Designing eLearning Experiences

Session Roadmap

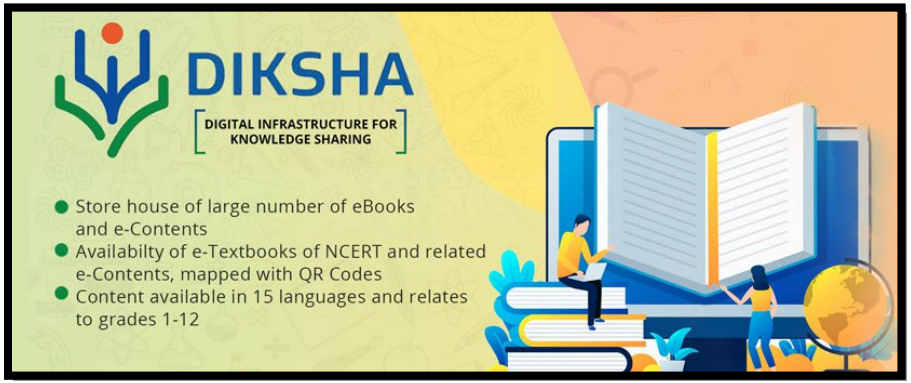
1. **Foundations**
   Instructional design models and Universal Design for Learning

2. **Core Principles**
   What research shows makes eLearning design genuinely effective

3. **Learner-Centred Content**
   Designing engaging content around real learners, not just topics

4. **Engagement & Motivation**
   Strategies to spark and sustain learner motivation

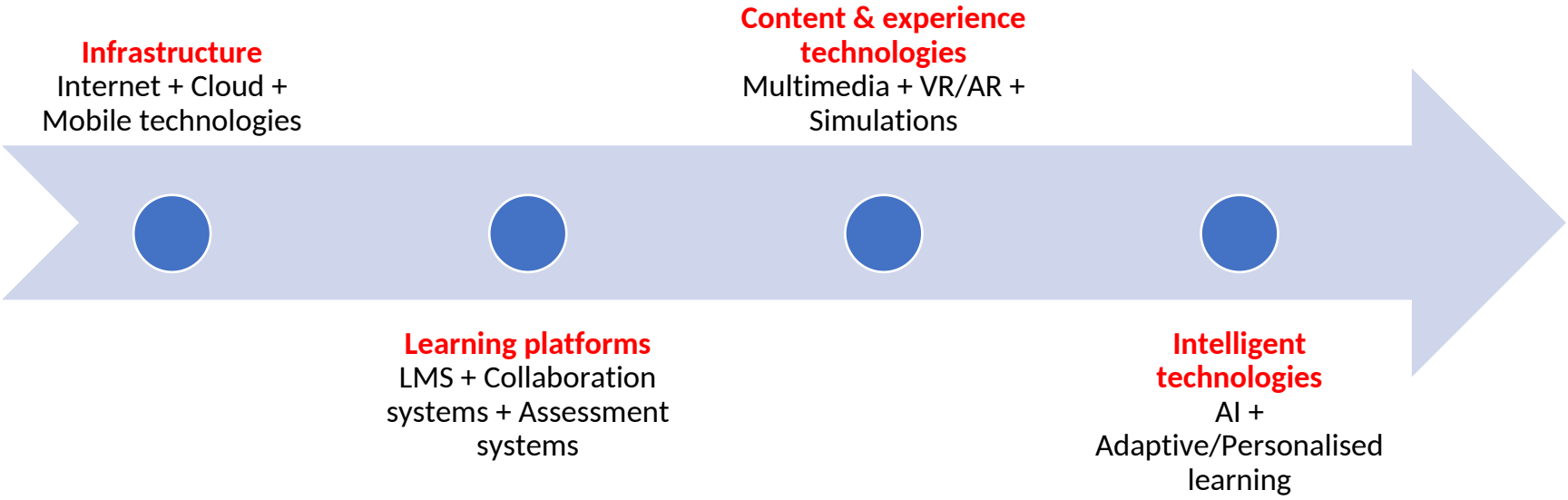
5. **Interactivity & Multimedia**
   Designing active, meaningful digital learning experiences



eLearning Portals

E-learning (electronic learning) refers to learning and teaching that are **enabled, delivered, supported, or mediated through digital technologies and electronic communication systems**

eLearning- Digital Technologies and Electronic Communication Systems



Diksha & Swayam- Types of Learning Resources

1. Video-based learning
2. Audio-based learning
3. Interactive simulations
4. Animation and motion graphics
5. Digital textbooks/e-books
6. Interactive quizzes and assessments
7. Infographics and visualisations
8. Virtual laboratories
9. Augmented/Virtual Reality (AR/VR) resources
10. AI-enabled and adaptive learning content

What is eLearning Design?

E-learning design is the systematic planning and creation of online or digitally mediated learning experiences so that learners can achieve specified learning outcomes effectively, engagingly, and accessibly.

E-learning design is the process of deciding what learners will learn, how they will learn it online, what digital resources and activities they will use, and how their learning will be assessed.

Key Elements of E-learning Design

E-learning design is the systematic planning and creation of online or digitally mediated learning experiences so that learners can achieve specified learning outcomes effectively, engagingly and accessibly.

1 Learner Analysis

- Prior knowledge
- Needs and goals
- Digital skills and access
- Motivation and learning context

2 Learning Outcomes

- Clearly specify what learners should know,
- understand or be able to do.

3 Content Design

- Organise content into meaningful units, lessons or modules.

4 Multimedia Design

- Text, images, audio, video,
- animation, infographics,
- simulations, etc.

5 Learning Activities

- Quizzes, discussions,
- problem-solving,
- simulations, projects,
- collaborative activities.

6 Interaction Design

- Learner ↔ Content
- Learner ↔ Teacher
- Learner ↔ Learner
- Learner ↔ Technology

7 Assessment and Feedback

- Formative and summative assessment
- Timely and useful feedback

8 Accessibility and Inclusion

- Support diverse learners
- Include learners with disabilities
- Ensure equal access

9 Technology and Platform

- LMSs, MOOCs
- Mobile applications
- Video-conferencing tools
- Interactive platforms

10 Evaluation and Improvement

- Learner feedback
- Assessment results
- Learning analytics
- Continuous improvement

E-learning design = Learner + Objectives + Content + Multimedia + Activities + Interaction + Assessment + Technology + Accessibility + Evaluation

AI Generated Image (ChatGPT (2026))

Why eLearning Design Matters?

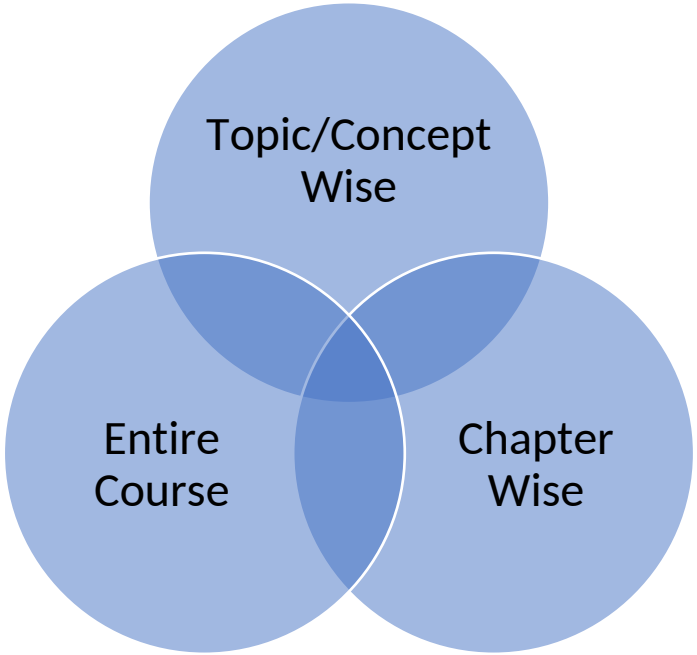
Moving Beyond "Digitized Slides"

- eLearning is not simply recorded lectures or slides uploaded online
- Weak design leads to disengagement, low completion, and shallow learning
- Strong design blends pedagogy, technology, and learner psychology
- Design quality directly shapes retention, transfer, and real-world performance

> ***"eLearning design is the intentional application of learning science — not just moving content online."***

(Clark & Mayer, 2016)

eLearning Design- Practical Approaches



Use animations for invisible phenomena

Some Physics concepts cannot be directly seen

Examples

Electric current

Magnetic field

Molecular motion

Sound waves

Electric field

Light rays

Media

Animation / Interactive Simulation

Instructional Design Foundations- What is ID?

Instructional Design (ID) is a systematic process of designing, developing, implementing, and evaluating learning experiences to help learners achieve specific learning outcomes effectively and efficiently.

Instructional design (ID) is the process of deciding what learners should learn, how they will learn it, what learning materials and activities will be used, and how their learning will be assessed

Instructional Design- Components

Learners – Who are the learners? What are their needs, characteristics and prior knowledge?

Learning outcomes – What should learners know, understand or be able to do?

Content – What knowledge, concepts and skills need to be taught?

Learning strategies – How will the content be taught or learned?

Learning activities – What will learners do to developthe required knowledge and skills?

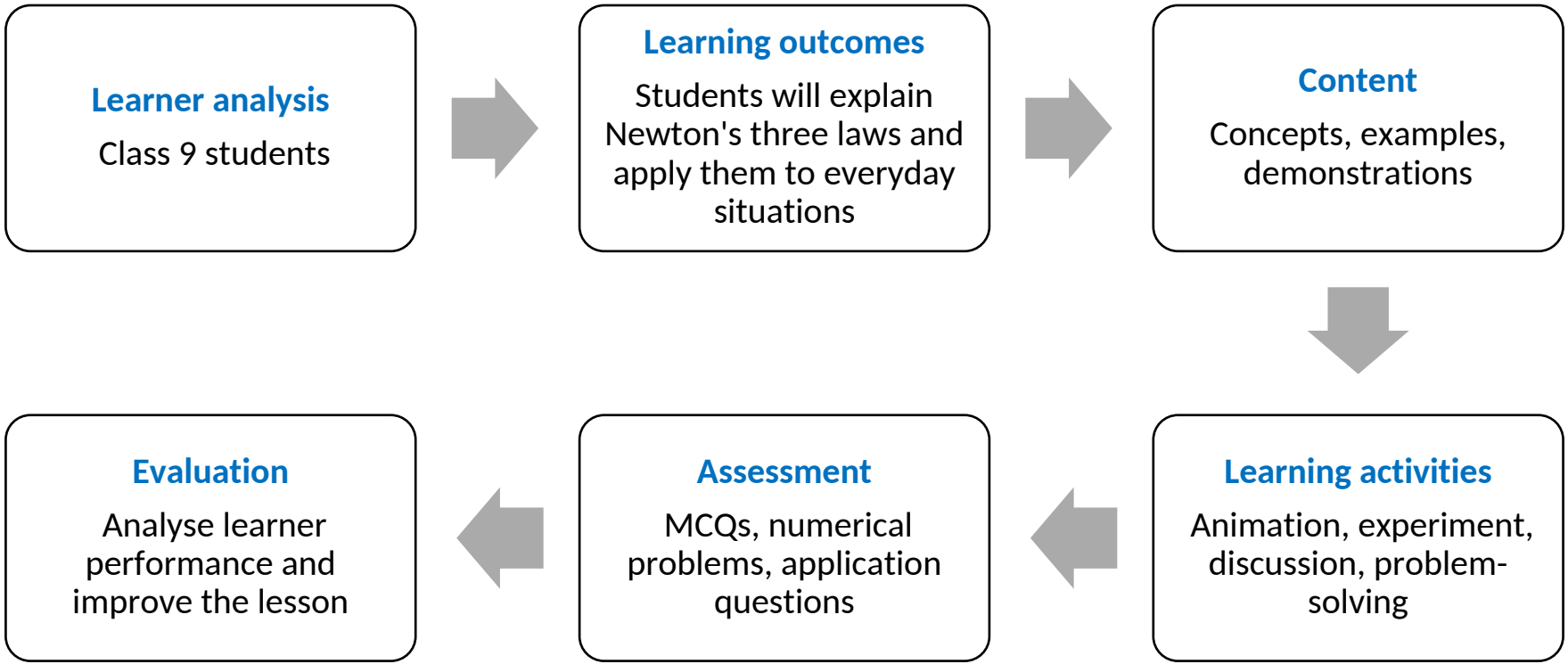
Learning resources – What materials, technologies, media and tools will be used?

Assessment – How will achievement of learning outcomes be measured?

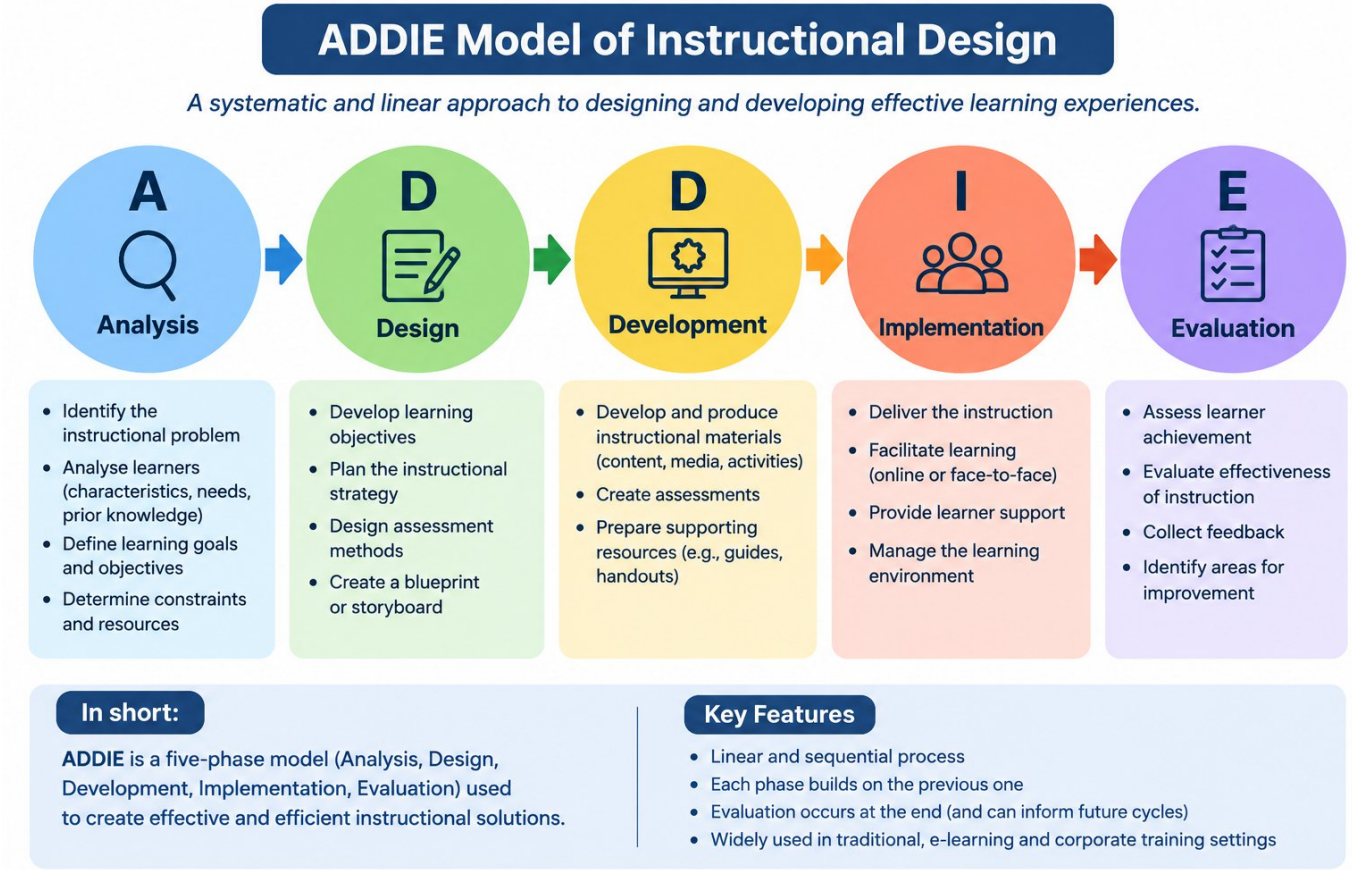
Evaluation and improvement – How effective was the instruction, and what needs to be improved?

Instructional Design

Example: Newton's Laws of Motion



Instructional Design Foundations



AI Generated Image (ChatGPT (2026))

Universal Design for Learning (UDL)

Universal Design for Learning (UDL) is an educational framework that guides teachers to design learning experiences that are accessible, flexible, and effective for all learners, regardless of their abilities, needs, backgrounds, or learning preferences

Universal Design for Learning UDL means designing teaching from the beginning so that different learners can access, engage with, and demonstrate their learning in different ways.

3 Core Principles of UDL

Principle	Key Question	Examples
Multiple Means of Engagement	**Why do learners learn?**	Individual study, group discussion, Choice, motivation, collaboration, relevant examples, varied activities
Multiple Means of Representation	**What do learners learn?**	Text, audio, video, images, diagrams, animation, demonstrations
Multiple Means of Action & Expression	**How do learners demonstrate learning?**	Writing, speaking, presentation, project, video, concept map, practical task

Principles of Effective Design I

Gagné's Nine Events of Instruction

1. Gain Attention
2. State Objectives
3. Recall Prior Learning
4. Present Content
5. Provide Guidance
6. Elicit Performance
7. Give Feedback
8. Assess Performance
9. Enhance Retention & Transfer

(Gagné, 1985)

Principles of Effective Design II

Merrill's First Principles of Instruction

1. **Problem-Centred**
   Learning is anchored in real-world problems learners actually face
2. **Activation**
   New learning builds on learners' existing knowledge and experience
3. **Demonstration**
   The skill or concept is shown in use, not just described
4. **Application**
   Learners practice and apply what they've learned, with feedback
5. **Integration**
   Learners reflect on and transfer learning into their own context

(Merrill, 2002)

Learner-Centred Design

Starting with the Learner, Not the Content

1. **Know Your Learners**
   Analyze prior knowledge, context, and digital access

2. **Build Learner Personas**
   Ground design decisions in real learner profiles

3. **Offer Flexibility**
   Flexible pacing, pathways, and content formats

4. **Design for Real Contexts**
   Mobile, workplace, and self-paced use in mind

SAMPLE LEARNER PERSONA

- Name: The Busy Professional
- Goal: Apply new skills immediately
- Context: Mobile, 10-minute sessions
- Barrier: Limited, fragmented time

Learner Engagement & Motivation

The ARCS Model of Motivational Design

A

Attention

Capture and maintain the learner's attention.
Spark curiosity with variety, questions, and real problems.

R

Relevance

Why the learning is useful and meaningful to them.

C

Confidence

Help learners develop the belief that they can succeed.
Set clear expectations and achievable challenges.

S

Satisfaction

Ensure that learners feel successful and rewarded after learning.
Provide meaningful feedback and recognize progress.

(Keller, 1987)

Designing Learner-Centred, Engaging Content

From Information to Experience

1. **Chunk Content**
   Break material into short, focused segments (microlearning)

2. **Tell a Story**
   Use scenarios and narrative to build relevance and memory

3. **Write Conversationally**
   Plain language, active voice, and direct address

4. **Align to Objectives**
   Every element ties back to a clear learning outcome

Interactive Activities for Meaningful Learning

Active Participation, Not Passive Viewing

1

Branching Scenarios

Practice real decision-making

2

Simulations

Safe, realistic skill rehearsal

3

Formative Quizzes

Immediate, explanatory feedback

4

Drag-and-Drop & Sorting

Active processing of concepts

5

Discussion & Collaboration

Peer learning & shared problem-solving

Interactivity should serve the learning goal, not add novelty for its own sake.

Multimedia for Meaningful Learning

Mayer's Cognitive Theory of Multimedia Learning

1

Multimedia Principle

Combine words with relevant graphics, not words alone

2

Coherence Principle

Remove extraneous words, images, and sounds

3

Segmenting Principle

Present content in short, learner-paced segments

4

Modality Principle

Narrate graphics rather than overload on-screen text

(Mayer, 2021)

Best-Practice Checklist for eLearning Design

- ✓ Start with learner needs & clear objectives
- ✓ Apply a systematic ID model (ADDIE, etc.)
- ✓ Design for variability with UDL
- ✓ Build in interactivity & timely feedback
- ✓ Use multimedia purposefully, not decoratively
- ✓ Motivate through relevance, autonomy & achievable challenge

E-Learning Experience
Types of Pollution

Explore • Discover • Apply

Objective

Identify the different types of pollution and their sources in the environment.

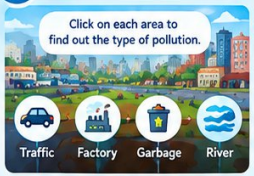
- **Subject:** Science
- **Class:** 6 – 8
- **Duration:** 15 minutes
- **Mode:** Online / Self-paced

1 Engage – The Mystery

A short video shows a city facing multiple pollution problems. Learners are asked: "What types of pollution can you spot?"

Media/Technology: Video (2–3 min) + Audio narration

2 Explore – Find the Clues



Learners click on different locations to discover the type of pollution and its source.

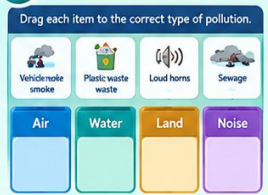
Media/Technology: Interactive image (clickable hotspots)

3 Learn – The Types

A clear and simple explanation of each type, with real-life examples and icons.

Media/Technology: Animated slides + Infographics

4 Classify – Test Your Understanding



Learners drag and drop items into the correct category.

Media/Technology: Drag-and-drop activity

5 Investigate – Sources & Effects

Interactive animations show how each type of pollution affects our environment and health.

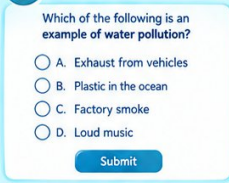
Media/Technology: Interactive animations + Audio

6 Apply – Real Life Connection

Learners write or select the best solution for each type.

Media/Technology: Interactive form / text input

7 Assess – Quick Check



Short quiz with multiple-choice questions.

Media/Technology: Online quiz (MCQs)

8 Reflect – Make a Difference

Learners share one action they can take at home, school or in their community.

Media/Technology: Text/Voice response (for discussion board)

Cleaner Environment Healthy Tomorrow

Key Features of This E-Learning Design

- Interactive & engaging
- Real-life context
- Uses multimedia (video, animation, images, audio)
- Encourages critical thinking & problem solving
- Builds awareness & responsibility

Small Actions Big Impact

AI Generated Image (ChatGPT (2026))

Thank You