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A Problem-Based, Service-Learning Approach to Financial Literacy

MTH 3015: QL and the Consumer Credit Crisis

Course Description:

In the past four decades, the American consumer credit market has ballooned: Credit card company revenues, Americans' debt load, and personal bankruptcies have all gone up; savings rates have gone down. In this class, we will study the problem of escalating consumer debt and the difficulties of unequal access to credit. We will also investigate what it takes, in terms of quantitative literacy, to be a knowledgeable and successful consumer in today's market.

MTH 3015: QL and the Consumer Credit Crisis

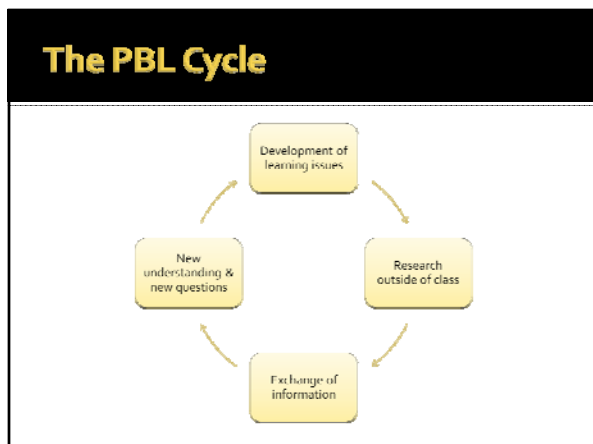
Course Objectives:

- Gain the ability to quantitatively assess a situation, including being able to:
 - Read and interpret quantitative information sources.
 - Produce quantitative analyses of situations.
- Understand the potential personal and societal problems connected to the use of credit.
- Define quantitative literacy and see how it is connected to successful personal financial management.

Problem-Based Learning

"In the problem-based approach, complex, real-world problems are used to motivate students to identify and research the concepts and principles they need to know to work through those problems."

—Duch, Groh, and Allen. "Why Problem-Based Learning?" In *The Power of Problem-Based Learning*



Problem 1: Credit Card Analysis

"Caroline loves to travel and has just learned of an opportunity to take the trip of her dreams over Christmas break. She will need a total of \$2000 for the trip: \$1250 for airfare and lodging and \$750 in cash to cover the remainder of the costs. Unfortunately, Caroline does not have the money now, so she plans to charge the trip to a credit card, get a cash advance for the spending money, and pay it all back later. She has heard that you are taking a class about credit and would like your help in finding the best deal."

Insights from Problem 1

- Very complicated mathematical formulae, including:

$$A(n) = [(1-m)(1+r_1)]^n P - \frac{[(1-m)(1+r_1)]^n - 1}{(1-m)(1+r_1) - 1} \cdot (m - r_2 + mr_2)C$$

- Weak spreadsheet skills

Problem 2: QL at Belmont

"A number of educators and activists today believe that quantitative literacy is the key to economic success and, more broadly, effective citizenship in the 21st century. Such thinking is behind many colleges' requirements that all students must pass a mathematics class in order to graduate.... Is Belmont's QR requirement an effective way to educate its students to be quantitatively literate?"

Insights from Problem 2

- Interesting ideas for cross-curricular QL assignments
- "Analytic" approach difficult for students
- Students understand that QL is not (all) about specific mathematical skills

Problem 3: Title and Payday Loans



Problem 3: Title and Payday Loans

" You will play the role of a research aide for a Metro Councilmember Anna Page, who represents District 16. Nolensville Road, in District 16, has a large number of payday and title lenders, so Mrs. Page is interested in the issue of these loans. She would like to know whether greater limits on title lenders and payday lenders are appropriate."

Insights from Problem 3

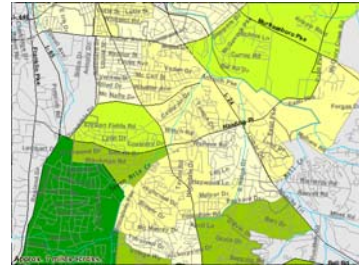
- Challenge to get students to do "deep" research
- Difficult to get straight information from lenders!
- Generates good discussions
- Lots of interesting data

Title Lenders: Targeting a Population?

	37211	37205
Title lenders	16	0
Payday lenders	26	0
Total population	64,753	21,861
Median household income	\$37,141	\$68,194
Individuals below poverty level	13.1%	5.3%
High school graduate or higher	81.3%	96.0%
Bachelor's degree or higher	27.2%	64.9%

Sources: TN Dept. of Financial Institutions; U.S. Census 2000

Title Lenders: Targeting a Population?



US Census 2000 Median Household Income Map for ZIP 37211

Service-Learning Component

- Volunteered with local mortgage counseling service
- Created a financial literacy curriculum for middle-school-aged children of Habitat for Humanity homeowners
- Reading and reflection assignments throughout the semester

Quantitative Decision-Making: What do Students Need?

- Going beyond "surface" research
- Taking an analytical approach to a decision
- Looking for quantitative evidence
- Spreadsheet skills
- Creating charts/tables/graphs

Other Financial "Problems"

- Mortgages
 - Why do people choose "bad" loans?
 - Why do banks offer loans to people with bad credit?
 - How does one decide which mortgage option is best for a given situation?
 - Is it ever better to rent than buy?

Other Financial "Problems"

- Student loans
 - Is college worth the cost?
 - Should the private student loan industry be eliminated?

Other Financial "Problems"

- Equity issues
 - What different credit-related problems affect various subpopulations?
 - Is there discrimination in lending? How can we know?
 - Are credit scores used appropriately?

Other Financial "Problems"

- Planning and the "safety net"
 - Why do people need credit in the first place?
 - Why do people choose payday/title loans? Do they have other options?
 - How can we plan for emergencies so as to reduce the need for credit?
 - How long can a person survive on unemployment?

You can help ...

- Problem Based Learning Clearinghouse
 - <http://www.udel.edu/pblc/>
- Currently only one problem from mathematics/statistics