Integrating Economic Education into 6th Grade Curriculum: The Impact of Perceived Ability

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Abstract

Understanding the importance of economics for a successful adult life, the National Council on Economic Education (NCEE) has increasingly provided curricula for the pre-college educational system. However, given the emphasis on "reading, writing and arithmetic" and increasing scientific literacy, there is little time left in elementary school for stand-alone economic courses. As a result, the primary method used to incorporate economics is to "infuse" the material into math and social studies courses. This study examines the effectiveness of this method for different ability-grouped students. Using a sample of questions, including a subset of the Basic Economics Test (BET), the change in economic understanding resulting from three economic lessons incorporated into sixth grade social studies classes is assessed. This study finds that infusing economic content into this curriculum with active learning type exercises enhances the learning that occurs, as all students showed an ability to retain material learned in the lessons.

Keywords: economic education, pre-college, retention

1. Introduction

Approximately fifteen years ago, economic content standards were written for pre-college education by the NCEE and other economic education organizations. Establishing these standards has enabled educators to identify the most important concepts, and more critically assess the effectiveness of various methods and approaches. Although there has been an increase in the number of states mandating the inclusion of economics into the high school curriculum, incorporating economics into the elementary and middle school level has required an "infusion" method of drawing economic concepts into social studies or math classes.

Over the previous five years, one of the authors has periodically presented economic material to all or a portion of the students in this class. The frequency has fluctuated from about once to three times per semester, and the topics have ranged from opportunity cost to comparative advantage to money and interest to production and specialization of labor. The material presented has always involved some type of hands-on activity for the students, has been presented during the social studies or math class periods, and has frequently been adapted from materials made available through the Council for Economic Education. Periodically these students have mentioned the concepts and activities from prior years. As these students get ready to move on to junior high school, the question arose regarding how well these students have retained the information presented. This past year, a study was designed to look into this question. The purpose of this paper is to explain which factors contribute to a 6th grade students' ability to learn and retain economic concepts presented with this approach.

2. Influences on Learning

There is a rather substantial literature in the education and psychology fields which discuss factors influencing how students learn.[1]One generally accepted conclusion is that students learn better when they have some related information to which they can associate new information. That is, students that are high achievers tend to continue this high level of achievement. This finding is also supported by research in the biological sciences.[2] There is also a rather extensive literature examining how a family's characteristics impact a student's academic success.

Two variables frequently examined are the education level of parents and the birth order of the child. The parents' education level can positively influence a child's success directly through innate ability and opportunities provided, but also through the expectations parents have of their children.[3] Davis-Kean (2005) finds that the strength of both the direct and indirect influences tends to be more pronounced among non-Hispanic white families. Travis & Kohli (1995) report that the mother's education attainment level had a stronger positive impact than the father's level of education.

The influence of a child's birth order on academic success has a complicated relationship determined by number and gender of siblings, range of siblings' ages, and number of parents present in the home.[4] A common result is that an only child finds the most academic success, followed by a first-born child, last born child and finally middle-children. One of the theories used to explain this result argues that a family's resources tend to be allocated unevenly with favor shown to first-borns and last-borns. Travis & Kohli report an even stronger association for families described as "comfortable" rather than affluent or poor.

Much of the research explaining academic success is found in the education and psychology literature. The economic education literature has largely relied on these disciplines' expertise. As such, economists' discussion of these issues, especially at the pre-high school level, is limited.[5] This paper follows this lead in that we have used the findings of these experts to develop our model. We proceed by discussing the method and setting used for this study, the material presented in the social studies classes, and the results and conclusions suggested by the data.

3. Setting

This study was conducted during social studies periods with three classes of 6th grades students at a school in Pocatello, Idaho. This community's, and the school's, population is rather homogeneous. Approximately 90% of its residents are non-Hispanic White. In addition, the neighborhoods served by the school used in this study tend to have average to above average income levels. Neither the residents with the lowest or highest income levels reside in this specific area. This school enrolls students from kindergarten through sixth grade – typically with three classes at each grade level. In addition to being divided into three classes, the sixth grade students are also divided into groups approximately based on their scores on the Idaho Standards Achievement Test (ISAT) taken the previous May. The students rotate between the three teachers throughout the day. In the morning, the students rotate in their groups to attend their math, reading and social studies classes. In the afternoon, the students remain with their fellow classroom students to receive instruction in art, science and English.

4. Method

Three lessons were designed to bring out some economic concepts related to the material being presented in the social studies class. Tests were administered in order to assess which students were able to learn and retain economic concepts. A pre and post test was administered the day before the lesson and immediately following its conclusion, and a follow up post test covering all of the topics presented was administered approximately a month after the last lesson. The lessons' content was not determined by the questions available from the Basic Economics Test (BET) but rather the material most closely related to the social studies topics chosen by the social studies teacher. As a result, only a portion of the test questions used are from BET. In addition to gathering pre and post test scores, a survey (see Appendix A) was sent home with the students to gather some limited demographic data. The data gathered includes the age and number of siblings, the highest education level achieved by the parents, whether the parents enjoy reading, whether the student typically eats breakfast, how often the family eats dinner together, and how frequently current events are discussed and news is watched as a family. This data was used to control for external factors that could influence a student's ability to learn.

4.1. Classroom Presentations

During the fall semester two presentations were made to these students. The first worked through how the Lydians' introduction of coined money increased the efficiency of trade in the Fertile Crescent. Factors making it easier for Egypt to produce and benefit from trade, such as its proximity to water-based trade routes available were discussed in the second activity. These presentations were made prior to receiving approval for this study.

Over a two month period during the spring semester, three lectures were presented in the social studies classes that were used for this study. These lectures tied the social studies topics currently being discussed to related economic concepts.

4.1.1 Lesson One

The first lecture was presented when the class was discussing the fall of Rome. This lesson looked at the role of a government and how it can impact a country's welfare through the provision of public goods. After holding a discussion on Rome's government, a variation of the classic public goods experiment was run with the students participating as residents of one community and then as residents of five separate communities where the distribution of public goods did not align with the taxes collected. In the course of the experiment, the free rider and majority voting problems became apparent and were discussed. The lesson concluded with a discussion of how the citizens of the empire felt a disconnect with Rome's leaders and how that contributed to its demise.

4.1.2 Lesson Two

The second lesson was presented during a discussion of China and its silk monopoly. The activity conducted during this lesson was the monopoly experiment. The students were divided equally between buyers and sellers. As the rounds were conducted, the sellers were combined into larger firms, eventually ending up with all of the sellers becoming a monopolist. The sellers and buyers calculated their profit and consumer surplus (although that expression was not introduced) after each round and a comparison was made. The lesson concluded with a discussion on the financial impact of China losing its monopoly in silk. The seller students had a harder time with this experiment. They did not want to increase their price as much as they could have. This was likely due in part to their friends being buyers, and not wanting to profit at their expense.

4.1.3 Lesson Three

The final lesson, which discussed inflation, was presented during the discussion of European history. In addition to relating to the social studies lesson, the impacts of inflation were also present in the students' reading class books. Following a discussion of inflation, an experiment was conducted where students bid on items as the amount of currency they held increased. This was followed by a discussion of hyperinflation and the impacts that had on various European economies. Although when asked if they wanted more "money" during the experiment the students immediately said yes, it did not take long for them to realize the problems of inflation.

5. Descriptive Statistics

There are some differences between the groups, as is evidenced by the following group statistics. In each of the three pre-tests and post-tests there were seven questions. The last test used to capture retention of economic concepts consisted of 21 questions. With the data available it was possible to analyze the data segmented by teacher or by group. Statistics related to group were most interesting. Group 1 generally had higher pre test scores and learned more, as measured by the post test scores, than the other two groups. This was more pronounced on Tests 1 and 3. Group 2 is rightly in the middle, and Group 3 had lower pre test scores and showed the smallest improvement in knowledge. Test 2 seems to be an anomaly, to be explained later.

Table 1: Mean correct responses by group

	Pre Test 1	Post Test 1	Pre Test 2	Post Test 2	Pre Test 3	Post Test 3	Retention
Group 1	5.3333	6.5555	4.3461	4.9600	3.2800	5.9642	17.3333
Group 2	4.7692	6.0384	3.2916	3.9583	3.5925	5.3703	13.2592
Group 3	3.8947	4.3888	2.6842	2.8500	2.2173	3.0434	10.1176

At times outliers can bias results so an alternative measure of central tendency, the median, was also reviewed. The results are similar to those found by studying the average.

Table 2: Median correct responses by group

	Pre Test 1	Post Test 1	Pre Test 2	Post Test 2	Pre Test 3	Post Test 3	Retention
Group 1	5	7	4.5	5	4	6	17.5
Group 2	5	6	3.5	4	4	6	14
Group 3	4	4.5	2	3	2	3	9

The 6th grade class could also be segmented by teacher. As is readily apparent, there is no discernible difference when looking at either the average or the median for the three 6th grade teachers. This is likely due to the fact that students are distributed by the school district so that each classroom is balanced with respect to gender and ability, so that each teacher has comparable numbers of group 1, group 2 and group 3 students in class.

Table 3: Mean correct responses by Teacher

	Pre Test 1	Post Test 1	Pre Test 2	Post Test 2	Pre Test 3	Post Test 3	Retention
Teacher 1	5.1363	5.9047	3.0000	3.6666	3.0800	4.9200	14.0476
Teacher 2	4.5833	5.5600	3.4166	3.9583	3.2916	4.9230	13.6956
Teacher 3	4.5769	6.0000	4.0833	4.3333	2.8461	4.8518	14.0000

Table 4: Median correct responses by Teacher

	Pre Test 1	Post Test 1	Pre Test 2	Post Test 2	Pre Test 3	Post Test 3	Retention
Teacher 1	5	6	2	4	3	6	15
Teacher 2	5	6	3.5	4	3.5	5	14
Teacher 3	5	6	4	4.5	2.5	5	15

5.1 Comparison to BET data

The pre and post tests used questions from the BET test for comparability analysis. Two BET questions appeared on tests 1, three were used on tests 2 and one appeared on tests 3. The following table shows the percentage of correct responses. The Pre Test would be comparable to the Without Econ while the Post Test corresponds to the BET With Economics column. Before studying the relevant economic concepts the 6th grade class performs similar to the national sample, sometimes above and sometimes below but generally in the same range.

Table 5: Percentage of Correct Responses

Question	6th Grade Sample		BET	
	Pre Test	Post Test	Without Econ	With Economics
1	75.0	60.6	67.5	77.3
2	80.6	87.3	74.5	75.1
3	47.1	20.6	48.7	59.1
4	41.2	76.5	44.0	40.8
5	61.5	77.9	41.4	80.5
6	55.4	87.0	37.6	41.1

The post test sample demonstrates significant improvement for the last three questions and is well above the national norm for questions 4 and 6. The first three questions do not, at first, show similar gains in knowledge. Question 1, 2 and 3 were all used on both the pre and post test. So, these three questions were altered and the post test questions deviated from the text in the BET. Question 1, about public goods, had the leader altered as the public good was changed from police departments to education and this difference may explain the seemingly paradoxical results. Question 2 had a different set of distracters which were more youth friendly but this did not seem to bias the results. Question 3 was reversed, with increase being replaced by decrease. The fact that the percent of students responding correctly after the lesson decreased so dramatically is perplexing, as this is not consistent with BET norms, nor with the general results of this research. One would hope that students do not just memorize an answer and then respond from rote rather than reading the question.

5.2 Explaining the learning

From the test results and a survey sent home with students we were able to determine what, if anything, explains the performance on these evaluation instruments.

In addition to the variables already described, we gathered information on the children in the home including their ages and gender, the number of adults in the home and their educational attainment, whether the child typically ate breakfast before going to school, the frequency that the family ate dinner together at home, whether the family typically watched the news, and whether adult household members regularly read books for pleasure. There were several variables for which we had preliminary information but could not be incorporated such as the parent's occupation or whether the parent was paid a wage or a salary. Each of the variables is explained more thoroughly. Test Scores: Both Pre and Post test scores were recorded for each student. In addition, the summary score was recorded for the final test which we used to determine retention. Test scores become the dependent variable in the regressions run.

Group: Each student is identified by group. This categorization was determined by the school based on the most recent ISAT (Idaho Standard Achievement Test) administered the previous spring. We were not able to receive the actual ISAT score for each student, although this would have been more beneficial and allowed further analysis by examining the sub-scores on reading and mathematics. Thus group is a proxy for intellectual ability, as measured by the ISAT score. Certainly an actual ISAT score would have been preferable to just knowing which group the student was placed, as it is likely that the scores at the bottom of one group are approximately equal to the top scores of the next group.

Parent Academic Achievement: From the survey we were able to categorize educational attainment of the adults in the household. Initial attempts to incorporate educational attainment as a likert scale proved inconsequential, so this variable became a dummy variable in regressions. Further, educational attainment by gender was important for this research. The variable ultimately chosen was a dummy variable equal to 1 if the parent had earned a bachelor's degree or higher and 0 otherwise.

Oldest Child: A dummy variable if the student was the oldest child in the household.
Only Child: A dummy variable if the child had no siblings.
Large Family: A dummy variable if the child lived in a household with four or more children.
Enjoys reading: A dummy variables if the parent self-reported that she or he enjoyed reading on a regular basis.
Family eats dinner together: A dummy variable if the family reported that they ate dinner together 5 or more times per week. The data that was returned did not allow creation of a quantitative variable.
Breakfast: A dummy variable if the child regularly eats breakfast at home before going to school.
Gender: The gender of the child.

A model was created of the form:

$$Test\ score = \beta_0 + \beta_1 female\ parent\ education + \beta_2\ male\ parent\ education + \beta_3\ watch\ news\ together + \beta_4\ oldest + \beta_5\ only + \beta_6\ large\ family + \beta_7 female\ parent\ reads + \beta_8 male\ parent\ reads + \beta_9\ dinner + \beta_{10}\ breakfast + \beta_{11}\ gender \quad (1)$$

The model was estimated for each of the pre and post tests and the final test to determine retention of economic concepts.

5.3 Explaining pre test performance

There is no set of independent variables that explains each of the three pre tests. For comparison a common set of independent variables was included in each estimation to arrive at some understanding of the factors that influence gains in economic literacy. The first reported results did not include the group the student was assigned to determine if there were consistent explanations for the initial score and the post test scores. Results of this are reported in Table 6.

Table 6: Factors Influencing Gains in Economic Literacy

	Pre Test 1		Pre Test 2		Pre Test 3	
Variable	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Intercept	4.528538	0.0000	3.014797	0.0221	4.631923	0.0001
Female Parent Education	0.517781	0.1895	0.380085	0.4997	-0.555509	0.2421
Male Parent Education	0.281470	0.4363	-0.241459	0.6548	0.046635	0.9190
Watch News Together	1.111879**	0.0071	1.081962*	0.0757	1.092116**	0.0355
Oldest Child	0.574577	0.2254	0.094739	0.8907	-1.097391*	0.0650
Only Child	-1.000615*	0.0756	0.346408	0.6578	0.346938	0.5988
Large Family	-0.365832	0.3885	1.037455	0.1073	-1.055833*	0.0609
Female Parent Enjoys Reading	0.541993	0.1269	0.304989	0.5768	0.562608	0.2088
Male Parent Enjoys Reading	0.125159	0.7069	-0.641482	0.2023	-0.462142	0.2592
Family Dinner 5 or more times	-0.666908	0.1351	-0.828755	0.2402	-0.870808	0.1273
Student Eats Breakfast Regularly	-0.202106	0.7101	0.431683	0.6168	-0.139217	0.8449
Gender	-0.171502	0.6216	0.388327	0.4503	0.532765	0.2174
R Squared	0.400465		0.313080		0.253114	

** indicates significant at the 5 % level, * indicates significant at the 10 % level.

Usually, but not always, signs are as expected. The only variable that has the correct, positive, sign and is significant is the family watching the news together. It is surprising that educational attainment of the female and male adults in the household do not significantly increase a student's pre-test score. Living in a large family generally reduces a student's performance but this is significant on only test 3. The signs on eating dinner together are contrary to our expectations. Gender does not seem to have any demonstrable effect for children in the 6^{th} grade.

To determine the influence that group has on pre test scores they were added to the model. For tests 1 and 3 both group 1 and group 2 have higher scores than do students in group 3, and the results are statistically significant.

Table 7: Factors Influencing Gains in Economic Literacy with Group

	Pre Test 1		Pre Test 2		Pre Test 3	
Variable	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Intercept	4.307472	0.0000	2.742877	0.0430	3.845877	0.0006
Female Parent Education	0.234765	0.5366	0.198433	0.7371	-0.650976	0.1498
Male Parent Education	0.186206	0.5689	-0.301381	0.5770	-0.117610	0.7813
Watch News Together	0.954230	0.0108	0.994840	0.1008	0.948981**	0.0465
Oldest Child	0.390580	0.3860	0.044800	0.9508	-1.046718*	0.0622
Only Child	-1.125150**	0.0292	0.252203	0.7459	0.517279	0.3938
Large Family	-0.743314*	0.0867	0.660856	0.3570	-1.128829**	0.0460
Female Parent Enjoys Reading	0.551153*	0.0939	0.413582	0.4565	0.457954	0.2692
Male Parent Enjoys Reading	0.079307	0.7922	-0.577798	0.2476	-0.412102	0.2707
Family Dinner 5 or more times	-0.887483**	0.0325	-1.127384	0.1258	-1.079771**	0.0417
Student Eats Breakfast Regularly	-0.139094	0.7780	0.529513	0.5383	0.095944	0.8833
Gender	-0.183010	0.5712	0.381510	0.4667	0.485032	0.2238
Group 1	1.337798**	0.0018	1.068517	0.1128	1.279272**	0.0098
Group 2	0.913554**	0.0183	0.695316	0.2633	1.412047**	0.0026
R Squared	0.540584		0.360715		0.407738	

** indicates significant at the 5 % level, * indicates significant at the 10 % level.

Few of the other independent variables are significant at the 5% levelin general and for test 2 in particular. Watching the news adds about 1 more correct answer but it is not always significant. Eating dinner at home with the family 5 or more days per week had a negative effect, as did living in a household with 4 or more children, or being an only child. We did not find a gender effect in this sample.

These results are not what we expected, at least for some of the variables. It was surprising that educational attainment of parents did not demonstrate a significant positive impact. The good news is that a student's performance is not dependent on parental achievement. We thought that breakfast would have a positive impact on student success, but did not find that to be true in a statistically reliable definition. This variable says nothing about the quality or quantity of the breakfast. Further, it may be picking up false reporting as no one wants to indicate that their child goes to school without eating breakfast. Also, while not many of the students in this elementary school qualify for free or reduced price meals, some students may eat breakfast at the school so this could be serving the dual purpose of picking up income level of the household. The finding that having dinner at home with the family 5 or more days per week is negatively correlated with student success is also different from our expectations. Our initial view was that frequent meals together indicate the family engages in communication about current events. On the other hand, this variable may be indirectly picking up income again. Eating at home may indicate that the student is not engaged in extra-curricular activities or that the family cannot afford to eat out. We believe that student success is positively affected by the student being engaged, as demonstrated by extracurricular activities and household income level.

We did not have strong prior beliefs about impacts of living in a large family, defined by having 4 or more children in the household or being an only child. The positive sign of the coefficient on news seems consistent with our prior beliefs. But, it could be said that the group into which the ISAT assigned students is picking up many of the household characteristics we were attempting to explain. In summary, much of what explains student success is the group to which she or he is assigned. So, we do not want to suggest that educational attainment of parents, reading with the child by parents, sharing meals and so on are not relevant, it could be stated that the positive impacts that these create have been incorporated to student prior success, which is the basis for group assignment, and thus do not show up as being associated with these variables individually. Simply stated, students who are identified as high achievers did better on the economics pre tests.

5.4 Explaining post test performance

In the case of the post tests, generally every variable other than group ceases to meet criteria for statistical significance across the lessons. Students who in the past have demonstrated that they are high achieving learners have significant and larger increases in performance than other students.

Table 8: Factors Influencing Post Test

	Post Test 1		Post Test 2		Post Test 3	
Variable	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Intercept	5.256389	0.0000	3.403216	0.0017	4.184006	0.0001
Female Parent Education	-0.339832	0.3596	-0.711549	0.1290	-0.911289**	0.0302
Male Parent Education	-0.037911	0.9225	0.287378	0.4724	0.181340	0.6406
Watch News Together	0.605968	0.1206	0.281047	0.5310	0.876035**	0.0449
Oldest Child	-0.649298	0.1568	-0.810570	0.1528	-0.725865	0.1547
Only Child	-1.102521**	0.0471	-0.581294	0.3360	-0.013922	0.9799
Large Family	-0.228650	0.6259	-1.087594**	0.0477	-0.421646	0.4071
Female Parent Enjoys Reading	0.105363	0.7691	1.635716**	0.0001	0.123984	0.7425
Male Parent Enjoys Reading	-0.519401	0.1138	-0.523661	0.1557	-0.464446	0.1770
Family Dinner 5 or more times	0.260550	0.5551	-1.239729**	0.0168	0.094665	0.8419
Student Eats Breakfast Regularly	0.051371	0.9237	0.636456	0.3254	-0.546108	0.3639
Gender	0.078918	0.8241	0.458750	0.2242	0.536729	0.1433
Group 1	1.710723**	0.0001	2.115416**	0.0001	2.751762**	0.0000
Group 2	1.234955**	0.0039	0.806710*	0.0685	2.298003**	0.0000
R Squared	0.584109		0.602870		0.612696	

** indicates significant at the 5 % level, * indicates significant at the 10 % level.

5.5 Retaining learning

Students demonstrate that they do retain what they have learned. The test for retention again demonstrates the robustness of the grouping of students as a significant factor, certainly for the highest achieving group. The score of students in group 1 is almost 4 more correct answers than group 3.

Group two does better than group three, but the result are not statistically significant. The findings are shown in Table 9. The sum of all of the post tests was added as an additional independent variable. This variable proved to be highly significant.

Table 9: Retention

	Retention	
Variable	Coefficient	P-value
Intercept	4.864989	0.1849
Female Parent Education	0.666699	0.5875
Male Parent Education	-2.743375**	0.0210
Watch News Together	1.348637	0.2571
Oldest Child	1.677201	0.2471
Only Child	-0.424874	0.8002
Large Family	2.813115**	0.0452
Female Parent Enjoys Reading	-0.327544	0.7546
Male Parent Enjoys Reading	1.684143*	0.0973
Family Dinner 5 or more times	-1.154457	0.3898
Student Eats Breakfast Regularly	-1.578653	0.3716
Gender	0.353270	0.7345
Group 1	2.782095	0.1195
Group 2	1.766214	0.2112
Sum of Correct Answers	0.581567**	0.0063
R Squared	0.737190	

** indicates significant at the 5 % level, * indicates significant at the 10 % level.

In addition, the performance of students of the retention test is significant, with the student, regardless of group, adding slightly more than .58 to the retention score for each question answered correctly on the post tests. Whether students learned the concept prior to the lesson, or during the lesson, the result is that once learned, students retain slightly more than half of what they have learned. Other variables do not prove to have statistical significance. Group, which had been significant before, is now not significant, indicating that all students, regardless of group retain economic concepts once learned. There is a concern that the sum of post lesson test scores is endogenously determined with the score on the retention test. If this were true the estimates would not be consistent. A Hausman test was conducted using teacher group as instrumental variables. The results of the Hausman test were negative for endogeneity, so the above results were reported.

It should be noted that there are different outcomes depending on the lesson. Clearly lesson two, regarding monopoly, was not as well explained by the independent variables used. It makes sense in some ways, as monopoly is the least tangible and the least likely to appear in the news. Public goods, lesson 1, and inflation, lesson 3, are more likely to be addressed on the news and discussed within a family. The active learning component showed similar effectiveness. We know from experience that sellers often perform less well than buyers in a double oral auction. This finding is more likely to be a problem with younger participants, who really have no experience with being on the seller side of the market. Further, the concept that a decrease in the number of sellers will lead to more power to manipulate the market was lost at this grade level.

6. Conclusion

Sixth grade students can learn economics in a curriculum that infused economic concepts into a broader social science lesson plan. All students benefit from economics and retain the material for several months, the length of the study. Students identified as higher achieving students reconfirm their high achievement status by showing larger gains from pre test to post test and retention than do less gifted students. Adding economic content to the sixth grade curriculum would be beneficial, and active learning type exercises enhance the learning that occurs, as all students showed an ability to retain material learned in the lessons.

References

Davis-Kean, Pamela E. (2005). "The Influence of Parent Education and Family Income on Child Achievement: The Indirect Role of Parental Expectations and the Home Environment"*Journal of Family Psychology* 19(2): 294-304.

Hester, Colleen, Gerald E. Osborne and Trang Nguyen (1992). "The Effects of Birth Order and Number of Sibling and Parental Cohabitants on Academic Achievement"*Individual Psychology* 48(3): 330-348.

International Training and Education Center for Health (2008). *Guidelines for Pre- and Post-testing: a technical implementation guide.,* University of Washington.

Ip, Y.K. (2003). "Processing Information vs. Retaining Information"*successful learning* 19. Center for Development of Teaching and Learning, National University of Singapore.

Lambert, N.M. & McCombs, B.L. (1995). *How Students Learn: Reforming Schools Through Learner-centered Education.* Washington, DC: American Psychological Association.

Schunk, Dale H. (2011). *Learning Theories: An Educational Perspective* (6th edition), New York: Addison Wesley.

Travis, Russell and VandanaKohli (1995). "The Birth Order Factor: Ordinal Position, Social Strata, and Educational Achievement."*Journal of Social Psychology* 135(4): 499-507.

Watts, Michael (2005). *What Works: A Review of Research on Outcomes and Effective Program Delivery in Precollege Economic Education.* New York: NCEE.

Endnotes

[1] Schunk (2011) provides a rather extensive review of the literature.

[2] In addition to the citations presented in Chapter 2 of Schunk, studies examining how students learn from a neurological and psychological perspective can be found in Lambert & McCombs (1995) and Ip (2003).

[3] A good overview of this literature and its findings can be found in Davis-Kean (2005).

[4] Hester et.al. (1992) and Travis &Kohli (1995) provide a thorough literature review of this topic.

[5] Watts (2005) provides a rather comprehensive review of the research conducted at the precollege level in both the economic education and education fields.

Appendix A

Error! Main Document Only.Background Questions for Economics Lessons Research

Sixth grade student's name: _____

Gender of your sixth grade child: _____ Male _____ Female

Please provide the age and gender of each child:

Table of siblings here.

Please answer the following questions for this child's parents.

Parent #1 _____ Male _____ Female

Occupation / Job Title: _____
Are you paid an hourly wage or a salary? _____
What is the highest level of education attained?
_____ High School
_____ Some College / Associates Degree
_____ Bachelors Degree
_____ Masters Degree
_____ Doctoral Degree
Do you regularly read books for pleasure? _____ Yes _____ No

Parent #2 _____ Male _____ Female

Occupation / Job Title: _____
Are you paid an hourly wage or a salary? _____
What is the highest level of education attained?
_____ High School
_____ Some College / Associates Degree
_____ Bachelors Degree
_____ Masters Degree
_____ Doctoral Degree
Do you regularly read books for pleasure? _____ Yes _____ No

Does your child typically eat breakfast? _____ Yes _____ No
How many times per week does your family eat dinner together? _____
How frequently does your family discuss current events? _____
Does your family regularly watch the news together? ____ Yes _____ No

Thank you filling out this survey!