Experiential Learning in STEM

Empowering Students Through Hands-On Innovation

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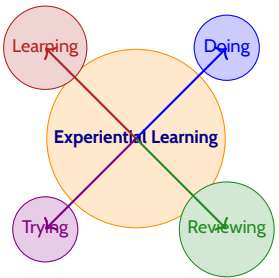
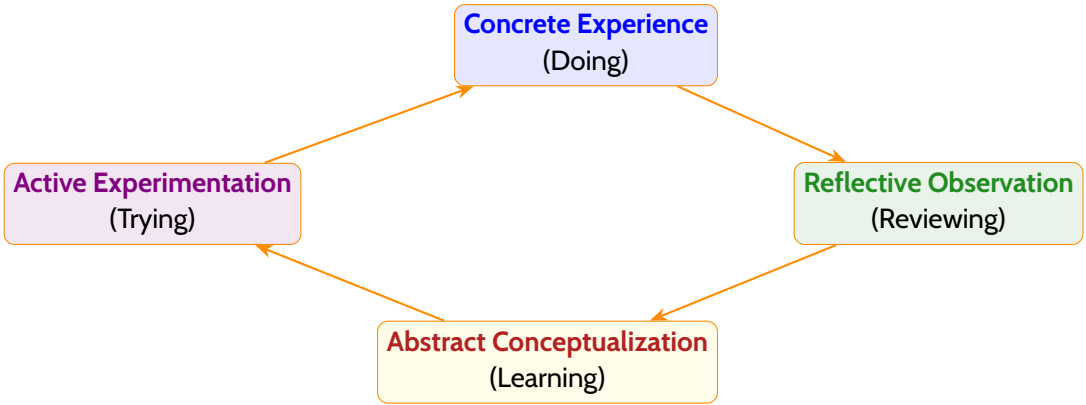
Session Overview

- Understand **experiential learning** and its role in STEM
- Explore Kolbs Experiential Learning Cycle
- Discover benefits for students in Bhagalpur classrooms
- Identify challenges and practical solutions
- Align with National Education Policy (NEP) 2020



What is Experiential Learning?

Experiential learning is "learning by doing" [1]. It follows Kolbs Experiential Learning Cycle:



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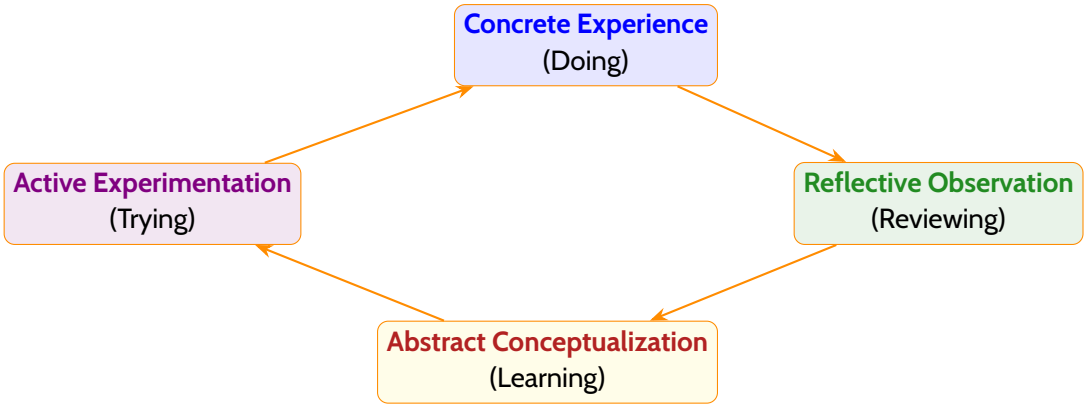


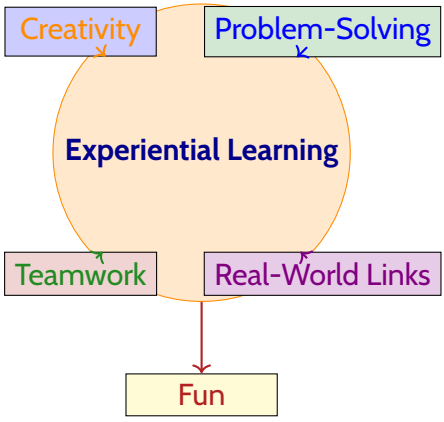
In STEM: Build a model, test it, learn from it, and improve it!

Why Experiential Learning Matters

Experiential learning makes STEM engaging and impactful:

- **Creativity**: Design projects like water filters or coded games [3].
- **Problem-Solving**: Tackle real challenges like water purification.
- **Teamwork**: Collaborate like engineers [4].
- **Real-World Links**: Connect to community issues.
- **Fun**: Hands-on projects spark curiosity [5].

Activity: Share a hands-on STEM idea!



Example: Water Filter Project in Bhagalpur

A Bhagalpur school used bottles, sand, and charcoal to build water filters [5]:

- **Doing**: Built and tested filters.
- **Reviewing**: Discussed what worked.
- **Learning**: Understood filtration principles.
- **Trying**: Tested new materials like cotton.

Impact: Connected science to local water issues, made learning fun!

Classroom Activity

Reflect and Share:

- Think of a STEM concept you learned through hands-on experience (e.g., building a model or experimenting).
- Share with a partner: How did it help you understand?
- Brainstorm a simple activity for your students using local resources or free tools like Scratch [3].

Goal: Design a practical STEM lesson for your classroom!

Wrap-Up

- Experiential learning makes STEM engaging and relevant.
- Builds creativity, problem-solving, and teamwork.
- Overcomes challenges with local resources and training.
- **Next Steps**: Try a hands-on STEM project in your classroom!

References I

[1] Central Board of Secondary Education. Stem education initiatives in indian schools, 2024.

[2] Ministry of Human Resource Development, Government of India. National education policy 2020, 2020.

[3] MIT Media Lab. Scratch: Creative coding for kids, 2023.

[4] NASSCOM. Futureskills: Technology skills for india's growth, 2024.

[5] UNESCO. Education for sustainable development: Stem in rural india, 2024.

Thank you for your engagement!

Lets inspire students with experiential STEM learning!