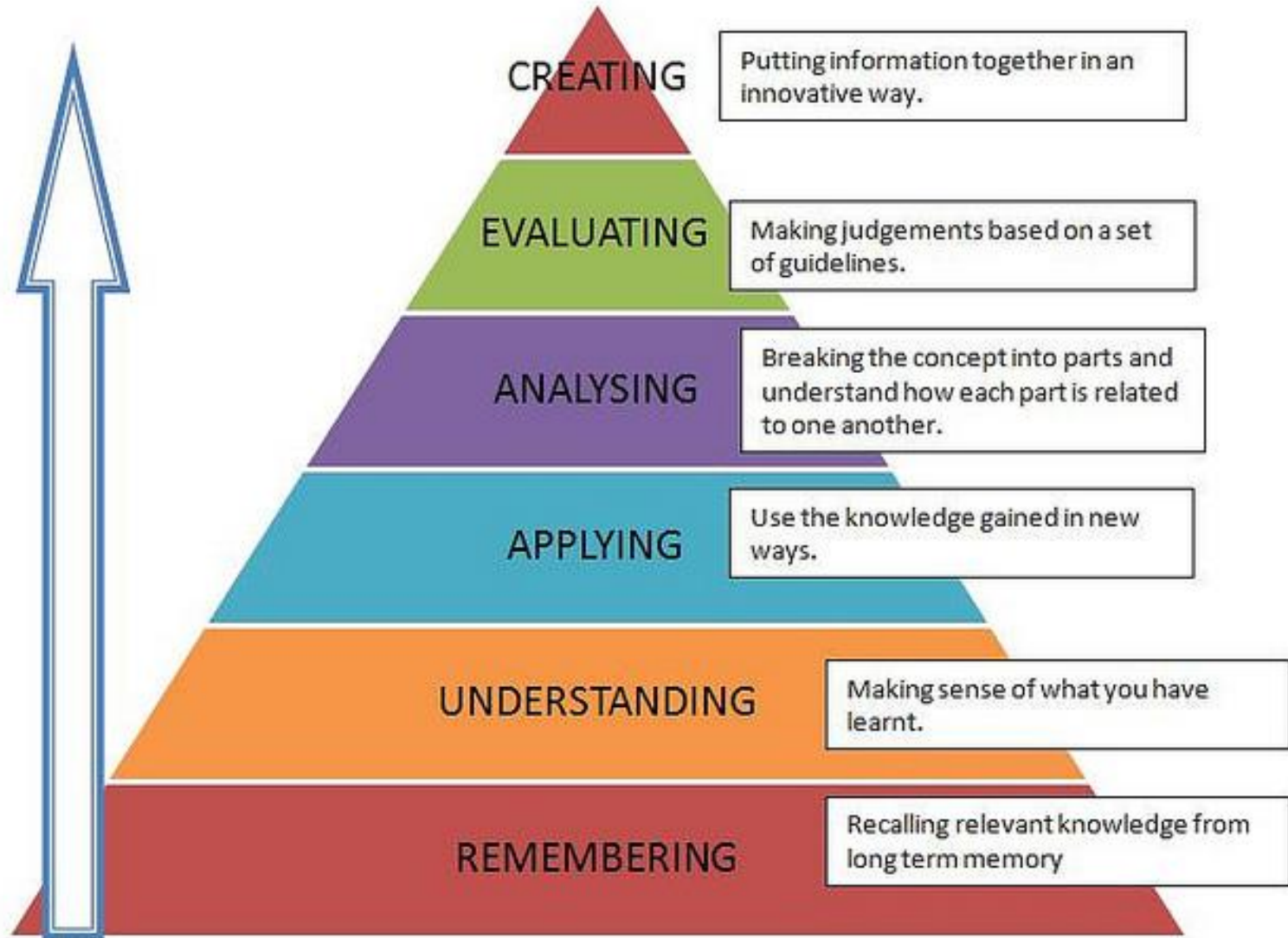
Quality check

Reviewer

Graphic designer

Client's expectations





HOW E-LEARNING WORKS ?



STUDENT LEVEL

**KNOWLEDGE –
TRANSFORMATION**

HIGH LEVEL



**SME
RAW CONTENT**

- Text
- PPT
- PDF
- HTML
- IMAGE
- Video
- book

**UN STRUCTURED
CONTENT –
RAW CONTENT**

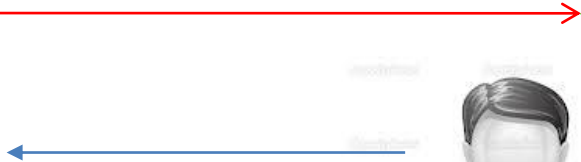


ID

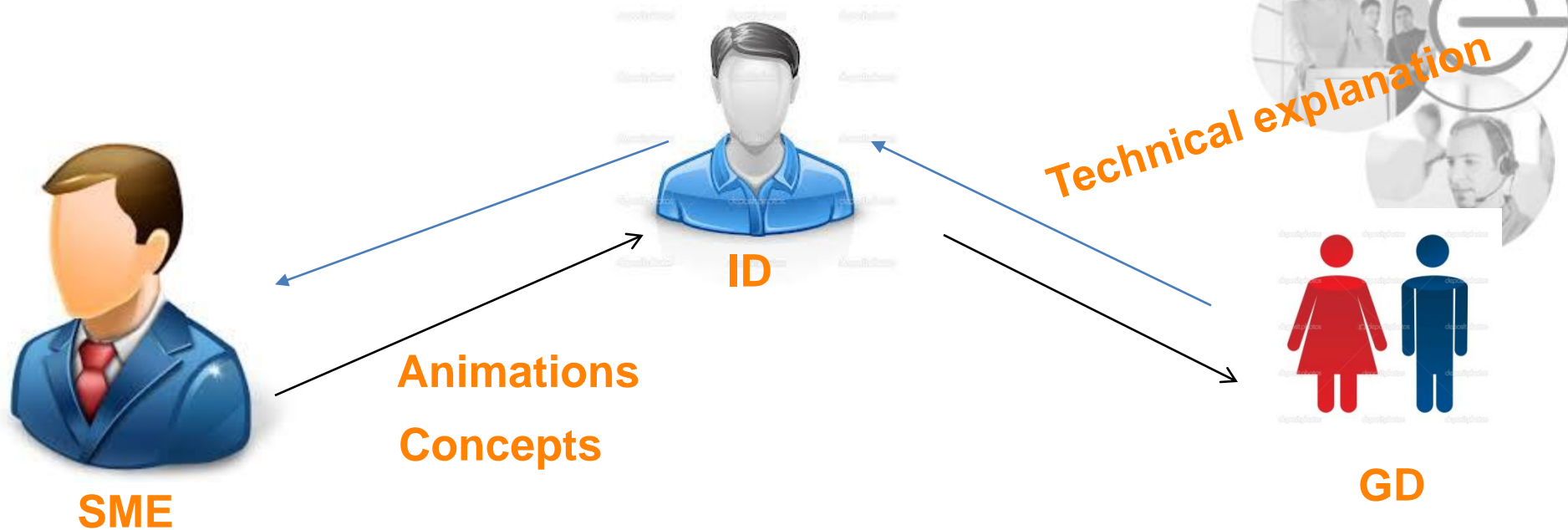
**STRUCTURED
CONTENT –
STORY BOARD**



Students



content /knowledge transformation



BLUE PRINT – IS BASE FOR THE BUILDING

STORY BOARD – A BASE DOCUMENT FOR THE COURSE