The Short-Term Effectiveness of a College-Based Financial Reality Simulation in Building Financial Awareness[1]

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Abstract

Economic conditions facing recent college graduates include wage stagnation, significant student loan debt and high rates of unemployment and underemployment. These factors highlight the need to provide financial education in the college and university setting. This article examines the impact of college students' participation in a financial reality life skills simulation that measures financial knowledge and intended change in current and future financial behaviors. Using the Five-Tiered Approach as a guiding framework for the development of the financial simulation and evaluation, we found that participants experienced an improved ($p<.001$) change in financial understanding as a result of participating in the financial reality life skills simulation. Specifically, student knowledge of the costs to maintain a household and the costs to raise a child were greatly improved ($p<.001$).

Introduction

Significant student loan debt, coupled with high unemployment and underemployment rates, are major issues being faced by recent college graduates. Considerable attention has been paid to student debt since the recent economic crisis. Seventy-one percent of graduating seniors in the Class of 2012 carried student loan debt, with an average balance of $29,400 (Reed and Cochrane, 2013). In general, the long-term employment and wage forecasts for recent college graduates have been described as dim. Although unemployment and underemployment for college graduates under age 25 appeared to have peaked in 2010, unemployment remained at 9.4% and underemployment at 19.1% in 2012 (Shierholz et al., 2012). This is compared to a national average unemployment rate of 4.5% for all college graduates and a national average underemployment rate of 14.7% for all workers during the same period (Bureau of Labor Statistics, 2013). Furthermore, as a result of wage stagnation during and after the recession of 2007-2009, termed the Great Recession, it is anticipated that young college graduates will earn less for the next decade compared with those graduates entering the job market during a strong economy (Mishel and Shierholz 2013; Shierholz et al., 2012). These findings suggest a less than favorable economic climate for young college graduates.

College students encountering financial difficulties may experience increased levels of anxiety and depression, as well as declines in general health and academic performance, sometimes limiting the students' ability to complete a degree (Andrews and Wilding, 2010; Borden et al., 2008; Gutter and Copur, 2011; Lyons, 2007; Shim et al., 2009). Stress levels among college students may be further exaggerated in an economic downturn. Guo et al., (2011) found that stress resulting from the recent economic downturn increased students perceived stress levels. High stress triggers were identified as concerns about future employment opportunities and current financial burden (Guo et al., 2011).

The transition from financial dependence to financial independence typically occurs between the ages of 18 and 25 (Arnett, 2000; Gutter and Copur, 2011; Shim et al., 2012). The lack of experience in managing money, coupled with increased financial responsibilities and direct marketing tactics from financial institutions, results in the emerging adult population being financially vulnerable (Borden et al., 2008). For example, college students may give little thought to the long-term consequences of misusing credit cards (Borden et al., 2008). Young adults carrying heavy debt burdens and/or facing other difficult financial circumstances are less likely to make

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a successful transition to adulthood (Shim et al., 2009). The financial behaviors and habits formed during this transition period will likely influence financial decisions throughout the student's lifespan (Shim et al., 2009). The long-term consequences of high debt accumulation while in college can be significant, including limited or no savings, restricted employment mobility, delayed retirement contributions and bankruptcy (Lusardi et al., 2010; Palmer et al., 2010).

A heightened awareness of the need for financial literacy exists due to the efforts of educators, legislators and organizations such as the Jump$tart Coalition for Financial Literacy (Avard et al., 2005; Mandell, 2008). Consumer levels of financial literacy have a direct impact on financial management behaviors such as household money decisions and the ability to save for and attain financial goals (Hung et al., 2009; Perry and Morris, 2005). Furthermore, individuals possessing low levels of financial literacy are more likely to pursue or accumulate undesirable financial products, such as high interest credit card debt (Lusardi and Tufano, 2009) and have lower levels of wealth accumulation (Lusardi and Mitchell, 2007).

To date, most youth-based financial education programs are offered through the K-12 educational system. Seventeen states require a personal financial education course as part of high school graduation requirements (Council for Economic Education, 2014). However, research indicates exposure to financial education during high school does not necessarily correlate to high levels of financial literacy, nor does it have a lasting impact on financial decisions and behaviors as an adult (Avard et al., 2005; Mandell, 2008). This finding may be a result of the lack of motivation of high school-aged students, as well as the limited exposure these students have to real world financial situations directly affecting them (Mandell, 2008; McCormick, 2009).

The college setting has been identified as an effective learning environment in which to capitalize on the teachable moments of students becoming more financially aware and independent (Peng et al., 2007). Shim et al. (2009) charged educators and university administrators with providing financial education programs that improve financial literacy, promote positive financial behaviors and develop institutional support structures to improve students' financial well-being. Although many colleges and universities incorporate a variety of financial education programs into core courses and other student life programs, there is a limited body of scholarly knowledge regarding the success of financial intervention programs (Palmer et al., 2010).

The purpose of this study is to examine the impact of college students' participation in a financial life skills simulation on their financial knowledge as well as on their intended change in current and future financial behaviors. The development of the financial reality life skills simulation and the program evaluation process are explained. This study contributes to the scholarly knowledge base by expanding the research on college student financial knowledge and education programming.

Materials and Methods

Five-Tiered Approach to Program Evaluation

Program evaluations for financial education programs are limited in scope due to struggles associated with isolating program impacts, inconsistencies of program delivery methods and costs (Fox et al., 2005; Lyons, Chang and Scherpf, 2006). To mitigate these concerns, the financial life skills simulation described in this manuscript utilized Jacobs' (1988) Five-Tiered Approach for program evaluation. The Five-Tiered Approach requires the program coordinator to make a conscious commitment to the program evaluation from the point-of-program inception. The five levels of program evaluation include: (1) preimplementation, (2) accountability, (3) program clarification, (4) progress toward objectives and (5) program impact. Fox et al., (2005) highlighted the Five-Tiered Approach as a comprehensive evaluation framework for financial education programs.

Applying the Five-Tiered Approach to the It's Your Reality (IYR) Financial Life Skills Simulation

Preimplementation Tier

The preimplementation phase establishes the need for programming. A needs-based assessment can be conducted using several pieces of information including national and local statistical data, as well as interviews with community leaders who are aware of the problem (Jacobs, 1988). The initial impetus for exploring the development of a campus-wide financial education program resulted from local and national news headlines and government reports regarding the alarming trends in student loan debt and financial struggles facing recent college graduates (Bureau of Labor Statistics, 2012; Cheves, 2011; Curran, 2012; Martin and Lehren, 2012; Reed and Cochrane, 2012; Rosen, 2012). The second stage of exploration involved conducting a needs assessment, utilizing focus group interviews with current college students on our campus. The student focus groups were a convenience sample; sessions were held in conjunction with other campus events or classes. Three focus groups were conducted, with forty-seven total participants, providing student input on the program development and implementation. The student focus groups sessions were followed by one-on-one interviews with a variety of campus leaders who held university-wide positions with primary responsibilities for serving the student body. The 12 one-on-one interviews included the Associate Dean of Students, Directors of Student Relations within numerous colleges on campus and representatives from Student Affairs, Student Financial Aid and the Career Center The one-on-one interviews primarily targeted individuals who held university-wide positions with primary responsibilities to serving the student body. The preimplementation process not only allowed for the establishment of

program priorities and goals but also launched key campus relationships. As a result, a core project team was established to design and implement the program. The core project team consisted of a faculty member, a campus Extension administrator, program coordinator and three campus-teaching faculty.

Program Description

It's Your Reality (IYR) is a financial life skills simulation developed by the University of Kentucky Cooperative Extension Service designed to promote financial capability among college students. The IYR simulation introduces college students to the financial realities associated with emerging adulthood by allowing them to make the critical decisions regarding lifestyle and budget choices. The simulation was designed to help young women and men between the ages of 18 and 22 understand how the financial decisions made today, or shortly after graduation, will impact their life course.

IYR was modeled after the Kentucky 4-H Reality Store curriculum. The Kentucky 4-H Reality Store curriculum is a workforce preparation program targeting middle school youth (Blevins, 2010). The Reality Store concept was initially developed by the Indiana Federation of Business and Professional Women's Club, Inc. (O'Neill, 2008). The goals of the Kentucky 4-H Reality Store curriculum focus on school retention, encouraging post-secondary educational attainment, reducing/preventing teen pregnancy, reducing drug misuse and introducing basic financial life skills (Blevins, 2010). Although the IYR simulation exercise is similar in conceptual design to the 4-H Reality Store program, the IYR program was developed to specifically target college students and the financial situations they will likely experience following graduation. The primary goals of the IYR simulation include helping college students become aware of basic financial life skills including budgeting, weighing financial trade-offs, financial planning and goal setting, as well as helping them understand the relationship between current behavior choices and future financial implications.

Operation of Program

The IYR simulation consists of a one-day learning opportunity for college students. The campus-wide program was offered in the student center during heavy traffic times. Upon arrival to the simulation, students received the equivalent of one month's salary, based on average starting salary for their specific major. Students then selected their own family situation; however, if they were planning to have children within five years of graduation they were encouraged to incorporate the appropriate costs into their simulation experience. Participants circulated through the simulated "stores." The simulation incorporated 25 store fronts, which included transportation, insurance, housing, property taxes, communications, charitable giving, entertainment, credit card repayment, student loan repayment, groceries, supplemental income, financial distress and chance.

Volunteers staffed the store fronts and the buying process was made as realistic as possible. For example, salespeople from a local new and used car dealership staffed the transportation booth. Participants were presented with a variety of vehicle options ranging from economy, used vehicles to luxury, new vehicles. The salespeople were instructed to treat the participants as standard customers and they employed standard sales tactics.

The chance booth was designed to help students understand the need for an emergency fund and the consequences of their purchase decisions. Students randomly drew a card from the chance treasure chest. Chance cards included door prize giveaways, as well as the opportunity to receive unexpected additional income, such as a gift; however, the majority of chance cards represented unexpected negative events that might occur during any given month, such as the costs associated with a flat tire, home repair, or medical illness. The price students paid for these events was based on their prior purchase decisions. For example, a card associated with a medical illness may read: "You woke up with the flu and need to go to the doctor. If you purchased medical insurance, you owe a $20 copayment. If you purchased catastrophic medical insurance or no medical insurance, you owe $150." A Certified Financial Planner (CFP) staffed the financial distress booth to help students who were struggling to allocate their income. The CFP reviewed the lifestyle purchases made by the student and helped to identify areas in which the participant could reduce expenses, such as basic cable versus premium cable. Students were allowed to exchange any purchase decision, with the exception of the decision to have a child, to see the impact on their monthly budget. For example, a student who purchased a new Honda CRV could later go back and trade his vehicle for a used Honda Civic. The student's monthly car payment, taxes and insurance would all be adjusted accordingly.

Accountability Tier

The accountability tier is designed to collect program utilization data. Program utilization data includes number of participants reached and cost of programming (Jacobs, 1988). The IYR simulation was offered on three separate days in 2013. A total of 970 undergraduate students completed the simulation. The average time for a student to complete the simulation was 50 minutes. The total program cost was $13,650 or $14.07 per participant. Examples of program budget items included marketing materials, signage, booth development and setup, program materials and handouts, graphic design support, volunteer parking and lunch for all volunteers and the first 250 students who attended each simulation. Student lunches were provided as an incentive to participate in the event. More than thirty door prizes were given away each day as part of the chance booth. Door prizes were donated from local business and not included in the total cost of programming. Volunteers

staffed all booths and there was no cost recovery for faculty or program coordinator salary.

Program Clarification Tiers

The program clarification tier is designed to allow the program staff to reflect on the event and identify improvements for future programming efforts. This step involves reviewing and refining the program's mission, goals, objectives and strategies (Jacobs, 1988). Following the IYR event, the core project team met for a debriefing session and to process participant and volunteer feedback. Two focus group sessions with student participants were conducted the week following the event. Thirty-six students participated; 23 of them had also participated in the preimplementation focus group session. Students were asked to respond to prompts regarding the design, flow and overall event experience. One-on-one interviews were also conducted with many of the same campus leaders and administrators who participated in the needs assessment. A total of nine campus faculty and staff, representing campus-wide student services, participated in the one-on-one interviews. An additional three course instructors, who had required or incentivized student participation, were also interviewed.

Progress Toward Objectives and Short-Term Program Impact Tiers

The fourth level of the tiered program evaluation approach is assessing progress toward objectives and the fifth level is program impact (Jacobs, 1988). The student evaluation for the IYR simulation was designed to be both formative (assessing program satisfaction) and summative (measuring knowledge gained and intended behavior change) in nature (Fox et al., 2005). The data for this study were collected from participants at the exit point of the simulation event. A retrospective pretest (RPT) measure was used to assess program impact (Lyons et al., 2006; Davis 2003; Rockwell and Kohn, 1989). Specifically, the RPT survey design was used to measure self-reported understanding on eight financial practices/concepts as a result of participating in the simulation. The RPT survey instrument consisted of 28 questions and included both closed-ended and open-ended response questions. The instrument was divided into five sections, including demographics (seven questions), program satisfaction (three questions), knowledge gained (eight questions), intended behavior changes (six questions) and open-response (four questions). Participants responded to a statement that read "For each topic listed below, in the LEFT column, circle the ONE number that best reflects your LEVEL OF UNDERSTANDING before the program. Then in the RIGHT column, circle the ONE number that best reflects your LEVEL OF UNDERSTANDING after the program." Responses were presented using a Likert-scale where 1 = Poor Understanding, 2 = Average Understanding, 3 = Good Understanding and 4 = Excellent Understanding. Paired sample t-tests were conducted to compare the mean pretest and posttest scores using SPSS 21.0.

Results and Discussion

As discussed above, 970 undergraduate students completed the simulation, representing approximately 5% of the undergraduate student population. A total of 697 evaluations were collected by study personnel, a 72% response rate. As is often true of surveys, there is some missing data/skipped questions. Table 1 displays detailed demographic characteristics of the sample. The sample included seniors (29.1%), juniors (22.1%), sophomores (9.5%) and freshmen (39.3%). The majority of the sample were female (64%). Approximately 44% of the sample reported having student loan debt and 14% reported having credit card debt.

Participant satisfaction of the program was extremely high. Ninety-five percent of respondents found the simulation exercise educational. Similarly, 94% of participants found the information presented practical and 74% reported the subject matter as timely.

Table 2 displays the pre/post-course assessment of understanding including the mean, standard deviation and difference between the scores. Participants experienced a highly significant (P<.001) positive change in understanding across all eight indicators. The largest reported mean change in understanding was the costs to maintain a household followed by costs to raise a child.

One objective of the IYR simulation was to provide students with a realistic picture of cost of living once they become financially independent. Open-ended response questions identified that students had unrealistic expec-

Table 1. Respondent Demographic Characteristics

Measure and Variable	Sample	%
Grade classification (n = 694)		
Senior	n = 202	29.1
Junior	n = 153	22.1
Sophomore	n = 66	9.5
Freshman	n = 273	39.3
Sex (n = 694)		
Male	n = 250	36.0
Female	n = 444	64.0
Student loan debt (n = 695)		
Yes	n = 302	43.5
No	n = 393	56.5
Credit card debt (n = 696)		
Yes	n = 95	13.6
No	n = 601	86.4

Table 2. Paired t-Tests for Retrospective Pretest (n= 688)

Understanding Variable	Pre		Post		
	Mean	SD	Mean	SD	Difference
Costs to maintain a household	2.54	0.89	3.68	0.51	1.14***
Costs to raise a child	2.21	1.05	3.2	1.01	0.99***
How amount of money influences lifestyle	2.84	0.89	3.75	0.47	0.91***
Budgeting my money	2.76	0.84	3.62	0.52	0.86***
Link between career choice and lifestyle	2.85	0.86	3.7	0.52	0.85***
How to make wise financial choices	2.79	0.85	3.62	0.53	0.83***
Impact of student loan debt on future	2.72	1.03	3.43	0.83	0.71***
Impact of credit card debt on future	2.75	1.02	3.41	0.79	0.66***

Note: *** p < .001

tations regarding starting salary, taxes and actual costs of common household consumables such as groceries, personal products, internet and cable. Perhaps the best testimony to the success of the program is communicated directly through the words of the participants. One participant noted: "During the [It's Your Reality] simulation, I learned many things on what I should expect outside of college, in what I have to budget for with my spending. It helped me realize what is necessary versus what is unnecessary."

In addition to measuring change in understanding, participants were asked to respond to a series of six behavior statements to measure change in intentions as a result of program participation. The response matrix is presented in Table 3. The participants overwhelmingly reported positive changes in intended behaviors; most notably 97% reported the intention of "thinking more about the impact of a purchase decision on my finances." The second stated goal of the IYR program was to help college students understand the relationship between current behavior choices and future financial implications. Ninety-six percent of participants reported they were "more likely to consider the impact of a purchase decision today on my future."

It was determined the IYR simulation achieved the program mission, goals and objectives. Several strategies emerged to improve the simulation experience. Key findings and program modifications from the program clarification stage included a more targeted marketing plan, adjustments to the volunteer training and rearrangement of the store front layouts for the simulation. Several changes were made regarding specific "for sale" items at the booths. For example, the clothing booth offered several clothing packages, which included consignment, department and name-brand stores. Students suggested changing the clothing store options to name-brand stores, which may have a broader appeal to college students. As suggested by Jacobs (1988) an IYR simulation handbook was developed, which contains program process and implementation data. This handbook is a resource tool for future programming efforts that details the needs-based assessment process, program development processes and specific program components, such as timeline for program planning, contact information, volunteer training material, booth descriptions, marketing materials, notes from key conversations and program evaluations.

For future research, the project team has designed a long-term evaluation tool to measure actual change in behavior and progress toward achieving the goals outlined by the program. The team has identified an 18- and 24-month time lapse post programming to implement the long-term evaluation. These findings can be used to support program replication in other college and university settings (Jacobs, 1988).

Table 3. Intended Behavior Change as a Result of Educational Program

Behavior Change Variable	Yes (%)	No (%)
Thinking more about the impact of a purchase decision on my finances	97	3
Consider the impact of a purchase decision today on my future	96	4
Limit my use of credit cards or other forms of debt	93	7
Delay having children	87	13
Change how I purchase clothing, food, and entertainment	82	18
Consider seeking education beyond a bachelor's degree	81	19

The Five-Tiered Approach provides a holistic program evaluation. This paper details the implementation of the Five-Tiered Approach; however, only preliminary plans to implement the fifth tier are outlined as related to long-term program impact. The evaluation findings will be more robust after the long-term program impact data has been collected and analyzed. It is recognized the RPT used to measure program impact is a less rigorous evaluation tool as compared to a true experimental or quasi-experimental design; however, the RPT is a commonly accepted measurement tool utilized to document changes in knowledge and behavior within Cooperative Extension programming (Lyons et al., 2006; Davis 2003; Rockwell and Kohn, 1989). Finally, the IYR simulation was conducted at a state flagship land grant institution. Students in other college and university settings may have more or less experience in the area of family financial management based on prior experiences.

Summary

There is currently limited work specifically addressing the effectiveness of financial life skill simulations in the college environment. However, the findings presented enhance the overall body knowledge supporting the use of active learning strategies to enhance college student knowledge and understanding of a particular subject (Barkley, 2010; Curland and Fawcett, 2001; Braxton et al., 2000).

The findings from this study have important implications for educators regarding college students' financial literacy and financial security, as well as future research. As previously discussed, the college setting provides a backdrop for teachable moments. While this project used a financial simulation to provide financial education to college students, educators should be challenged to integrate financial knowledge and skills across the curriculum. To increase the likelihood of successful transition from financial dependence to financial independence students will need to be financially literate and to make wise financial decisions such as purchasing a car or home and retirement planning. This especially holds true for retirement planning as more employers are shifting the investment and saving responsibility to the worker. Consumers need education on how to become more financially savvy.

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