

# Driving Instructional Design through Pedagogy

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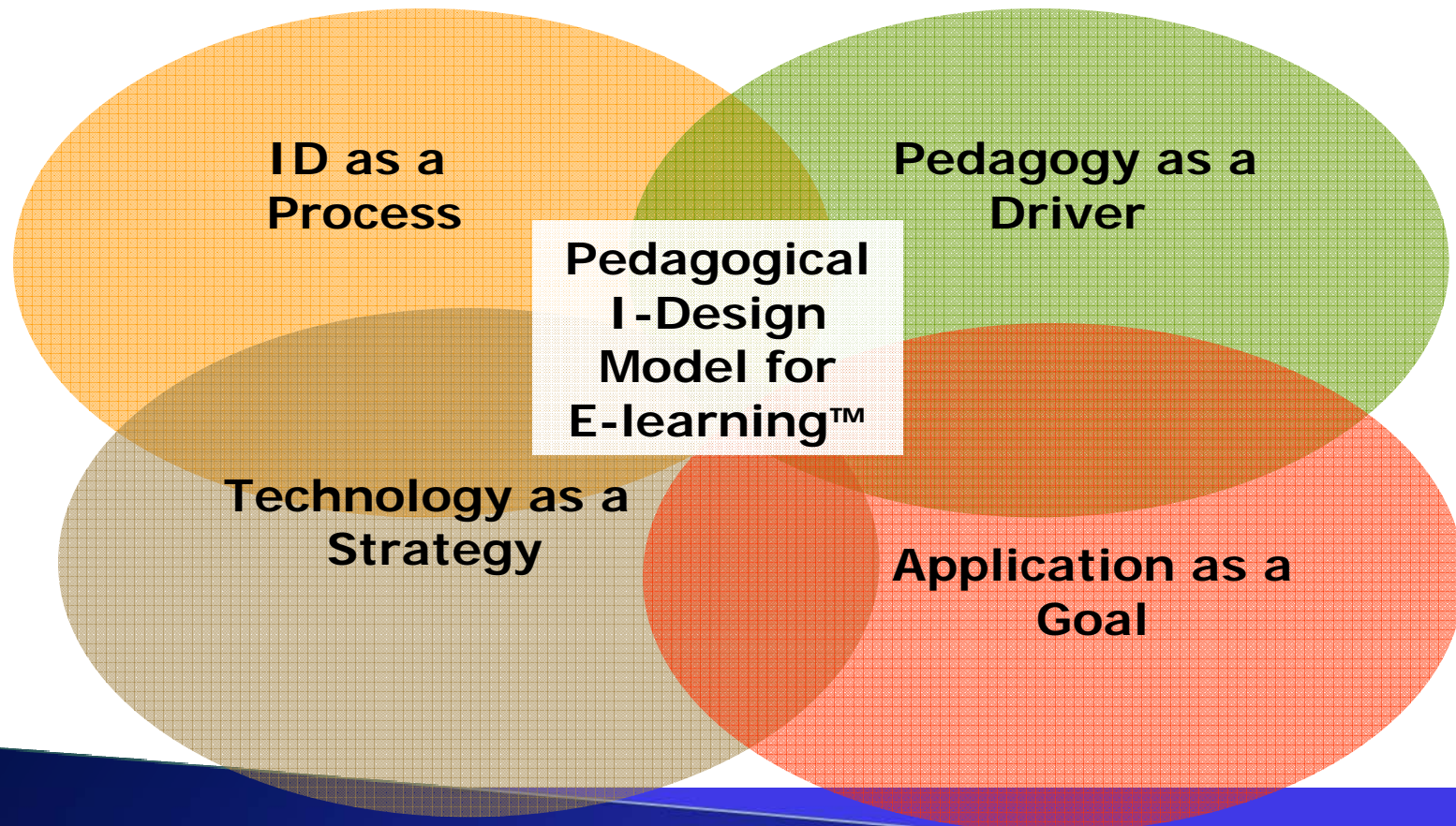
# Poll #1 and Poll #2

- ▶ Poll #1: How would you describe your familiarity with educational psychology, cognitive theories, and learning styles?
  - ▶ No exposure
  - ▶ Some exposure
  - ▶ Intermediate
  - ▶ Fairly advanced
  - ▶ Expert
  
- ▶ POLL #2: How would you describe your familiarity with instructional design models?
  - ▶ No exposure
  - ▶ Some exposure
  - ▶ Intermediate
  - ▶ Fairly advanced
  - ▶ Expert

# Four Categories

- ▶ ID as a Process
- ▶ Pedagogy as a Driver
- ▶ Technology as a Strategy
- ▶ Application as a Goal

# A Model for Learning



# ID as a Process: Meet Susan

- ▶ **S**ystematic
- ▶ **U**sing learning and instructional theory
- ▶ **S**chema-based
- ▶ **A**ligned with needs and goals
- ▶ **N**avigable

# Premise

- ▶ We are designing backwards
  - Designing for the functionality of the LMS
  - Designing based on standards and specifications
  - Designing based on popular models
- ▶ Need to design based on pedagogy (strategies of instruction)

# Pedagogy as a Driver

- ▶ Learning opportunities targeted to the different types of learners (Morrison, Sweeney, and Heffernan 2003) to increase the achievement of learning outcomes.
- ▶ Customizing course design for learning style groups
- ▶ Facilitate learning through various modalities by systematic exposure to various types of learning activities

# Pedagogy as a Driver

- ▶ Felder and Porter (1994) described some key learning preferences as follows:
  - Visual learners (look now and review later)
  - Aural learners (listen, read aloud, confer)
  - Verbal learners (skilled at absorption)
  - Sensing learners (tactile – need to touch and feel)
  - Inductive learners (infer principles from data or experience)
  - Deductive learners (start with principles and deduce consequences)
  - Kinesthetic learners (learn by doing – active learners)
  - Global learners (see the whole – do not like only parts)
  - Sequential learners (learn linearly – concept analysis)

# Pedagogy as a Driver

- ▶ If you had to select one, which learning preference best describes you?
  - Visual learner
  - Aural learner
  - Verbal learner
  - Sensing learner
  - Inductive learner
  - Deductive learner
  - Kinesthetic learner
  - Global learner
  - Sequential learner

# Pedagogy as a Driver

- ▶ Based on your response what are your expectations as a learner?
  - Motivators
  - Barriers
- ▶ Emphasis on learner's learning style, modes of thinking, context of learning

# Pedagogy as a Driver

- ▶ Cognitivism focuses on how one acquires knowledge
- ▶ Conceptualization focuses on how one processes knowledge
- ▶ Affect includes constructs such as motivation, decision-making styles, values and emotional preferences

# Pedagogy as a Driver

- ▶ Learner's construct meaning: Bruner referred to it as scaffolding – build on a learner's existing schema – to apply and synthesize
- ▶ Cognitive constructivists recognize the role of the learner as making sense of the learning environment and progressing through developmental stages (Vygotsky)
- ▶ Social constructivists emphasize the influence of peer or facilitator

# Pedagogy as a Driver

- ▶ Learners are unable to construct new ideas and understanding – make meaning – if not based on existing understandings and perspectives (there must be a meaningful and relevant connection)
- ▶ Needs to be more than replicating the performance of others and acquiring knowledge transmitted in instruction – content must be acquired in a context not in the abstract

# Technology as a Strategy

- ▶ Focused on instructional technology not the technology
- ▶ Application of strategies from educational psychology
- ▶ It is the methodological application of ID as a process to Pedagogy as a driver

# Technology as a Strategy

- ▶ According to Papert (Founder of Media Lab at MIT) there needs to be an emphasis on *constructionism* where technology is seen as a playground where there is learning through exploration and inquiry
- ▶ So what do we do with the bells and whistles?

# Application as a Goal

- ▶ Use technology as a strategy based on pedagogical (or andragogical)– driven instructional design for applications that are most relevant to the learners.

# Application as a Goal

- ▶ It is important to balance and combine, for example:
  - Combine practical problem-solving methods (sensing/active) with fundamental understanding (intuitive/reflective).
  - Provide logical inference, pattern recognition, generalization with observation of surroundings, empirical experimentation, and attention to details.
  - Encourage both sensing and intuitive/reflective.
  - Use pictures, schematics, graphs before, during and after the presentation of verbal material (sensing/visual).
  - Provide opportunities to do something active.
  - Provide open-ended problems that require analysis and synthesis (intuitive/reflective/global).

# Application as a Goal

- ▶ So what are the macro questions?
  - What is the existing level and does it engage the learner in the zone of proximal development?
  - Does the content take into account what content is most intriguing and significant to learners?
  - Does the content bring about a sufficient grasp of concepts, principles or skills that learners can apply to new problems and situations? (Barr & Tagg, 1995).

# Application as a Goal

- ▶ Instructional designers only, please answer these questions.
- ▶ Does the content take into account what content is most intriguing and significant to learners? (scale of 1–5, with 5 as the highest)
- ▶ Does the content bring about a sufficient grasp of concepts, principles or skills that learners can apply to new problems and situations? (scale of 1–5, with 5 as the highest))

# Questions

- ▶ Please type any questions in the chat box on your screen

# Thank You

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