# Learning Activities and Student Motivation

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# What motivates us?

- When I taught my most recent course I was motivated by …
  - Helping students on road to success
  - Challenge of engaging students
  - Experience in teaching methods
  - Will to survive!

- When I worked on my recent research project I was motivated by …
  - Looking for novelty
  - Looking for excitement
  - Experience in discipline
  - Networking

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# Outline

- Review of Svinicki's amalgamated theory of motivation

- Analysis of two Math 116 learning activities

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# Amalgamated Theory of Motivation

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# Historical Review

- **Early Theories**: given inner "force" drives behaviour

- **Behaviorally Based Theories**: behaviour to meet consequences (reward/punishment)

- **Cognitive Theories**: internal perceptions affect behaviour


- M.D. Svinicki (psychology, education)

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# Amalgamated Theory

- Based on three threads in the cognitive theories:

Value of Goal

Expectation of Achievement

Drive towards goal

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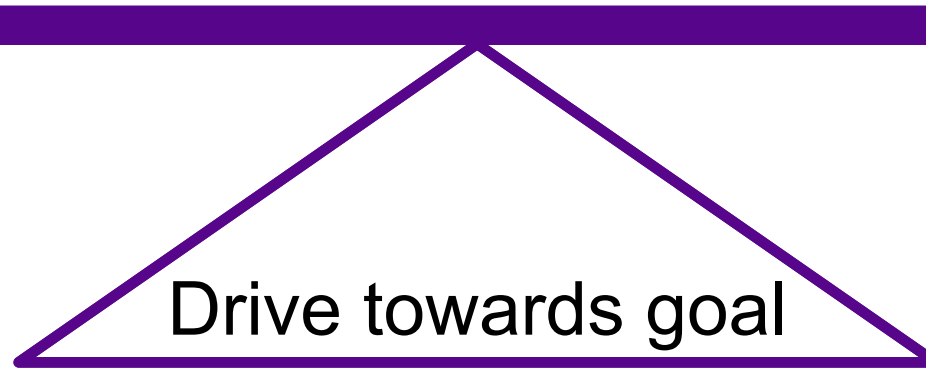
# Value of Goal Affected by:

- Outcome – extrinsic and intrinsic
- Satisfying need
- Intrinsic value of activity – interesting vs. boring
- Utility of knowledge/skill – short and long terms
- Choice (ownership) to control direction
- Influence/opinions of others

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# Expectation of Achievement Affected by:

- Self-efficacy

- Difficulty  - challenge vs. boredom

- Prior experience – start from success

- Skill matching – cross-discipline

- Encouragement

- Learner's belief – nature of ability, internal vs. external control

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# Analysis of Sample Learning Activities

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# Math 116 Assignment 3

- Worth 1% of final course grade (10 assignments / course)

- Only 30 – 40 % of assigned questions were graded (not announced prior to submission)

- Textbook provides correct answers for even numbered problems

- 2 tutorial problems indicated by ellipses

- Lecture coverage ≈ 3.5 hours

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# Week 4 Tutorial Exercise

- Non-compulsory tutorial:
  - Assignments are due at start of tutorial
  - Graded assignments available in tutorial
  - Attendance (effective) between 30 – 40 %
- 3 problems

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# Mentoring Analysis

- Identify positive motivating features of Assignment 3:
  - value
  - expectation of achievement
- Suggest changes to create more positive motivating features for value and expectation of achievement
- Repeat for Tutorial Question 1

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# Identified Motivational Features

## Value

- Knowledge coverage is well aligned with course
- Marks for assignment work
- Develops exam question capability ("safe" exam proving ground)

## Expectation

- Questions 2 and 3 of Tutorial align with assignment questions
- Similar to high school and earlier assignments
- Only 1 correct answer
- Progression in challenge of questions

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# Suggested Changes to Improve Motivation

## Value

- Include engineering context in Q#6
- Limit choice to improve student control
    - Make progression of capability clear in assignment wording and layout
    - State that Q#6 is graded
- Distribute grading over all parts of learning path
- Promote "peer" learning
- Emphasize connection to course outcomes

## Expectation

- Include connections to earlier assignments and topics
- Provide more balance between easy and challenging questions
- Provide explicit transitions to exam/life contexts
- Incorporate relevant recommended problems into solution strategies through hints or suggestions

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# Summary

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- Motivating features in two areas:
  - value
  - expectation of achievement
- Application to learning activities
- Habits for working with colleagues

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# Bibliography

1. Svinicki, M.D., 2004, *Learning and Motivation in the Postsecondary Classroom*, Jossey-Bass, A Wiley Imprint, San Francisco, CA

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