Project-Based Learning
in
IT Skill Development

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Introduction

Why am I interested?

Why is this important?

- **Project–Based Learning is sustained learning that requires of students a high degree of challenge.**

- **Project–Based Learning creates an authentic learning experience for students.**

Source: Preparing Students For a Project–Based World, August 2016
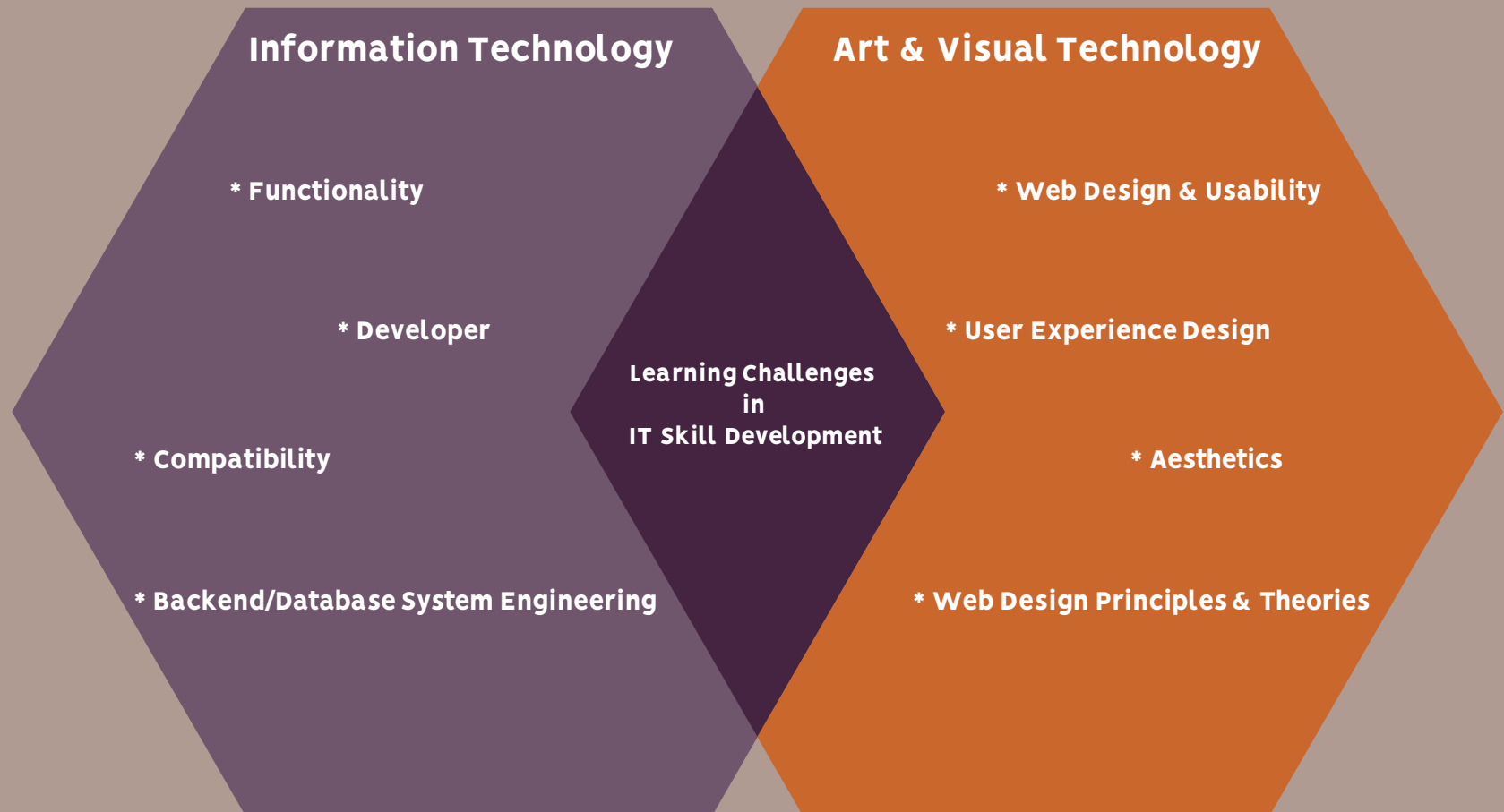
Agenda

1. Research Question
2. Interdisciplinary Rationale
3. Literature Review
4. Research Methods
5. Creative Project
6. Reflection
7. Conclusion
8. Questions

Research Question

With IT Skill Development being important to visual aesthetics of web design, should IT Skill Development become a Project-based learning environment in higher education?

Interdisciplinary Rationale

Information Technology

* Functionality

* Developer

* Compatibility

* Backend/Database System Engineering

Learning Challenges in IT Skill Development

Art & Visual Technology

* Web Design & Usability

* User Experience Design

* Aesthetics

* Web Design Principles & Theories

Literature Review

Project-Based Learning (PBL)

- **Preparing Students for a Project-Based World** (Lathram, B., Lenz, B., &Ark, T.V., 2016)

- **Development and evaluation of a web map mind tool environment** (Hou et al., 2016)

- **Using project-based learning to teach object-oriented application development** (Fernandez & Williamson, 2003)

- **The Incremental Teaching Project Design for Project-Based Learning and Its Application in Java Programming Course** (Huang, 2016)

Photo Source: NESA by Makers on Unsplash

Student-Centered Learning

- **Student-Centered Learning Environments in Higher Education Classrooms (Hoidn, 2017)**

- **Interactive Student Centered Learning: A Cooperative Approach to Learning (Spooner, 2015)**

- **Pedagogies for Student-Centered Learning: Online and On-Ground (Crumly et al., 2014)**

- **Student-Centered Education and Constructivism: Challenges, Concerns and Clarity for Teachers (Krahenbuhl, 2016)**

Research Methods

Project-Based Learning (PBL)

- Survey
  - ❑ Surveymonkey.com
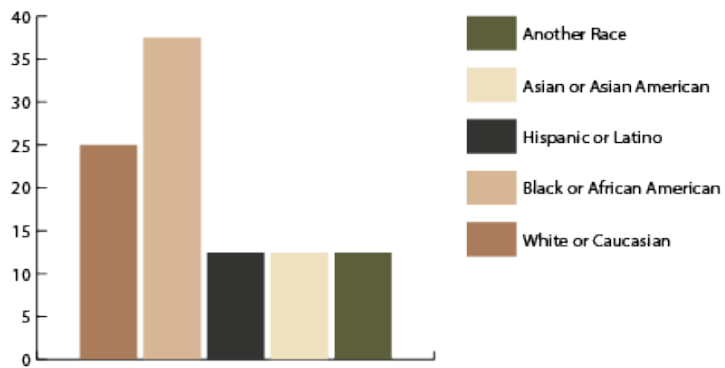   - ▪ The Questions
    - ▪ The Graphs

- Infographic
  - ❑ Project-Based Learning
    - ▪ 21stCenturySkills
    - ▪ Student-Centered Learning
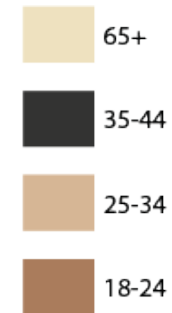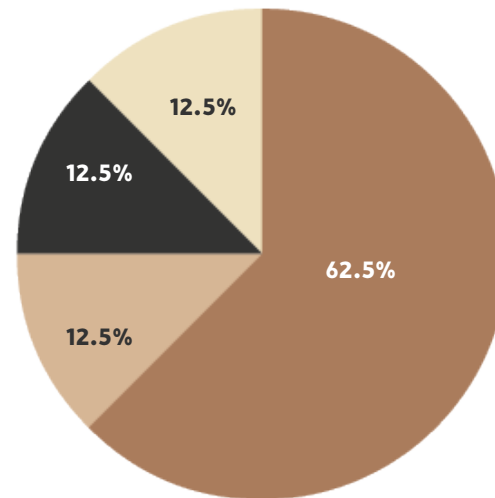   - ▪ Inquiry-Based Learning
    - ▪ Gamification

THE
SURVEY

92 Students Surveyed

□ **White/Caucasian–25%**
□ **Black/African American–37.5%**
□ **Hispanic/Latino–12.5%**
□ **Asian/Asian American–12.5%**
□ **Another Race–12.5%**

Legend (bar chart):
- Another Race
- Asian or Asian American
- Hispanic or Latino
- Black or African American
- White or Caucasian

Pie chart (age):
- 65+ — 12.5%
- 35-44 — 12.5%
- 25-34 — 12.5%
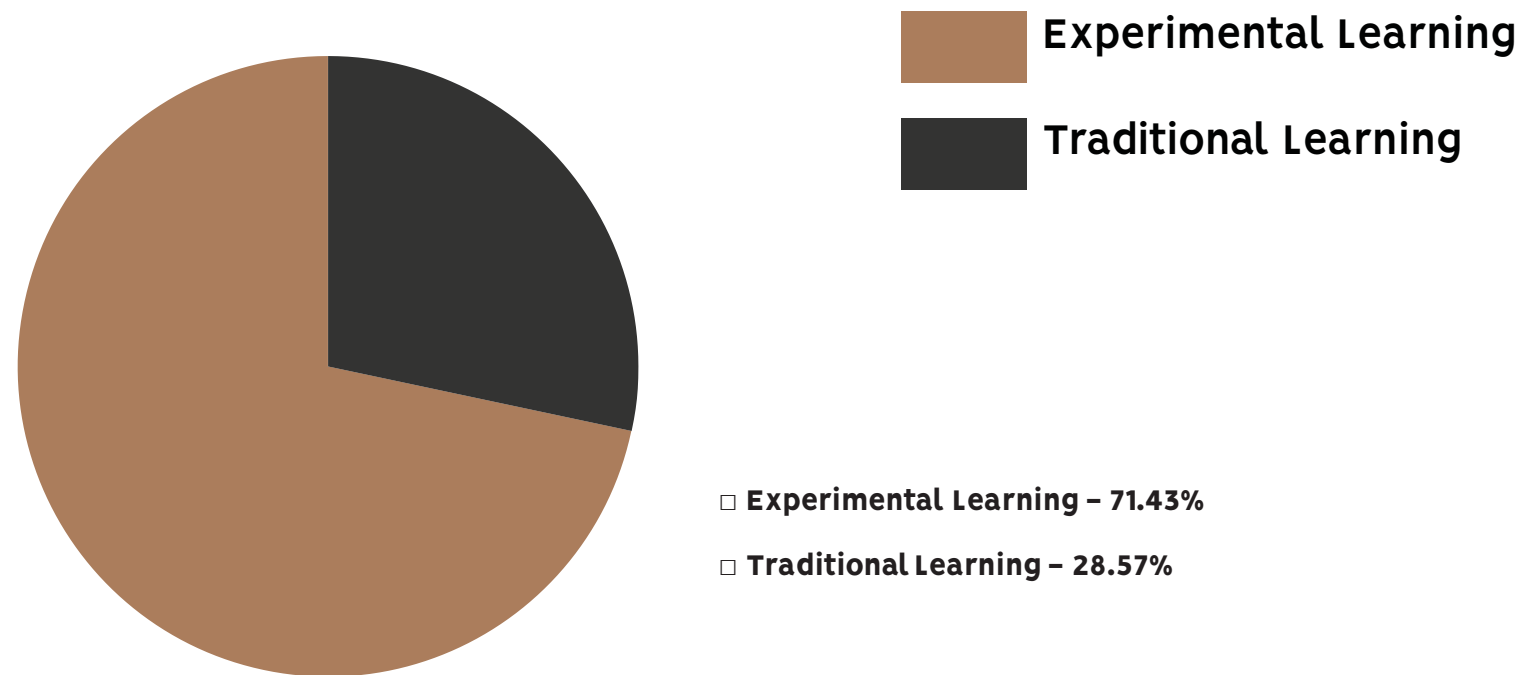- 18-24 — 62.5%

DEMOGRAPHICS

Gender bar chart:
- Female — 37.5%
- Male — 62.5%
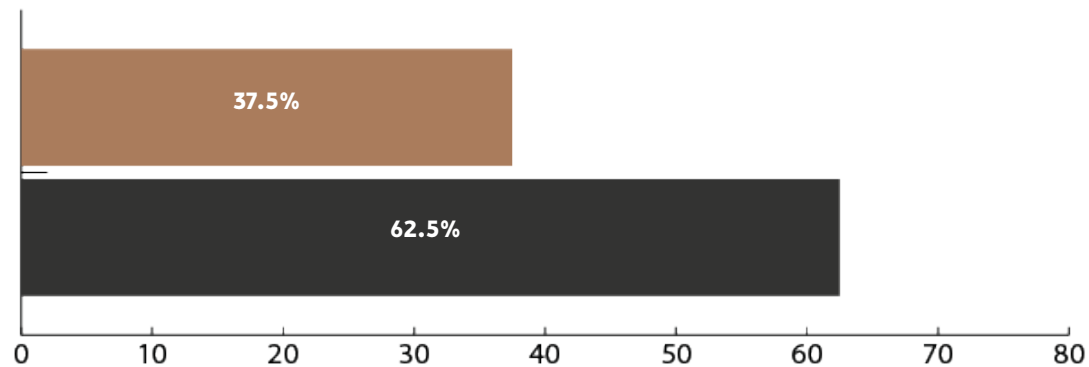
Should IT 106 (Introduction to IT Problem Solving Using Computer Programming – Java Version) be an experimental learning course?

☐ **Strongly Agree – 37.5%**

☐ **Agree – 37.5%**

☐ **Neither Agree nor Disagree – 25%**

Legend:
- Neither Agree nor Disagree
- Agree
- Strongly Agree
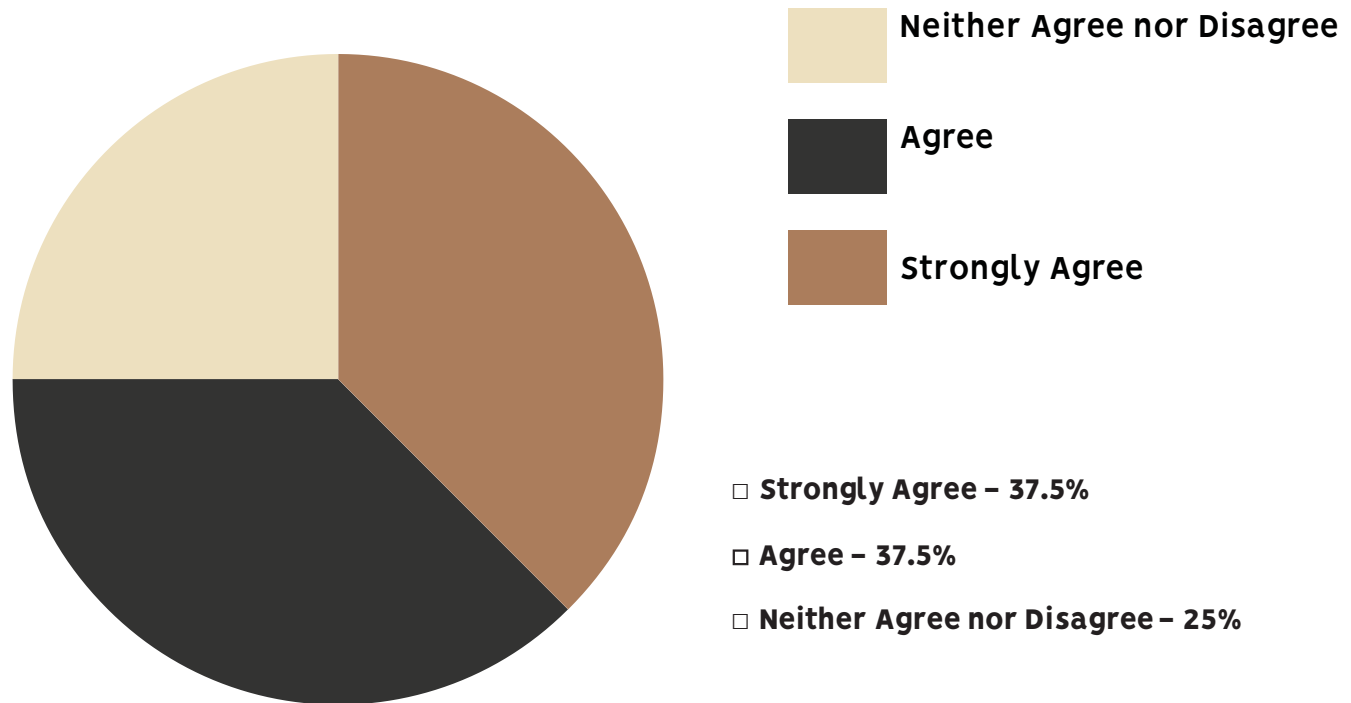
Do you think you would gain more from an experimental learning or traditional course in IT 106? If so, state your reason.

Experimental Learning

Traditional Learning

□ **Experimental Learning – 71.43%**

□ **Traditional Learning – 28.57%**

Creative Project

- **4 Phases Of Inquiry**
- **4 Levels Of Inquiry**
- **Inquiry—Based Learning**
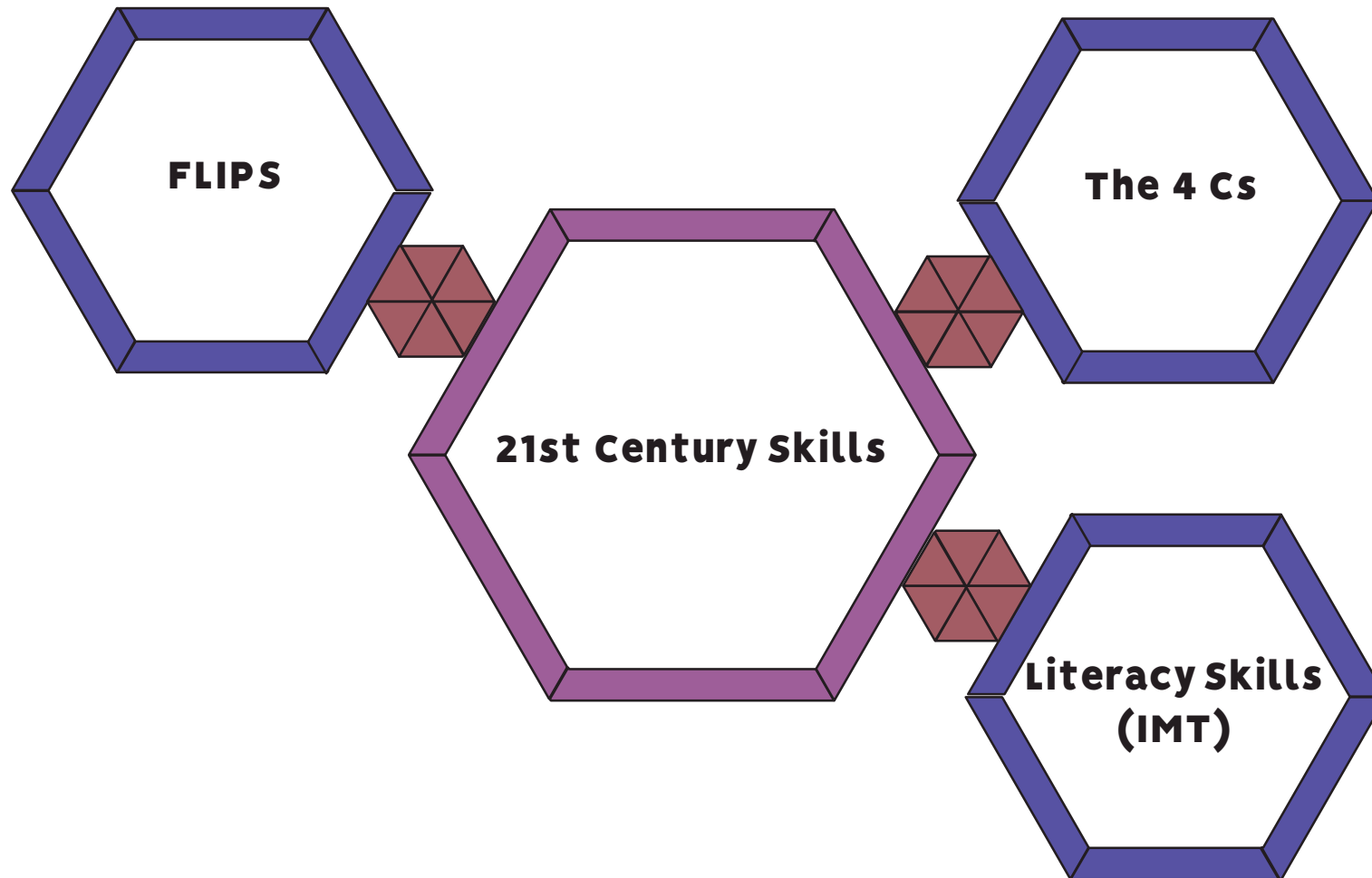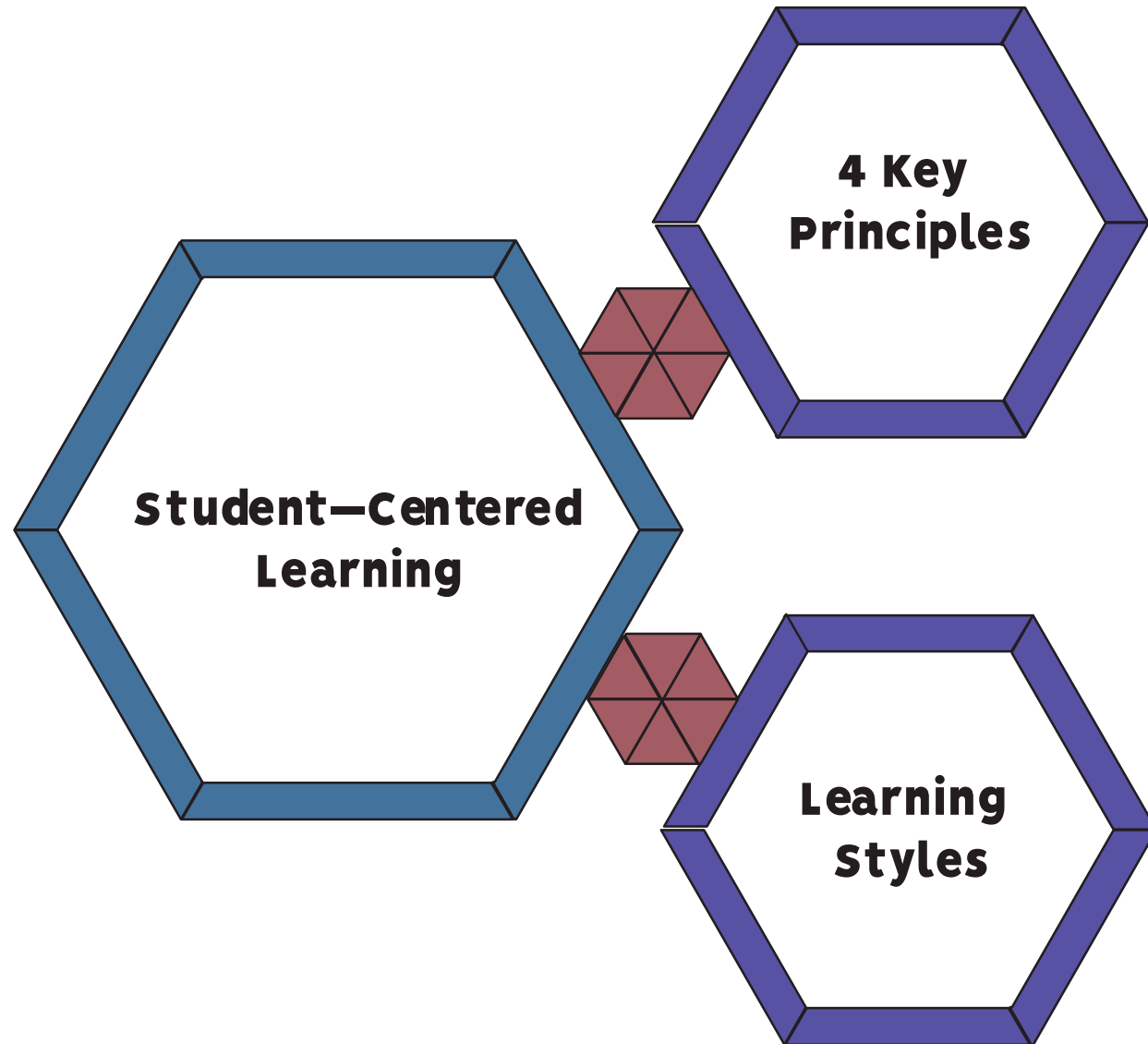- **FLIPS**
- **The 4 Cs**
- **21st Century Skills**
- **Literacy Skills (IMT)**
- **Project—Based Learning**
- **Bruner's Discovery Learning Theory**
- **Gamification**
- **The 7 Elements of Digital Literacies**
- **4 Key Principles**
- **Student—Centered Learning**
- **Learning Styles**

Sources:
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21st Century Skills

FLIPS

21st Century Skills

The 4 Cs

Literacy Skills (IMT)

Student-Centered Learning

Student–Centered Learning

4 Key Principles

Learning Styles

Inquiry-Based Learning

4 Phases Of Inquiry
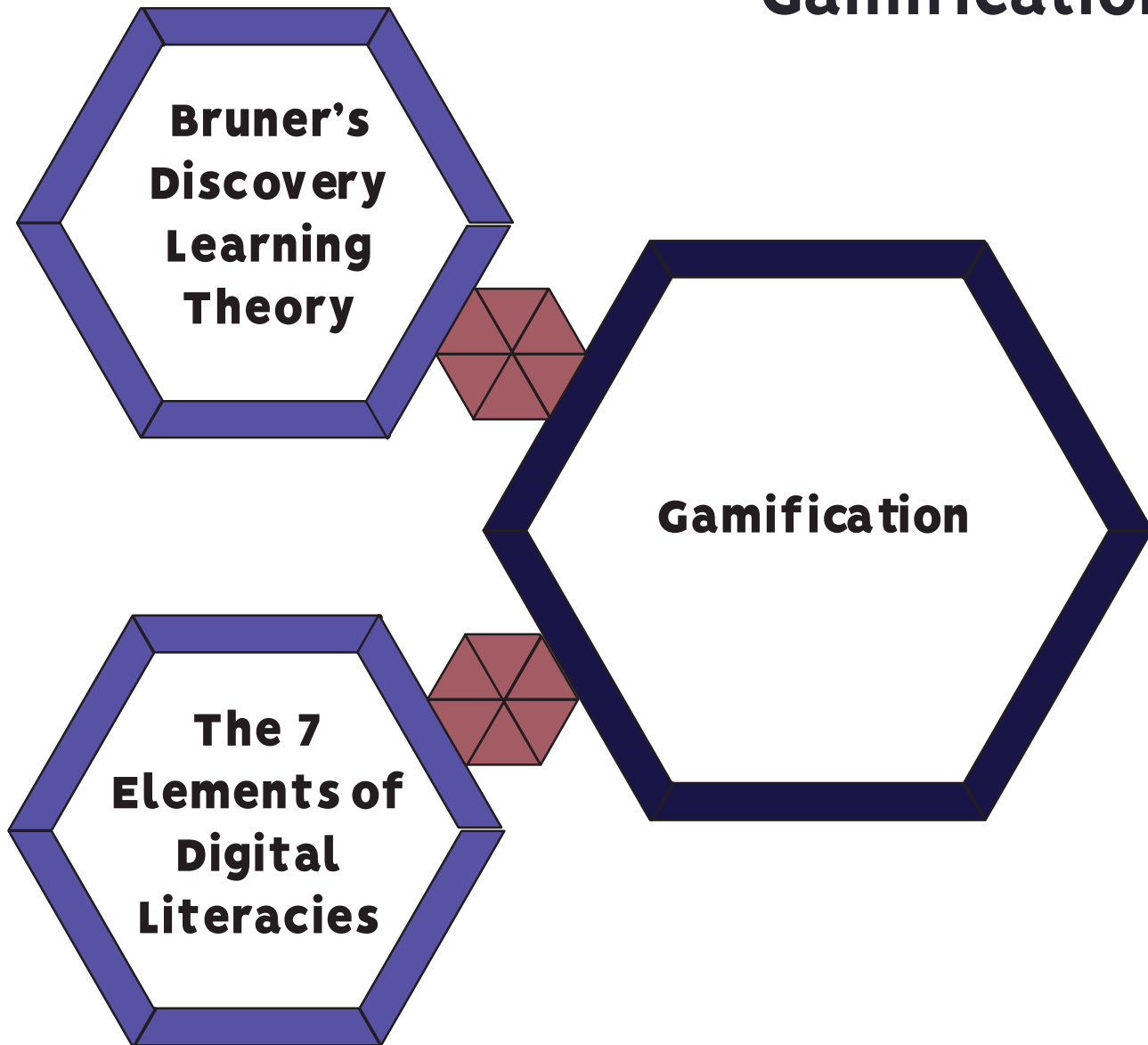
Inquiry-Based Learning

4 Levels Of Inquiry

Gamification

Bruner's Discovery Learning Theory

The 7 Elements of Digital Literacies

Gamification

Reflection

- **Why I chose to do a creative project?**

Conclusion

Schools are moving towards Project-Based Learning. Developers really need to work in teams to learn how to use each other skills to create a project.

References

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QUESTIONS?