
**MODERATION ANALYSIS OF BASIC ECONOMICS AND TEACHER
CLASSROOM INSTRUCTIONAL LEADERSHIP ON STUDENT
LEARNING BEHAVIOR CHANGE**

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ABSTRACT

Students in inner-city urban communities are exposed to many economic activities that require basic economics reasoning in order to engage in the activities - luxury boutiques, retail stores, expensive cars, liquor stores, corner-stores, illegal drugs, guns and hoodlums. Yet, most inner-city urban schools do not offer basic economics education as a standalone course to students in elementary and middle schools. Lack of basic economics education in a volatile inner-city environment, positions students to bad economic judgements. This study examined the moderation effect of basic economics education and teacher classroom instructional leadership on student learning behavior change. 216 elementary and middle school students from a metropolitan inner-city schools in North East, USA were participants in the basic economics study. A 5-point Likert Scale questionnaire was used to capture data from pre and post basic economics study. Data collected was analyzed using Process moderation analysis in SPSS. The result of the study finds that basic economics education has a significant effect in moderating the relationship between teacher classroom instructional leadership and student learning behavior. The study was limited to a few inner-city schools, and high school students were not included in the study and as such, the findings cannot be generalized to rural schools and high schools. The implication is that basic economics is the underpinning of everyday activity in the neighborhood, environment of economy. Basic economics concepts are valuable, practicable and applicable at every moment in the economy and as such, students need to learn economics.

Keywords: Basic economics, teacher classroom instructional leadership, student learning behavior change.

1. INTRODUCTION

Students in inner-city urban communities are exposed to many economic activities that require money in order to engage in those activities. The exposure to venues of daily economic transactions such as boutiques, retail stores, expensive cars, liquor stores, corner-stores, illegal drugs, and guns are attractions to some elementary and middle school students who may merely ignore to understand that these transactions involve money and choices. On a second thought, it could be obvious that these students may not be literate to understand the functioning of the economy and the basic principles of economics underlying daily economic transactions. It is obvious that children can either learn from their parents or schools. In most inner-city urban communities, student learning is seldom from their parents, but predominantly from their schools and of course, whenever there is a learning vacuum not filled by parents or schools, the streets take over as the teacher of economics to the student. Inner-city urban students are not learning mathematics on the streets, neither are they learning reading, natural or social science; they are learning economics in a hard and fast route. Yet, elementary and middle schools do not offer to students a standalone course in basic economics. Elementary and middle schools offer mathematics, science, social studies, band course or orchestra, arts, and reading or integrated language arts to students. These courses have specialized teachers who demonstrate classroom instructional leadership to help students master and acquire learning experiences to help develop and change their behavior toward doing things right as they transition to adults. Basic economics education has an immediate relationship on daily economic transactions in the economy, and if offered to students as a course, it would have an effect on student learning behavior. This effect could even be stronger, because of the classroom instructional leadership relationship established already with the students. This study assumes basic economics education as a moderator to the relationship between teacher classroom instructional leadership and student learning behavior change. The study seeks to understand the moderation effect of basic economics education and teacher classroom instructional leadership on student learning behavior change.

2. LITERATURE REVIEW

2.1 Basic Economics Education

Economics is frequently considered as a course that teaches students to understand how the economy operates (Veblen, 1898; Taylor & Weerapana, 1925; Samuelson & Nordhaus, 1985, Durden, & Ellis, 1995). However, most schools do not frequently invest in teaching students in elementary and middle school basic economics or elementary principles of economics as a standalone course, not until the students are in high school (Reid, 1983). A common excuse given by most educators is that economics is a difficult subject to teach and students are not able

to grasp the concepts until they have acquired a certain level of understanding (Attiyeh, & Lumsden, 1972; Frey, 2008). Nonetheless, students are born in an economy that requires at least some basic economics education to understand how the economy functions. Incidentally, students do not deliberately wait to get to high school before learning economics (McGoldrick, 1998). Accidentally, they start to learn basic economics from their home environment by seeing how their parents or the most popular or admired guy in the neighborhood conducts every day transactions in the neighborhood economy – from how they interact with people, explore opportunities, earn income, and make choices with little understanding or lack thereof about the cost for making decisions (Zadrozny, & Elkan, 2001). As such, by the time students get to high school and start learning to acquire the correct understanding of economics from the classroom, most have already established a learning behavior based on neighborhood economics (Williams, Davis, Saunders, & Williams, 2002). It is obvious that any appealing interest of becoming a high school student in an economics class may not be valuable to most students, especially those who already know how to use neighborhood economics to hustle the streets to get what they want.

The implication is that changing the neighborhood economics learning behavior acquired by students with just two years of high school economics education does not seem realistic and as such, the understanding of economics education would become boring and difficult to master by most students in high school preparing for college (Walstad, 2001). Suffice to say, such is the complication in understanding economics when students do not get basic economics education as a standalone course until they are in the 11th or 12th grade (Buckles, & McMahon, 1971). This study assumes that basic economics education is of essence in elementary and middle schools and would be a moderator to teacher classroom instructional leadership and student learning behavior change.

2.2 Teacher Classroom Instructional Leadership

Teacher classroom instructional leadership (TCIL), the ability of teachers to encourage and arouse student learning using various instructional methods, has not frequently been given the recognition it deserves despite the increasing research interest in classroom leadership (Baba & Ace, 1989; Treslan, 2006). It is obvious that teachers lead classrooms, they plan the lessons, teach the students, and establish a direct relationship with the students that facilitates a positive student learning behavior change process (Bolkan, & Goodboy, 2009). It is also obvious that the ability of students in acquiring knowledge from any course depends on the teacher's ability to simplify the course to the language level of the students, and building confidence in the students is based on established classroom relationship. Most elementary and middle schools in this urban city of study offer various courses for students such as mathematics, science, social studies, band course or orchestra, arts, and reading or integrated language arts. Teachers do not only teach

these courses, but also lead students towards a learning behavior change as they transition from elementary through high school, reiterating their responsibilities in classroom instructional leadership (Bolkan & Goodboy, 2009; Leithwood & Jantzi, 2003; Muijs, & Harris, 2003, Baumert, Kunter, Blum, Brunner, Voss, Jordan, & Tsai, 2010). This article therefore has research support for discussing teachers as classroom instruction leaders. Teachers are not just teaching courses in the classroom, they are essentially transforming students by changing their learning behavior through a systematic comprehension of courses (mathematics, science, social studies, band course or orchestra, arts, and reading or integrated language arts) to become contributing and productive students as they transition from school to potential mathematicians, scientists and social scientists, musicians, artists, and more as productive adults in a functioning economy. This is an indication on how teacher classroom instructional leadership could bring an enormous improvement in student life ((Muijs, & Harris, 2003). Although teacher classroom instructional leadership in elementary and middle school is noticeable in course variety, such is not the case with economics. In other words, teachers of basic economics are rare in most urban inner-city elementary and middle schools, especially in this metropolitan urban city of study in North East USA and as such, basic economics is not a standalone course in such schools.

Teaching economics as a standalone course in elementary and middle schools would enormously help inner-city students acquire a learning behavior change towards rational thinking and would better relate to urban lifestyle trials and tribulations.

2.3 Student Learning Behavior Change (SLBC)

There is a consensus that the central reason why parents send their children to school is to learn, acquire understanding as they transition from students to educated adults, and so as to behave appropriately and function productively in the economy (Gaylord-Harden, 2008). Evidently, some students come to class with all kinds of experiences that shape their behaviors and their world views vis-à-vis classroom instructions (Gelber, & Isen, 2013). These experiences may not be grounded in classroom knowledge and could even be antagonistic to learning (O'Connor, Dearing, & Collins, 2011). Nonetheless, while students are in school, they are in learning trajectories grounded in classrooms and as followers in pursuit of knowledge with teachers as the ultimate leaders (Midgley, Feldlaufer, & Eccles, 1989). Teachers lead students in learning where courses are designed to change or transform student learning behavior (Bolkan, Goodboy, & Griffin, 2011). As such, learning behavior change is transformational learning where knowledge evident in courses are practicable and applicable to current and future events in the economy (Bouton, 2000). Basic economics education is a critical course directly relating to the economy. It is practicable and applicable here and now, in current and future events in the economy and as such, basic economics education as a course for elementary and middle schools students would

have an effect or some relationship on student learning behavior change. Student learning behavior change in this study is the ability for students to use knowledge gained from a course, in this case basic economics education, to enhance and change their behavior, ways of thinking towards rationality.

3. METHODOLOGY

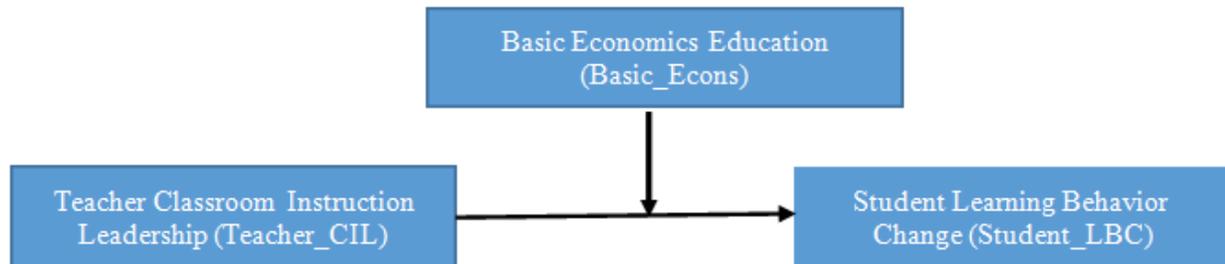
A sample of 216 male and female students from a metropolitan inner-city public elementary and middle schools in North East USA were participants in a basic economics education study.

The instrument selected was microeconomics concepts from high school AP economics. The investigator simplified the concepts to elementary and middle school level, and introduced the concepts to the students. These were essentially foundational concepts in economics: scarcity, choice, opportunity cost, income (money), market, and price. The investigator engaged students in learning using multiple instructional approaches such as economics concept search puzzles (first, as individual activity and second, as group activities), short relevant video clips, coin rubbing activities in groups, and Turning Point Technology response cards.

Survey was designed using Turning Point Technology (Clickers), a tool that has demonstrated relevant effectiveness in capturing data and student learning interest (Lantz, 2010; Keough, 2012). A 5-point Likert Scale questionnaire (1-Not Sure, 2-Strongly Disagree, 3-Disagree, 4-Agree, 5-Strongly Agree) was used for the pre (students understanding of basic economics or behavior towards it before the program) and post (students in-class learning behavior after basic economics education) surveys. In addition, a questionnaire regarding teacher classroom instructional leadership (motivation to learn, i.e. teachers encouraged me to learn) was included in the questionnaire, although students were not directly told if the question was specifically related to their teacher. Data collected from the survey was stored in Microsoft Excel for easy use with SPSS statistics.

The model used for data analysis is moderation analysis using Process, a versatile computational tool for observed variable mediation, moderation, and conditional process modeling all in a single, easy to use command or for SPSS point and click interface (Hayes, 2012, 2009). The rationale for using moderation analysis was also due to its proven history for assessing program effectiveness for a subgroup of individuals (Bierman, & Furman, 1984; Hansen, Graham, Wolkenstein, & Rohrbach, 1991; Ross, Cousins, & Gadalla, 1996; Chatterji, 2006). Therefore, moderation analysis was essential for this study in identifying the interaction effect of basic economics education and teacher classroom instruction leadership on student learning behavior change.

Conceptual Model of Moderation Analysis



4. RESULTS

Using Process in SPSS, the following was the result of the study. The three variables used for the study are listed below, including the sample size:

Y = Student_LBC; X = Teacher_CIL; M = Basic_Econs; Sample size = 216

The model summary below on Table_1, indicates the predictors on the outcome of student learning behavior change with some observations.

Table 1: Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.3420	.1170	3.0271	10.1294	3.0000	212.0000	.0000
Model							
		coeff	se	t	p	LLCI	ULCI
Constant		7.0718	.1354	52.2111	.0000	6.8048	7.3388
Basic_Ec		-.1624	.0302	-5.3794	.0000	-.2219	-.1029
Teacher_		-.0061	.0026	-2.3073	.0220	-.0113	-.0009
int_1		.0018	.0007	2.5857	.0104	.0004	.0031

First, the model summary shows 3 predictors: Basic_Econs, Teacher_CIL, Moderator (int_1) predicting student learning behavior change (Student_LBC): $F(3,212) = 10.13$, $p < .05$, $R^2 = .12$. Note that although R-square ($R^2 = .12$) accounts for just 12% of the variance, the predictors are significant.

Second, how significant is the model in predicting Student_LBC can be derived by looking at each predictor and the coefficients (coeff), slope or b :

Predictor 1, Basic Economics Education (Basic_Econs) $b = -.1624$, $t(212) = -5.3794$, $p = .00$. From the p -value $< .05$: Basic_Econs is a significant predictor of student learning behavior. For each concept of basic economics that students learn, students gained economics knowledge and a learning behavior change. In a nutshell, basic economics education is a great learning opportunity for elementary and middle schools students, it would help them gain foundational understanding, and make them better thinkers of the economy.

Predictor 2, Teacher Classroom Instructional Leadership (Teacher_CIL) $b = -.0061$ $t(212) = -2.3073$, $p = .02$: Teacher_CIL is a significant predictor of student learning behavior change. A teacher good in classroom instruction leadership would motivate students to learn economics just like they learn mathematics so as to acquire new practical knowledge that would help change their behavior towards their environment or economy.

Predictor 3, int_1, the interaction or the moderator effect: The interaction $b = .0018$ $t(212) = 2.5857$, $p = .01$. Looking at this predictor, it may be easy to say that although Basic_Econs and Teacher_CIL are individually significant in predicting Student_LBC, the interaction effect of Basic_Econs and Teacher_CIL (Basic_Econs * Teacher_CIL) is greater than the individual predicting effect of the predictors on Student_LBC. In other words, Teacher_CIL without teaching Basic_Econs classes to elementary and middle schools students makes Student_LBC significantly less than when Teacher_CIL engages Basic_Econs classes.

Although the above explanation is reasonable, it does not give the full picture of the effect of the moderator. There are other things to examine from this study by looking at conditional effects of Teacher_CIL on Student_LBC at the values of the moderator.

Taking into consideration that the interaction is the slope or change based on Teacher_CIL in predicting Student_LBC for each additional Basic_Econs concept or classes instructed to elementary and middle school students. The slope would help to also determine the effect of Teacher_CIL on Student_LBC at each level of Basic_Econs, the moderator.

A simple slope can be derived from the coefficient or b -values from the model summary table_1

above, where:

$$Y = \text{Constant} + -.1624 (\text{Basic_Econs}) + .0061(\text{Teacher_CIL}) + .0018(\text{Teacher_CIL} * \text{Basic_Econs})$$

$$Y = \text{Constant} + 0 + -.0061(\text{Teacher_CIL}) + 0$$

The conditional effect (of Y = Student_LBC, X = Teacher_CIL) on table_2 below indicates three Basic Economics effects: Low effect, Average effect, and High effect.

Table 2: Conditional effect of Teacher_CIL on Student_LBC at values of the moderator(s)

Basic_Ec	Effect	se	t	p	LLCI	ULCI
-4.5156	-.0140	.0053	-2.6455	.0088	-.0245	-.0036
.0000	-.0061	.0026	-2.3073	.0220	-.0113	-.0009
4.5156	.0019	.0022	.8643	.3884	-.0024	.0061

For low Basic_Econs students, Teacher_CIL $b = -.0140$, $t(212) = -2.6455$, $p = .0088$: The probability is that for students with prior low basic economics education, in attending classroom instructions in basic economics, they would gain economics significant knowledge that would affect behavior change towards becoming rational individuals.

For Average Basic_Econs students, Teacher_CIL $b = -.0061$, $t(212) = -2.3073$, $p = .0220$: The probability is that average students would gain from Teacher_CIL by attending classes in Basic_Econs. These students may not need as much instructional leadership as compared to the low Basic_Econs students to acquire knowledge in basic economics.

For High Basic_Econs students, Teacher_CIL $b = .0019$, $t(212) = .8643$, $p = .3884$, there is no statistical significant relationship, Teacher_CIL may not matter in shaping Student_LBC. This does not imply that students in this group are very proficient in Basic_Econs. This could imply many things. It may be inner-city students whose heads have been infiltrated with neighborhood or the streets economics, and may even feel confused to learn what would change what they already know about basic economics. It could as well be that, these students are slow to adjust to new learning, and with continuing Teacher_CIL that may involve patience, time, and additional help, these students would adjust better to learning and understanding Basic_Econs.

Table_3 below is data for graphical representations of the interactions with Basic_Econs, the moderator.

Table 3: DATA LIST FREE/Teacher_CIL, Basic_Econs_Ed, Student_LBC.

BEGIN DATA.		
-62.3531	-4.5156	8.6801
.0000	-4.5156	7.8051
62.3531	-4.5156	6.9301
-62.3531	.0000	7.4510
.0000	.0000	7.0718
62.3531	.0000	6.6925
-62.3531	4.5156	6.2220
.0000	4.5156	6.3384
62.3531	4.5156	6.4549

The graph below is derived from table 3, the moderator (Basic_Econs) effects on Teacher_CIL and Student_LBC – a graphical representation of the discussions on the previous page.



It is important to know the percentage of student data above and below the mean. To know this, the Johnson-Neyman significance region provides a cutoff point where Basic_Econs is a significant moderator and where it is not. This is shown on Table_4 below.

Table 4: Moderator value(s) defining Johnson-Neyman significance region(s)

Value	% below	% above				
.9966	54.1667	45.8333				
Conditional effect of X on Y at values of the moderator (M)						
Basic_Ec	Effect	se	t	p	LLCI	ULCI
-12.0185	-.0272	.0103	-2.6567	.0085	-.0475	-.0070
-11.0685	-.0256	.0096	-2.6585	.0084	-.0445	-.0066
-10.1185	-.0239	.0090	-2.6600	.0084	-.0416	-.0062
-9.1685	-.0222	.0084	-2.6612	.0084	-.0387	-.0058
-8.2185	-.0206	.0077	-2.6617	.0084	-.0358	-.0053
-7.2685	-.0189	.0071	-2.6612	.0084	-.0329	-.0049
-6.3185	-.0172	.0065	-2.6590	.0084	-.0300	-.0045
-5.3685	-.0155	.0059	-2.6539	.0086	-.0271	-.0040
-4.4185	-.0139	.0052	-2.6442	.0088	-.0242	-.0035
-3.4685	-.0122	.0046	-2.6264	.0093	-.0213	-.0030
-2.5185	-.0105	.0041	-2.5942	.0101	-.0185	-.0025
-1.5685	-.0088	.0035	-2.5356	.0119	-.0157	-.0020
-.6185	-.0072	.0030	-2.4266	.0161	-.0130	-.0013
.3315	-.0055	.0025	-2.2193	.0275	-.0104	-.0006
.9966	-.0043	.0022	-1.9712	.0500	-.0087	.0000
1.2815	-.0038	.0021	-1.8281	.0689	-.0080	.0003
2.2315	-.0022	.0019	-1.1579	.2482	-.0058	.0015
3.1815	-.0005	.0018	-.2619	.7936	-.0041	.0031
4.1315	.0012	.0020	.5864	.5582	-.0028	.0052
5.0815	.0029	.0024	1.1978	.20323	-.0018	.0076
6.0315	.0045	.0029	1.5898	.1134	-.0011	.0102
6.9815	.0062	.0034	1.8385	.0674	-.0004	.0129

The essence here is to look for the exact point where the relationship between Teacher_CIL and Student_LBC is exactly .05; This point, $t(212) = -1.9712, p=.05, b= -.0043$.

It is noted that 46% of the data falls above this exact point. The above p -values are significant, indicating that Teacher_CIL is crucial for Basic_Econs to have an effect on Student_LBC.

54% of the data falls below this cutoff point indicating that Teacher_CIL doesn't really matter for these Student_LBC. This emphasizes the point discussed above that, there is a probability that, as this group of students continues to participate in Basic_Econs classes, Teacher_CIL would enable them to gain incremental interest, knowledge, and understanding in basic economics. Teacher_CIL is crucial in motivating student learning of basic economics and as such, the interaction effect of Basic_Econs and Teacher_CIL would likely enable students to eventually gain a learning behavior change from economics. Such economics learning behavior change could be intensified by students participating in recurrent standalone basic economics classes.

5. CONCLUSION

The result indicates that basic economics education as a moderator, moderates the relationship between teacher classroom instruction leadership and student learning behavior change in regarding economics. Teaching students in elementary and middle schools basic economics as a standalone course would be beneficial to students, because the students would acquire significant knowledge essential in understanding their environment and the economy. The concepts in economics are essentially a reflection of the everyday economy and as such, the earlier students start learning economics, the better they would master the basic knowledge and be able to apply the concepts. Even to some educators who may be thinking that economics is difficult for students in elementary and middle schools to comprehend, this study mitigates any such rhetoric. Teaching basic economics in urban inner-city schools does not need a massive hiring of new economics teachers, even though it may be important to do so at some point. Existing teachers already have taken at least a course in economics while as undergraduate students in college.

Therefore, taking on basic principles of economics as a standalone course in teaching elementary and middle school students would not be an impossible classroom leadership task. Teachers would just be doing what they do best, fostering student learning although this time it will be applying their classroom instructional leadership to basic economics to help students grasp the understanding of economics and its relationship to their environment, the economy.

6. FINDING

The following findings were eminent. Firstly, it is never too early to start teaching students in elementary/middle schools a course considered difficult such as basic economics. Secondly, teacher instructional leadership skills matter in simplifying class work for students to acquire practical knowledge. Thirdly, repetitive learning using various techniques to develop an understanding is essential for students. Fourthly, the more students learn practical aspects the more they master them and later, apply them. Finally, students could be better off in handling the economy when they start to learn and practice basic economics as a basic decision making tool as early as in elementary school. Suffice to say, most or all the students attend school to prepare for their future as adults in an economy perpetually guarded by principles of economics.

Therefore, it makes sense to start teaching students in elementary and middle school basic economics education as a program.

7. LIMITATION

The most critical limitation of this study is the focus on inner-city elementary and middle schools. The rationale for this focus is that inner-city learning is confounded with many variables especially economic distractions – good clothing, expensive shoes, cars, fast money, drug dealers, hoodlums and violence. Basic economics provides a foundation for learning the opportunity cost of all these distractions. This is not to say teaching basic economics is not significant in rural schools and as such, this creates a venue for a similar study to be conducted with students in rural elementary and middle schools.

Another limitation of the study is the exclusion of high school students. This study intentionally ignores high school students, because most of these students are exposed to economics even though it may not be offered as a standalone course in most inner-city high schools.

Unfortunately, research indicates that most undergraduate students find economics difficult to understand, because they did not grasp the foundation in high school before attending college (Attiyeh, & Lumsden, 1972; Reid, 1983; Anderson, Benjamin, & Fuss, 1994; Durden, & Ellis, 1995; Durden, & Ellis, 1995; Stock, 2017).

Despite these limitations, the result of this study should be compelling to educators that basic economics education is a crucial learning behavior change agent, and should be implemented as a stand-alone course in elementary and middle schools to better prepare students to adapt to the economy.

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