Fostering Student Identities in Introduction to Programming

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Agenda

- Problem Overview (Research Context)

- Literature Review: Intro to Programming (JISE)

- An activity

- Identity Theory, Briefly

- Applying Identity Theory in Intro to Programming

- Future Steps

BEING THE CHANGE

Setting the Stage

Problem: Promote Belonging and Engagement

- IS programs often include at least one intro to programming course
  - Not here to debate which language to use
- Non-CS students are often resistant or intimidated by coding
- The course should be welcoming, inclusive, and engaging for ALL
  - ...and, as a result, improve retention in our programs.

BEING THE
CHANGE.

Literature Review: Intro to Programming (JISE)

- Recommended to take **student-centered focus** rather than instructor-centered (Sharma, Biros, Ayyalasomayajula, & Dalal (2020)

- Zhang, Crabtree, Terwilliger & Jenkins (2020) presented 26 tips for teaching

- Prior experiences represent "significant antecedents of learning performance" and "**student-centered active learning** over traditional lecture" is recommended (Zhang, Zhang, Stafford & Zhang 2013)

- Systematic practice problems and structured feedback helped improve students' reported self-efficacy (Menon 2023)

- **Matching learning style with tasks** improves performance in OOP (Cegielski, Hazen & Rainer 2011)

Identity Activity, Part I

Private: Twenty Statements Test (TST)

1. I am
2. I am
3. I am
4. I am
5. I am
6. I am
7. I am
8. I am
9. I am

Structural Symbolic Interactionist Theories of Identity, Briefly
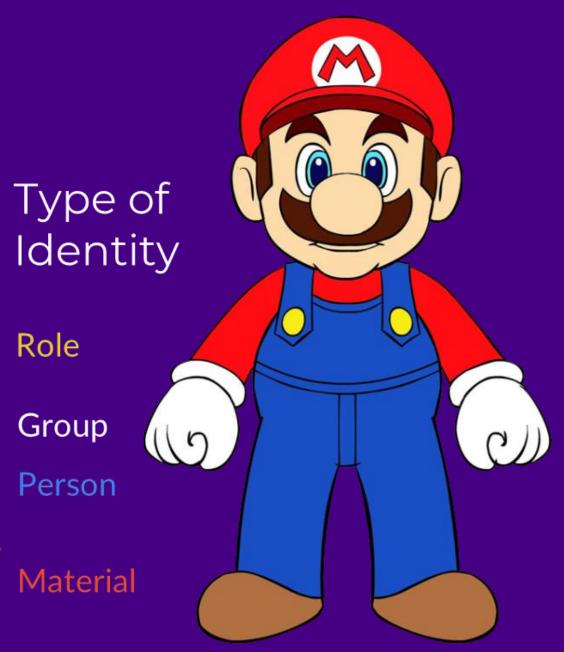
Identities explain "Who am I?"

Identity Theory, Briefly

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Identities explain "Who am I?"

It's-a me!...

1. ...a plumber.
2. ...a doctor.
3. ...an older brother.
4. ...Italian.
5. ...a romantic.
6. ...short.
7. ...a mushrooms aficionado.
8. ...a coin collector.
9. ...my hats.

Type of Identity

Role

Group

Person

Material

Identity Theory, Briefly

Identities are the Source of Behavior

Identity Activity, Part II

Turnover: Personal Statements

Considering what you came up with in your TST,
write a few sentences telling me who you are in relation to:

- Information Technology and/or Games (degree/program)
- Programming
- Boise State and/or higher ed

Understanding Students' Identities

- For the instructor:
  - Connect to students
  - Appreciate the diversity in the class, and avoid assumptions
  - Understand student motivation and behavior
  - Customize the course content (lectures and assignments)
- For the student:
  - Consider personal motivation for taking the class
  - Set goals for class performance and participation based on those personal motivations.
- Challenges:
  - Identity is very personal, so not everything can (or should) be shared with the instructor
  - Tech classes aren't known for their requirements for introspection

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CHANGE.

Future Steps

- Collect data from students
  - Have responses from six past classes
- Analyze qualitatively (early stage)
  - Look for patterns of identities regularly enrolled
  - Consider whether class modifications can better serve the students

Ask for Advice

- What is most salient for you?

- What do you want to learn more about?

- How do we turn this into a full paper that is both rigorous and interesting?

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