E- Learning: Concepts, Needs and Scope

Contents

What is E- Learning?

Evolution and Concept of E-Learning

Need, Scope and Significance of E- Learning

Ethical, Safe and Sustainable E- Learning Practices

Emerging Trends in Digital and E- Learning

Digital Learning Ecosystem and Changing Learning Needs

What is E- Learning?

What is e-learning?

A systematic approach to teaching and learning in which electronic and digital technologies are used to

- provide learning resources
- facilitate interaction
- support practice
- conduct assessment
- provide feedback and
- promote collaboration

E-learning may take place through

Learning Management Systems (LMS)	Online classes and webinars	Digital repositories	Educational videos	Interactive simulations
Online quizzes	Discussion forums	Virtual classrooms	Digital portfolios	Mobile applications
	MOOCs	AI-supported learning tools	Collaborative platforms	

Examples

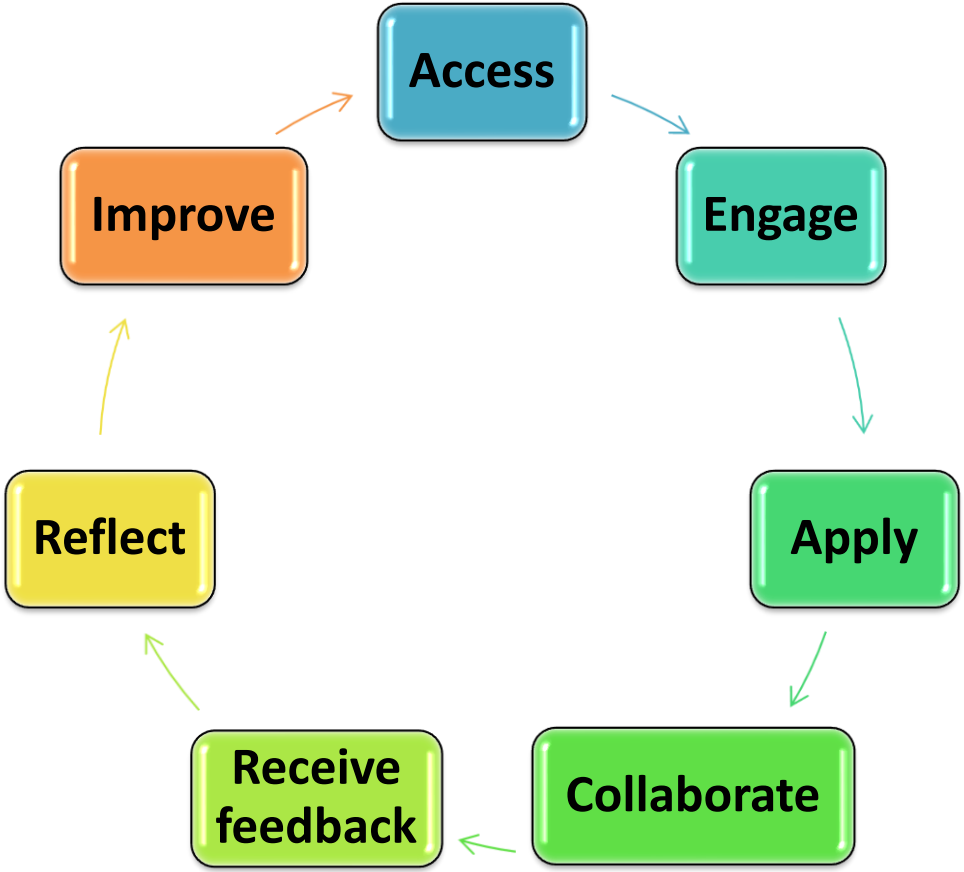
Technology-centred approach:

Teacher will show learners a PowerPoint presentation on inclusive education.

Learning-centred approach

Teacher will provide learners with three classroom cases involving learners with diverse needs. They will analyse the cases, identify barriers to participation, suggest inclusive strategies and discuss their solutions with peers.

E-learning cycle



Example

A Class VII Science teacher is teaching Heat. The teacher:

shows a short animation demonstrating heat transfer

asks students to predict what will happen when two objects at different temperatures come into contact

conducts a digital quiz

asks students to explain their answers

provides immediate feedback.

The technology supports **conceptual understanding and formative assessment**.

Evolution and Concept of E-Learning

Evolution of E-Learning

Computer-Assisted Learning

programmed instruction

drill and practice

tutorials

objective-type questions

immediate responses

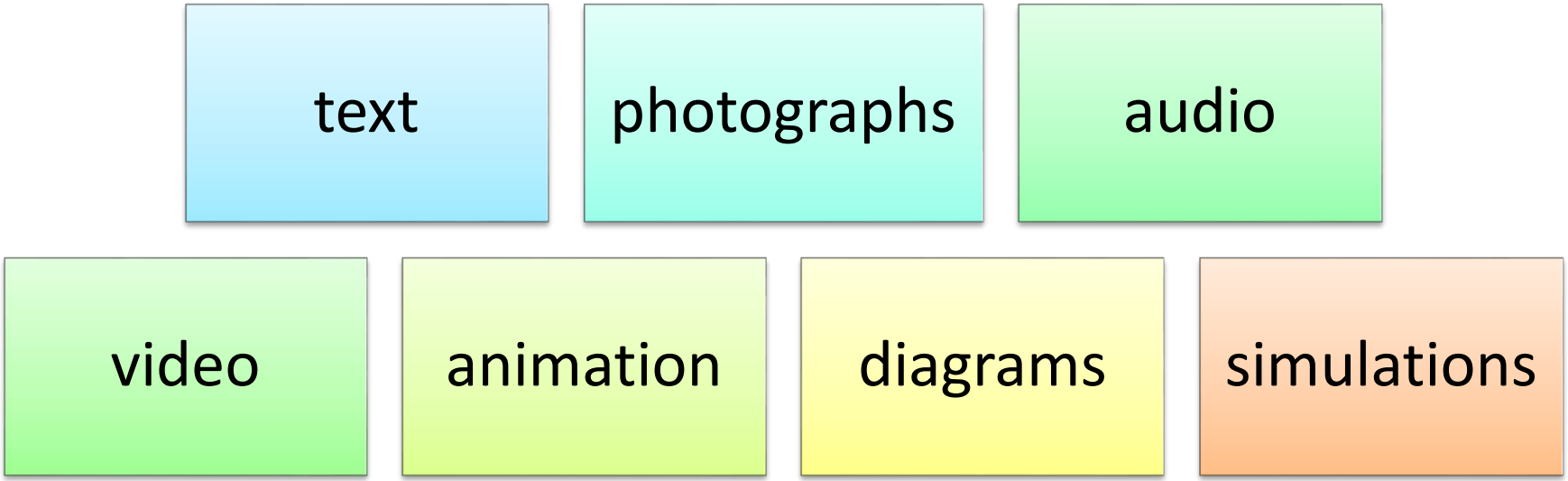
Evolution of E-Learning

The earliest recognisable ancestor is Computer-Based Training (CBT).

The first dedicated CBT system, PLATO (Programmed Logic for Automatic Teaching Operations), was built in 1959 at the University of Illinois

The concept of CBT itself evolved from earlier terms like Computer-Assisted Instruction (CAI) and Computer-Assisted Learning (CAL).

Multimedia Learning



Example: Child Development

A teacher educator can use short video clips demonstrating:

language development, peer interaction

problem-solving and classroom behaviour

Trainees can observe the videos and identify developmental characteristics.

The important shift is from:

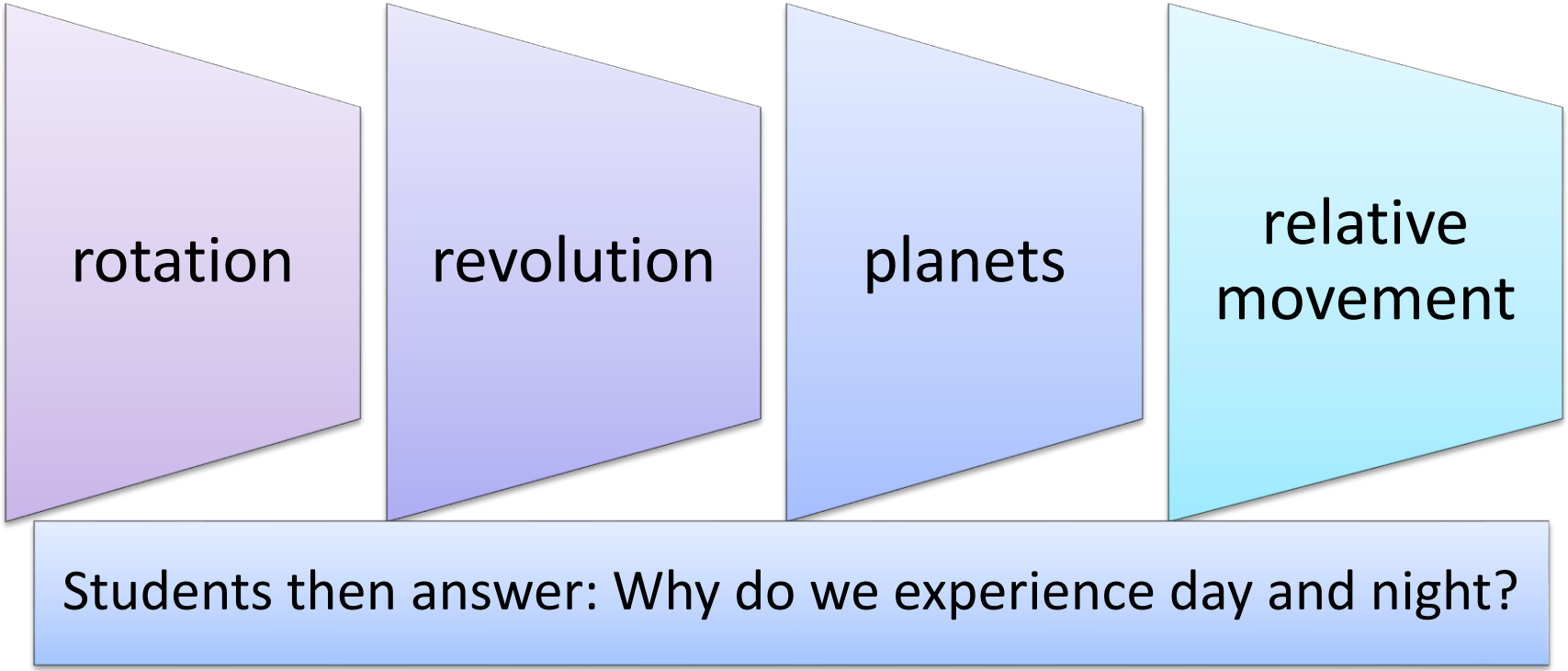
Educator is telling trainees about child development to

Teacher is giving trainees an opportunity to observe, analyse and interpret child development.

Thus, video becomes a case for professional analysis.

Example: Social Science

In Class VI, the teacher can use an animation showing:



Internet-Based Learning

The internet expanded access to:	online journals	digital libraries	educational websites
discussion forums	online courses	webinars	institutional repositories

Example: Action Research

search for examples of classroom action research

identify the research problem

examine the methodology

compare two studies

identify possible research questions for their own school internship.

Thus, internet resources can promote **independent inquiry**

Example: Water Conservation

investigate water scarcity

compare two regions

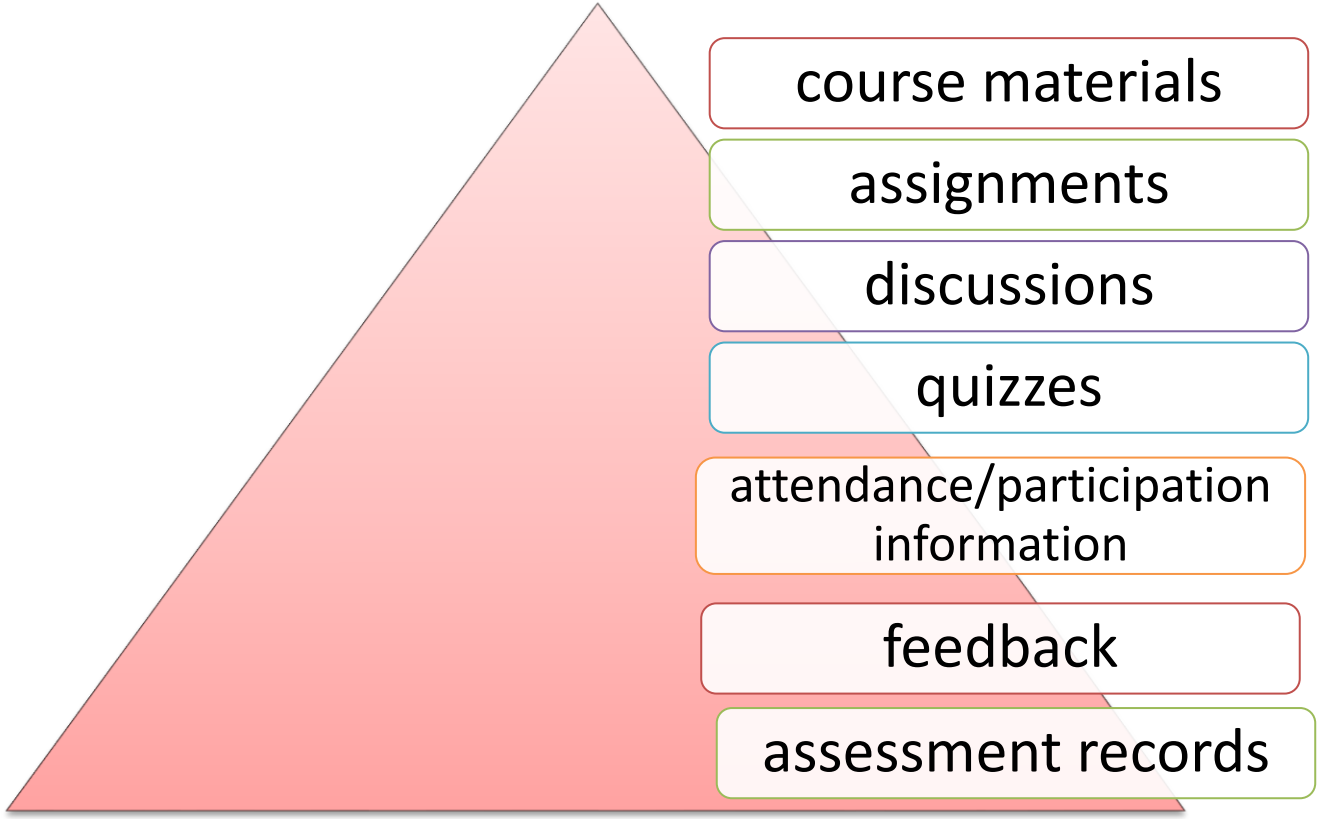
identify causes

propose solutions

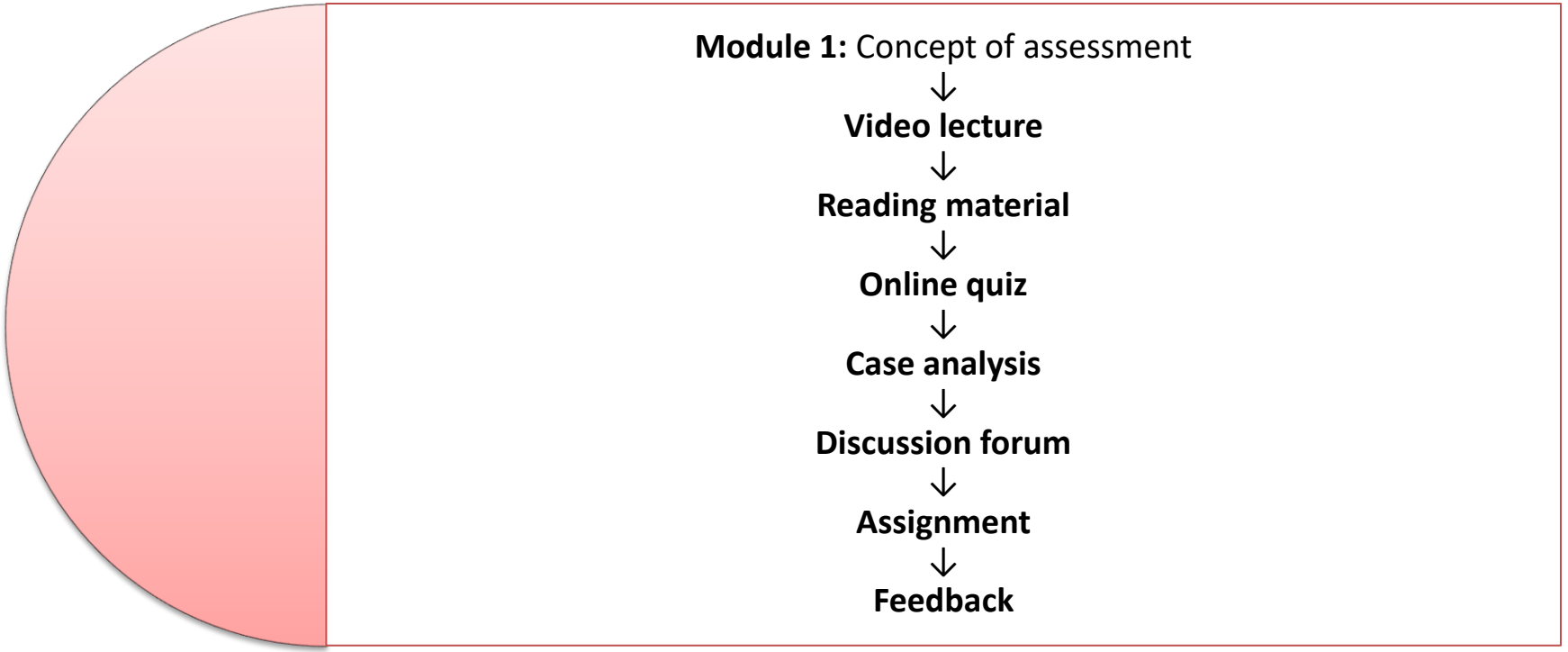
prepare a digital presentation

The teacher is therefore developing both subject knowledge and information literacy

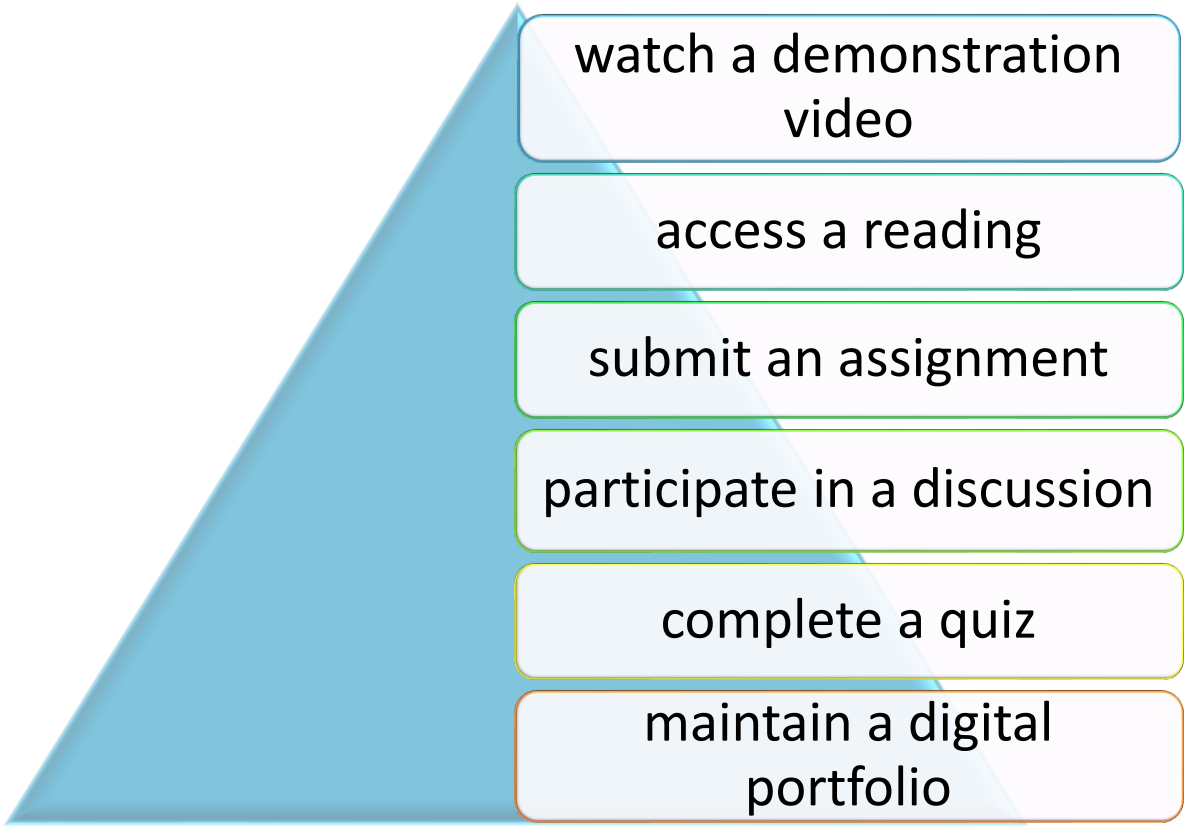
Learning Management Systems



Example: Assessment for Learning



Mobile and Blended Learning



Example: School Internship

Trainees may record their reflection after a teaching lesson

What did I plan?

What actually happened?

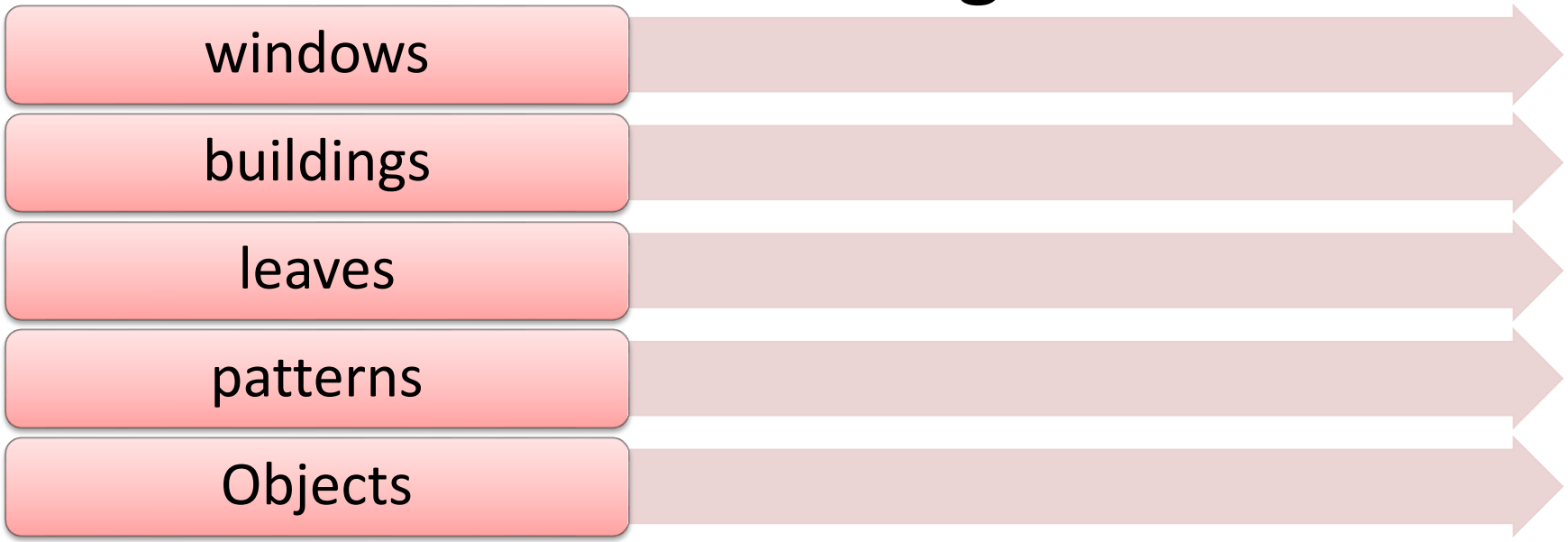
Which learners participated?

Where did learners face difficulty?

What will I change next time?

This develops **reflective practice**.

Example: Photograph of symmetry in surroundings



This transforms the mobile phone from a **distraction** into a **learning instrument**

Collaborative and Social Learning

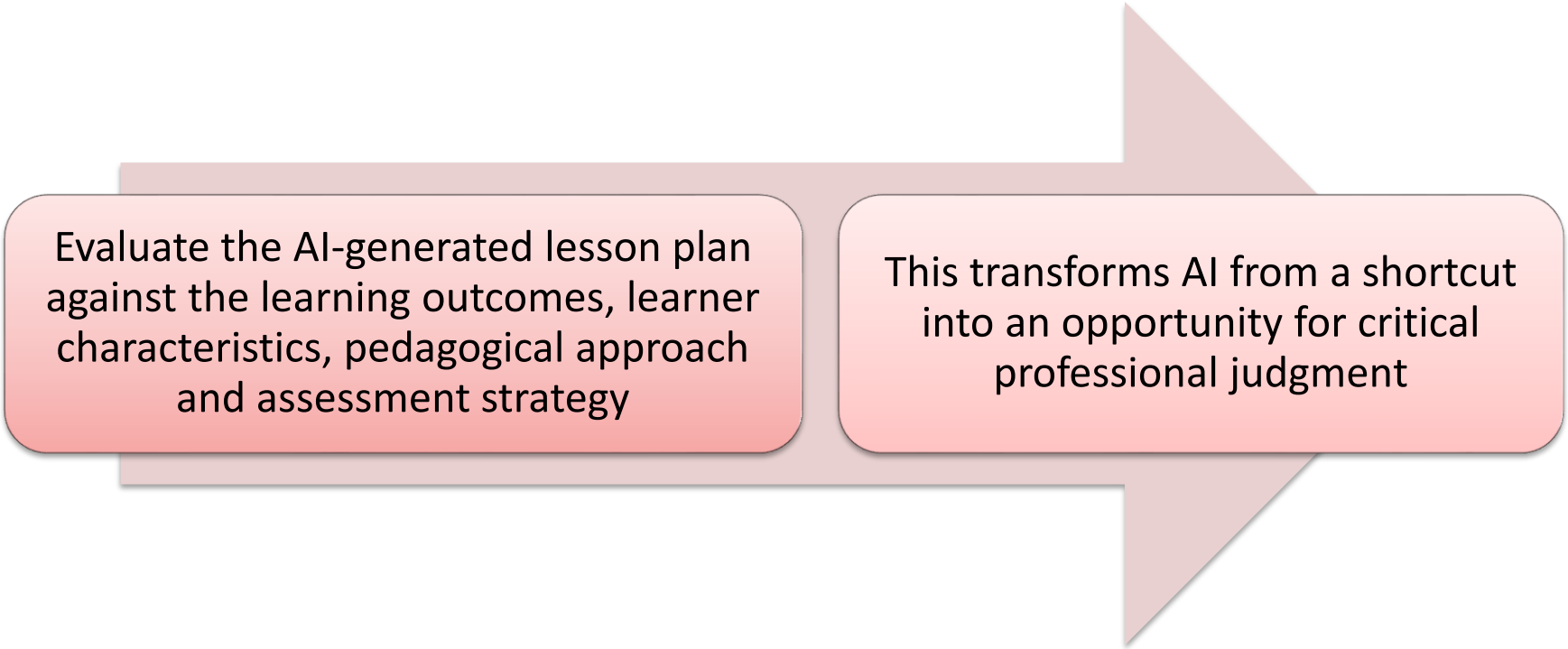
Example: Learners can work in groups to develop:	a digital lesson plan	concept map	educational podcast
instructional video	digital teaching-learning material	inclusive classroom activity	Each group member can contribute to a shared product

This develops both pedagogical and digital competencies

AI-Supported Learning

- generating examples
- creating practice questions
- providing initial feedback
- supporting lesson planning
- adapting learning materials
- assisting brainstorming
- generating alternative explanations

Example


Evaluate the AI-generated lesson plan against the learning outcomes, learner characteristics, pedagogical approach and assessment strategy
This transforms AI from a shortcut into an opportunity for critical professional judgment

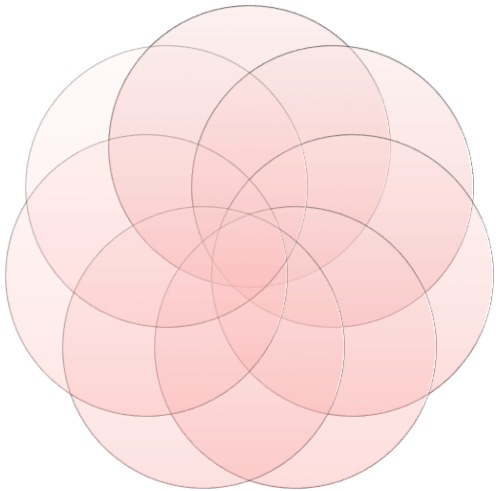
Need, Scope and Significance of E- Learning

Need of E-Learning

Smart phones

AI tools

search engines



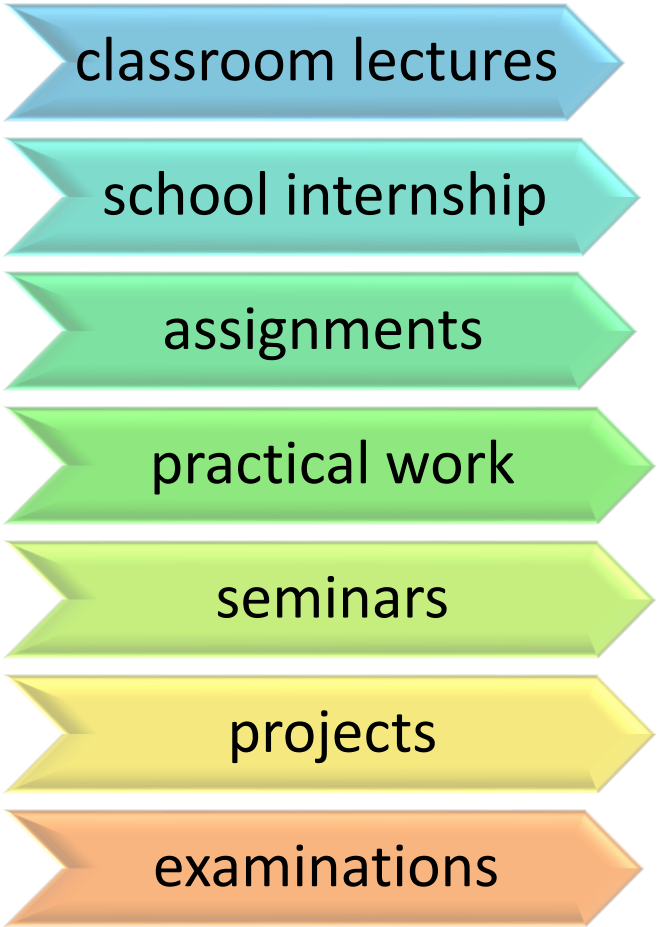
digital libraries

video platforms

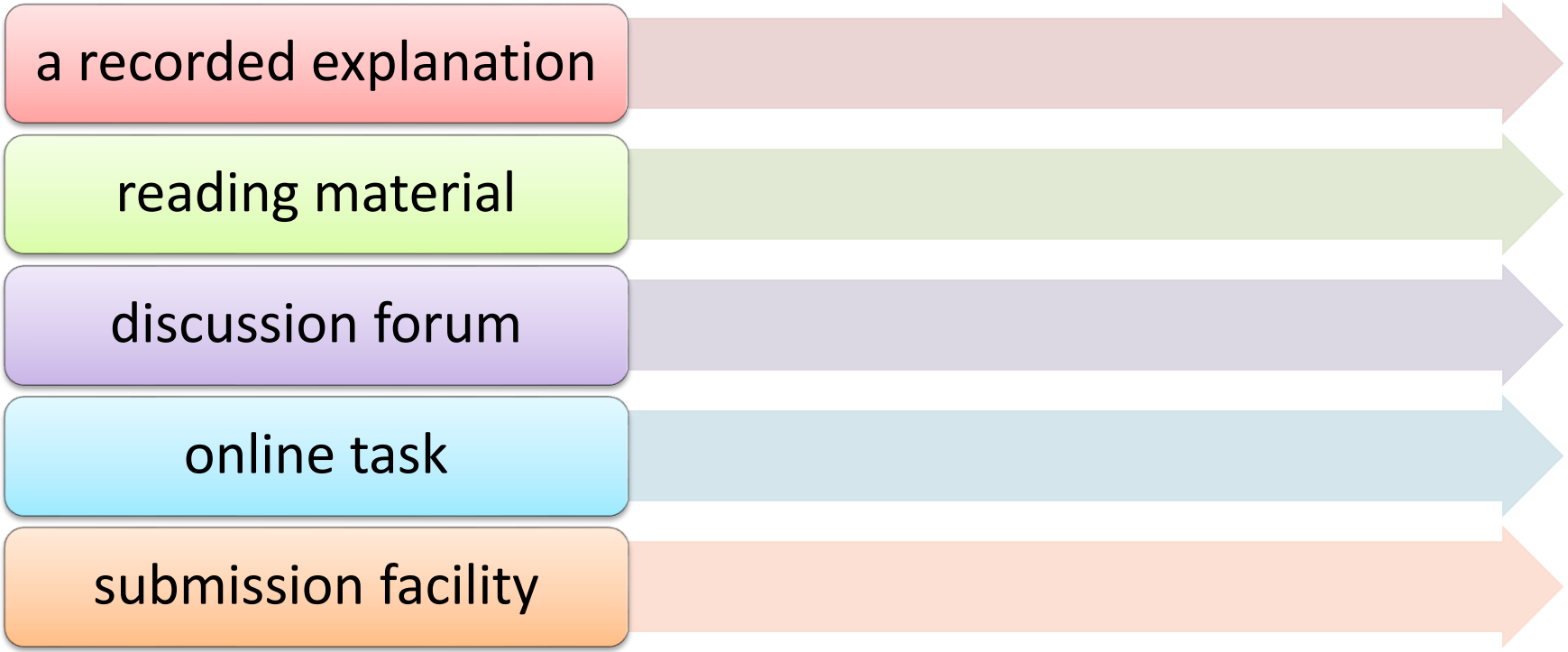
social media

online courses

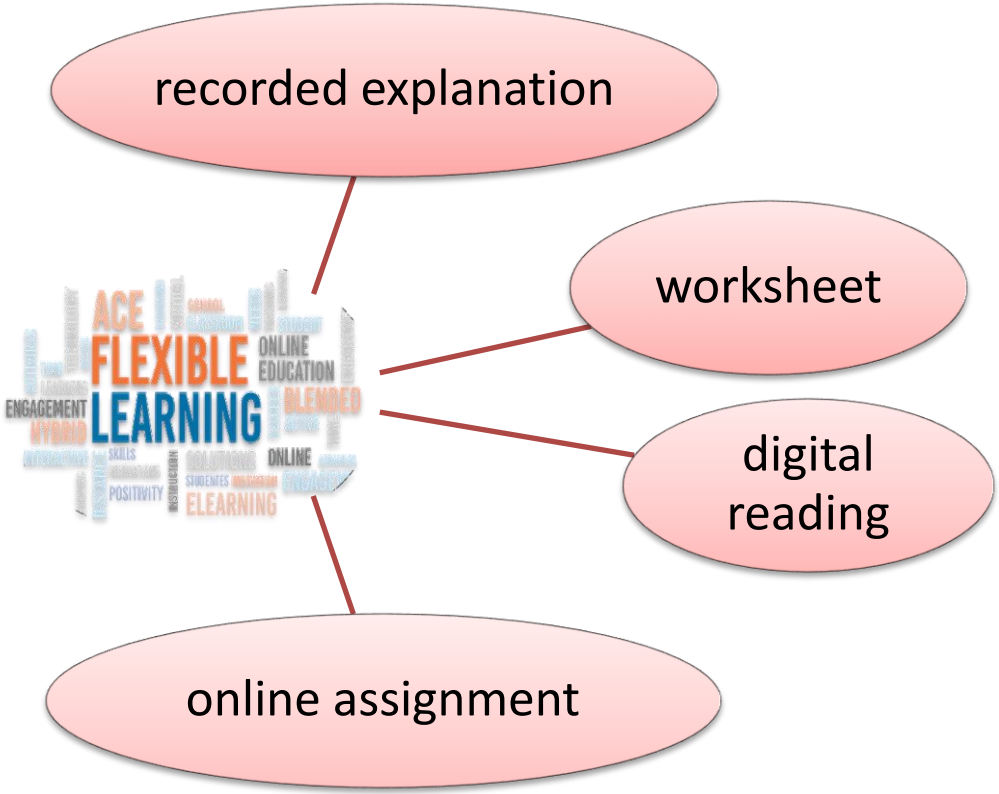
Need for Flexible Learning



Example


a recorded explanation
reading material
discussion forum
online task
submission facility

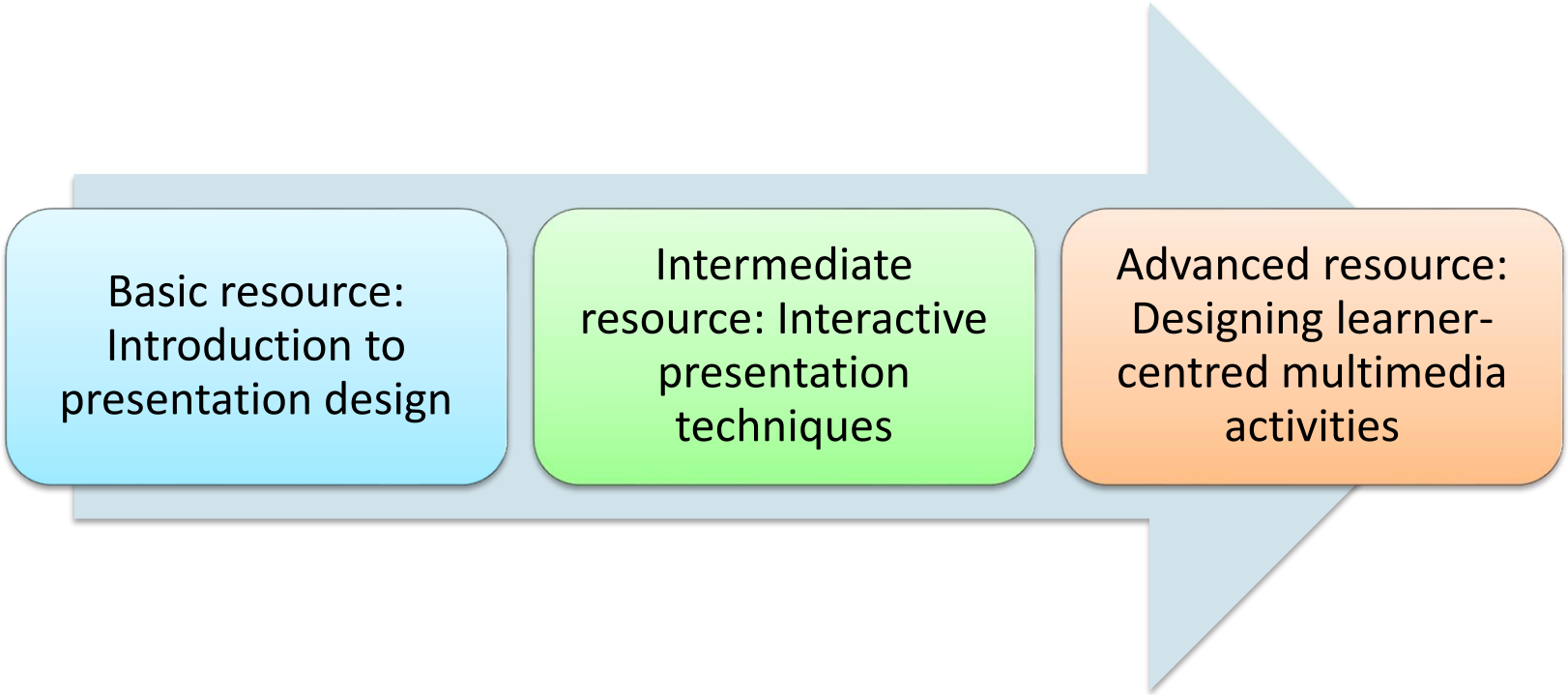
Example


recorded explanation
worksheet
digital reading
online assignment
ACE
FLEXIBLE
ONLINE
EDUCATION
ENGAGEMENT
LEARNING
BLENDED
HYBRID
ONLINE
POSITIVITY
ELEARNING

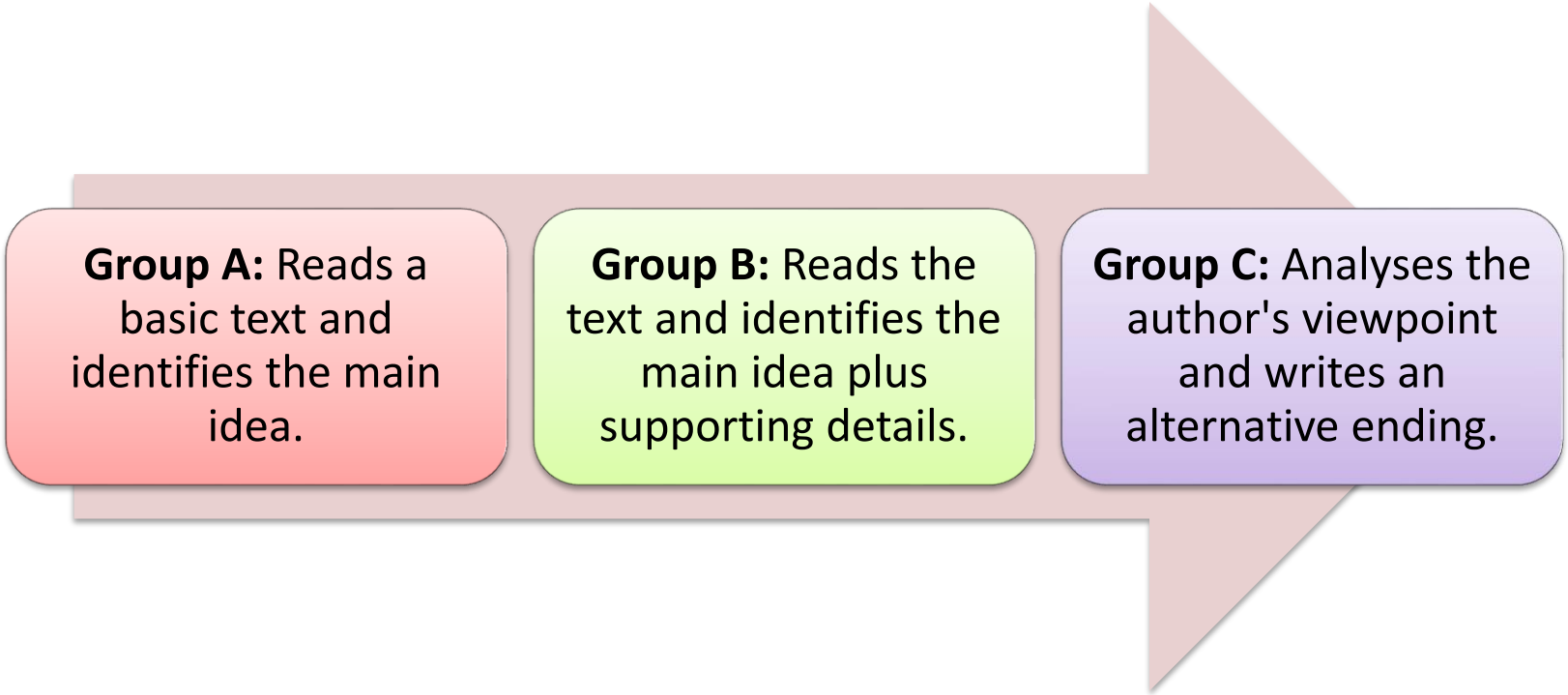
Need for Individualised Learning

prior knowledge	learning pace	language	digital proficiency
interests	learning needs	Learners can pause, replay, revisi, practise	choose additional resources.

Example: Educational Technology



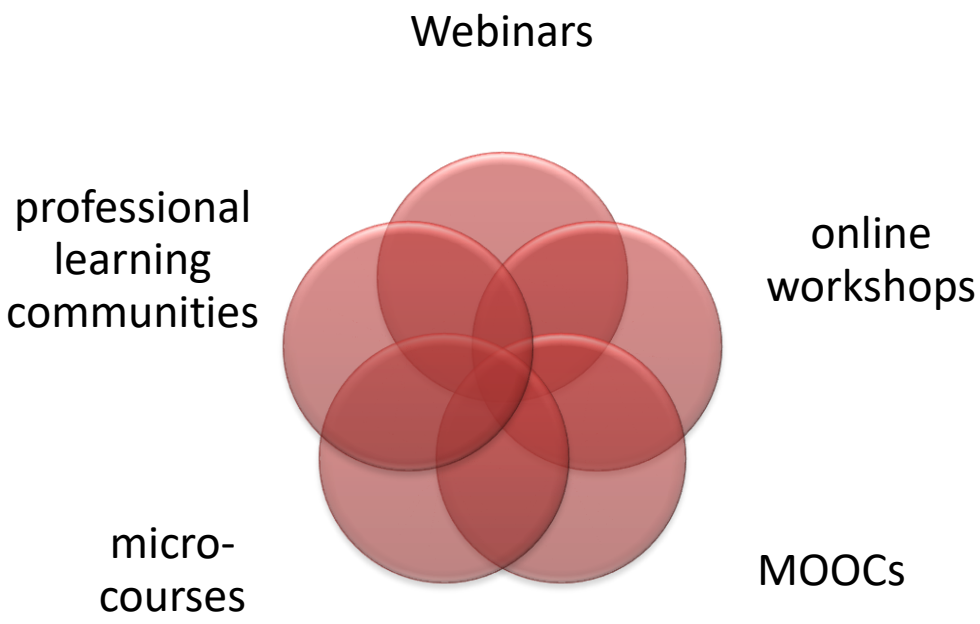
Example: Class VI English lesson



Need for Continuous Professional Development

- digital pedagogy
- assessment
- inclusive education
- classroom management
- socio-emotional learning
- AI literacy
- educational research

E-learning makes continuous professional development more feasible through



Example: Designing Formative Assessment

E-Learning and Assessment

E-learning can transform assessment from simply testing at the end to continuously supporting learning

The teacher identifies the misconception

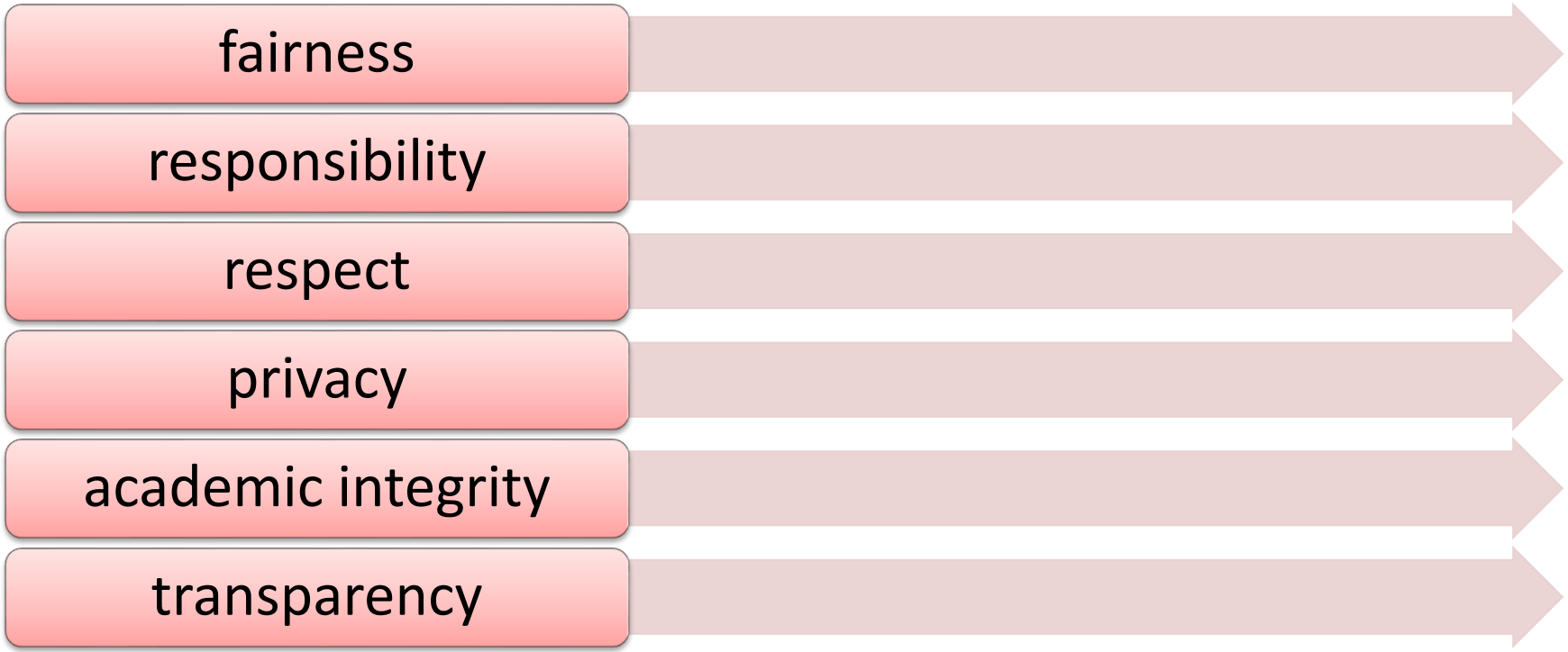
provides another explanation

gives a visual representation

provides additional practice

conducts a second short assessment

Ethical E-Learning



Example

The teacher should consider: whether the material can legally be shared

whether permission is required

whether an open educational resource can be used

whether limited excerpts can be used appropriately

Example

- identify the original source
- paraphrase appropriately
- cite the source
- add personal analysis
- connect the idea to school practice

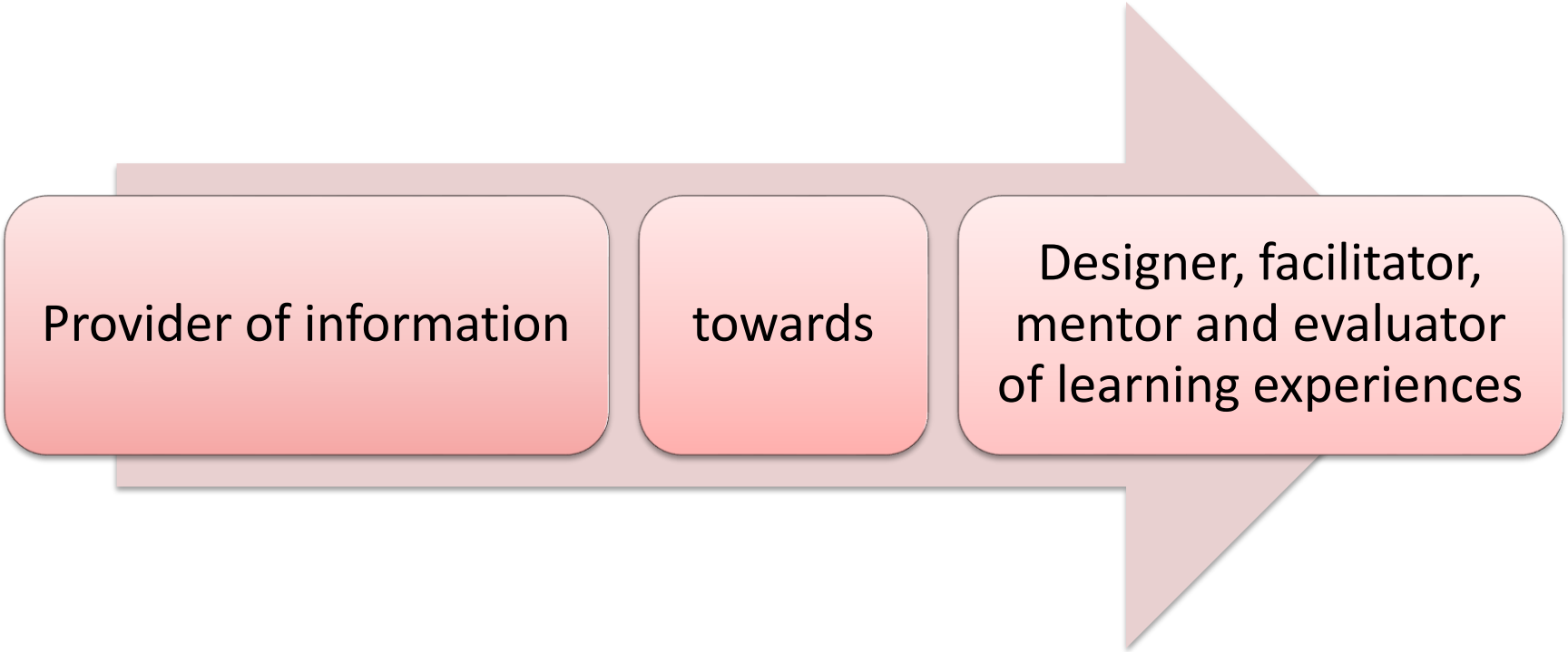
Scope of E-Learning

S. No.	Area	Possible E-learning application
1.	Theory courses	Videos, readings, quizzes
2.	Educational Psychology	Case analysis
3.	Pedagogy	Digital lesson planning
4.	Microteaching	Recorded teaching + feedback
5.	School internship	Digital reflective journal
6.	Assessment	Online assessment tasks

Scope of E-Learning

S. No.	Area	Possible E-learning application
7.	Research	Digital databases and research tools
8.	Practicum	Digital portfolios
9.	Inclusive education	Simulations/case studies
10.	Professional development	MOOCs/webinars
11.	Collaboration	Online communities
12.	Teaching-learning material	Digital resource creation

Significance



Example: Bloom's Taxonomy

provide a short introductory video

ask trainees to analyse examination questions

classify questions according to cognitive levels

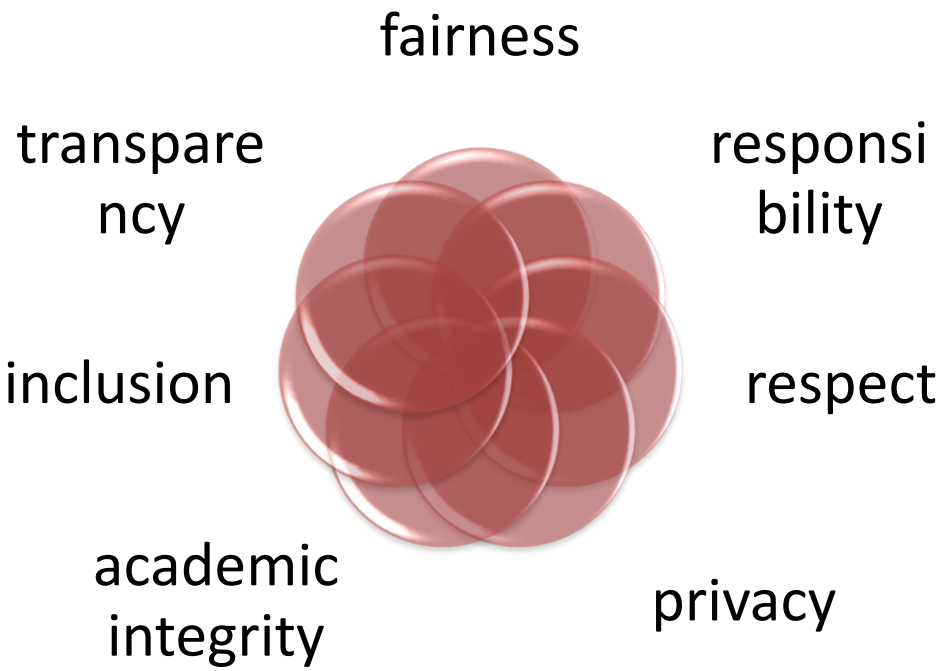
create their own questions

exchange questions with peers

revise them after feedback.

Ethical, Safe and Sustainable E-Learning Practices

Ethical E-Learning



Example: Copyright

Here learners learn to: identify copyright concerns

use open educational resources

provide attribution

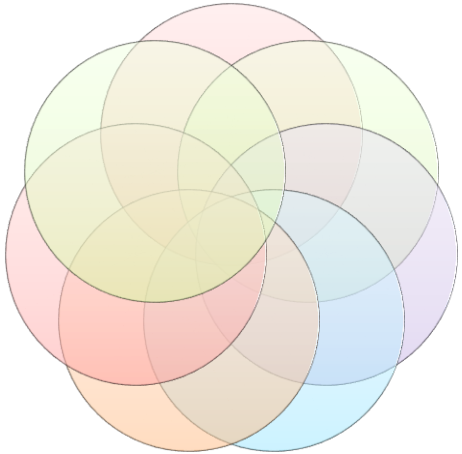
respect licensing

Privacy and Data Protection

names

email addresses

videos



assessment results

photographs

participation records

Example

Is permission required?

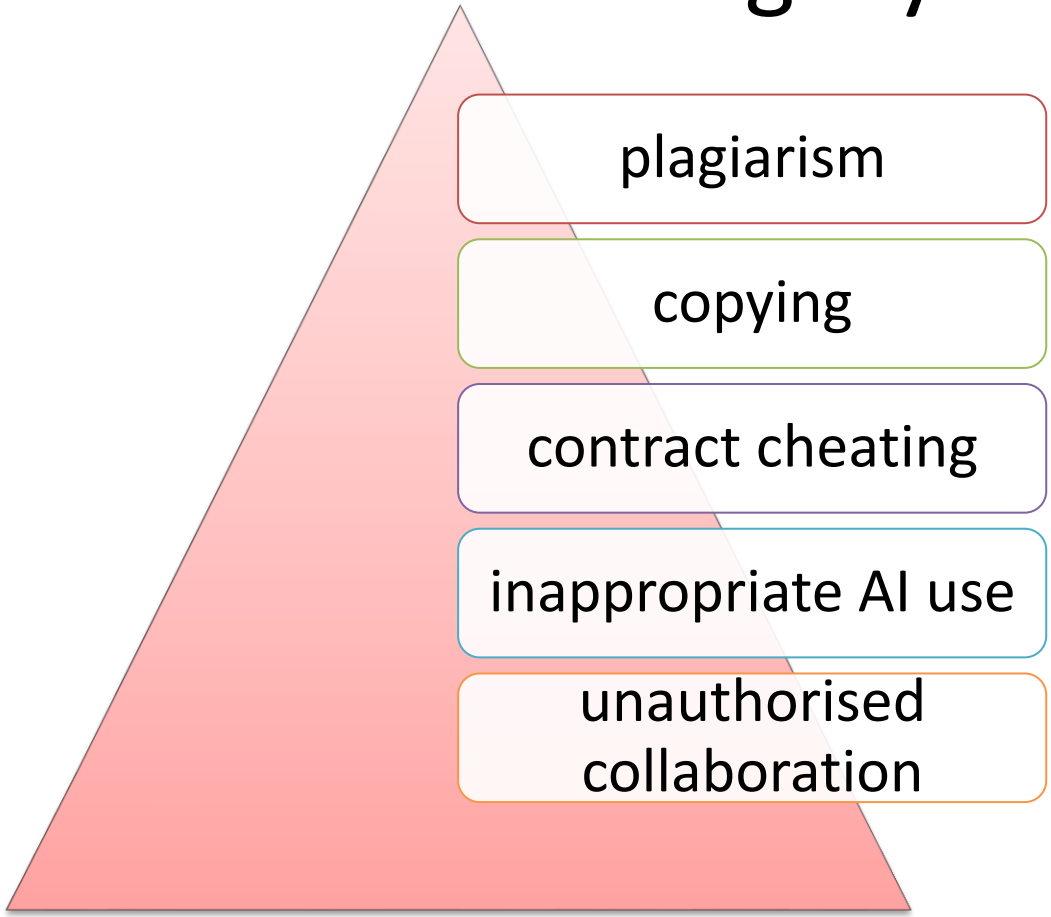
Where will the photograph be stored?

Who can access it?

Is it necessary to identify the child?

Can the activity be conducted without collecting identifiable information?

Academic Integrity



Example

analyse a real classroom situation

identify constructivist principles

prepare a lesson

explain their pedagogical decisions

teach a short segment

reflect on learner responses

Digital Safety

use appropriate passwords

avoid sharing confidential information

verify suspicious links

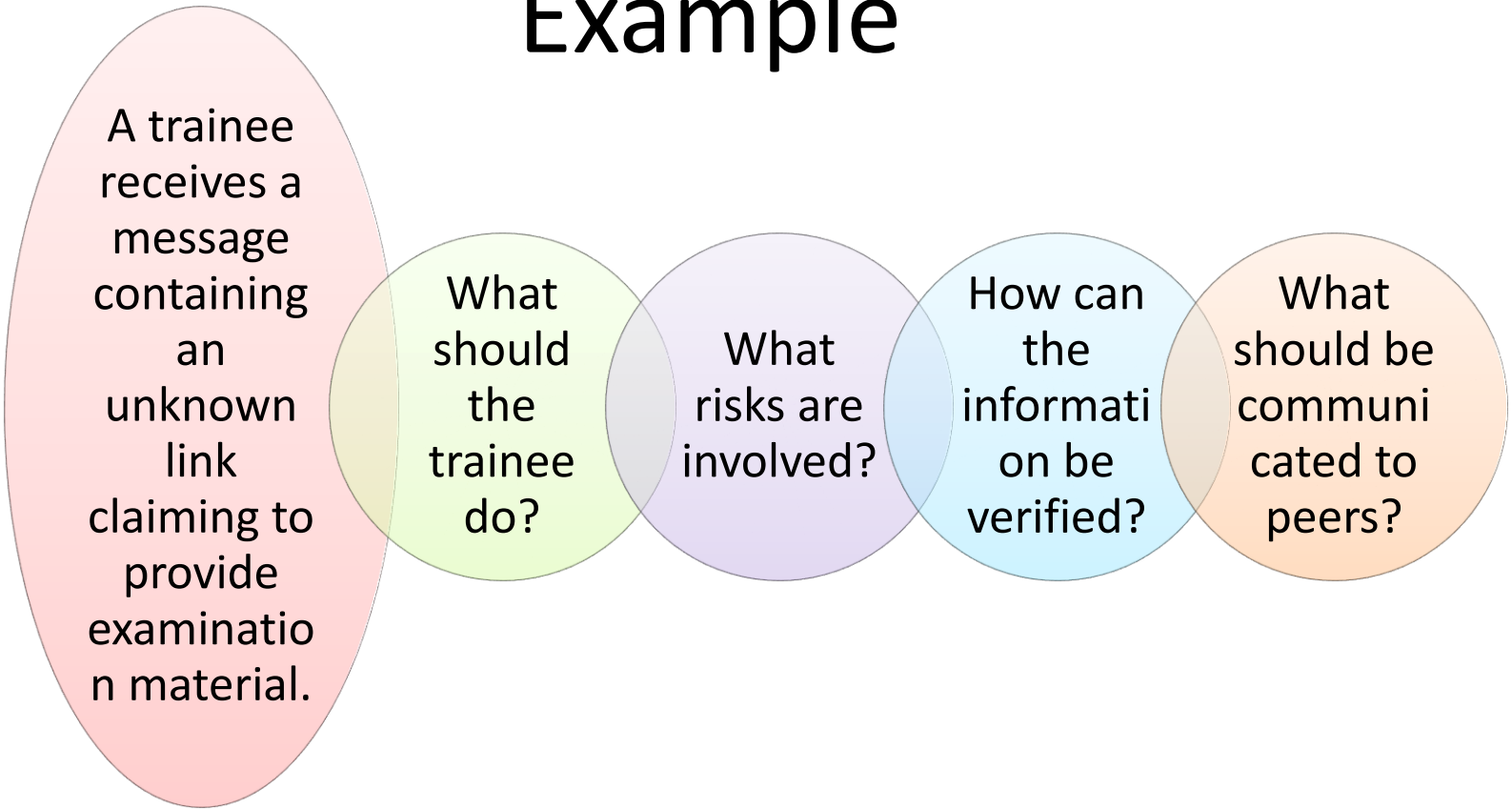
identify misinformation

maintain professional communication

understand cyberbullying

report inappropriate online behaviour

Example


A trainee receives a message containing an unknown link claiming to provide examinatio n material.
What should the trainee do?
What risks are involved?
How can the informati on be verified?
What should be communi cated to peers?

Accessibility and Inclusion

An inclusive digital resource could provide: captions

transcript

readable text

appropriate contrast

alternative formats

clear navigation

manageable file sizes

Sustainable E-Learning

Instead of	consider
40-minute video + 30-page PDF + five links + multiple applications	8-minute focused video + concise reading + one meaningful activity + feedback.

The objective is

Less digital clutter → greater learning value

Example

Sustainability means considering digital equity.

If some learners have limited internet access, the teacher should provide an accessible alternative.

Therefore, A digital practice is not truly sustainable if it excludes learners because of access barriers.

Emerging Trends in Digital and E- Learning

Artificial Intelligence

AI is becoming increasingly relevant to education.

Before generating an argumentative paragraph, students must: read the AI response, identify weaknesses, check facts, improve the argument, explain their changes

This develops **critical AI literacy**.

Example

Teachers can also give trainees an AI-generated lesson plan and ask them to identify:

- pedagogical strengths
- inaccuracies
- inappropriate assumptions
- missing assessment
- inclusivity concerns
- The task develops AI literacy and professional judgement.

Personalised and Adaptive Learning

Digital systems can increasingly provide different learning experiences based on learner performance.

Example: Learners complete a diagnostic test on a topic

Learners demonstrating strong prior knowledge receive an advanced case.

Learners with misconceptions receive explanatory material and additional practice.

The principle is: Assessment information should inform the next learning opportunity.

Example

A mathematics platform identifies that a student has difficulty with fractions.

It provides: Concept explanation → visual example → easier practice → feedback → additional practice

Another learner who has mastered the concept can move to a more challenging problem.

Learning Analytics

Learning analytics involves using available learning data to understand patterns of participation and performance.

Educator noticed that: 90% of trainees accessed a resource

only 45% completed the activity

many incorrect responses occurred on one particular concept

The educator can investigate: Is the concept difficult, or is the learning material unclear?

Analytics should therefore support pedagogical decisions.

Micro-learning

Micro-learning presents learning in short, focused units.z

Example: Instead of a 90-minute online lecture on formative assessment, teacher educators can create five short learning units:

What is formative assessment?

Feedback strategies, Questioning techniques, Exit tickets and

Designing a formative assessment task

Gamification

Gamification involves incorporating selected game elements into learning.

It include: challenges, levels, badges, points, immediate feedback, progress indicators.

In a Class VI, students receive a digital map challenge

Identify the location and characteristics of five Indian rivers.

Students earn progress points as they complete increasingly complex tasks.

The learning objective remains geographical understanding, not simply winning points.

Virtual and Immersive Learning

Virtual simulations can provide experiences that may be difficult to reproduce physically.

Example: Teacher trainees could work through a simulated classroom containing diverse learner behaviours.

They might be asked to respond to: disruptive behaviour, learner disengagement, group conflict, inclusive education needs.

The focus is not on the technology itself but on: observe → decide → act → receive feedback → reflect

Digital Learning Ecosystem and Changing Learning Needs

Digital Learning Ecosystem and Changing Learning Needs

A digital learning ecosystem is the interconnected environment of people, technologies, resources, policies, infrastructure and learning practices that influence digital learning.

It includes: Learner + Teacher + Content + Technology + Assessment + Support + Institution + Home/Community

Digital Ecosystem

Learners: students, different levels of digital literacy, different devices, different learning preferences

Teachers: Educators, mentors, counsellors

Content: e-books, videos, lesson plans, research articles, digital teaching-learning materials.

Digital Ecosystem

Technology: LMS, video conferencing, mobile devices, collaborative platforms, assessment tools.

Assessment: quizzes, portfolios, assignments, presentations, reflective journals.

Support: technical support, academic mentoring, institutional policies.

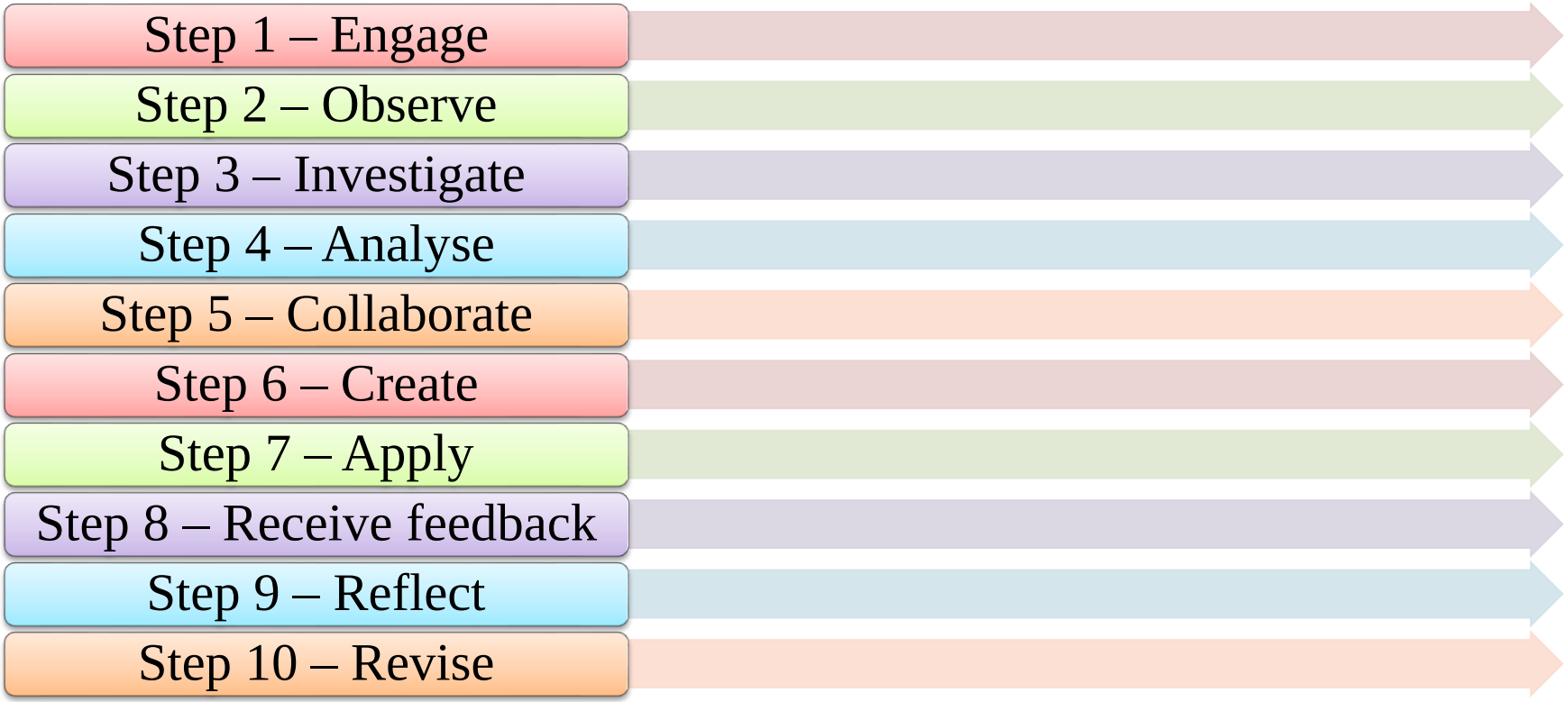
Changing Learning Needs of Learners

- Digital literacy
- Information literacy
- Media literacy

Changing Learning Needs of Learners

- AI literacy
- Collaboration
- Self-regulation
- Critical thinking

Bringing Everything Together: An E-learning-oriented approach



Topic: Water Conservation
E-learning-supported approach

Step 1 – Engage: Students watch a short video showing water scarcity.

Step 2 – Explore: Students examine digital information about water consumption.

Step 3 – Analyse: Students compare water-use patterns.

Step 4 – Collaborate: Groups discuss possible solutions.

Step 5 – Create: Students design a digital poster or awareness campaign.

Topic: Water Conservation
E-learning-supported approach

Step 6 – Present: Groups present their proposals.

Step 7 – Assess: Peers use a simple rubric.

Step 8 – Reflect, Students answer: “What change can I make in my own water-use behaviour?”

Now the lesson moves from: Information → Understanding → Application → Creation → Behavioural change

Conclusion

Ultimately, the success of e-learning should not be measured by how much technology is used, but by what learners are able to do because technology has been used meaningfully. Technology should follow pedagogy, learner needs and educational purpose and not replace them.

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E-LEARNING
IMPROVE YOUR SKILLS