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Preparing Today’s Learners: The Role of Information Literacy in the Adoption of Innovative Pedagogies

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PREPARING TODAY’S LEARNERS

THE ROLE OF INFORMATION LITERACY IN THE ADOPTION OF INNOVATIVE PEDAGOGIES

Clarence Maybee
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OVERVIEW

• Instruction Matters: Purdue Active Course Transformation (IMPACT)

• Leveraging information literacy to support innovative pedagogic approaches – 3 examples

• Insights and considerations
PURDUE UNIVERSITY
PURDUE UNIVERSITY

- Undergraduates – 27,510
  - Engineering – 7,318
  - Health Sciences – 3,905
  - Science & Tech – 6,224
  - International – 4,977
- Professional – 943
- Masters and PhD – 8,136
- Total – 36,616

(Enrollment summary, 2015)
CHALLENGES

Transform large, foundational courses to enhance student engagement and success!

Decrease time to graduation, reduce DFW rates & enhance student success
MISSION

Redesign foundational courses by using research findings to create student-centered teaching and learning environments.

• 2011 – Pilot
• 2013 - Purdue Big Move
  • Core curriculum
  • Scale up
• 2015 – Redesigned 139 courses
STUDENT-CENTERED LEARNING

From motivational theory:

• Autonomy – Students can make choices

• Relatedness – Students feel supported

• Competency – Students have confidence that they can succeed

70% of courses are highly student-centered

DFW rates decrease and course grades increase

Instructor ratings are higher

(IMPACT Annual Report, 2014)

(Adapted from Ryan & Deci, 2000)
• Strategic goal:
  • Support student learning by making Information literacy integral to the Purdue curricula.

• Approach:
  • Enable students to use information to learn within disciplinary and professional contexts.
INFORMATION AND DATA LITERACIES WITHIN CURRICULA

• Analyzed 88 syllabi from 2 departments

• Grounded theory-inspired approach

• Nutrition science:
  • Professional Identity
  • Scholarly communication

• Political science:
  • Research process
  • Critical awareness

(Maybee, Carlson, Slebodnik, & Chapman, 2015)
IMPACT DETAILS

• 14 weekly meetings

• Learn about and select pedagogic strategies and models, such as:
  • Problem-based learning
  • “Flipping”
  • Classroom techniques

Deliverables

- Research question
- Learning outcomes
- Assessment plan
IMPACT TEAM

3 Teachers +

Instructional designer
Technologist
Librarian
INFORMATION LITERACY AND ACTIVE LEARNING

Biology
• Peer-led team learning (PLTL)
• Relevance in information seeking

Technology
• Design process
• Use information to inform designs

Statistics
• Learning with social media
• Evaluate research found in popular sources
BIOLOGY: FINDING RELEVANCE

• Problem:
  • Students feel that learning information skills is “busy work.”

• Solution:
  • Students developed a personally relevant question that could be answered by using biological information.
Peer review comments on “key takeaway” of the posters:

- **Brother has Crohn’s Disease** (Personal relevance)
- **Provides info on how brain interprets auditory signals** (Content)
- **May lead to therapies** (Social impact)
• Problem:
  • Design solutions are only informed by students already existing knowledge of a problem.

• Solution:
  • Students collect and analyze primary and secondary information to inform their problem.
STATISTICS: DEVELOPING CONSUMERS

• Problem:

  • Students do not see relevance of learning statistics.

• Solution:

  • Students apply concepts learned in class to evaluate and discuss research found in popular media using a Facebook-like social media platform.
Student survey (n = 405)

• What terms do you use when searching for material for the assignment?
  • 53.2% answered type of study, e.g., “research study.”
  • 33.2% answered specific topic, e.g., breast cancer or chocolate.

(Gundlach, Maybee, O'Shea, in press)
“...I think the biggest struggle... is for them to be really aware of what information they want. What do they want to know and how is that relevant to them? And, as soon as they have that thought then they are ready to take charge of their learning and find ways to inform themselves.”

Biology teacher

(Maybee, Doan, Flierl, 2015)
Key Insights

- Active learning strategies often require students to independently use information in ways new to them:
  - New types of sources, e.g., original data, social media, etc.
  - New ways of identifying and summarizing relevant information for a specific purpose.
- Learning intended by active learning strategies is strengthened by addressing how students use information.
THINGS TO CONSIDER

• Redesign your course over time to allow for:
  • Reflection at various stages
  • Input from all team members

• Consider if students will know how to do what is required of them by the active-learning techniques you draw into your course.
QUESTIONS

Thank you!


