Chapter 3:
Learning Management Innovations for Developing 21st-Century Skills

Definition of Educational Innovation

The application of new concepts, methods, processes, media, or inventions (or improvements to existing ones) in teaching and management to enhance educational efficiency and effectiveness.

CORE CONCEPT

Definition of Educational Innovation

New Ideas & Inventions

Application of original methods, instructional media, and processes in education.

Continuous Improvement

Refinement and expansion of existing pedagogical approaches and management systems.

Primary Goal

Maximizing instructional efficiency and learning effectiveness across institutions.

CLASSIFICATION 1

Classification According to Primary Users

Teacher-Oriented Media

Lesson Plans: Structured instructional roadmaps

Teacher Manuals: Comprehensive teaching guides

Assessment Tools: Evaluation instruments

AV Equipment: Projection & audio delivery tools

Learner-Oriented Media

Programmed Modules: Self-paced study packages

Practical Kits: Hands-on training sets

Worksheets & Songs: Guided activity materials

Educational Games: Gamified learning tools

CLASSIFICATION 2

Classification According to Innovation Characteristics

CATEGORY 2.1

Techniques & Methods

Pedagogical procedures and active classroom strategies.

- Role-playing activities
- Learning-center instruction
- Inductive & deductive teaching

CATEGORY 2.2

Instructional Media

Tangible and digital content delivery channels.

- Multimedia & modular packages
- Educational videos & simulations
- Games & interactive worksheets

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21st-Century Learning Skills: The 3Rs & 8Cs

FOUNDATION

The 3Rs

Reading:
Effective comprehension & evaluation.

(W)Riting:
Clear written expression.

(A)Rithmetics:
Numerical reasoning & calculation.

Core literacy and numeracy prerequisite for advanced skills.

COMPETENCIES

The 8Cs Competency Matrix

1. Critical Thinking: Analysis & problem solving

2. Creativity & Innovation: Original ideas

3. Cross-cultural: Diversity appreciation

4. Collaboration: Teamwork & leadership

5. Communication: Media & info literacy

6. Computing & ICT: Tech fluency

7. Career & Learning: Adaptive growth

8. Compassion: Ethics & empathy

21st Century Learning Skills (3Rs 8Cs)

INNOVATION MODEL 1

The Flipped Classroom

STAGE 1: PRE-CLASS

Self-Directed Study

Learners review assigned content and media prior to session.

STAGE 2: IN-CLASS

Active Application

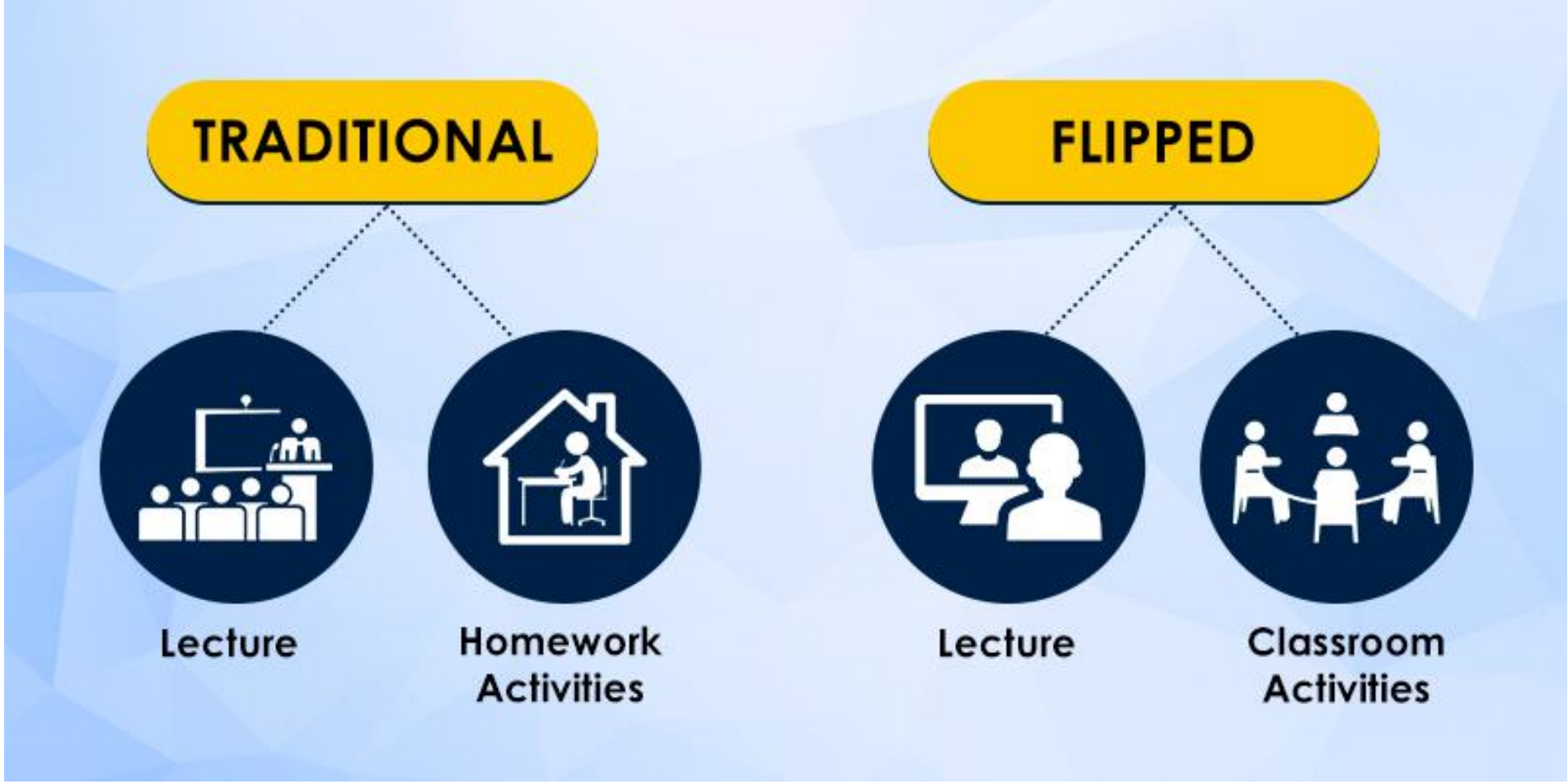
Engage in problem solving, Q&A, and practical exercises.

Instructor Role

Transitions from lecturer to facilitator and advisor.

A flipped classroom

A flipped classroom is a teaching approach where students learn new content at home through videos or readings, and use class time for interactive group work and problem-solving


TRADITIONAL
Lecture
Homework Activities
FLIPPED
Lecture
Classroom Activities

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Virtual Classroom

1

Live Telecommunications

Conventional classroom instruction transmitted via live video and audio feeds over networks.

Key Feature: Real-time broadcast from physical location.

2

Virtual Reality Environment

Computer-generated software environments delivering interactive text and graphical media.

Key Feature: Fully immersive virtual education space.

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The SMART Classroom

smart classroom is a technology-enhanced learning space that uses digital tools, hardware, and software to improve teaching and student participation.

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The SMART Classroom

Junfeng Yang (2013) Dimensional Architecture

S

Showing

Content display via digital media.

M

Manageable

System & resource administration.

A

Accessible

Seamless access to learning resources.

R

Real-time

Interactive engagement tools.

T

Testing

Continuous evaluation & tracking.

Core Components: Teachers + Learners + Integrated Tech (Smart Boards, Tablets, Wi-Fi Networks)

Integrated Ecosystem

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Learning Spaces

Beyond Conventional Classrooms

Purpose-built physical and digital environments supporting informal and collaborative learning.

Rich Multimedia Resources

Access to diverse media formats including books, digital archives, video, and audio workstations.

Self-Directed & Collaborative Hubs

Promoting hands-on experimentation, research, and knowledge exchange among peers.

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Genius Hour: 6 Core Principles

01

80/20 Rule

20% dedicated time for passion projects.

02

Socialization

Peer, expert, and community collaboration.

03

Create

Producing tangible and visible outputs.

04

Inquiry & Navigation

Exploration leading to focused research.

05

Design

Autonomous design of learning paths.

06

Purpose

Translating personal interests into goals.

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Social Networking

7 Types of Online Social Networks

Identity Network: Personal profiles

Creative Network: Work sharing

Passion Network: Shared interests

Collaboration: Joint projects

Virtual Reality: 3D spaces

Professional: Career growth

P2P Network: Direct peer-to-peer connection

Intelligent Teaching Robots

Designed to address teacher shortages in specialized disciplines, language acquisition, and complex technical fields.

Key Advantage: Stimulates engagement and provides dynamic interactive support.

SUMMARY

Empowering 21st-Century Learners Through Innovation

Combining innovative pedagogy, advanced learning spaces, and modern technology to prepare students for a rapidly evolving world.

Q & A Session

Practical Classroom Application