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Prematriculation Programs: What Problem(s) Are We Trying Solve?

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Objectives

- Establish cost benefit analysis of time spent in prematriculation program for:
 - Students
 - Faculty
- Establish goals for prematriculation program
 - Short term
 - Long term
- Evaluate implications for program design

Introductory Anecdote: The Perceived Problem

- Informal advisory experience with students
- Persistent problems with student performance/adjustment
- Curriculum too fast for some
- Needed longer adjustment time

Introductory Anecdote: The Obvious Solution

- Four to five first semester teachers
- Offered a two week introduction
- Designed to help adjustment, not to pre-teach
- Added: test taking skills, study skills, stress and time management

Introductory Anecdote: The Unintended Outcome

- Some students still struggled
 - Presenting course content doesn't address learning problems
- Not all invited students attended
 - Viewed by some as a stigma
 - Financial issues
- Ended when leader couldn't continue
 - Several willing to play teaching role
 - Not willing to administrate

Types Of Prematriculation Programs

- Designed for students already accepted
- Other types of programs
 - Enrichment programs for application to med school
 - Pipeline programs to structure premedical experience

General Nature

- Purpose: Reduce attrition
 - Easier transition – socialization, personal adjustment
 - Provide what is missing
 - No time pressure
 - Time to correct weakness
- Precede matriculation
 - One week to two months
 - Constraints are cost of housing finding teachers extra work requires dedication
- Follow through support?
 - Support is the key perception

What Is The Real Problem?

- Premedical education “qualifies” but doesn’t “prepare”
- Students lack the Growth Mindset
 - No self-awareness
 - No self-understanding
 - Low ability to think about content
 - Ineffective use of learning time
- Lack of follow-up support
 - Integrated into the fabric of the educational program
 - Appropriate assessment?

Metacognition As A Solution

- Fixed Mindset as a barrier (from Dweck, 2006)
 - Low self esteem
 - Low motivation
 - Low adaptability
- Growth Mindset as an enabler
 - Creating their own intelligence
 - Motivated
 - Highly adaptive

Prematriculation As Growth Mindset

- Keep it simple
- Keep it relevant – to them
 - As producers not receivers
 - Adult ego state, not child ego state
- Provide skill training
- Become a metacognitive learner yourself
- Here's how

Becoming A Guide To Metacognition

1. Teach Jungian types (MBTI)
2. Teach Deliberate Practice
3. Teach Experiential Learning/Cortical Specialization
4. Teach Concept Mapping
5. Teach Group Question Analysis
6. Use basic science content to practice each of these principles.

Teach Jungian types (MBTI)

- Simple and easy to learn
- Only mental model correlated with functional areas of the brain
 - Intuitives prefer front-brain thinking
 - Sensing types prefer rear-brain thinking
- Non-threatening, normal behavior only
- Not a limitation but a beginning point
- Can illustrate Deliberate Practice

Teach Deliberate Practice

- The only evidence-based route to expert skill development
- Highly applicable to skill areas of the brain
- Focused effort to correct weakness
 - Requires self-awareness (from MBTI)
- Every study session becomes self-directed practice
- Support 9/13 Core Entrustable Professional Activities.

Teach Experiential Learning/Cortical Specialization

- Information processing model
 - Different ways to use your brain.
 - Medical school demands all of them be developed.
- Interplay between functional areas
 - Emotional involvement important
- Integrate sleep function in memory consolidation
 - Supports Growth Mindset
- Evidence-based model

Teach Concept Mapping

- Constructivist model of representing understanding
- Transformational experience
 - “Receiver” becoming “producer”
- Employs at least seven different study methods
 - More time efficient
 - Inspectional reading

Teach Group Question Analysis

- Replicates the dialogue from attending rounds
 - Attending rounds becoming extinct
- Analysis of learning needed for wrong answers
 - Rationale discussion digs deeper
 - Hearing other ways of thinking
 - Self-correction
- Carry over effects on individual study
 - More self-directed influence
- See Expert Skills Program at SuccessTypes website

Main points

- Consider metacognition as a goal
 - Use content to teach thinking, not content
- Teaching “how” leads to self-directed learning
- Neurobiology insight fundamental to metacognition
- Two most time efficient methods
 - Concept mapping
 - Question analysis

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