Insert "Skill Bites" Into Your Course to Enhance Discipline Specific Development

Nancy Harris – Computer Science
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Outline for Today

- Introductions
- Overview of JMU first-year students
- Who should care about this?
- Some literature to support
- Ralph Walters College project
- Experience of a first-year teacher
- Adaptation of an exercise to your students
- Wrap up

Intro – Activity

- Individually, list 3 traits of your students that enhance their ability to learn.
- Individually, list 3 traits of your students that impede their ability to learn.
- In your group, settle on the top 3 enhancing traits and the top 3 impediments and share them.

The Transition to College

INDEPENDENCE?

The Changing American College Student:
Thirty-Year Trends, 1966-1996
Alexander W. Astin

"While each of the 30 freshman surveys since 1966 has revealed significant changes from the previous year's survey, there have been two periods during which students have shown particularly rapid and widespread change: the late 1960s through the early 1970s, and the past 8 to 10 years covering the end of the 1980s to the present." (Astin, 1998)

Recent Trends in First-Year Student's Issues (Astin)

- Financial Concerns
- Increased Stress
- Grade Inflation/Competition and Academic Disengagement
- Political Disengagement
- Decreasing Reliance on Government
- Mixed Trends on Social Issues

Highlights from Freshman Survey Data (Astin)

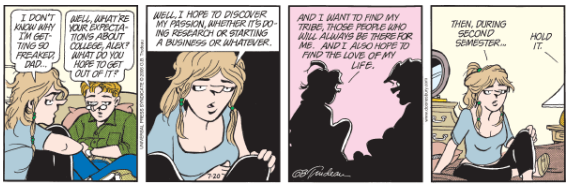
"Compared to their counterparts of the late 1960s, freshman women today have much higher educational aspirations and are much more interested in careers in traditionally "male" professions (business, law, medicine, engineering)"

Highlights from Freshman Survey Data (Astin)

"…women and men today are much more alike in their interests, aspirations, values, and behavior than they were three decades ago."

About the only area where the sexes have diverged is politics: women lean to the left while men lean to the right

EXPECTATIONS



First in the Family
Advice about College from First-Generation Students
Your College Years (2006)
By Kathleen Cushman

"I just feel a little intimidated, like it's going to feel really weird to approach them. Maybe I'll ask a question that they think is ridiculous. If I'm going about something that is really complicated to me, I don't want them to think, *Well, maybe she's not right for this class*." – Jackie

Quotes from JMU Freshmen

- "When students come to college many doubt their ability to succeed in a college environment. These students need someone who **believes in their abilities** and **expects from the beginning that they will succeed**."
- "Being the first person in my family to attend college, I knew little of what to expect…."

The James Madison University Student:
Before, During, and After Enrollment
1993 to the Present
The Office of Institutional Research at James Madison University

Between Fall 1995 and Fall 2006, JMU's average SAT combined decreased slightly from 1,186 to 1,140.

The percentage who reported in the First Year Survey that their average grade in high school was in the 'A' range increased from 43 percent to 55 percent.

Within specific skills, students reported increased preparation in study habits, computer skills and vocational skills.

There was also a decline in the percentage that stated they were very well prepared students in mathematics and a slight decline in foreign languages preparedness.

JMU Admissions Website

- **2006 – 2007 Freshman Class Profile**
- Applications: 17,765
- Applicants accepted: 62.6%
- Applicants enrolled: 3,748
- Average SAT Score: 1140
- * SAT mid-50 percent range: 1080 – 1240
  * ACT mid-50 percent range: 23 – 28
  * Top third of high school class: 88%
- First-year retention rate: 91.8%

Activity – How well do you know our first year students?

- These figures come from self-reports of the incoming 2007-2008 class. Of the 3748 students enrolled, 3592 participated in the survey.

How does JMU choose which students to admit?

JMU Admissions Requirements – from the JMU website

1. **Quality of High School Academics**
   Competitive candidates for admission will have taken upper level coursework (i.e. Honors, AP, IB, Dual Enrollment) in the core academic areas when available in their high school.

JMU Admissions Requirements, cont

2. Academic Achievement
Competitive candidates will have mostly As and Bs in the core academic areas: English, math, lab science, social science and foreign language.

3. Standardized Tests
When reviewing test scores we use the highest individual verbal and highest individual math scores from the SAT. For the ACT we use your single highest composite score.

JMU Admissions Requirements, cont

4. Secondary School Report and Recommendation

The high school guidance office completes this form. The Admissions Committee will learn if the applicant chose the most demanding program of courses, an average…

The guidance office tells us how competitive the high school class is by sharing with us how many students intend to go to a four year college next year.

And the office will rate the applicant in some areas such as academic potential, motivation, and leadership skills.

JMU Admissions Requirements, cont

5. Extracurricular Activities

JMU is looking for quality involvement rather than quantity of involvement.

Also interested in students who have been involved in community service or held part time jobs.

So what are the challenges we as faculty face?

National Survey of First-Year Curricular Practices
Summary of Findings
by Betsy O. Barefoot, EdD

- What, in your opinion, is the most significant problem or difficulty at your institution that affects the academic success of first-year students?

1. Lack of academic preparedness for college level courses
2. Poor time management strategies
3. General adjustment issues
4. Working too many hours off campus
5. Absence of motivation

National Survey of First-Year Curricular Practices
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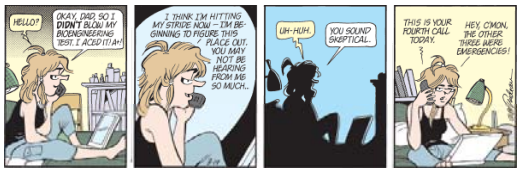
Six of the "Seven Principles for Good Practice in Undergraduate education" (Chickering & Gamson, 1987) are particularly relevant to the research on first-year curricular practices:

Seven Principles for Good Practice in Undergraduate education

1. Encourages contact between students and faculty
2. Develops reciprocity and cooperation among students
3. Encourages active learning
4. Gives prompt feedback
5. Emphasizes time on task
6. Communicates high expectations
7. Respects diverse talents and ways of learning

Students and Parents



How can we as faculty impact the development of our students?

Can we make a difference in their ability to learn?

What does the literature tell us?

- Historically, developmental programs have been separated from the discipline specific classroom.
- Railton and Watson state: "What we often end up doing is expecting students to adapt their practices to fit ours as if by osmosis: we expect students to speak the same language as us and intuitively understand the adjustments in their learning practice that higher education demands."

Railton and Watson study

- Discussed conditions in a first-year student class that encouraged small group discussion. What they found was that students were in roles of "student" to the teacher's "teacher" rather than the role they wanted them to be, that of autonomous "learner" in a classroom facilitated by the "teacher" mentor and guide.
- Specific strategies were developed to improve students' deep reading ability and to create conditions where they were encouraged to learn on their own within groups of other learners.

And we see other skills that students struggle with

- Historically, we have provided support to certain populations of students.
  - Learning disabled students (when they were provided access to higher education.)
  - Students coming into school with specific testable deficiencies (many community colleges see developmental education as a cornerstone of inclusion of all comers.)
- The kinds of skills taught to the "learning disadvantaged" students are the same kind of skills that can benefit all students just as providing Universal Design can benefit all students.

And we see today

- First year students struggle with time management, critical thinking skills, reading skills, and learning how to learn.
- Traditionally non-disadvantaged students had to identify their own need and seek out those kinds of supports. (Such as our first year involvement programs.)
- There is a certain stigma in seeking out such help. Students don't take advantage of the help provided outside of the classroom in any great numbers.

And…

- We are seeing more and more diversity in our classrooms.
- College is no longer for the elite.
- High schools also seem to be producing students less prepared for higher educational rigor…strategies that help them do well in high school with accountability testing do not always help them do well in college.
- Students who did well in high school find that college work is more difficult than expected.

Retention

- A number of schools have approached this problem from a retention perspective…how can we help our students to be successful?
- JMU has an excellent retention rate. Somehow the students are succeeding.
- So why are we interested in helping them to learn?

Rationale

- By embedding some learning strategies into course content, we can help our students to become better learners and ease the transition to college academics.
- Research suggests that students will retain the skills better if taught with direct applicability to the content.
  - See Burchard, Arendale
- Different disciplines require different strategies. Students should read a programming text differently than a history text differently than a novel.

Skill bites

- Booklet was developed by Raymond Walters College (University of Cincinnati) and the RWC Smart Connections Learning Community in 2006.
- Specifically, they were looking at supporting their incoming students and helping them to begin to think and learn like others in the discipline.
- Exercises include very general skills (time management, study habits, etc), but also weave in discipline specific skills and learning about the discipline.

My classes

- I teach the two course introductory programming sequence in Computer Science (CS 139/239).
- Students are primarily first-year Computer Science majors.
- These students have varying backgrounds in CS from no prep in the field to AP or dual enrollment.

- I also teach a gen-ed critical thinking course which is GISAT 160 in Cluster 1.

What I have done – CS

- I looked at some of the things that trouble the students the most in my classroom.
  - Cheating (sadly it is often an issue)
  - Learning to learn for Computer Science
  - Time management – large projects get away from them (and large projects will be an ongoing theme of their CS work)
  - Learning to use a wide range of tools to direct their own learning … it is a necessity in our changing field.

My theme is to try to make them successful in my classroom

- Making the textbook a partner in their education.
- Understanding learning styles – learning how they learn.
- Understanding and preventing cheating on programming assignments.
- Using a quiz "gatekeeper" to encourage reading and study before lab activities
- Applying time management principles to larger projects.
- Working in groups.

I also use exercises directly related to being a JMU college student

- We use exercises where students must program:
  - Calculation of a weighted average.
  - Calculation of a GPA (which gets into what quality points are and what grades affect their GPA).
  - Creating a program to calculate a target test score to achieve a particular grade.
- Despite having these students as advisees, they don't seem to know how to do these things.

Ongoing

- I purposefully model strategies to learn and discover from the software that we use.
- I rarely answer a question by giving the answer, but instead model how I would find out by trying the item in question. I let the students develop a hypothesis and then we see what happens.

GISAT 160

- This course is different in that it is a more general skills course.
- I use many of the activities from the Skill Bites book in that class room directly.
- They are learning how to think and to think and read more critically.
- I tell the students that I am trying to help them become more strategic consumers of information.

Differences between these populations.

- CS Students don't like just doing what they perceive as unnecessary skills development. The Learning Style exercise was a bust from their point of view (heard about it in TAP and at the end of the semester review).
- If I "hide" development skills in a big dose of CS "sugar", they accept it and seem to learn from the activities.
- The GISAT students, because of the nature of the course, seem to enjoy the self-discovery activities.

Specific examples of adaptation of a general skill to classroom specific learning.

- Textbook introduction
  - Teaches them how to use the textbook and what resources are there
- Example of a lab quiz (using Blackboard adaptive release to control access to lab material)
  - They need to pre-prepare for the lab with the basic concepts required for that lab
- Learning style activity
  - To help them to see how they might have to approach the course material.
- **Cheating case studies – demo**
  - Yeo article – students don't always perceive actions as being honor violations that we in fact treat as such.
- **Time management exercise** – adaption of a Skills Bite exercise for my class – demo
  - Help students to plan for and execute a large project.

Skill bites book

- Examples and exercises with classroom instruction and homework.
- Most are designed to take 20 minutes or less of classroom time.

Other learning strategy sources

- http://www.studygs.net Landsberger
- http://coe.jmu.edu/learningtoolbox/ JMU College of Education
- http://www.rwc.uc.edu/library/librarypdfs/quickskillsbites.pdf

Now your turn…

- Choose one thing in your classroom that you would like to see your students do better or that will help them to learn the material better.
  - Note taking
  - Time management
  - Critical reading
- Choose an activity that you would like to adapt to your specific discipline.
- In the time remaining, work out how you might adapt that activity to the specific issue that you have in class.
- Discuss with your colleagues how you will proceed.

Share

- What one thing will you try in your class, if not this semester, then next.

Resources

- We have a number of the resources (papers, books) available to peruse after the workshop.