

Constructivism and Designing Learning Environments

Chapter 10

By Nitesh Mathur

March 21 & 23, 2023



Overview

- **Perspectives on Constructivism**
- **Common Elements in Constructivist Theories**
- **How We Can Apply It in the Classroom**
- **Collaboration vs Cooperative Learning**
- **Impact of Technology**

Cognitive Constructivism vs Social Constructivism



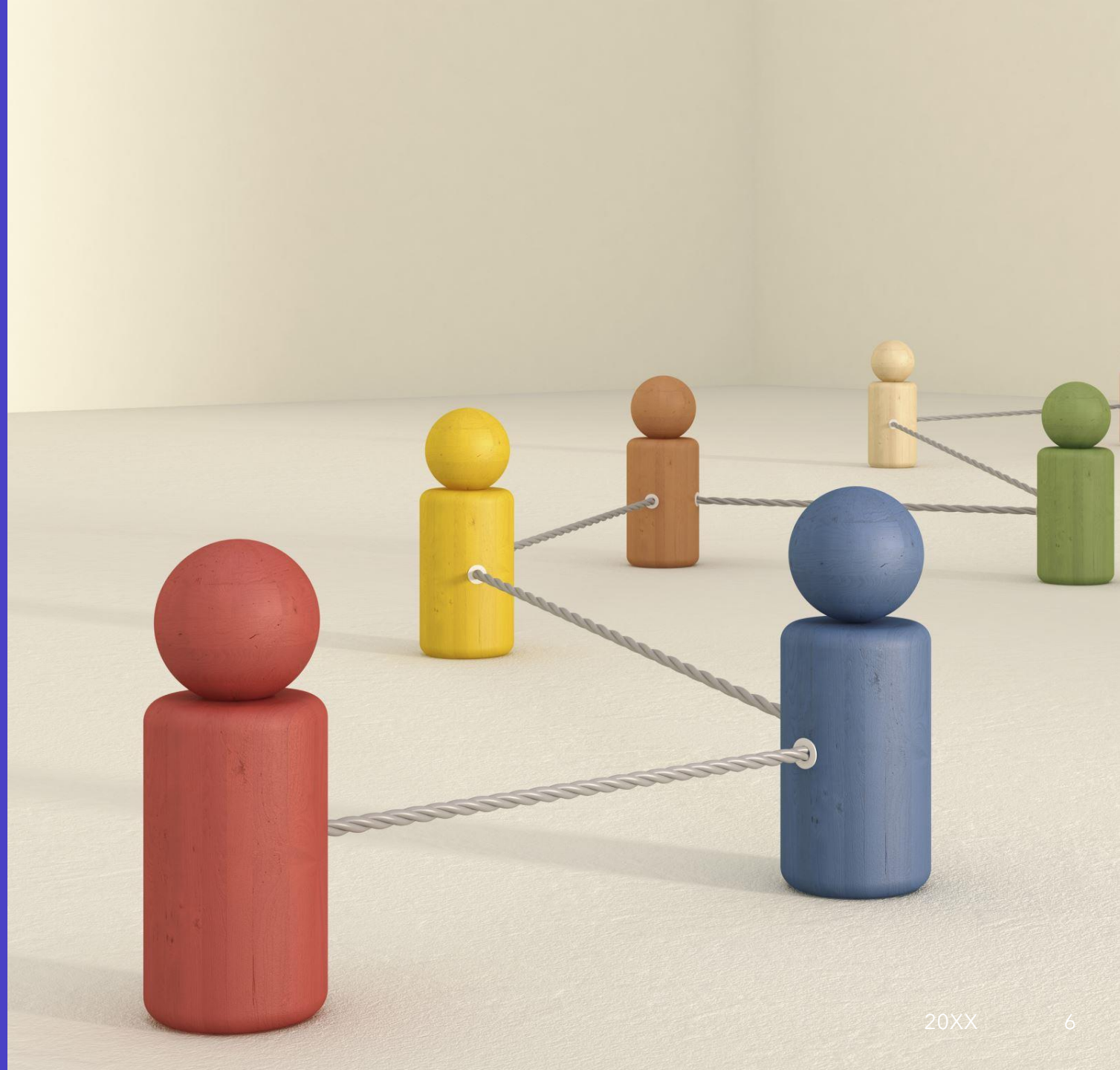
Cognitive Constructivism



Cognitive Constructivism

- **Learners active in constructing their own understanding**
- **Information Processing**
- **Piaget's Psychological Constructivism Perspective**
- **Radical Constructivism**

Social Constructivism



Social Constructivism

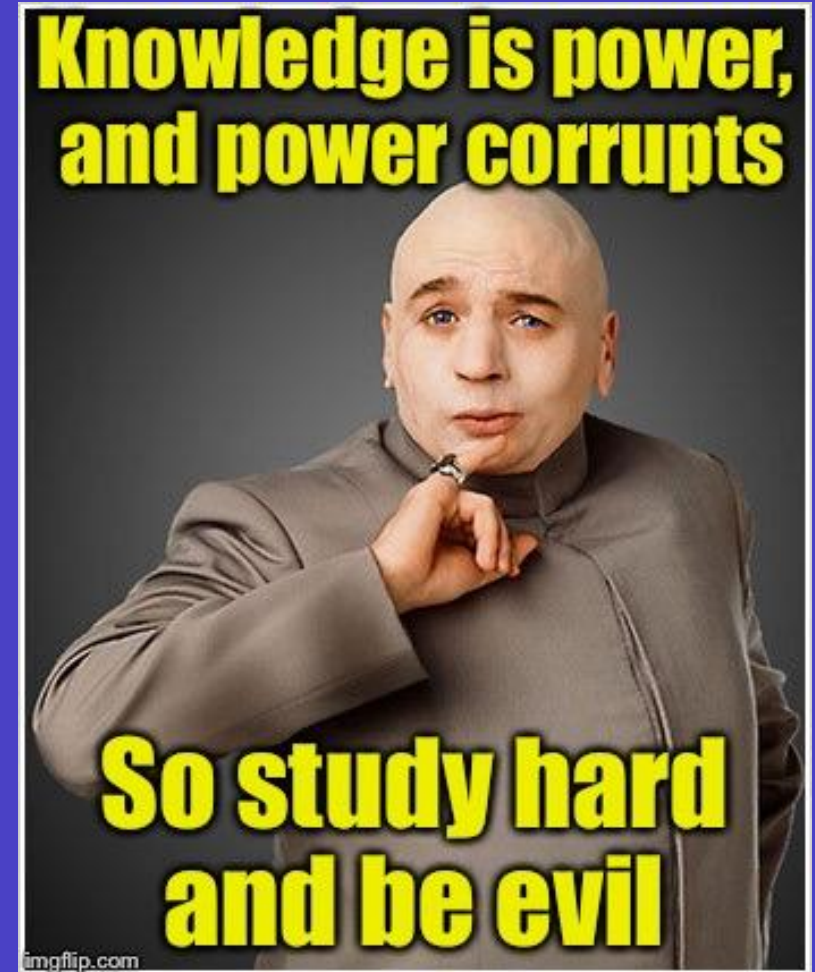
- **Vygotsky - Social Interaction, Cultural Tools, Activity Shape Individual Development**
- **Let's revisit 'Zone of Proximal Development'**
- **Knowledge - Both individually constructed & socially mediated**

**But How is Knowledge
Constructed?**



Knowledge: Situated or General?

- External Direction
- Internal Direction
- Both Internal & External
- Community of Practice



5 Conditions for Learning

Under Constructivist Thinking



Common Elements of Constructivism

- **Complex Learning Environments**
 - (ill structured problems), Problem Solving, Authentic Tasks, Scaffolding
- **Social Negotiation**
 - Intersubjective Attitude, Argumentation, Critical Thinking
- **Multiple Perspectives and Representations of Content**
 - Examples/perspectives, 'Spiral Curriculum'
- **Self-Awareness and Understanding Knowledge Construction**
 - Assumptions, Beliefs, etc.
- **Encourage Ownership in Learning**

Traditional Classrooms Vs Constructivist Learning Environments?



Designing Constructivist Learning Environments

- **Facilitate Through Asking/Answering Deep Questions**
- **Inquiry & Problem-Based Learning**
- **Scaffolding**
- **Reciprocal Teaching**

Scaffolding

- **Motivational Scaffolding, Cognitive Scaffolding**
- **Contingency Support**
- **Fading**
- **Transferring Responsibility**

Reciprocal Teaching



Does Problem-Based Learning Work?





Collaboration and Cooperation

Collaboration, Group Work, Cooperative Learning

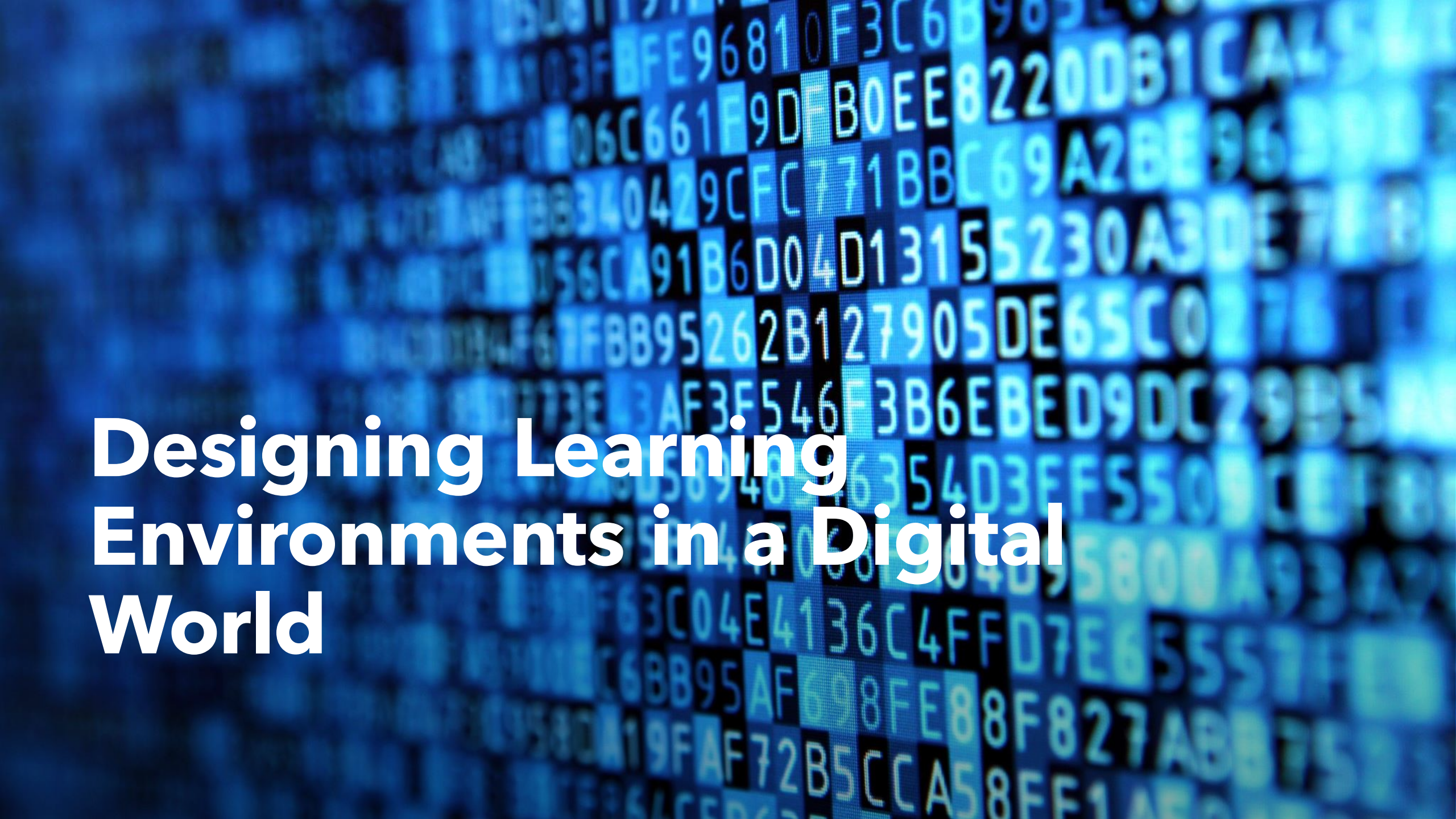
- **What's the Difference?**
- **Cooperative Learning**
 - Positive Interdependence
 - Promotive interaction
 - Individual accountability
 - Collaborative and social skills
 - Group processing

Setting up Cooperative Groups

- **Assigning Roles**
- **Explanations**
- **Reciprocal Questioning**
- **Jigsaw Classroom**

Misuses of Group Learning and Dilemmas of Constructivism?





Designing Learning Environments in a Digital World

Learning Environments

- **Learning Management System (LMS)/Virtual Learning Environments (VLEs)**
- **Personal Learning Environment (PLE)/Personal Learning Network (PLN)**
- **Immersive Virtual Learning Environments (IVLE)**
- **Games**
- **Coding/Computational Thinking**
- **Flipped Classroom**



Thank you