Study Skills
Lunch Series in Teaching and Learning

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What do we know already about how students study?

How can you collect this information?

What are some ways to address student study skill gaps?

Discussion: Your experience with student study skills.
What data do we have?

- Math 110, Sept 2010 to Apr 2011.
- Compare between students in the top quartile and those in the bottom quartile (of most recent test grade).
- Some results from course grades, study habit survey and attitude survey.
Workshop attendance

<table>
<thead>
<tr>
<th></th>
<th>Top quartile</th>
<th>Bottom quartile</th>
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<tbody>
<tr>
<td>T1, before MT1</td>
<td>90%</td>
<td>70%</td>
</tr>
<tr>
<td>T1, after MT1</td>
<td>90%</td>
<td>70%</td>
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<tr>
<td>T2, before MT2</td>
<td>90%</td>
<td>60%</td>
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<td>T2, after MT2</td>
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Factors influencing failure in math: Students’ point of view

Factors influencing failure in math:

- Lack of regular study routine
- Not completing assignments

Levels of influence:

- Greatly
- Moderately
- Not at all

Top quartile
Bottom quartile

Top quartile
Bottom quartile
Confidence and interest

Q1: I can usually figure out a way to solve math problems.

Q2: I avoid solving math problems when possible.
Factors influencing failure in math: Students’ point of view

- Greatly
- Moderately
- Not at all

Dependence on procedures in solving problems
Inadequate mathematics background

Top quartile
Bottom quartile
Dependence on procedures

Q1: If I get stuck on a math problem on my first try, I usually try to figure out a different way that works.

Q2: When I solve a math problem, I find an example that looks like the problem given and follow the same steps.

Q3: When I am solving a math problem, if I can see a formula that applied I don’t worry about the underlying concepts.
What do students do when studying math?

- Always
  - Transcribe class notes/books into personal notes
  - Study the solutions without trying

- Sometimes

- Never
  - Transcribe class notes/books into personal notes
  - Study the solutions without trying
What do students do when studying math?

- Always
  - Redo assignment problems
  - Rework sample problems/examples before reading the solutions

- Sometimes

- Never
Connections between different topics

Q1: I will not consider myself to have enough preparation for my math test if I cannot see how concepts relate to one another.

Q2: An obstacle to learning math is having to memorize all the necessary information.

Q3: Learning math changes my ideas about how the world works.
Help seeking

If we plot course grade on the horizontal axis and help-seeking events (office hours, tutorial centre) on the vertical axis, what does the graph look like?
Help seeking: Results from Science One

- From Science One study habit survey.
- Top and bottom students are less likely to seek help than the middle students.
- Results consistent with existing research.

![Bar chart showing attendance of students in different groups: Bottom, Middle, Top. The Middle group has the highest percentage of students attending Office Hours and Tutorials.](image-url)
How can you collect this information?

- Midterm evaluations/surveys.
- Smaller survey, perhaps earlier in the course (even start of term is possible).
- Weekly online survey if you are serious about data.
Promoting study skills:
Simpler options

- Provide a handout on study skills that you mention or go over in the first week.
- Draw attention to study skills (and handout, if any) frequently.
- Point students to learning goals.
Promoting study skills:

More involved options

- Grade incentives for certain “study” activities (e.g. recovering some test points via test review).
- Targeted reading assignments (likely need some attachment to course/grade).
- After first test, contact lowest-scoring students to visit you.
Discussion

- Does the data mentioned today match up with your own experience with students?

- How much of promoting study skills is “our job” as instructors?
Thanks!

Science One data courtesy of Eric Cytrynbaum with analysis by Costanza Piccolo.

For more detail, see the CWSEI Resources page: www.cwsei.ubc.ca under the Resources tab.
Thank You!!
Factors influencing failure in math: Students’ point of view

- Lack of confidence
- Lack of interest

- Top quartile
- Bottom quartile

Greatly

Moderately

Not at all

Lack of confidence
Lack of interest