ICT

What, Why, When, How?

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Maths ?

- Think of a number between 2 and 8
- Multiply that number by 9
- You now have a two digit number.
- Add those two digits together
- Take away 5

General Knowledge

- Now think of the alphabet and your number
- If A = 1, B = 2 and so on till Z = 26. Your number will correspond with a letter.
- Think of a Northern European country that starts with that letter.
- Now think of the NEXT letter in the alphabet.
- Think of an African mammal that starts with that letter.

Elephants in Denmark

Patterns

Since 2004 The NZ Ministry of Education has financed a number of projects to investigate how ICT and e-learning applications are being used within vocational education and industry training.

Table 1: *Recent Internet use by individuals for education: August 2006*

Age Group	Recent Internet users [5]	% of total population[6]	Education or study
15 - 19	264,400	87.2	55.1
20 - 24	237,700	83.8	39.4
25 - 29	212,000	82.4	23.3
30 - 34	225,700	82.8	20.8
35 - 39	232,800	77.0	22.1
40 - 44	242,800	77.8	21.3
45 - 49	220,100	73.3	21.9
50 - 54	179,300	68.9	19.4
55 - 59	152,000	63.8	15.9
60 +	240,600	35.8	14.0
Total	**2,207,600**	**69.0**	**26.3**

[Source: Statistics New Zealand. (2007a) (p83)]

Table 3: *Business use of computers and the Internet: By type: August 2006*

Industry	Businesses	% Using computers	% Using the Internet
Agriculture, forestry and fishing	3,123	82	77
Mining and quarrying	90	83	77
Accommodation, cafes and restaurants	3,465	78	82
Retail trade	5,886	93	89
Construction	3,549	98	92
Manufacturing	5,523	97	93
Health and community services	2,085	99	93
Transport and storage	1,524	98	94
Communication services	141	96	94
Cultural and recreational services	615	95	95
Education	585	98	96
Property and business services	5,055	98	96
Wholesale trade	3,198	99	97
Finance and insurance	582	99	99
Electricity, gas and water supply	18	100	100
Total	**35,436**	**93**	**91**

[Source: Statistics New Zealand. (2007a) (p98)]

Table 5: *Provision of training via the Internet by type: August 2006*

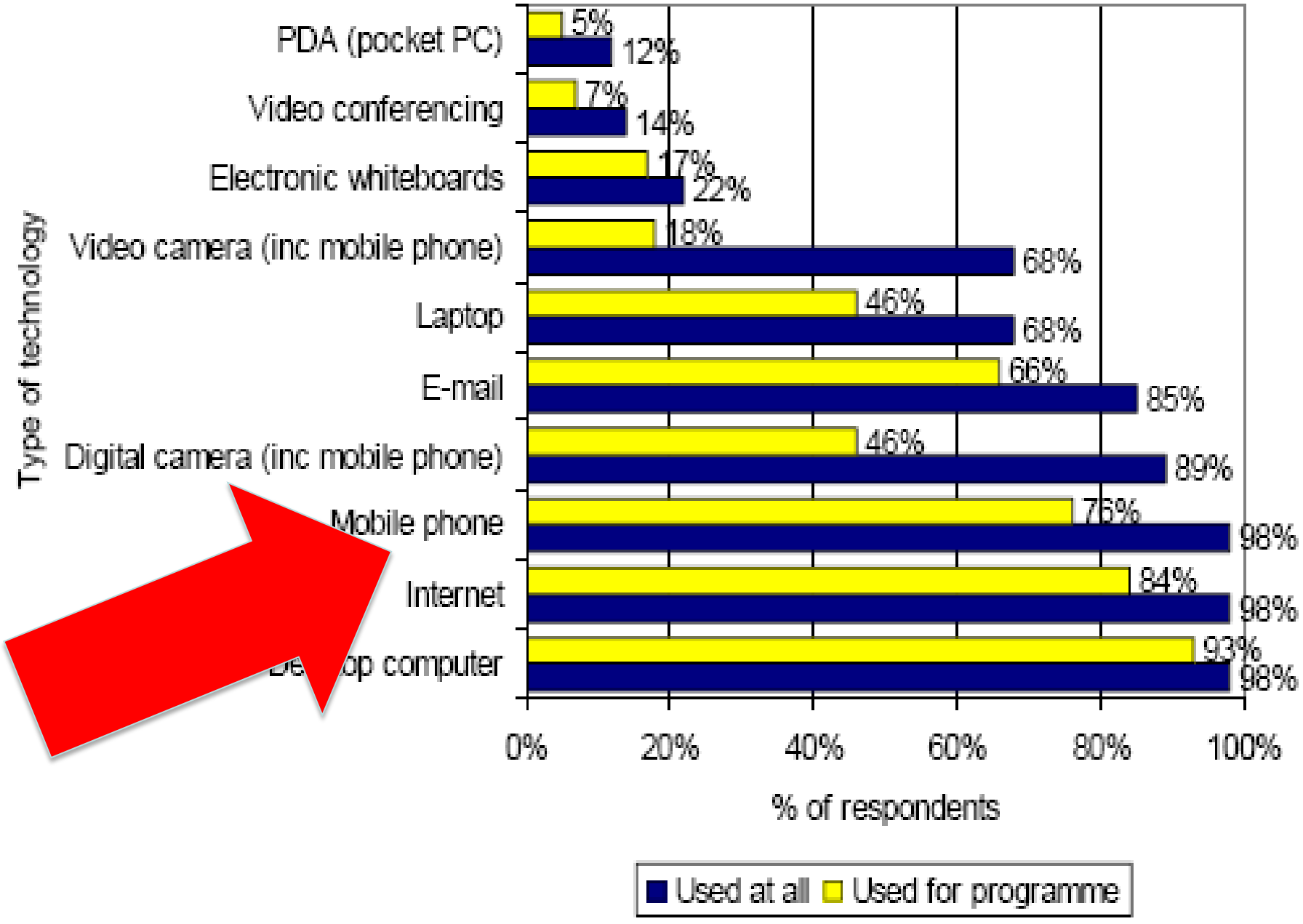
Industry	Number using the Internet	% of staff training via the Internet
Agriculture, forestry and fishing	2,403	7
Construction	3,267	8
Accommodation, cafes and restaurants	2,835	9
Manufacturing	5,157	12
Retail trade	5,259	16
Restaurants	1,428	20
Wholesale trade	3,099	21
Health and community services	582	21
Property and business services	549	24
Mining and quarrying	69	27
Education	1,935	30
Transport and storage	132	32
Finance and insurance	4,845	33
Communication services	579	34
Electricity, gas and water supply	18	50
Total	**32,157**	**22.9**

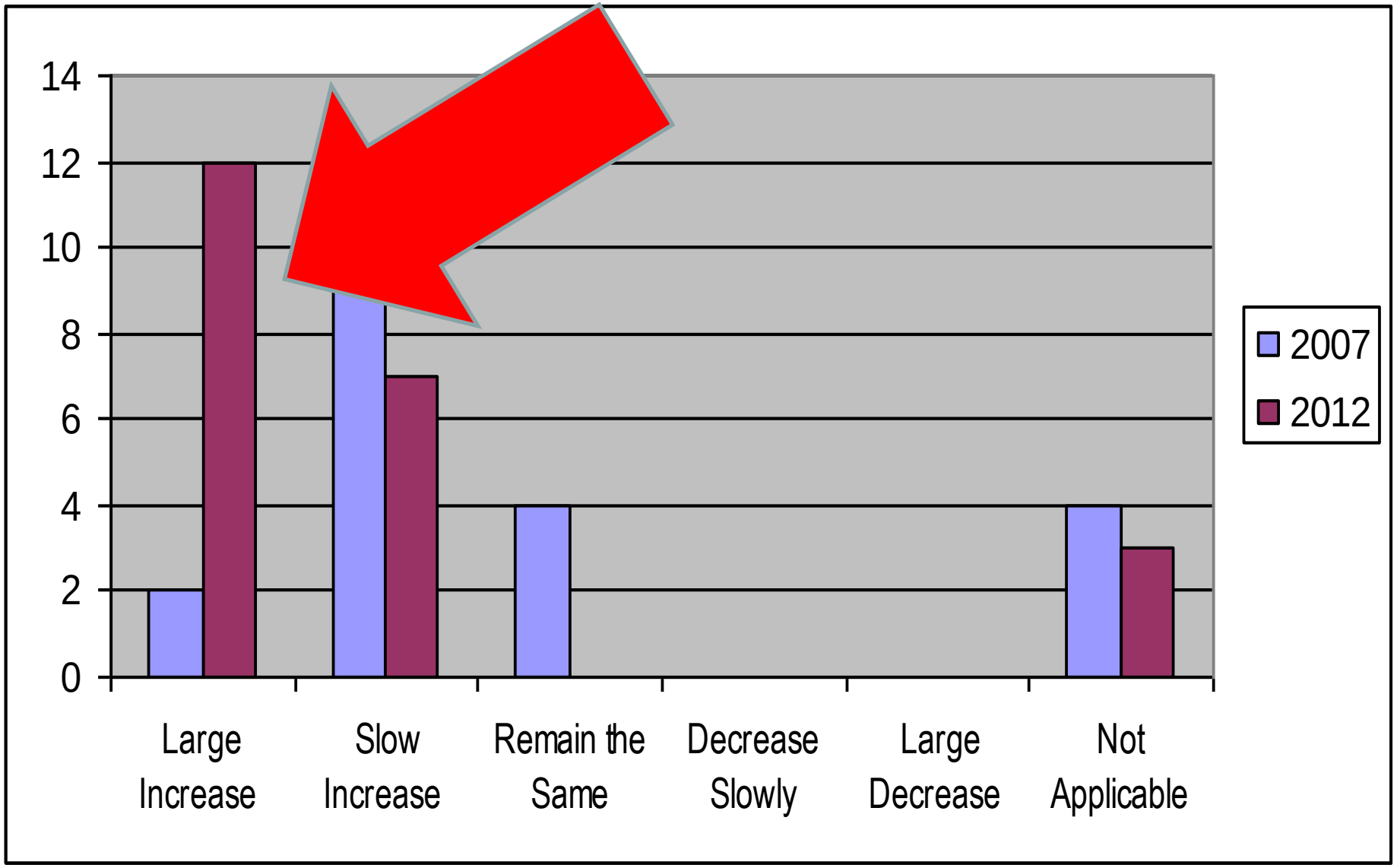
[Source: Statistics New Zealand. (2007a) (p102)]

Category	Code	Count	Percent of Responses	Percent of Cases
Paper-based resources	1	349	32.6	82.7
Computer / CD-Rom based	2	269	25.2	63.7
Videos	3	247	23.1	58.5
Online materials	4	171	16.0	40.5
Other	5	33	3.1	7.8
Total		1069	100.0	253.3
57 missing cases, 422 valid cases				

Preferred training support materials ITOs

[Source: Business NZ & Industry Training Federation of NZ (2003) (Table 54: p44)]

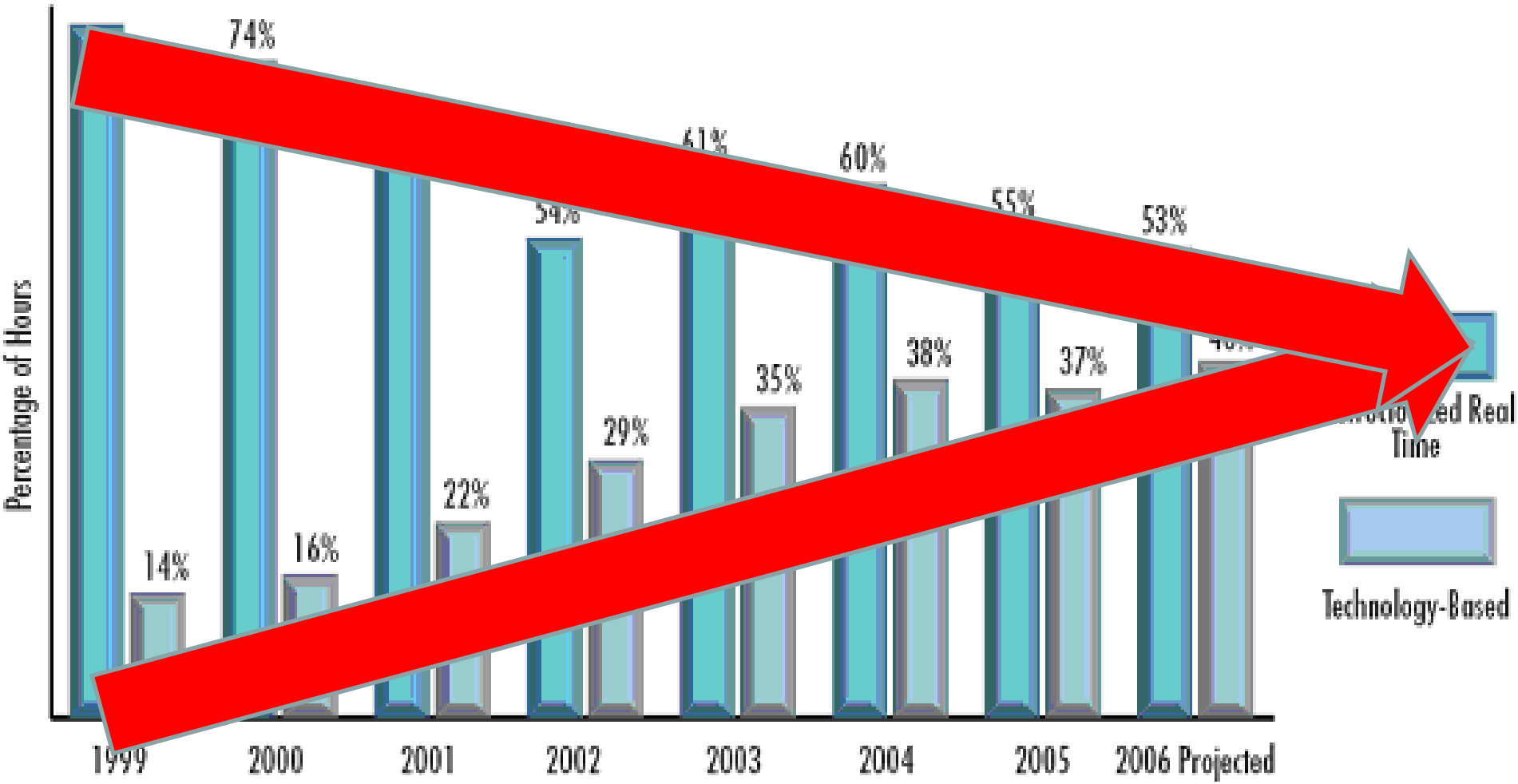




Perceived future use of e-Learning in ITOs

(n=23) Clayton, J & Elliott, R (2007, July) Report 2: *A survey of e-learning activity within the ITO sector*

[Original Source: Rivera, R. & Paradise, A. (2006) Figure 15, p14]



Actual e-Learning growth (n=37)

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[Original Source: Rivera, R. & Paradise, A. (2006) Figure 15, p14]

Pattern

What is indicated is a “pedagogical design” approach “thoughtfully” combining traditional methods to on-the-job (workplace) and off-the-job (work-based) training with e-learning applications will be needed.

Blended Learning

Thoughtful "*blend*" of

Time-constrained and time-dependent, (synchronous) activities with time-independent (asynchronous) activities;

Identified physical spaces (classrooms) with digitally created, flexible spaces (virtual environments),

Instructor-facilitated, human interactive environments (face-to-face) with computer-mediated environments (e-learning).

	2 Days of Classroom Training		Blended
Training Component	**Cost per Learner**	**Total Cost**	**Total Cost**
Training, Design, Project Mgmt	$250	$250,000	$50,000
Learner Materials	$275	$275,000	$175,000
Facilitation Services	$175	$175,000	$75,000
Travel/Accomodations/Meals	$500	$500,000	$0
Sub-Total: Hard costs	**$1,200**	**$1,200,000**	**$300,000**
Employee Time off the Job	$800	$800,000	$400,000
Total Cost of Investment	**$2,000**	**$2,000,000**	**$700,000**
Performance Improvement		2%	7%
Value of Increase in Productivity	($100k salary)	$2,000,000	$7,000,000
Return on Investment (ROI)		**none**	**10x**

New Zealand

- Energy Company
- 500 FTEs and 4,500 Affiliated
- Compliance major issue
- All training managed by e-system
- Problems were comprehension not computer competence

The Blended Learning Promise

e-learning applications and blended approaches are seen to be critical in providing

- **Just** the right skills,
- to **Just** the right person,
- **Just** in time,
- in **Just** the right place.

Impact is influenced by the

Instrument of implementation

YOU

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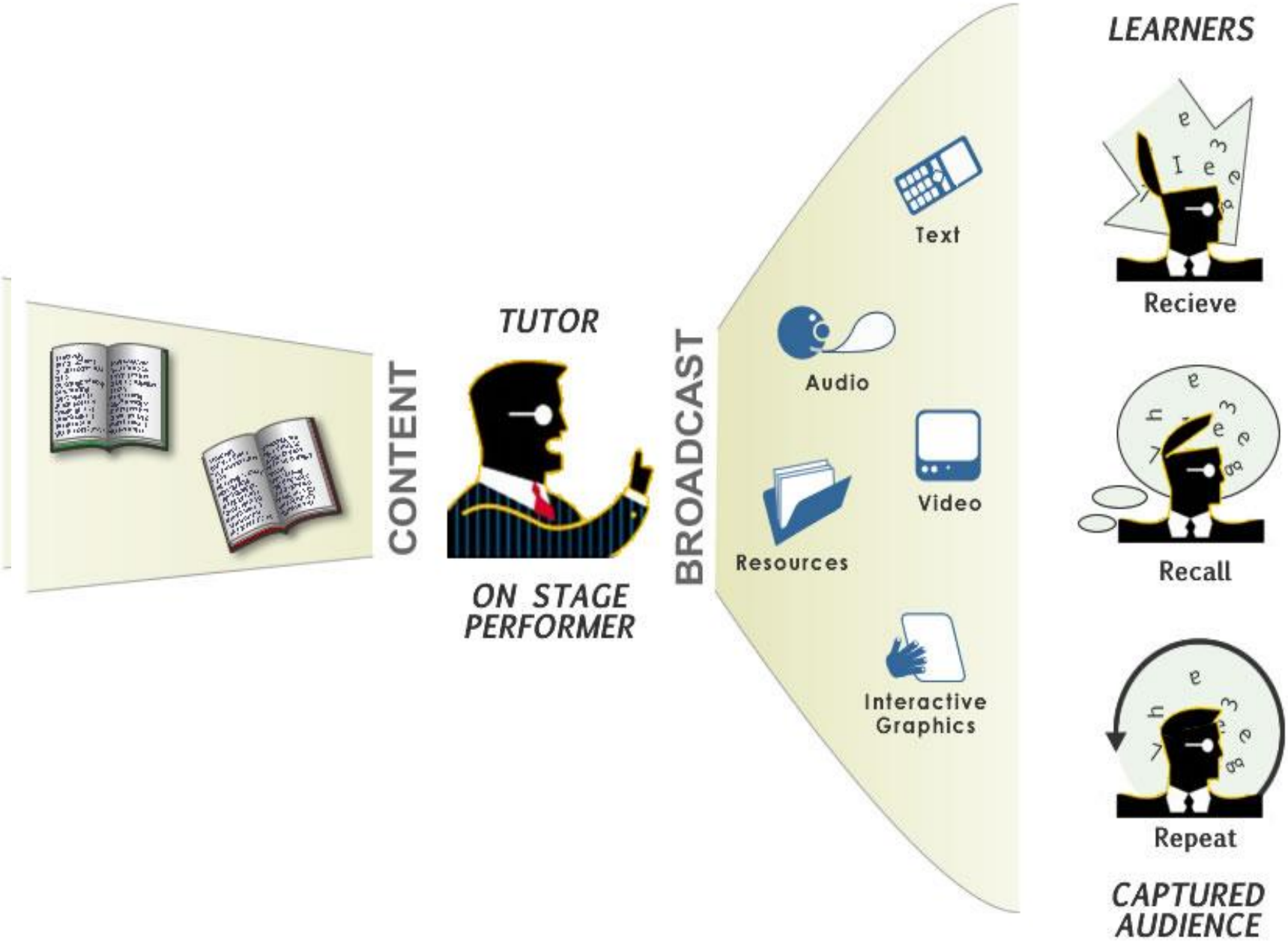
Learning Environment

- Compliance
- Competence
- Capability

CONTENT IS KING

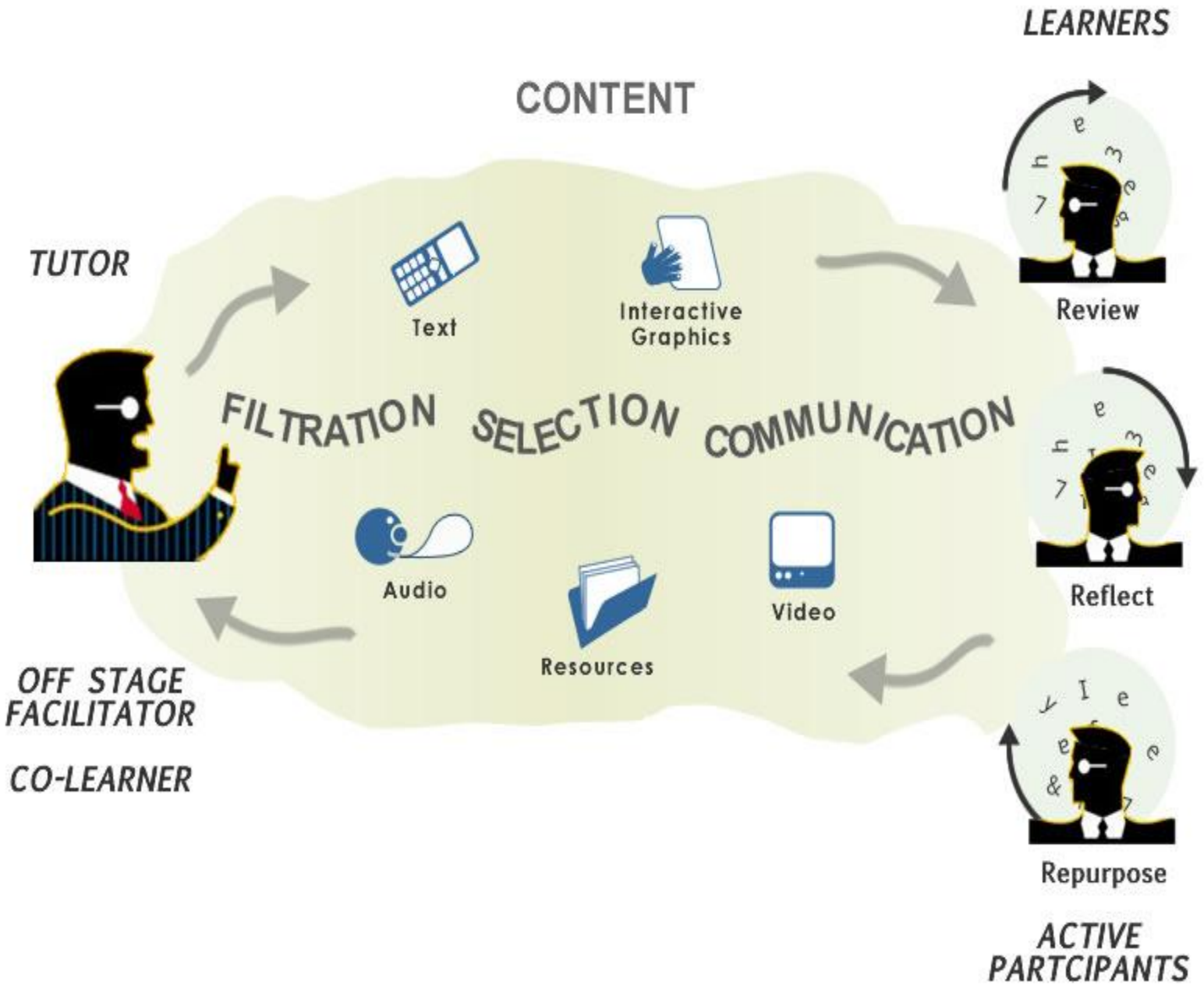

LEARNERS
TUTOR
CONTENT
BROADCAST
Text
Audio
Video
Resources
Interactive Graphics
ON STAGE PERFORMER
Recieve
Recall
Repeat
CAPTURED AUDIENCE

Learning Environment

- Communication (learner/learner/tutor)
- Conversation (co-creation of content)

Facilitated by Web 2 Technologies

CONTEXT IS QUEEN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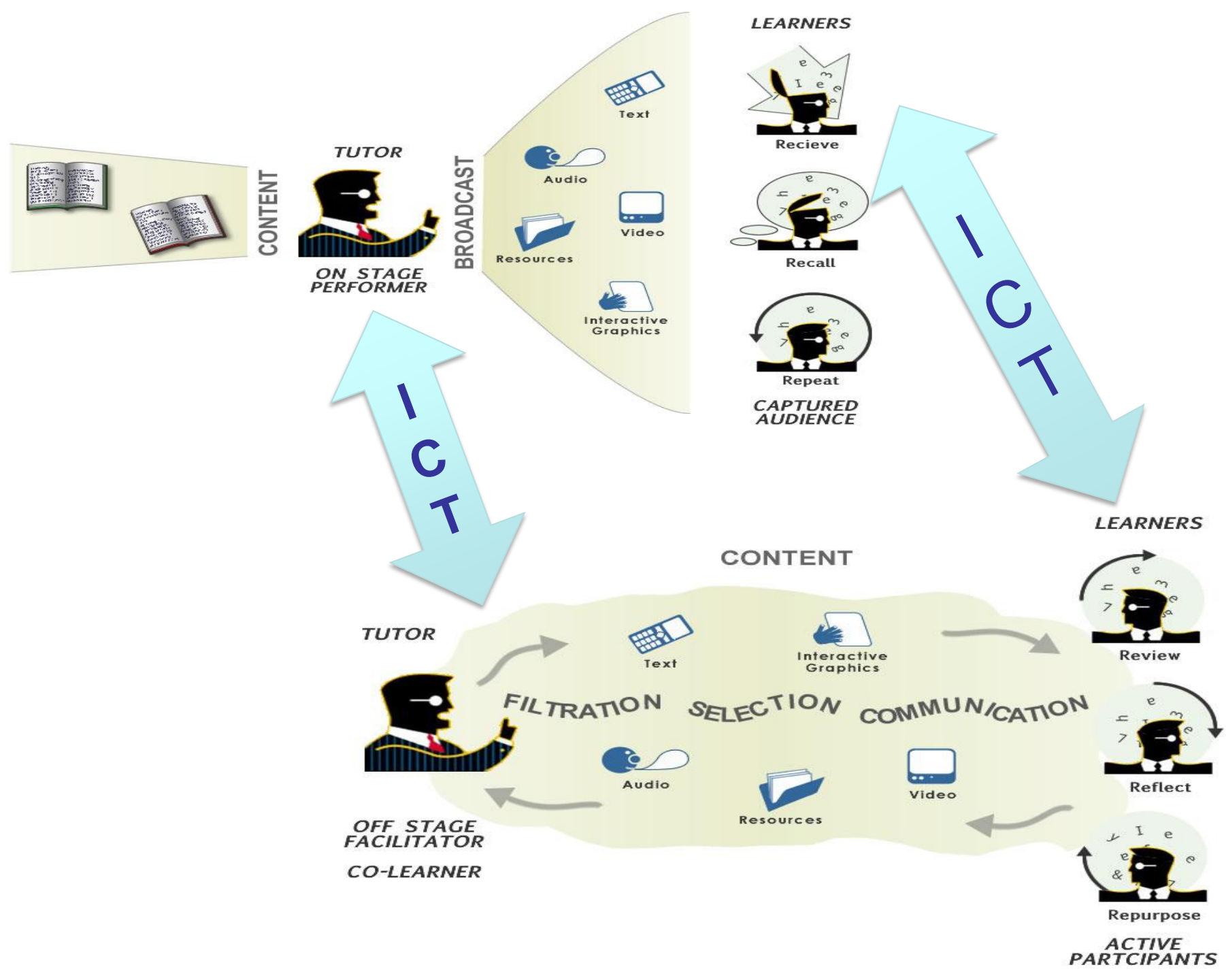
TUTOR
Text
Interactive Graphics
Review
FILTRATION
SELECTION
COMMUNICATION
Audio
Resources
Video
Reflect
OFF STAGE
FACILITATOR
CO-LEARNER
Repurpose
ACTIVE
PARTCIPANTS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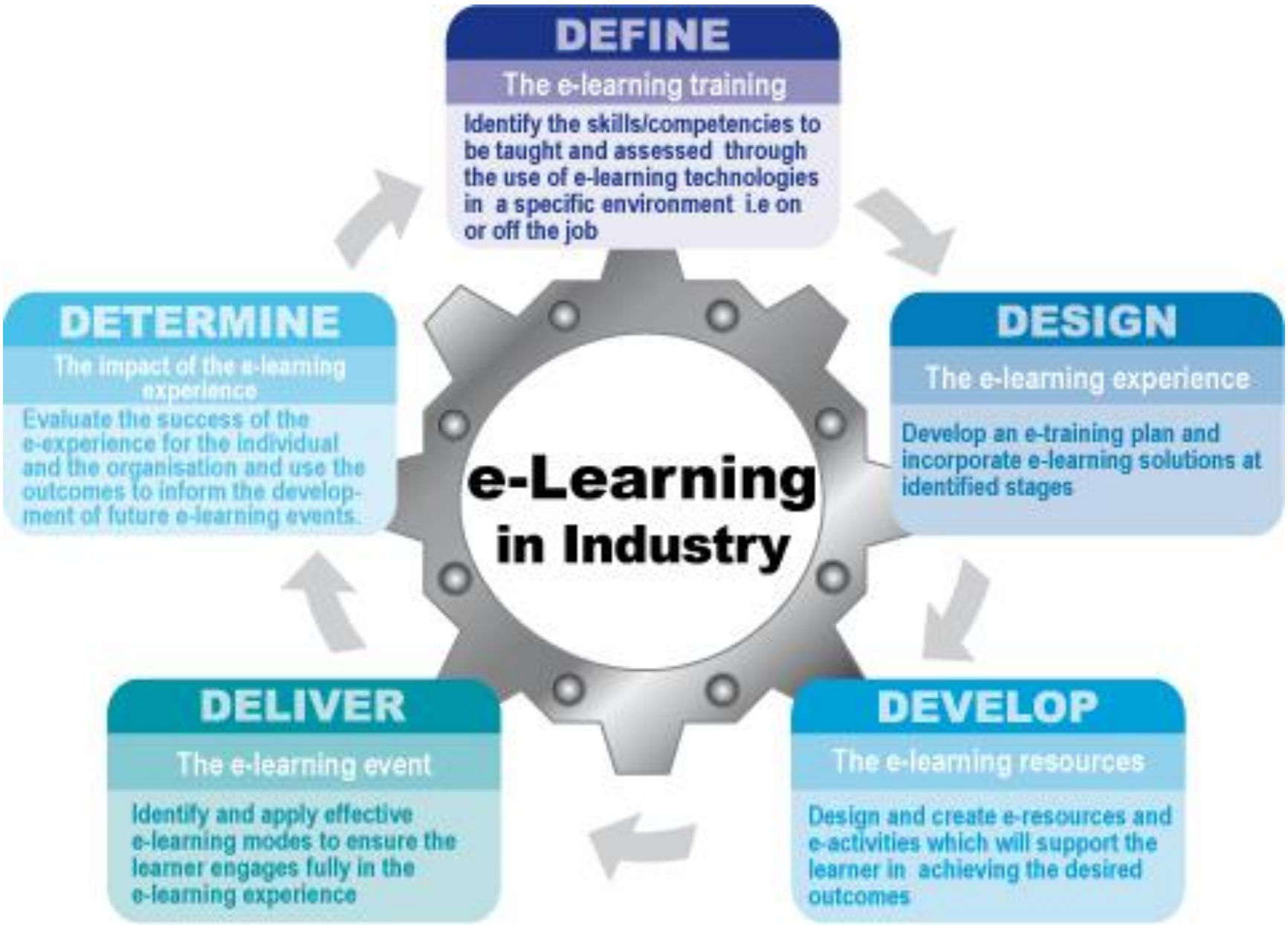
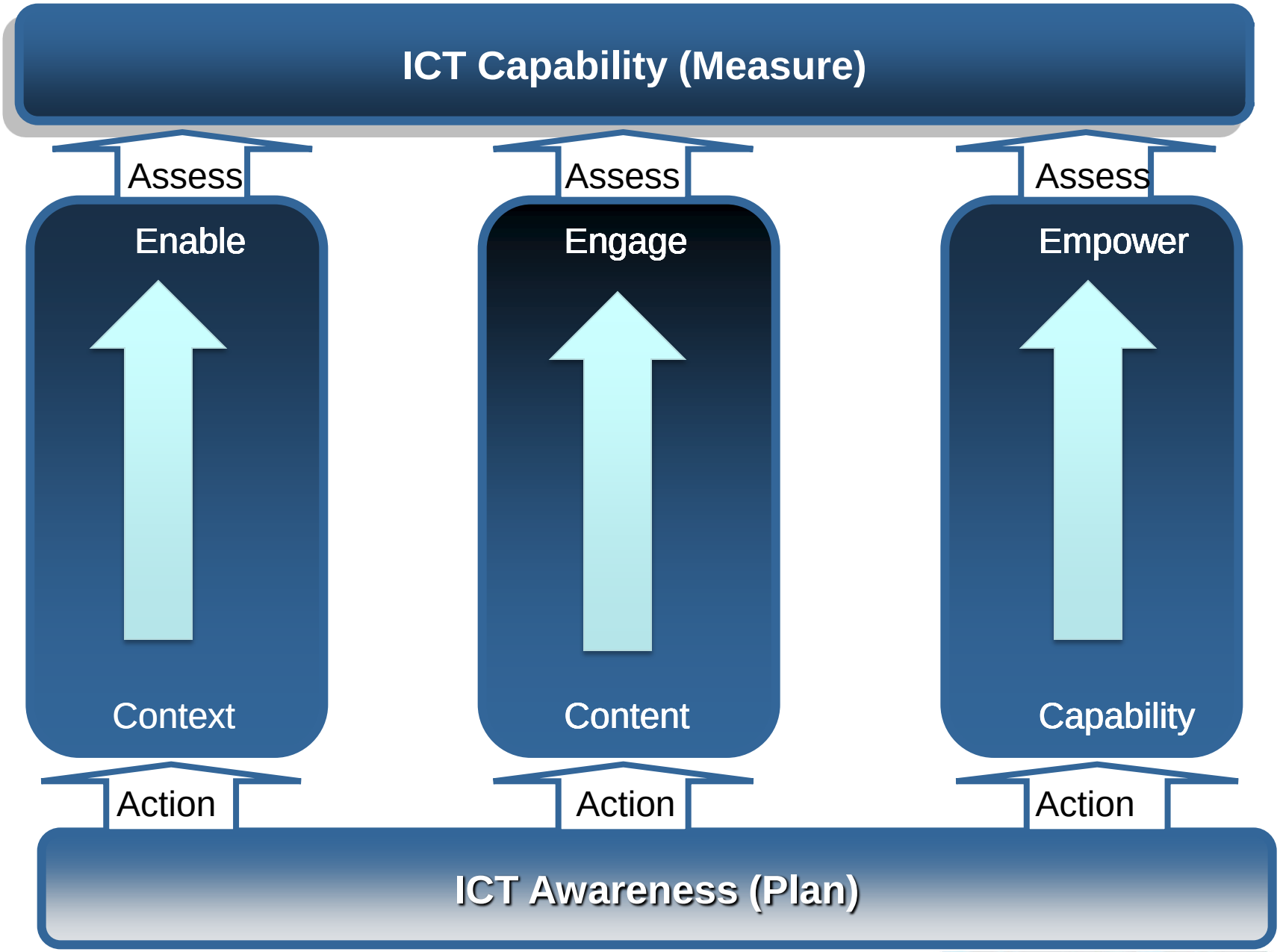
CO-LEARNER

Perceptions

Five Ds (5Ds).


DEFINE
The e-learning training
Identify the skills/competencies to be taught and assessed through the use of e-learning technologies in a specific environment i.e on or off the job
DESIGN
The e-learning experience
Develop an e-training plan and incorporate e-learning solutions at identified stages
DEVELOP
The e-learning resources
Design and create e-resources and e-activities which will support the learner in achieving the desired outcomes
DELIVER
The e-learning event
Identify and apply effective e-learning modes to ensure the learner engages fully in the e-learning experience
DETERMINE
The impact of the e-learning experience
Evaluate the success of the e-experience for the individual and the organisation and use the outcomes to inform the development of future e-learning events.
e-Learning
in Industry


ICT Capability (Measure)
Assess
Assess
Assess
Enable
Engage
Empower
Context
Content
Capability
Action
Action
Action
ICT Awareness (Plan)
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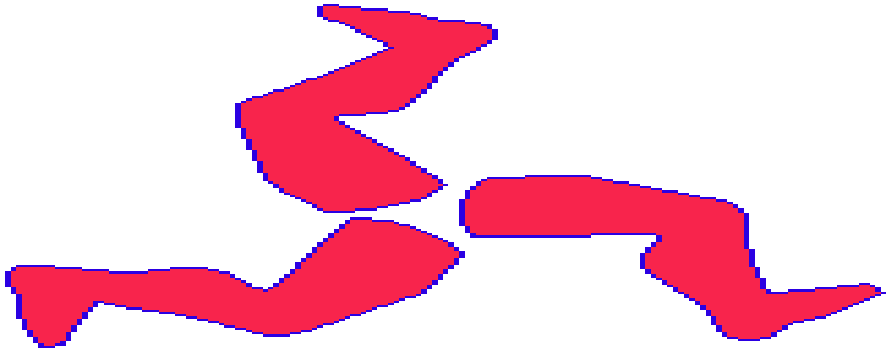
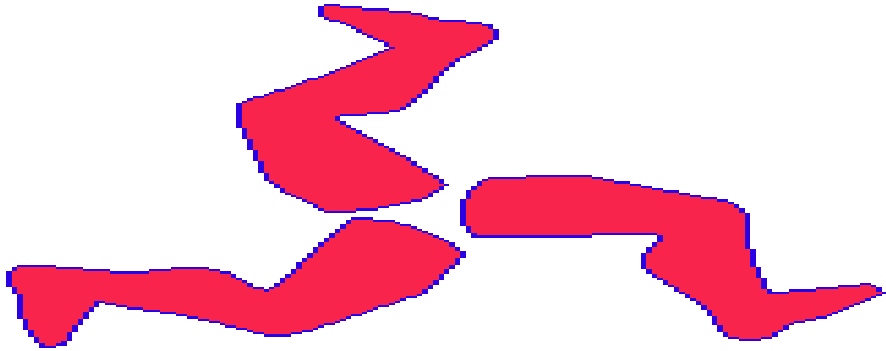
Low-Speed Solutions

Open Applications

Cooperation

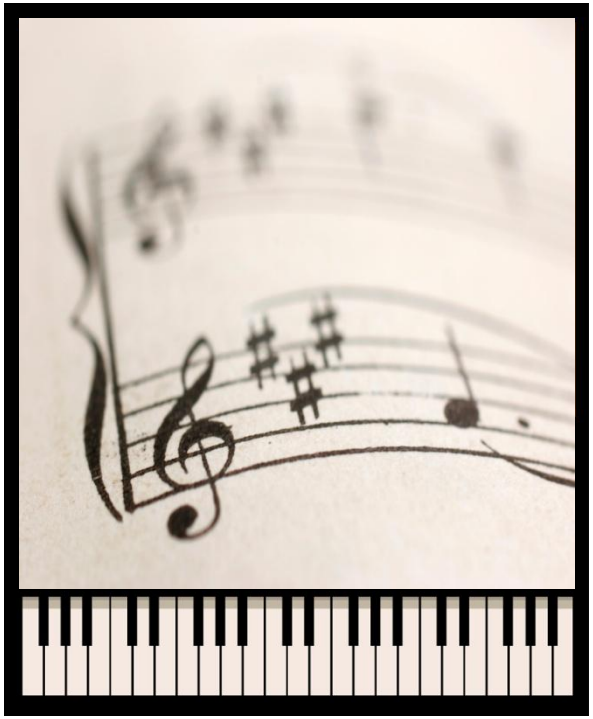
- We often build collaborative relationships with others in the same discipline.
- What we create may not advance the group in the way we imagined





Collaboration

What we may need to do is build collaborative relationships with others outside our disciplines: (Technical Services, Subject Matter Experts, Knowledge Managers… … …)



Learners hold views of the world and meanings for words that make sense to them

Educators attempt to capture that knowledge and encloses it in a specific learning environment.

How the e-frame is constructed is crucial to fully engaging learners


Questions