

Conducting an Outcome Evaluation of Virginia Cooperative Extension's Kids' Marketplace Curriculum

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Chapter 1: Introduction

Background and Setting

The Virginia 4-H program provides education and experiences to youth. Youth participate in 4-H through several delivery modes including community clubs, day and overnight camping programs, and school enrichment. While agriculture and farming projects were traditionally a large focus in the 4-H program, today's youth are participating in a larger variety of programs. One major area of emphasis, particularly found in school enrichment programs, is STEM (Science, Technology, Engineering and Math). By participating in a 4-H program, youth are exposed to new subject matters, have the opportunity to acquire new skills, are able to form positive relationships with caring adults, and build life skills that will help them be successful in all areas of life. The 4-H Study of Positive Youth Development shows that youth engaged in 4-H participate in activities that build important life skills, are almost two times more likely to achieve better grades in school, and make a larger long-term contribution to society than those who do not participate in 4-H programs (Lerner, 2013).

With a variety of learning styles found amongst students, classrooms must be flexible and provide different and varying opportunities for learning to happen. In the area of financial literacy, Virginia 4-H and Virginia Cooperative Extension have used many approaches and programs to educate youth and increase their financial capacity. Each of these programs aims to educate students about sound money management skills and the financial planning process. In return, it is expected that these students will begin to develop positive behaviors that are necessary to attain financial maturity and achieve a secure future. Programs that are currently being offered in Virginia include Kids' Marketplace simulations, Reality Store simulations, Real Money, Real World simulations, and Reading Makes Cents. Kids' Marketplace is designed to

target elementary school students in grades 3-5 and provides a simulation-based environment for youth to have hands-on experience with making financial decisions. Youth are given a career and salary and must budget and pay a month's expenses. Reality Store and Real Money, Real World programs follow the same premise but also include family members that youth must account for and an income tax experience. These programs are designed for high school and middle school students respectively. The Reading Makes Cents program educates youth on financial literacy through children's literature and a complimentary craft, game, or research experience. Each of these programs correlates to Virginia Standards of Learning and educational mandates.

Statement of the Problem

In 2003, Heather Greenwood, an Extension Agent within Virginia Cooperative Extension, created the Kids' Marketplace curriculum. Since that time, the materials have undergone one revision in 2015 and have been used statewide in educating youth on financial literacy. The current curriculum includes an evaluation tool that asks participants to choose "Yes," "No," or "Maybe" to several questions surrounding whether or not they learned a specific skill or completed certain tasks within the program. While this information has consistently been used to create statewide impact statements, the questions asked of students are not correlated with the stated program objectives in a meaningful way and cannot show whether the program is teaching youth the desired outcomes.

Purpose of the Project

By conducting this project, I aimed to complete an outcome evaluation of the Kids' Marketplace curriculum and program through the creation, piloting, and implementation of a supplementary evaluation tool. The tool was designed to evaluate whether students showed an increased understanding of economic terms, had an increased capacity to make independent decisions based on needs and wants, were able to carry out basic math skills related to money management, and showed an increased understanding of making choices based on limited resources.

Project Objectives

Overall, the objectives for this project were to:

1. Determine the relationships between participation in the Kids' Marketplace experience and ability to define and recognize economic terminology.
2. Determine the relationship between participation in Kids' Marketplace and ability to distinguish needs from wants.
3. Determine the relationship between participation in Kids' Marketplace and ability to complete basic math skills related to money management.
4. Determine the relationship between participation in Kids' Marketplace and ability to make choices based on limited resources.

Definition of Terms

ELT- Experiential Learning Theory

Kids' Marketplace– KMP; a Virginia curriculum that focuses on financial education and includes a simulation component.

SOL – Standards of Learning; Standardized testing in the state of Virginia is conducted based off of Standards of Learning. Teachers plan lessons and activities based on these standards.

Economics – the science that deals with the production, distributions, and consumption of goods and services

Personal Finance- Incorporates all financial decisions and actions of an individual or household in the areas of earning, spending, saving and investing.

Financial Education – In the context of K-12 education, financial education refers to the basic principals involved with earning, spending, saving, and investing money. The goal is to help students understand multiple areas of finances, including the correlation between education and income and managing money.

Limitations of the Project

This project was limited by the selection of participants. By using third grade students that were already assigned to a classroom, obtaining a truly random sample was not possible. While every effort was made to choose classrooms that have similar make up and teaching strategies, this can never be guaranteed. It was also limited by the fact that students may have been absent and missed lessons or activities that relate to this project. Also, since the researcher is the developer of the evaluation tools being used, there may be subjectivity in the responses.

Basic Assumptions

For the purpose of this research, several basic assumptions were made about the participants and program. The researcher assumed that all students are starting at a similar point in terms of pre-existing knowledge of economics. Due to the SOLs being followed at each school in each grade level, all students should have equal knowledge. Since all teachers were given the same curriculum, it was assumed that they followed the provided KMP curriculum and provided the appropriate time for completion of the program and following evaluation, with understanding that teaching styles may vary from person to person. It was also assumed that the developers of the KMP curriculum created the program with the Virginia SOL in mind and based the lessons on said standards.

Significance of the Problem

The 2015 Junior Achievement/The Allstate Foundation survey discovered that 84 percent of teenagers turn to their parents or guardians for money management information. However, 66 percent of guardians do not have conversations about money and finances with their children. In 2015, 23 percent of teens reported feeling as if their parents do not spend enough time talking to them about personal finances (Junior Achievement, 2015). America Saves (2015) reports that youth are aware that it is imperative to save money, but they are not sure where to start to accomplish this task. This suggests that youth are excited and eager for education on finances and economics, but lack the necessary resources to obtain education. Virginia is one of 35 states that includes personal finance in state standards, and one of 17 that requires a personal finance class prior to graduation. While most of these requirements are found in secondary school curriculum, scholars suggest that starting at the elementary age may have greater impacts

(Sherrard & Johnson, 2010). All of these facts support that there is a great need for more youth financial education programs in school.

Chapter 2: Review of the Literature

Research has shown that students have various learning styles and that many benefit from hands-on experiences with subject matter (Novak, 2013). Simulation learning can provide students with this hands-on learning experience and has been effectively used in multiple fields of study. The usage of simulation-based learning has proven to be successful at increasing knowledge gains as well as student confidence in the subject matter.

Uses of Simulation Learning

Simulation learning environments have been used successfully across many disciplines, including health care and science, to promote more active learning and engagement in students. Some classroom teachers are already implementing simulation exercises in classrooms. Beth Arner, a former elementary school teacher in California, used simulation activities to supplement science curriculum. Arner (1998) recognized the value of simulations in encouraging active learning and found that the more students were involved in the simulation the more knowledge they retained on future tests. She found simulations to be a “natural vehicle” for delivering science lessons, and that coordinating simulations with textbook learning provided balance and depth in her classroom. Using a scientific inquiry simulation, Arner’s students investigated why creatures in a simulated pond environment were dying. Arner (1998) found that since the simulation echoed real life problems being addressed by scientists, the experience became more meaningful and assumed a great importance for the learners.

As students have varying learning styles, multiple teaching methods may be necessary in a traditional classroom environment. By offering experiential learning opportunities and simulations, more students may be able to grasp new concepts. Learning motivation is also

thought to be improved with experiential based learning methods that are found in simulation exercises. According to Roh and Kim (2015), “experience provides the main motivation for learning, and new knowledge is established from reflection on experience.” Teachers also appreciate simulation-based learning because of the uniqueness of the experience in engaging reserved students, getting them involved in the content, and allowing them the opportunity to practice the skills. Simulations provide standards-based content that will captivate students. (Mitchell & DeBay 2012).

Benefits of Simulation Learning

Research has shown benefits of simulation participation on learning outcomes in a variety of fields. Roh and Kim (2015) conducted a study to determine the effect of simulations on the learning motivation and life skills with nursing students. Their research was based off prior studies that suggested that integrating simulations with problem-based learning was superior to traditional lecture instruction. Roh and Kim (2015) issued questionnaires to a convenience sample of 83 nursing students who had participated in this mixed instructional method. Results showed an increase in nursing students’ motivation when integrating simulation with problem-based learning. The researchers concluded that problem-based learning alone can provide practical training in the acquisition of skills, but it cannot replicate the real-world environment nurses will face. Roh and Kim (2015) state that simulation is the vehicle for transforming classroom knowledge into practice, creating a larger opportunity for the students to use their knowledge in the future.

In another field, statistics students were found to have higher understanding of the subject after participating in simulation experiences than those who only received traditional textbook and lecture instruction. This research by Novak (2013) also examined the

effect of simulations that include a story line component. The study included 64 graduate students who were randomly assigned into two groups. One group participated in a simulation with a story line, while the other participated in simulation only. All of the students reported that simulation learning was more enjoyable than other learning activities. The researchers found that the portions of the simulation teaching math components were most effective at increasing learning gains in students' knowledge (Novak, 2013).

Prior studies looking at the educational value of simulations have shown that simulations are suitable for developing skills and giving participants a hands-on experience in a “real world” environment. The experiential learning component of simulations adds to the knowledge gain outcome (Brennan & Vos, 2013). Through research, scholars have learned that young children show more excitement and may learn more when lessons are experiential, include an opportunity for discovery, and modify techniques for diverse groups and learning styles. In order to increase financial capability and understanding, youth need the opportunity and ability to act on their knowledge (Sherrard & Johnson, 2010). Simulations provide students with an opportunity to apply course content in an active learning environment. Simulations can increase student motivation, offer opportunities for peer recognition and collaboration, and clarify difficult concepts through participation (Wedig, 2010).

In an environment driven by standards and benchmarks, teachers are in need of new ways to engage students. By adopting simulations in classrooms, students and teachers may find excitement in topics that have become burdensome or rushed in their classrooms. In using simulation software in a physics classroom, “students who used simulations as part of the instructional sequence outscored students who did not on each of the summative assessments”

(Brusell & Horejsi, 2012). Students expressed positive reactions to the experience saying it allowed them to see the immediate effect of changes on their project.

Economic Education in Today's Schools

Economic education has become an increased focus in many states and school systems. A majority of states are now requiring some form of economics or personal finance class for students prior to graduation. At the state level, policy makers are requiring schools to include curriculum on financial education. As of 2009, 35 states required personal finance education standards to be in place and 17 states are requiring that students complete a finance class in order to graduate from high school (Sherrard & Johnson, 2010). However, with curriculum becoming “crowded,” educators are finding it difficult to set aside time for financial education or find ways to incorporate financial aspects into existing lessons. Finding the time to meet these new requirements will be critical in students obtaining the necessary financial knowledge needed to succeed as adults.

School systems have been noted as the natural way to deliver financial education to students. According to the National Center for Education Statistics, about 50.1 million students will be attending public school in the United States in 2015. By incorporating financial education topics into the school day, a majority of youth will receive this education and students who would otherwise have limited opportunities to participate in financial education are given the chance to engage and receive lessons. States are also beginning to place an emphasis on this education occurring during school times as seen in changes to standardized testing. As of 2013, six states require mandated testing of student knowledge of personal finance concepts (Batty, Collins, & Odders-White, 2015). Virginia began requiring a class in personal finance and economics with the graduating class of 2015.

Relevance to Extension Work

In the field of Extension education and 4-H, experiential learning is the preferred method of instruction. 4-H programs also place a strong emphasis on the development of life skills, turning student knowledge into practical application. 4-H Agents offer many programs that are research based, but few have undergone thorough research to determine the true outcome on skill and knowledge retention. It is important for those in the field to have factual support for their programs in order for educators to see the value of the work. The positive results of simulation experiences seem to align with the mission and value of Extension educators. By using simulations as a method for educational programming, Extension professionals would be able to provide hands-on experience and a direct link to real life applications of the knowledge gained.

Theoretical Framework

The framework for this research project was based on Kolb's Experiential Learning Theory (ELT) which places emphasis on the benefits of experience in learning. Kolb asserts that knowledge should be defined as "a process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Yardley, Teunissen, & Dornan, 2012). In short, experiential learning is gaining knowledge through real-life experience with the subject at hand. Kolb's theory draws from prior research by Dewey, Lewin, and Piaget, and centers on the process of having an experience (McCarthy 2010). According to McCarthy (2010), many experts agree with Kolb that student learning is optimized when the student has an active role in the learning process. According to Akella (2010), Kolb's ELT addresses the idea that experience makes learning have a greater meaning for the student involved, and thus will result in long-term knowledge gain. By

giving participants a chance to demonstrate their knowledge in a simulated environment, they will have a chance to be involved directly in the subject matter. This active involvement may help students to grasp concepts that were difficult in traditional classroom environments. This may also allow the student to see how these principles relate to real life situations providing a deeper meaning for the subject matter.

Kolb describes learning as a continual process that is grounded in experience (Akella, 2010). As such, pictorial representations of the ELT are circular, as shown in Figure 1. There are four stages in the ELT cycle: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE) (Akella, 2010). Kolb notes that learner can enter this learning cycle at any stage, but the sequence remains the same. Throughout the learning process, students have some sort of experience with the subject (CE), and then he or she moves on to reflect on that experience and how and why things may have occurred (Akella, 2010). The student then takes those reflections and relates them to theories or concepts they have been taught (AC) and may experiment further or test their ideas to see how they apply to reality (Akella, 2010). By using the ELT cycle, educators may be able to better understand the learning processes and styles of students and can then tailor their lessons based on identified needs. Simulations fit well into the ELT model as they allow learners an opportunity to experience some component or idea. During this project, participants engaged in a simulation providing the experience component. Educators and Extension personnel then guided students through the remainder of the model to help them achieve the full cycle of knowledge as proposed by the ELT, beginning with reflecting on the experience and having participants recount knowledge gained from participation. Students were then encouraged to relate their experience back to the concepts they had learned in the traditional classroom setting and think of ways that this new

knowledge be used or applied to other areas or used to help recall information at the time of testing.

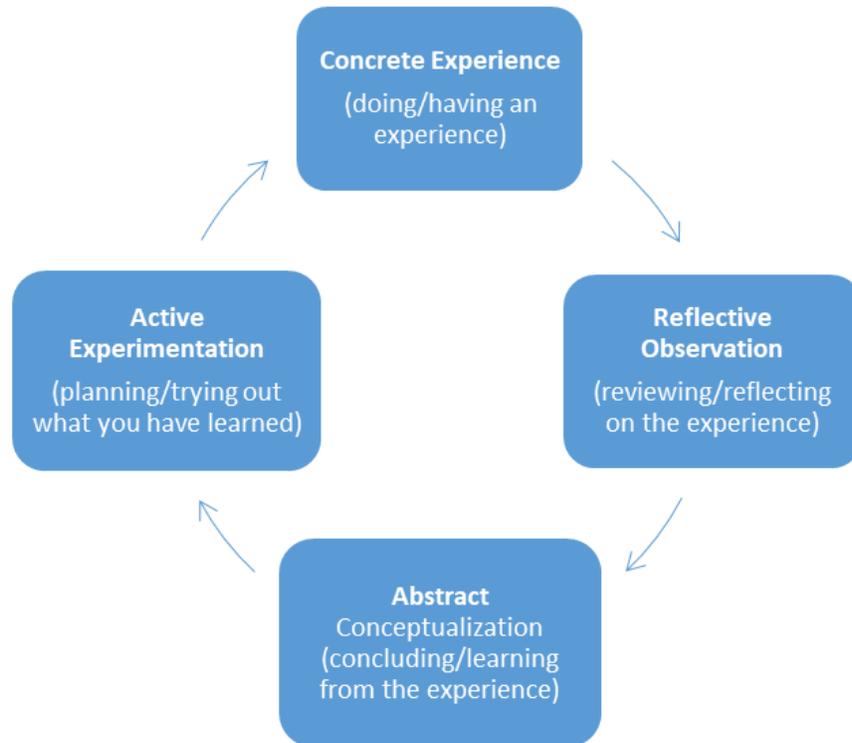


Figure 1. The experiential learning cycle (modified from Kolb, 1985).

Chapter 3: Methodology

Project Overview

The purpose of the research study was to perform an outcome evaluation of the Kids' Marketplace curriculum and simulation. I conducted a pilot study in the spring of 2018 with third grade students from an Elementary School in Stafford, Virginia. I used the stated objectives from the curriculum to develop a first draft of a supplementary evaluation tool. I delivered the Kids' Marketplace curriculum, conducted the simulation, hosted follow up conversations, and administered the standard evaluation tool as well as the supplementary tool. Results from this pilot, as discussed below, were used to modify and improve the supplementary tool. Extension Agents in Virginia who are currently using the KMP curriculum were asked to utilize this new tool in the 2018-2019 school year and share data with the researcher. In total, 504 students who completed a KMP simulation were included in this study. An additional 250 students were included in a control group.

Selection of Research Study Grade Level

This research project examined the outcomes of the Kids' Marketplace curriculum on third grade students. This grade level was selected as it is the first to include standardized testing on the topic. The Kids Marketplace simulation was developed based on the same set of standards students are tested on.

Participants

This in-school program was aimed at third grade students and their experience with simulation-based learning of economics. A convenience sample of intact classroom groups was used in the research study. The KMP curriculum and simulation were provided to students, with

teachers serving as the main instructors of the curriculum with assistance from the 4-H/FCS Extension Agent. Parents and other volunteers were utilized to complete the simulation portion of KMP.

Data for this research project was collected from September 2018 through June 2019. Five 4-H and Family and Consumer Science Agents participated in the data collection process by conducting a Kids Marketplace simulation or administering the supplemental instrument to third grade groups that were already established. In total, 754 students were included in this study. The experimental group contained 504 students, while the control group was made up of 250 students. The experimental group was comprised of students who participated in six unique Kids Marketplace simulations, and included students from both rural and urban areas as well as public and private school settings. The control group was comprised of students from four unique groups. There was no fee charged to participants to participate in any of the simulations.

Results from students who participated in the KMP program were compared to students who did not participate in the simulation. This was done by asking 4-H Agents or teachers to deliver the supplemental tool to groups of third grade students who either have not or will not participate in the KMP simulation during the research period.

Instrumentation

For the purpose of this project, the researcher developed an evaluation instrument for collecting data. This project relied on a posttest evaluation tool. By utilizing this instrument, the researcher aimed to determine student knowledge gains. The new evaluation tool was developed based on the objectives listed in the KMP curriculum which are:

1. Increase understanding of economic terms related to grade-level standards of learning

2. Increase capacity to make independent decisions based on needs and wants
3. Practice basic math skills related to money management
4. Increase understanding of making choices based on limited resources.

The supplemental evaluation tool included questions to specifically target whether students were familiar with economic vocabulary terms, were able to distinguish needs from wants, and were able to express that money was a finite resource.

A posttest (Figure 2), the supplemental evaluation tool, was administered to students to evaluate student knowledge following participation in the simulation exercise. See appendix for full version.

Kids' Marketplace

For questions 1-15, circle the correct answer. Write your answers to questions 16-20.

<p>1) Activities that satisfy people's needs and wants are:</p> <p>A. Goods B. Learning C. Services D. Recess</p> <p>2) David bought a magazine at the store. The magazine is an example of a:</p> <p>A. Want B. Need C. Service D. Tax</p> <p>3) Goods are things like clothing, dishes, bicycles, and pencils.</p> <p>A. True B. False</p> <p>4) A person who uses money to buy goods or services is a:</p> <p>A. Consumer B. Banker C. Cashier D. Producer</p> <p>5) Who grows or makes the things people buy?</p> <p>A. Producers B. Clerks C. Consumers D. Employees</p>	<p>6) Jill had enough money to buy gum or a candy bar. She decided to buy the candy bar. What is her opportunity cost?</p> <p>A. The candy bar B. Her change C. The gum D. The money</p> <p>7) Which of the following is an example of a capital resource?</p> <p>A. Water B. A machine C. Money D. The President</p> <p>8) Which of the following is an example of a natural resource?</p> <p>A. A house B. Trees C. Goods D. A teacher</p> <p>9) A doctor is an example of what type of resource?</p> <p>A. Natural resource B. Human resource C. Capital resource D. Environmental resource</p> <p>10) Tom loaded his truck with vegetables to take to the local market. His truck was an example of a:</p> <p>A. Natural resource B. Human resource C. Capital resource D. Environmental resource</p>
<p>11) Which of the following is <u>NOT</u> a natural resource?</p> <p>A. Water B. Soil C. Trees D. Workers</p> <p>12) A computer is an example of which type of resource?</p> <p>A. Natural resource B. Human resource C. Capital resource D. Environmental resource</p> <p>13) What is interdependence?</p> <p>A. Freedom from laws B. Relying on one another to meet needs and wants C. Giving help to others D. Doing a job alone</p> <p>14) Which of the following is an example of bartering?</p> <p>A. Buying a football from the store B. Buying a Coke for \$1 C. Trading a ball for a pencil D. Giving your friend 2 quarters for a candy bar</p> <p>15) Specialization is doing more than one kid of work or selling more than one kind of good.</p> <p>A. True B. False</p>	<p>16) What are three ways people can prepare for specialized jobs?</p> <p>A. _____ B. _____ C. _____</p> <p>17) Give three examples of a want.</p> <p>A. _____ B. _____ C. _____</p> <p>18) Give three examples of a need.</p> <p>A. _____ B. _____ C. _____</p> <p>19) In your own words, explain why we cannot have everything we want.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>20) In your own words, explain why money is important in our world.</p> <p>_____</p> <p>_____</p> <p>_____</p>

Figure 2

Data Collection

After completing the KMP program and simulation, students were asked to complete both the standard form included with the curriculum (see appendix) at present as well as the supplementary tool. The Extension Agents conducting the programs in varying localities then either mailed or delivered the documents to the researcher.

Data Analysis

Student responses on both the standard and supplementary tool were all scored by the researcher with each response scored using an answer key (Figure 3). For questions 1-15 of the supplementary evaluation tool, there was only one correct answer per question. Questions 16-20 required short answer text. The answer key provided guidance for what was considered an acceptable answer for these questions.

<u>Answer Key/Rubric for Supplemental Evaluation Tool</u>					
Question 1: C	Question 2: A	Question 3: A	Question 4: A	Question 5: A	Question 6: C
Question 7: B	Question 8: B	Question 9: B	Question 10: C	Question 11: D	Question 12: C
Question 13: B	Question 14: C	Question 15: B			
Question 16: Look for answers that include key words such as education, hand-on experience, training					
Question 17: Answers should include niceties, like toys, computers, cell phones, etc. These should be things a person can live without.					
Question 18: Answers should include things that are life necessities, such as water, food, air, and housing					
Question 19: Student answers should refer to balancing needs versus wants and not always having enough money for both.					
Question 20: Student answers should refer to the need for money to purchase the good and services needed to live.					

Figure 3

A coding system was used to document how many students answered each question correctly. Utilizing Microsoft Excel, the researcher developed a spreadsheet with one column for each question on the supplemental evaluation tool. Correct answers by students were represented with a value of zero, while incorrect answers were represented with a value of one. Each students' answers were recorded in a separate line of the spreadsheet.

Once all students' responses had been entered using this system, the researcher used Microsoft Excel functions to total the columns for each question. Lower sums represented areas that students performed well in, while higher numbers indicated a lower performance. Excel functions were then used to determine the percentage of students who answered each question correctly as well as the percentage who answered incorrectly. This same treatment was applied to students in both the control and experimental groups.

Two terms, natural resources and capital resources, appeared more than one time on the supplemental evaluation tool. To determine an overall score for these two terms, the responses were combined and then an average was found using Excel functions.

This coding process allowed the researcher to identify areas of opportunity or strength in the students. These results helped to determine the outcomes of the simulation and the KMP curriculum. These results were also used to determine if any changes to the curriculum are recommended.

Timeline and Budget

A pilot for this study was conducted in May 2018. Other field agents were then asked to deliver the supplemental tool in the 2018-2019 school year. The cost to operate the program were minimal, as supplies such as the Kids' Marketplace curriculum have already been purchased as part of the office supply budget. There were small charges incurred for the

duplication and copies of the curriculum materials. There was no registration fee for this research project, and all expenses were covered using unit office or local dollars. The total cost for all associated copies was no more than \$100.00.

Pilot Study Implementation and Results

The supplemental evaluation tool was piloted in May 2018. Five classrooms with 124 students participated in the KMP program, receiving the pre-simulation instruction, simulation exercise, and post-simulation follow up and discussion. Each participating student completed the standard evaluation form as well as the supplemental evaluation tool. The supplemental evaluation tool was graded using an answer key and results were recorded in Microsoft Excel.

The standard and supplemental evaluation tools were used to gauge whether the KMP program was successful at meeting its four program objectives. The four objectives of the program are:

1. Increase understanding of economic terms related to grade-level standards of learning
2. Increase capacity to make independent decisions based on needs and wants
3. Practice basic math skills related to money management
4. Increase understanding of making choices based on limited resources.

Described in teacher evaluations as the hardest component of teaching economics to students, objective one was addressed using the supplementary evaluation tool in questions 1-15. Of the economic terms students are asked to be familiar with, five areas of weakness showed up in the pilot data. Terms that did not seem to be as familiar to students were services, capital resources, interdependence, bartering, and specialization. For each of these terms, less than 75 percent of students were able to correctly answer the questions. One outlier was identified in this

grouping. Only 32 percent of students were able to correctly answer a question on the topic of “services,” but in oral discussions with students and from teacher opinions, this is a term the students seem comfortable with. This data suggest that the curriculum may not be placing enough emphasis on some economic terms.

Objective two was addressed in both evaluation tools. On the standard evaluation tool, students were asked to select “Yes,” “No,” or “Maybe” to the statement of “I learned to choose what I need with my money.” A majority (88 percent) of students said that they did learn this principle. Two percent of students answered in the negative to this metric, while 10 percent selected “Maybe.” The supplemental evaluation tool also asked students to list examples of needs and wants and to explain why a person cannot have everything he or she may want. The researcher opined that a majority of students successfully answered these questions.

The simulation by nature allowed 100 percent of participants to practice basic math skills related to money management as stated in objective three. Volunteers encouraged each student to count their own money as well as do their own addition and subtraction. One of the teachers participating in the pilot expressed a need for the KMP program to include coins in the pricing options.

Objective four is addressed in the standard evaluation tool. Students are asked to select “Yes,” “No,” or “Maybe” to the statement of “I learned how to give up one thing to choose another.” Data from the pilot showed that 79 percent of students responded in the affirmative, with 10.5 percent selecting “no,” and the other 10.5 percent selecting “maybe” in answer to this portion of the evaluation. Pilot data suggests that this objective is being met with students, but there is room for increased performance in this area.

Data from the pilot study was used to revise the supplemental evaluation tool.

Chapter 4: Project Results

Using the methodology referenced above, results from both the control and experimental groups were calculated. This project objectives were to:

1. Determine the relationships between participation in the Kids' Marketplace experience and ability to define and recognize economic terminology.
2. Determine the relationship between participation in Kids' Marketplace and ability to distinguish needs from wants.
3. Determine the relationship between participation in Kids' Marketplace and the ability to complete basic math skills related to money management.
4. Determine the relationship between participation in Kids' Marketplace and an ability to make choices based on limited resources.

Objective 1

Recognition of economics vocabulary is found in Objective 1 of KMP. Of the economic terms that are included in the Virginia Standards of Learning, six areas of weakness were identified in the data. These terms were identified as areas of weakness based on less than 75 percent of students correctly identifying the terms in the supplemental tool. These terms include services, opportunity costs, capital resource, interdependence, bartering, and specialization. In comparison, students in the control group were able to identify one term with over 75 percent correct. The chart below displays the percent of students who correctly identified the listed terms in both the experimental and control groups with the areas of weakness in red.

<u>Vocabulary Term</u>	<u>% of Students in Experimental Group with Correct Answer</u>	<u>% of Students in Control Group with Correct Answer</u>
Services	68%	58%
Wants	89%	74%
Goods	78%	54%
Consumer	87%	42%
Producer	86%	62%
Opportunity Cost	71%	14%
Capital Resource	68%	43%
Natural Resource	92%	84%
Human Resource	93%	66%
Interdependence	55%	30%
Bartering	65%	54%
Specialization	57%	40%

In 11 of the 12 vocabulary areas, including those identified as areas of weakness, a least 10 percent more students in the experimental group were able to correctly identify the vocabulary terms over those in the control group. An increase of 5 percent was also seen for the term “Natural Resource,” in which both groups scored over 75 percent correct. With the term “Opportunity Cost,” 57 percent more students in the experimental group produced the correct answer than those in the control group. While the experimental group fell below the 75 percent benchmark on this term, the difference in correct answers is notable. Based on this data for objective one, it can be deduced that students participating in KMP do have an increased understanding of economic terms related to grade-level standards of learning when compared to their peers who did not participate, with opportunities to increase this understanding and knowledge further with slight curriculum modifications.

Objective 2

In addressing objective two, experimental group data shows that the curriculum is successful in meeting this desired output. Of the students in the experimental group, 86 percent stated “Yes” that they learned to “choose what I need with my money” on the standard evaluation tool. Four percent of students answered in the negative to this question, with an additional 10 percent replying “Maybe.” The results on the supplemental evaluation tool also mimic an understanding of choosing needs versus wants. A majority of students were able to successfully list examples of needs (92 percent) and wants (94 percent) and explain why a person cannot have everything he or she may want (82 percent). In comparison, the control group was also able to successfully list needs (83 percent) and wants (81 percent) and explain that people have finite resources and therefore cannot have everything they need and want (75 percent) on an equal level as the experimental group. From this, it can be gathered that the KMP curriculum does meet objective two, but a causal relationship cannot be established.

Objective 3

By nature of the simulation design, 100 percent of participants in the experimental group were given the opportunity to practice basic math skills related to money management as stated in objective three. In all simulations included in the experimental group, students were asked to count their own money when making a purchase. They were given the opportunity to practice addition and subtraction when purchasing multiple items from one station or making change during the simulation. It is difficult to determine if the curriculum is successful at reaching this intended objective based on this research project. Students were not observed concretely completing these math functions, but were simply given the opportunity to do so. Therefore, no claims can be made about their ability to complete math skills after participating in KMP.

Students in the control group were only asked to complete the supplemental evaluation tool and therefore had no opportunity to practice basic mathematic skills.

Objective 4

Learning to give up one thing to choose another is the focus of objective four and was examined in two ways in this research study. As part of the standard evaluation tool, students are asked to select “Yes,” “No,” or “Maybe” to the statement of “I learned how to give up one thing to choose another.” Data from the experimental group showed that 73 percent of students responded in the affirmative, with 15 percent selecting “no,” and the other 12 percent selecting “maybe” in answer to this portion of the evaluation. Students in the control group were not asked to complete the standard evaluation tool. On the supplemental evaluation tool, students were presented with a question asking them to identify the opportunity costs in a scenario. Seventy-one percent of students in the experimental group were able to correctly identify the opportunity costs compared to 14 percent in the control group. This data suggests that this objective is being met with students, but there is room for increased performance to reach the 75 percent benchmark of success.

Chapter 5: Recommendations

From the onset, this research study was designed to test the outcomes of the Kids' Marketplace curriculum. Using experimental and control groups and a standard and supplemental evaluation tool, the study evaluated the four primary objectives as written in the current version of the curriculum. As a reiteration, the four objectives of the program are:

1. Increase understanding of economic terms related to grade-level standards of learning
2. Increase capacity to make independent decisions based on needs and wants
3. Practice basic math skills related to money management
4. Increase understanding of making choices based on limited resources.

As written, objectives two and three are currently being met by the existing curriculum. Students in the experimental grouped displayed the ability to make decisions based on needs and wants and practiced math skills using money. While these standards are being met by the curriculum as it is presented, there are a variety of ways to increase performance in these areas. In the current version of the curriculum, students are instructed that they can proceed through the simulation stations in any order they would like. There is discussion had about visiting needs stations before visiting wants stations. To promote choosing needs first, students could be instructed to rank the stations on their simulation handout before beginning the simulation. This would not greatly increase the time of the pre-simulation lesson, and would help students have a better strategy when participating in the simulation. The ranking would provide them a roadmap for the simulation versus students wandering aimlessly during the activity. While this may be problematic in terms of all students visiting needs booths first and stations becoming overcrowded, it would at minimum allow students to plan their route in the simulation while considering what should be the most important purchases they need to make. To improve math

skills practice, the recommendation is made to add additional instructions into the teacher and volunteer orientation that would officially deem it a guideline that students make their own change at each station. While this is a practice being used by many, the current curriculum states that volunteers should collect payments and make change on the students' behalf. Incorporating coins into the math practice has been suggested by teachers, but does not appear to be feasible as an addition to the current curriculum and would not be recommended based on the preparation required to add this component and the time necessary during the simulation to count coin money.

Students in the experimental group did show an increased understanding of economic terms overall as stated in objective one; however, there were areas of weakness identified with some terms being less familiar to students. To address this, revisions could be made to the curriculum pre-simulation lesson as well as the volunteer and teacher instructions. At present, students review economic terms in a flash card style review. Typically, this allows only one student to raise their hand and provide the correct definition. By utilizing technology where available, the curriculum could incorporate an optional buzzer style answering system where each student would be asked to provide an answer and results displayed. Mobile applications such as Kahoot! are free and could be accessed on existing computer equipment in classrooms. While this could not be a mandatory addition to the curriculum due to varying technological capabilities in different areas, it would be useful for those who are able to utilize the technology to involve more students in the vocabulary review.

In the research data, the terms that were identified as weak areas could also be addressed by a revision of the pre-simulation curriculum and volunteer and/or teacher orientation and instructions. Specifically, the terms "interdependence" and "specialization" were correctly

identified by 65 percent or fewer students. In the current program, students receive job cards along with their salary for the simulation. This card states the definition of the job and the education or training required to obtain that job. To increase students understanding of specialization and interdependence, a discussion could be incorporated into the pre-simulation lesson based on the job cards students receive. Students could be asked to identify what specialized skills their assigned job requires, whether it be additional education, training, or practice. By making it personal to the student's job for the activity, the ability for students to relate to the topic and potentially recall the vocabulary would increase.

As a focus on interdependence, students could compare jobs within their classroom to determine what jobs may depend on others. The students could create groupings based on a fictitious project they would all have to work together on to achieve a goal. For example, students could consider building a house and the jobs necessary for a complete project (i.e. carpenter, plumber, drafter, etc.). This would need to be facilitated by an instructor as the students may need assistance. Like specialization, doing this activity could bring interdependence to life in the students mind and make it more memorable.

To increase performance in objective 4, additional volunteer instructions could be implemented that would place emphasis on students making choices based on limited resources. When students approach stations and make a selection, the volunteer in charge of that area could ask students what options they would have liked to pick if they had unlimited funds. This will allow the student to have a greater understanding of their limited financial resources and making choices based on their individual financial situations. Volunteers could have students identify their opportunity costs. For example, the "Fun" station would be an ideal place for this conversation. Students may desire to purchase a cell phone, but not have enough funds for the

purchase. Volunteers could ask students what they would have to give up (i.e. groceries, new clothing, transportation) to be able to purchase their wants. This could lead to discussion of wants versus needs which would also tie the conversation back to objective one.

Other general recommendations for revisions to KMP include changes to the pre-simulation lesson and the debriefing and follow up portions of the program. The books that are currently recommended as part of the lesson in the curriculum were originally published between 1977 and 1982. While these books are highly acclaimed and address the topics of KMP well, including at least one modern book as an option in the curriculum may grab the interest of students in a new way.

In order to better align with Kolb's ELT, it is also recommended that more emphasis be placed on debriefing with students after the KMP simulation. The current curriculum includes a list of sample questions to ask students after participation, but this portion of the program can easily get rushed or passed over in there are time constraints. Students need to have ample time for reflective observation to gain the full benefit of the KMP program. By revising the recommended timeframe for the program or adding language to the curriculum that specifically states the importance of reflection, more students may reap this benefit. Additionally, KMP could better align with the ELT by having students complete the simulation twice. This would allow them to reflect on their experience, learn and plan for what they can do different, and then put that new knowledge into practice. This will not be practical in every situation as time in classrooms is often limited, but it would be a great addition for groups that are able to complete more than one simulation.

Conclusion

In conclusion, this research project included collaborations between multiple branches within the Virginia Cooperative Extension System, including 4-H and Family and Consumer Science. Various school systems were also key partners in this research. All partners recognize the benefits youth can receive through community support and joint efforts.

This project demonstrated a strong relationship between participating in a 4-H experiential learning program, based on the ELT, and learning achievements and retention in youth as demonstrated in the supplementary tool. Based on the strong correlation between participation in KMP and scores, it can be concluded that the curriculum is successful at achieving its stated purpose, but could benefit from increased emphasis on the areas of opportunity identified through the study. This type of research could and should be extended to other 4-H/FCS programs to evaluate the success of these efforts as well.

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Appendix

Appendix A – Supplemental Evaluation Tool

Appendix B – Standard Evaluation Tool

Appendix A

Kids' Marketplace

For questions 1-15, circle the correct answer. Write your answers to questions 16-20.

1) Items that satisfy people's needs and wants are:

- A. Goods
- B. Learning
- C. Services
- D. Recess

2) David bought a magazine at the store. The magazine is an example of a:

- A. Want
- B. Need
- C. Service
- D. Tax

3) Goods are things like clothing, dishes, bicycles, and pencils.

- A. True
- B. False

4) A person who uses money to buy goods or services is a:

- A. Consumer
- B. Banker
- C. Cashier
- D. Producer

5) Who grows or makes the things people buy?

- A. Producers
- B. Clerks
- C. Consumers
- D. Employees

6) Jill had enough money to buy gum or a candy bar. She decided to buy the candy bar. What is her opportunity cost?

- A. The candy bar
- B. Her change
- C. The gum
- D. The money

7) Which of the following is an example of a capital resource?

- A. Water
- B. A machine
- C. Money
- D. The President

8) Which of the following is an example of a natural resource?

- A. A house
- B. Trees
- C. Goods
- D. A teacher

9) A doctor is an example of what type of resource?

- A. Natural resource
- B. Human resource
- C. Capital resource
- D. Environmental resource

10) Tom loaded his truck with vegetables to take to the local market. His truck was an example of a:

- A. Natural resource
- B. Human resource
- C. Capital resource
- D. Environmental resource

11) Which of the following is NOT a natural resource?

- A. Water
- B. Soil
- C. Trees
- D. Workers

12) A computer is an example of which type of resource?

- A. Natural resource
- B. Human resource
- C. Capital resource
- D. Environmental resource

13) What is interdependence?

- A. Freedom from laws
- B. Relying on one another to meet needs and wants
- C. Giving help to others
- D. Doing a job alone

14) Which of the following is an example of bartering?

- A. Buying a football from the store
- B. Buying a Coke for \$1
- C. Trading a ball for a pencil
- D. Giving your friend 2 quarters for a candy bar

15) Specialization is doing more than one kind of work or selling more than one kind of good.

- A. True
- B. False

16) What are three ways people can prepare for specialized jobs?

- A. _____
- B. _____
- C. _____

17) Give three examples of a want.

- A. _____
- B. _____
- C. _____

18) Give three examples of a need.

- A. _____
- B. _____
- C. _____

19) In your own words, explain why we cannot have everything we want.

20) In your own words, explain why money is important in our world.

Appendix B

Job: _____

Income: _____

VISIT EACH OF THE FOLLOWING BOOTHS:
 (Write the amount saved or spent on each purchase &
 have the volunteer put a sticker on your sheet)

\$ amount

Animal Shelter _____

Chance _____

Clothing _____

Fun!!! _____

Groceries _____

Housing _____

Medical/Personal _____

Savings _____

Sharing _____

Transportation _____

Program Evaluation

I am in (please circle) K 1st 2nd 3rd 4th 5th grade

I learned more about using money.

No Maybe Yes

I learned to choose what I need with my money.

No Maybe Yes

I had money in the bank when I finished the game.

No Yes

I learned that different jobs pay different amounts.

No Maybe Yes

I learned how to give up one thing to choose another.

No Maybe Yes

I learned that life has surprises that can cost extra money.

No Maybe Yes

This program (please circle) did / did not give me new ideas on how I will handle money in the future.

I hope to talk to my parent(s) about today's program.

No Maybe Yes