How to take account different ways of studying and learning?

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Diversity among students

- Cultural & ethnical diversity
  - Influx of students from Asia and Africa in Western Universities
  - Bologna Declaration increased movement of students between European universities
- Multiple forms of intelligence and learning styles/approaches
- Commitment to studies

Learning styles vs. approaches to learning

- Learning styles
  - Part of personality, rather fixed
  - Lack of empirical evidence
- Approaches to learning
  - Modifiable
  - More empirical evidence for supporting relevance
- Other terms
  - Learning strategy
  - Learning preference

Learning styles

“Traditional” learning styles

- Visual learners
- Auditory (or aural) learners
- Kinesthetic (or hands-on) learners
- Reading and writing learners

Learning style theories & models

- Honey and Mumford
- Kolb
- Gardner’s theory of multiple intelligence
- Myers Briggs Type Indicator (MBTI)
- …
- (See for Cassidy 2004 for more)

Activists – Learning by doing

- Hands-on learning style
- Intuition rather than logic
- Preference to practical, experiential approaches
- Tendency to rely on others for information
- Not interested in carrying out their own analysis, acting on a ‘gut’ instinct

Reflectors – Stand back and observe

- Generate ideas, brainstorming, gathering information
- Interested in people, imaginative and emotional
- Arts-oriented
- Group-work skills

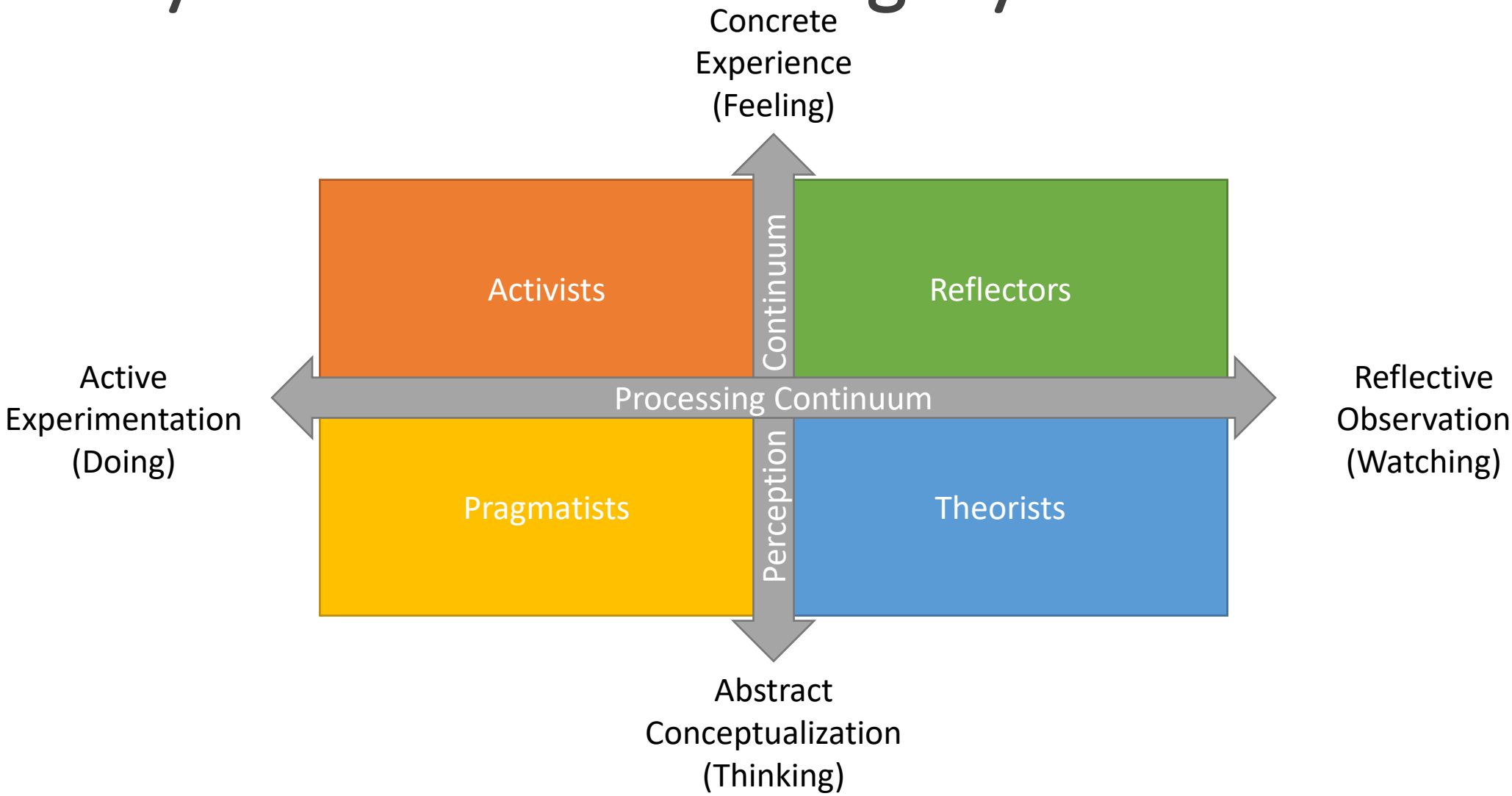
Theorists – Integrate all their observations

- Less focused on people
- Driven to ideas and abstract conceptualization
- More common in information and science careers
- Preference on readings, following logical approaches, being concise

Pragmatists – Apply theory in practice

- Problem-solving ability
- Preference for technical engagements that do not require social interaction
- Good at using technology
- Interested in experimentation of new ideas and in practical application of theory

Honey & Mumford learning styles



Kolb's learning styles

	Doing (Active Experimentation – AE)	Watching (Reflective Observation – RO)
Feeling (Concrete Experience – CE)	**Accommodating** (CE/AE)	**Diverging** (CE/RO)
Thinking (Abstract Conceptualization – AC)	**Converging** (AC/AE)	**Assimilating** (AC/RO)

Learning styles by Honey & Mumford

- Activists
  - “Learning by doing”
  - Respond most positively to learning situations offering challenge, to include new experiences and problems, excitement and freedom in their learning.
- Reflectors
  - “Stand back and observe”
  - Respond most positively to structured learning activities where they are provided with time to observe, reflect and think, and allowed to work in a detailed manner.
- Theorists
  - “Integrate all their observations”
  - Respond well to logical, rational structure and clear aims, where they are given time for methodical exploration and opportunities to question and stretch their intellect.
- Pragmatists
  - “Seek out new ideas to apply”
  - Respond most positively to practically based, immediately relevant learning activities, which allow scope for practice and using theory

Kolb’s learning styles

- **Diverging (feeling and watching – CE/RO)**
  - Generate ideas, brainstorming, gathering information
  - Interested in people, imaginative and emotional
  - Arts-oriented
  - Group-work skills
- **Assimilating (watching and thinking – AC/RO)**
  - Less focused on people
  - Driven to ideas and abstract conceptualization
  - More common in information and science careers
  - Preference on readings, following logical approaches, being concise
  - Ability to explore and manipulate analytical models.
- **Converging (doing and thinking – AC/AE)**
  - Problem-solving ability
  - Preference for technical engagements that do not require social interaction
  - Good at using technology
  - Interested in experimentation of new ideas and in practical application of theory
- **Accommodating (doing and feeling – CE/AE)**
  - Hands-on learning style
  - Intuition rather than logic
  - Preference to practical, experiential approaches
  - Tendency to rely on others for information
  - Not interested in carrying out their own analysis, acting on a ‘gut’ instinct

Gardner’s theory of multiple intelligences

- Linguistic
- Logical/mathematical
- Musical
- Spatial/visual
- Kinaesthetic
- Interpersonal
- Intrapersonal
- Naturalistic
- Existential

Learning approaches

Susan

- Susan
  - Highly motivated, interested and committed student
  - Important for her to learn
  - Active during lectures
  - Don’t need much support to learn and can “teach herself”

Robert

- Robert
  - At university to get a degree to get a job, not out of interest for the topic
  - Low motivation
  - Less committed than Susan
  - Has few or no questions
  - Only learn basic concepts but don’t see “the bigger picture”

Susan & Robert

- Susan
  - Highly motivated, interested and committed student
  - Important for her to learn
  - Active during lectures
  - Don’t need much support to learn and can “teach herself”

- Robert
  - At university to get a degree to get a job
  - Low motivation & commitment
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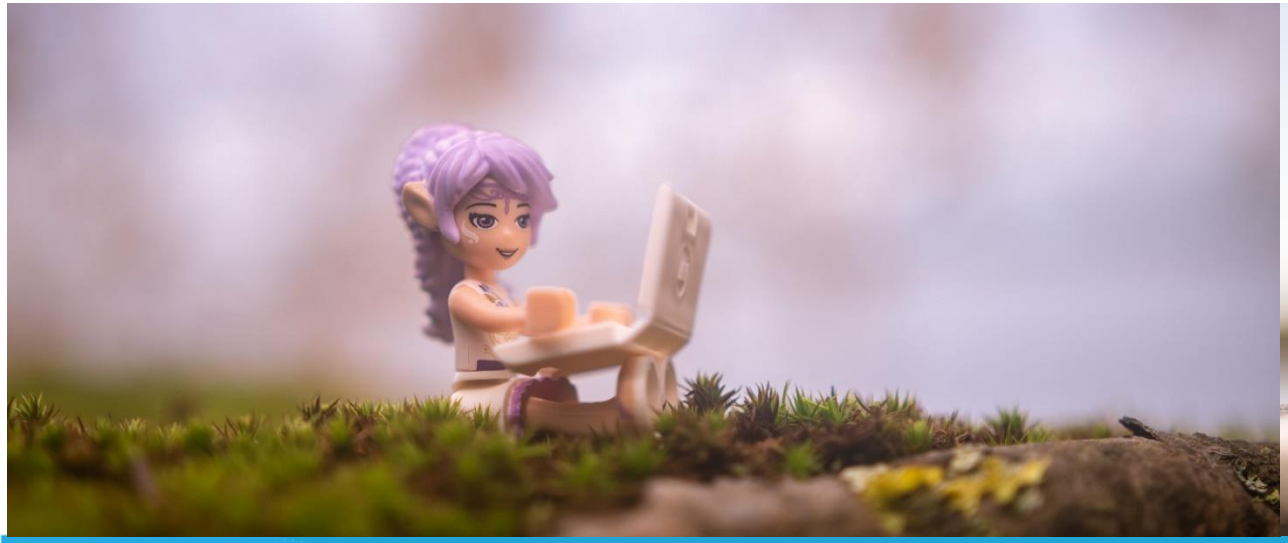
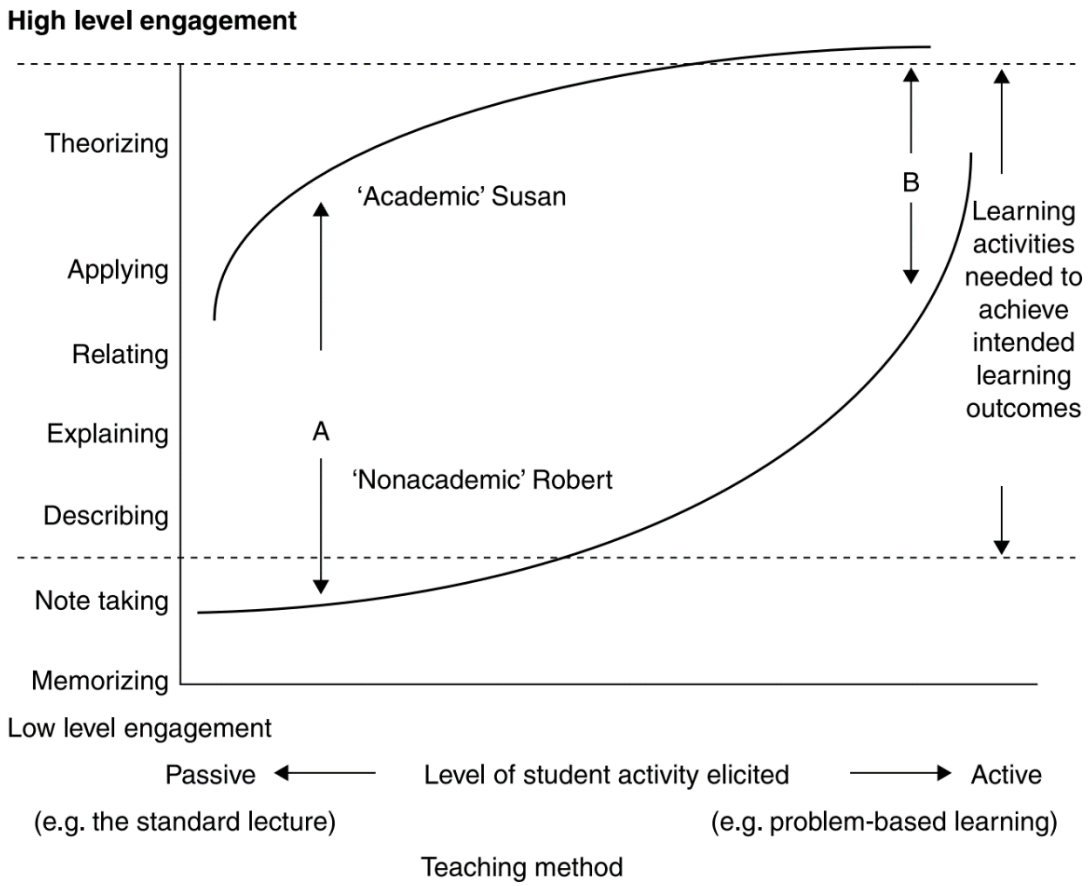


Learning approaches (Entwistle & Ramsden)

- **Surface**
- **Deep**
- Strategic

Learning styles/approaches in teaching

Teaching method and level of engagement



Source: Biggs & Tang (2011)

Identifying learning styles/approaches

- Juklovà used an existing questionnaire (ILS) to identify learning styles using 4 factors
- Answers from over 200 bachelor students from various fields
- Cluster analysis reveals 4 types of students
  - ~26% Easy-going persons (strategic approach)
  - ~17% Theorists (deep approach)
  - ~38% Practitioners (surface approach)
  - ~18% Persons unsuccessful in study (apathetic approach)

Advantages and pitfalls

- Advantages
  - Help students to think about how they learn
  - Can help teacher
    - Provides insights about students
    - Adapt course design to improve student behavior
    - Determine to type of learning activities and assessment methods to promote learning
- Pitfalls
  - Caution to interpretation

Promoting multiple approaches in learning

- Students should be encouraged to use their preferred learning style
- Learning materials should appeal to different intelligences
  - Include numbers, pictures, reading, writing, speaking
  - Provide the option for individual or group work
- Assessment of learning should not focus on a single form of intelligence
  - Different types of deliverable allowed (e.g. text, audio, video, etc)

Personal reflections

- People don’t use a single learning styles but a combination of them
- Certain forms of intelligence/learning styles might be better suited to
  - Certain fields
  - Certain learning outcomes

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