

# **How the Economy Influences Pedagogy: The Great Recession's Influence on Elementary Teaching Practices**

Amanda G. Sawyer  
James Madison University

## **Abstract**

From 2007 to 2009, the United States experienced one of the greatest economic declines reported in the previous decades, known as the Great Recession (Bureau of Labor Statistics, 2012). While a great deal of media attention focused on the immediate financial effects of the recession, little discussion was made about the influence of this crisis upon students' lives and education (Isaacs & Healy, 2012). Therefore, I investigated what happened to the education of these students. In this case study, three elementary teachers who taught over 10 years identified how the Great Recession affected their teaching practices. This investigation highlights how economic situations change how teachers address students' emotional, physical, and academic needs and how educators can assist teachers in these changing environments by providing differentiated strategies to reach their evolving student population.

Every day, Americans are waking up to headlines such as "Bond King Says the U.S. Economy Is Headed for Recession" (Fortune, 2017), hinting to an uncertain economic future while the country is just recovering from its last great decline. The Great Recession from 2007-2009 changed the face of modern society by changing the stock market and the lives of millions of citizens. The Great Recession most notably influenced individuals' incomes causing a widespread impact on family's lives (Luhby, 2010). People lost jobs, homes, and their way of life in a short period of time, yet media coverage primarily focused on the recession's effect upon businesses and currency (Issacs & Healy, 2012). However, the Great Recession also had a large influence on other areas like education.

When education was covered in the media, it was focused on how teachers were affected economically and personally, and it did not explore how the changing economy would affect the demands and needs of students (National Council on Teacher Quality, 2013). Therefore, the following questions remained:

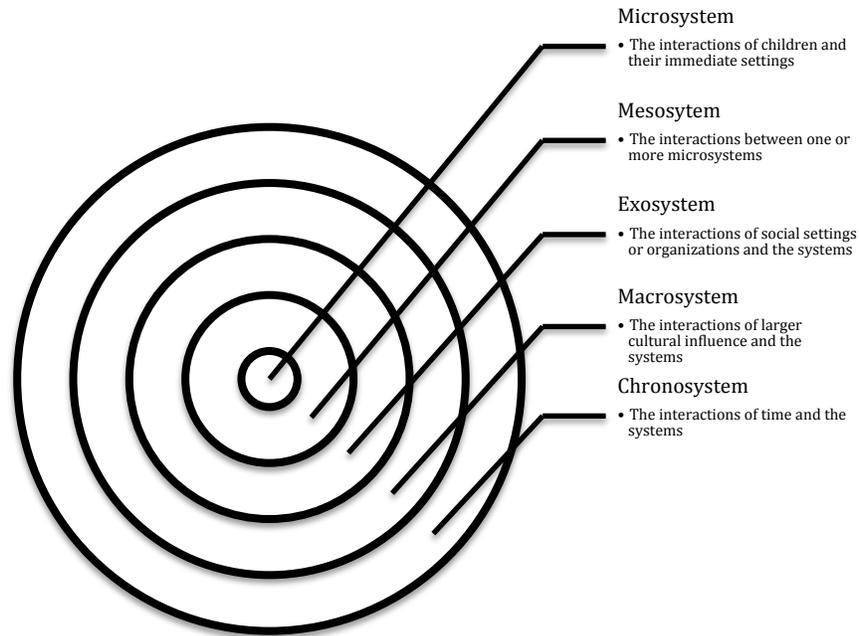
- What happened in the classrooms when the recession hit?
- How were elementary teachers' teaching practices influenced by the recession?
- What should elementary educators do in the aftermath of the recession?

The purpose of this case study was to answer these questions to determine the influence of the Great Recession on three elementary teachers teaching practice. Each teacher identified the Great Recession as affecting their interactions with their students, and they described how economic situations influenced their pedagogy. With the ever-changing economic environment in our current government landscape, educators must become aware of these answers to help meet the needs of future students.

### **Bronfenbrenner's Approach to Development**

Bronfenbrenner (1979) developed a bioecological approach describing the interaction of children's development in the context of their environment. Interactions include students' one-on-one relationships with other individuals to how students are influenced by the passing of time. Bronfenbrenner's approach takes a contextual perspective considering the relationships created by the individual and their cognitive, personal, and social environment (Feldman, 2014). This approach to development offers researchers a way to view factors influencing the development of children. In this paper, the interconnected nature between the students' economic situation and their education was explored through this lens.

Bronfenbrenner's bioecological approach breaks into five levels with each level nested in the previous interaction as seen in Figure 1 (Bronfenbrenner & Morris, 1998). Each layer has interactions that can have rippling effects causing developmental changes for the child. Layers influence each other and are not independent.



*Figure 1: Bronfenbrenner's Approach to Development (Bronfenbrenner & Morris, 1998)*

The inner level is called the microsystem. The microsystem describes the child's relationship with their immediate environment including family, school, or neighborhoods. Layers have bi-directional influence. For example, in the microsystem, a student's family can influence their behavior, while at the same time the student can influence the family's behavior. The interactions with other layers can also influence the impact of the inner structure.

The next ring is called the mesosystem. The mesosystem is defined as the interactions created between the microsystems. These interactions include any direct influence on a child created by a relationship or activity with another part of the child's environment. The ring

encircling the mesosystem is the exosystem involving the interaction of social elements and the individual. The operation of the microsystem and mesosystem can be influenced by the child's place of worship, parent's workplace, social media, and extended family. Children feel the positive and negative influence of their parents and extended family's interaction in this level.

The next level includes the macrosystem, which goes beyond the individual's direct social elements into the influence of the larger cultural factors. Bronfenbrenner's macrosystem *is an abstract concept*, "referring to the overarching institutional patterns of the culture or subculture, such as the *economic*, social, educational, legal, and political systems" (Bronfenbrenner, 1977, p. 515). Because of their abstract nature, macrosystems can be difficult to investigate. For example, the macrosystem considers the influence of the type of government, religious value system, and cultural values. This also includes how individuals are influenced by being associated with specific subcultures.

The outer layer of Bronfenbrenner's approach is called the chronosystem. This layer encompasses the influence of time, and it describes the interaction between the passing of time and the child's life.

In this investigation, we focused on two interactions: the microsystem's interaction between the students and their teachers through the teaching practice and the macrosystem's interaction between the Great Recession and students' learning. This study demonstrates how the microsystems interaction was influenced by the macrosystem. The macrosystem's influence has been especially difficult to investigate because it must show that social changes can impact the development of a single student. This influence became observable after the drastic change in the United States' economic climate. Because it includes economic influences as an influencing factor, the study described in this paper offers a way to show evidence of how Bronfenbrenner's

macrosystem influences children's development and explores what happened to students during this time.

### **Researching Recession**

The recession was a completely unexpected element influencing my participants' teaching practices that could not have been predicted in their teacher education programs and was not connected to teacher education, professional development, or any other usual influences on teaching. Researchers studying the impact of the recession have focused on how they affect teachers' incomes rather than how they affect teachers' teaching practices. The term recession refers to "a general slowdown in economic activity, a downturn in the business cycle, a reduction in the amount of goods and services produced and sold" (Bureau of Labor Statistics, 2012, p. 2). With such titles as "Teaching: No longer a Recession-Proof Job" (Luhby, 2010), "Will Teaching Face a Recession" (Bureau of Labor Statistics, 2008), "The Recession's Impact on Teachers' Salaries" (National Council on Teacher Quality, 2013), and "Recession Upended Teachers' Dreams, Created A 'Triple Tragedy' In Schools and Education" (Collins, 2011), the media has documented the impact of the recession on teachers' incomes because the career was once thought of as a secure profession. Collins (2011) wrote, "But the Great Recession and its ripple effects on the state and local tax dollars that fund public schools have upended the conventional wisdom that a teaching job is a golden ticket to career stability" (p. 1). The media has noticed that teachers' incomes were influenced, but the consequences for teachers' practices have not been investigated.

The recession caused the nation's unemployment rate to peak at 10 %, which was the largest spike in unemployment since 1982's stock market crash, and it caused the highest recorded percentage of individuals suffering from long-term unemployment. The U.S. Bureau of

Labor Statistics (2012) reported, “The employment decline experienced during the December 2007–June 2009 recession was greater than that of any recession of recent decades” (p. 7). Thus, the recession had a widespread influence on millions of families.

Because many parents were out of work and could not find employment for extended periods, the United States experienced an increase in the number of children living in poverty. The Urban Institute (2012) reported that the state in which this study was conducted, over 20 percent of children were living in poverty, higher than before the recession. As of the Urban Institute’s 2012 report, the overall pictures for many families had not changed since the start of the recession. It explained, “The economy has begun its slow recovery, but hard economic times are not over for millions of children and families” (Isaacs & Healy, 2012, p. 14). Because parents were subjected to mass layoffs, the student populations of many schools changed during this time, reflecting this economic downturn.

As a result of the recession, the student populations in teachers’ classrooms changed in one of two ways. Either the students remained the same while their economic situations changed, or the student population changed due to students moving (Isaacs & Healy, 2012). Both types of change affected the teaching practices of participants in this study.

## **Methods**

### **Participants**

I sampled my participants from a previous study on teaching practice. In that study, titled Learning to Teach Elementary Mathematics, two cohorts of elementary education students were followed through two years of their teacher education program and into their first two years of teaching (Spangler et. al, 2012). At the start of the study, the participants were in their junior

year of college. In their second and third semesters, they participated in 4-week field experiences in local schools. Their final semester of the teacher education program consisted of a traditional student teaching experience. After they graduated, the participants were hired at elementary schools, and they were followed through their first two years of teaching.

I chose three of the fifteen participants with pseudonyms Laura, Jayne, and Jennifer from the original study to investigate how their teaching practices had changed since the end of the initial study. As shown in Table 1, I selected Laura, Jayne, and Jennifer because they displayed three different patterns of teaching practice during the prior study (Sawyer, 2014).

Table 1

*Participants' Teaching Practice*

	Stage	Laura	Jayne	Jennifer
Teacher's Role	Initial	Instructor	Explainer	Explainer
	Second Year	Facilitator	Facilitator	Explainer

The three participants were white females in their early 30's. They taught for at least 10 years and were teaching in schools in the same southeastern state in the United States at the time of this study.

Across the 10 years, Laura taught in the same district in two different schools. She taught at an elementary school for 4 years in fourth grade, and she taught at a primary school for 6 years, 5 of which were in first grade and one of which was in kindergarten. Her elementary school had Title 1 status since 2003 and experienced an increase in the number of students eligible for free and reduced lunch across the 10 years as shown in Figure 6. During the 10 years,

she earned her master's degree in Early Childhood Education, was married, and had two children. During the semester I observed her class, she was a first grade teacher with a class consisting of 7 white students, 9 Hispanic students, and 3 African American students.

Since leaving her teacher education program, Jayne taught first grade in the same school for 11 years, experiencing change in both her community and students. Her school gained Title 1 status in the 2007 - 2008 school year, and the school's students eligible for free/reduced meals had drastically increased each year since 2003. During that time, she was married, had two children, and earned a master's degree in Early Childhood Reading and Literacy. I observed her first grade class consisting of 3 white students, 5 Hispanic students, and 12 African American students.

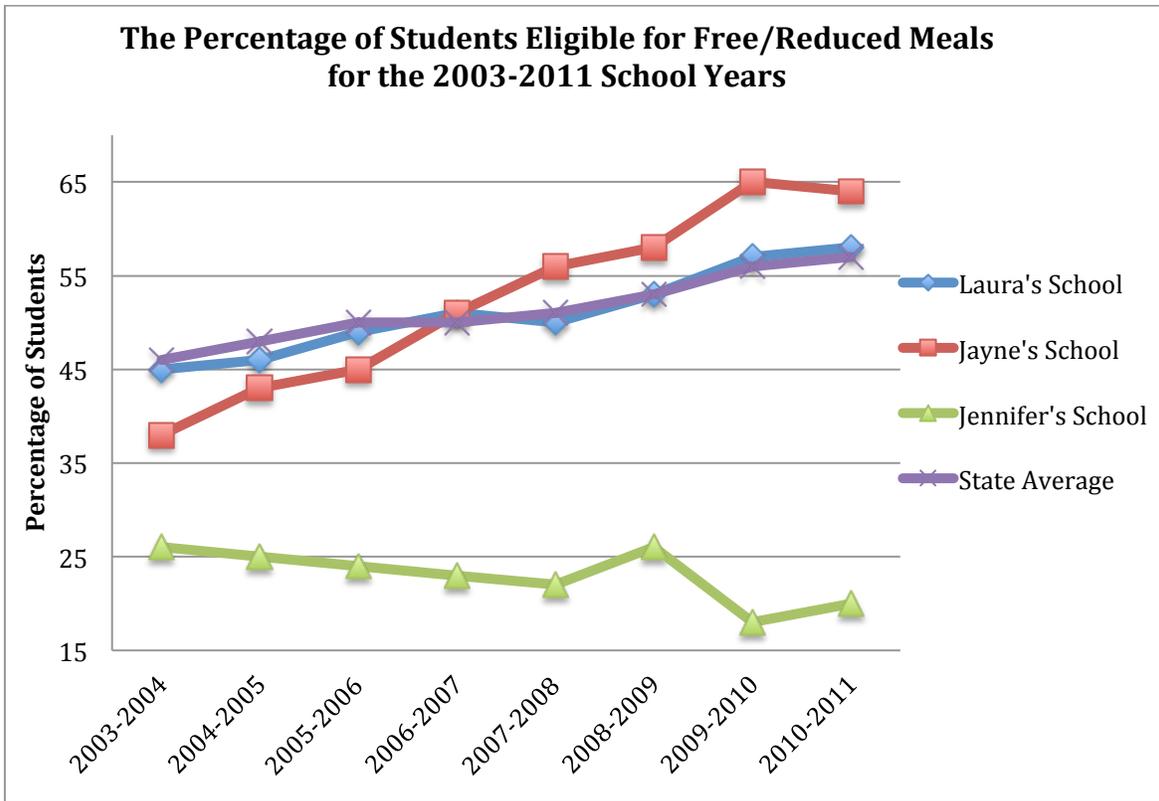


Figure 3: The percentage of students eligible for free/reduced price meals for the 2003-2011 school years (Georgia Department of Education, 2014).

Over the 10 years, Jennifer lived in three different states, teaching elementary school in second through fifth grade. She was married, had a child, earned a master’s degree in Curriculum and Instruction, earned a specialist in Educational Leadership, experienced job transfers, was divorced, and moved back to her home state. During this study, she taught at the same school she taught in during her first year of teaching. The school had a decreasing trend in the percentage of students eligible for free/reduced meals as shown in Figure 3. The semester she was observed, she was the fifth grade mathematics teacher for the school. I observed her teaching one fifth grade class consisting of 17 white students and 3 Hispanic students.

## Data Collection

Individuals often are not aware of their teaching practices; thus, researchers must ask teachers questions to help them better understand the influence on their views (Rokeach, 1968). To determine the teachers' influences on teaching practice, I use multiple strategies. I collected data on each individual by conducting:

1. three face-to-face interviews
2. one focus group meeting with all participants
3. three 1-hour classroom observations
4. Known Factors Affecting Teacher Change Survey

Data collection proceeded as follows. First, I conducted an initial hour-long classroom observation of each teacher. Beliefs are asserted to be a strong predictor of classroom practice (Cross, 2009), so I used classroom observations to help infer my participants' beliefs. Leatham (2006) argued that beliefs are constructed in a sensible system for each teacher even if they do not appear sensible to an outsider, so when I found a contradiction between a person's beliefs and practices, I continued investigating to better understand the participant's perspective.

After each classroom observation, I conducted an interview. Each face-to-face interview focused on understanding how the teachers have changed since the original study. The purpose of the first interview was to elicit the teachers' current views of their teaching. In the second interview, the participants were asked to elaborate from their own responses from the KFABC survey, and in the third interview, the participants were asked to describe their views on my initial findings from this study.

Between the first face-to-face interview and the second classroom observation, the participants took the Known Factors Affecting Teacher Change (KFABC) survey. Spangler,

Sawyer, Kang, Kim, & Kim (2012) developed the survey to collect data about the participants' backgrounds. Research in mathematics education identified some influences that could affect belief development (Raymond, 1997; Richardson, 1996), and Spangler et. al (2012) coupled these findings with a study to create the survey. The survey investigated the factors influenced by the following areas:

1. Personal Experiences (past and present events that occurred outside of school)
2. Schooling Experiences (past events that occurred in K-16 schools outside of their teacher education program)
3. Teacher Education Experiences (past and present events that occurred in a teacher education program, graduate program, or professional development experience)
4. Teaching Experiences (past and present events while teaching students in the school environment).

From each of the four categories, the participants were asked questions to understand the impact of each event. For example, the participants' teaching experiences were discussed using the following questions from the survey:

1. How have your students influenced the way you view how people learn mathematics?
2. How did your school administration affect the way you teach?
3. How has standardized testing affected your teaching of mathematics?

To ensure validity and reliability, Sawyer (2014) tested the instrument with twelve former teachers and had the group help to analyze the data to determine if the instrument collected data it was designed to find. The Known Factors Affecting Teacher Change Survey was a web-based, 20-item, open-response questionnaire, which took about an hour to complete.

The initial analysis of the data was conducted to construct a story of each participant's change over time, and I presented my participants with a copy of my interpretation. Finally, I conducted the third interview as a member check. I gave the participants the opportunity to respond to my interpretation of their teaching practices.

### **Data Analysis**

After collecting field notes from the classroom observations, the transcripts of the interviews, and the results of the survey, two analysis techniques were used to understand the data. First, the four categories of factors affecting belief change as described in the KFABC were investigated. By using the constant comparison method, I coded the factors that affected the participants as personal experiences, schooling experiences, teacher education experiences, and teaching experiences. I constructed another code when a part of the data did not fit into one of these four categories. For example, the participants identified a factor relating to the recession that did not fit into one of the four categories. Thus, a fifth category of factors was created called economic experiences to accommodate these factors identified by the participants.

Second, the researcher created a 5-10 page summary of each participant's factors affecting her teaching practice. Each participant was asked to read the summary and indicate whether it reflected her views. The participants generally said the summaries were an accurate reflection of their views. As a result of this member-checking, I only changed one participant's word choice from her interviews at her request.

## Findings

**Laura.** Laura identified the recession as an influencing factor on how she taught her students. Laura taught in the same district in which she grew up, which gave her a unique perspective on how the community changed over the years. She explained:

It used to be that [her county] was more affluent than [neighboring county]. [The neighboring county] is huge. They have like 13 elementary schools, and we have one. So [her county] has always been tiny, and [the neighboring county] has been big. They have 3 big high schools, and we have 1. Because of the recession, families that lived in [the neighboring county] had to move to our county because [the neighboring county] has no apartments. They had no subsidized housing. There was no cheap housing in the county. Also in the [neighboring county] a lot of the dirt roads are not serviced by the school bus, and so they had to move to the city so that their kids can catch a bus to go to school.

(Focus Group)

Laura explained there was a big boom in the economy in the early 2000's. The building she taught in originally held kindergarten through eighth grade. However, because of the large influx of students into the area, the building could only accommodate kindergarten through second grade. In 2003, she started working for the district, which at the time continually hired new teachers and had few students qualifying for free or reduced price lunch. However, since the recession started in 2008, the school and community had undergone a change. Laura explained, "Now we are 58% free and reduced lunch," and "a lot of kids don't go to school with the basic needs met" (Focus Group).

Because of these changes brought about by the recession, Laura felt that she had to assess the students' emotional and physical states, as well as assessing their learning. This changed Laura's teaching practice. For example, if a student needed sleep because he or she did not feel comfortable sleeping at home, then she would accommodate his or her needs. Laura did this by creating a sleeping center. She brought pillows and blankets from home to create a comfortable quiet area for her students.

Laura stated that she no longer could depend on parental involvement in her class because parents had other more pressing concerns. Laura changed her homework policy to require only one 15-minute assignment that did not require parental assistance to be completed each week, and she implemented a center where the students would come to her to receive one-on-one assistance. Thus, Laura's teaching practices were influenced by economic situations in her community.

**Jayne.** Jayne taught at the same school for over 10 years, allowing her a unique insight into the community. Because of the economic situation, she observed parents having less time with their children because they needed to work. The recession hit her community very hard. Jayne explained:

I really think situations have changed. I feel like parents who might not have had to work are now working one or two jobs. When I first started teaching here, I would say like a majority of my kids in my class came from a two-parent home where they weren't at daycare in the morning or daycare in the afternoon. Their homework was done with someone, and a lot of my kids now, their parents are working one to two jobs. They are working long hours. Their kids are spending more time in daycare. They're getting up early to go to daycare. They are leaving here and going to daycare. It is all parents can do

to get their kids fed, bathed, and in bed. I feel like the recession played a big part in it.  
(interview #3)

As a result of the recession, her school became a Title 1 school because it had a high percentage of students from low-income families. When asked how her teaching changed because of this influence, she stated, “I feel like I don’t take for granted thinking that they already know things” (interview #2). She implemented many activities to assess her students’ understanding of basic concepts, and then she determined where she should begin the lesson from that point. Or, she pulled specific students aside to work on the basics. Because of the recession, Jayne believed, “They are coming in with less background knowledge and needing more from us” (interview #2); thus, her teaching was influenced by the national economic situation.

**Jennifer.** Jennifer identified the recession as an influence on her teaching practice. Jennifer experienced a change in her student population that she attributed to the nation’s economic problems. Jennifer said:

[Her current county] is such an expensive place to be that if you lose your job or if money gets tight, they have to leave [the county]. They can’t afford the houses there. They can’t afford the rent there. They can’t afford to stay there. The families that we are losing are the lower income families. The new students that we get, it’s like, “Oh her dad is the new gymnastics coach at [the university]” or, “Oh her dad is head of the new [manufacturing] plant in [the county]” or, “His dad is the head surgeon at [the local hospital].” Every kid that is coming in is coming into the million-dollar houses in [the expensive subdivision].  
(Focus Group)

Jennifer's student population changed, making it necessary to change how she taught. The students had more resources available to them such as computers and tutors. If students were having difficulty with concepts, their families would fund outside assistance to help their students learn the concepts. Therefore, Jennifer observed a rise in the number of students in her higher-level classes. To meet the needs of these new students, Jennifer implemented different forms of differentiation by enacting more tasks with a high-level of cognitive demand. By differentiating, Jennifer was still able to meet the needs of her lower-level students but also focus instruction on the higher-level students' development.

### **Discussion**

All three teachers stated that the 2007-2009 economic recession caused them to change how they taught their classes because their student population changed. The data showed that the teachers needed two specific types of knowledge to be able to help the students in this changing economic time. Jennifer needed the ability to determine the level cognitive demand to reach students. Jane and Laura needed to be able to differentiate instruction to help the students at every level. Therefore, understanding the level cognitive demand and differentiation techniques helped the students in this changing economic time.

Jennifer saw a rise in higher-achieving students because her community attracted families with more resources. She explained that she increased the cognitive demand of her activities in her class. Smith, Stein, Arbaugh, Brown, and Mossgrove (2004) described how mathematical tasks can be categorized by their cognitive demand as either being high or low level. Tasks involving memorization and procedures without connections were considered having a low level of cognitive demand, and tasks involving procedures with connections and doing mathematics

were considered having a high level of cognitive demand. Jennifer needed this understanding of higher level tasks to help increase the cognitive demand for her students.

Laura and Jayne saw a decrease in students' basic knowledge, which they believed was caused by lower parental involvement. The teachers had to focus on meeting their students' emotional and physical needs before they could meet their students' academic needs. When they did focus on the content, they needed to assess their basic skills first. They no longer could assume the children received background knowledge about specific topics at home. Once they understood the students' academic needs, they differentiated their mathematical instruction. By creating activities like learning menus, Laura and Jayne used what the students knew mathematically to develop their understanding of new concepts.

My participants' views of the recession's effects were consistent with the findings from the U. S. Bureau of Labor Statistics (Bureau of Labor Statistics, 2012). Because of the increase in unemployment, more children were living in poverty (Isaacs & Healy, 2012). As of the Urban Institute's 2012 reports, the overall poverty levels for many families had not changed since the start of the recession. With many parents subjected to mass layoffs, the student populations changed, reflecting this economic situation.

### **Implications**

The study had three main implications for the educational community. First, the study demonstrates the importance of teacher educators becoming aware of the influence the economy has on pedagogy. Second, the findings from this study clearly show how we can assist teachers by providing differentiated strategies to reach diverse learners in their classrooms. Third, the

study showcased how Bronfenbrenner's macrosystem had a noticeable effect on students' development.

### **Awareness**

Forgasz and Leder (2008) stated elementary teachers hold similar beliefs about holistic learning. Like Laura and Jayne, other elementary teachers are focusing on meeting the needs of all their students both physically and mentally. Because many elementary teachers hold similar beliefs about learning, this suggests the recession's effect might be more widespread among elementary teaching populations. Professional developers and district administrators should be aware of the potential influences of future economic events and be ready to provide support to teachers as they deal with changing student needs.

Recessions have a cyclical nature (Applebaum, 2014). Our society will be faced with similar circumstances in the future. Therefore, teacher educators must be concerned with what happened to teachers during this recession to be prepared for the future.

### **Assistance**

Inservice teachers need assistance working with these changing student populations. Tankersley (2013) believes the economy has recovered as much as it can. With many parents subjected to mass layoffs, the student populations continue to change. Teachers will need professional development-focused differentiation techniques. Teachers must understand the importance of differentiating math content so that all students have an equal opportunity to experience mathematical thinking and develop a relational understanding of content, based on their own motivation, engagement, and voice (Bray & McClaskey, 2013). To do this, professional development could focus on instructing teachers to organize lessons that differ by

content, product, and/or process: the fundamental areas that lead students to acquire mathematical relational understanding (Andreasen & Hunt, 2012; Bender, 2013). Also, professional development could focus on developing multiple strategies to make sense of mathematical content, demonstrate knowledge, and practice with material (Andreasen & Hunt, 2012). Effective mathematics instruction does not occur while using a “one-size-fits-all” teaching style. Lessons must be flexible to fit the needs of all ability groups within a classroom (Vigdor, 2013).

These techniques could also be used to prepare future elementary teachers to counter these effects in the schools. Elementary educators can make their preservice teachers aware of these changes. By focusing on how to address diverse learners across the same school year, the preservice teachers will go into the classrooms prepared for the evolving teaching environment.

### **Visible Macrosystem**

The participants in this study provided evidence demonstrating how Bronfenbrenner’s macrosystem influenced children's learning. Because of their abstract nature, macrosystems can be difficult to investigate (Feldman, 2014). Students learn through social interaction from their teachers and their parents; however it is difficult to see how economic influences cause children to learn differently. The Great Recession allowed the macrosystem to become visible in a way that previously had not been explored. In this research study, the changes in student’s learning was observed and explained. Therefore, teacher educators need to openly look into how the macrosystem affects development, and this research also suggest that the influence of the macrosystem might be more influential than many have viewed in prior studies.

Future research should be conducted to see if the recession influenced other teachers and in what ways. Such studies might look at teachers in different settings and subjects, such as rural

and urban areas, teachers of different ages of students, such as middle and high school, and teachers in different areas of the country where the recession was felt more and less acutely. When future economic events occur, researchers should be poised to investigate their effects on teachers, and professional developers could use this information to plan for changes in teaching practices as a result of economic change.

### **Closing**

With today's ever changing economic and political environment, teachers have a societal mandate to physically, emotionally, and academically support their students. Bronfenbrenner's (1979) theory predicted that economic situations could influence children's development, and this study showed how these large forces have rippling effects on teaching and learning. The Great Recession influenced individuals in a large capacity, and teacher educators need to be aware of these influences to address how to help others who are affected by these changes. Therefore teachers cannot ignore the macrosystem's influence on students.

Economists warn we are in "secular stagnation" because:

The U.S. economy just can't catch a break. It has been poised time and again to rocket back to a growth rate that would recapture all the ground lost in the Great Recession, while delivering big job gains. But every time, some outside event scuttles things.

(Tankersley, 2013, p. G01)

Since the economy consistently had "bad luck" in recovering, teachers will continue to see these effects in their classrooms. As the student populations change, so do elementary teachers' teaching practices. Therefore, elementary educators need to be aware of the impact of the macrosystems to better serve the needs of their future students.

## References

- Andreasen, J.B., & Hunt, J.H. (2012). Using math stations for commonsense inclusiveness. *Teaching Children Mathematics*, 19(4), 238-246.
- Appelbaum, B. (2014, June 12). U.S. economic recovery looks distant as growth lingers. *The New York Times*, pp. B1, B3.
- Bureau of Labor Statistics (2008). Will teachers face a recession? *Teaching*. Retrieved from <http://teaching.monster.com/careers/articles/3022-will-teachers-face-a-recession>
- Bureau of Labor Statistics (2012, February). The recession of 2007-2009. *BLS Spotlight on Statistics*. Retrieved from [http://www.bls.gov/spotlight/2012/recession/pdf/recession\\_bls\\_spotlight.pdf](http://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf)
- Bray, B., & McClaskey, K. (2013). A step-by-step guide to personalize learning. *Learning & Leading with Technology*, 40(7), 12-19.
- Bronfenbrenner, U. (1977). Towards an experimental ecology of human development. *American Psychologist*, 32, 513–531.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. & Morris, P. (1998). The ecology of developmental processes. In W. Damon (ED.), *Handbook of child psychology* (Vol. 1, 5<sup>th</sup> ed.). New York: Wiley.
- Collins, J. (2011, September 24). Recession upended teachers' dreams, created a 'triple tragedy' in schools and education. *Huffington Post Education*.
- Cross, D. I. (2009). Alignment, cohesion, and change: Examining mathematics teachers' belief structures and their influence on instructional practices. *Journal of Mathematics Teacher Education*, 12(5), 325-346.

- Dewey, J. (1938). *Experience & Education*. New York, NY: The MacMillan Company.
- Feldman, R. (2014) *Child Development: A Topical Approach*. Boston: Pearson. Georgia
- Department of Education (2014). *School reports*. Retrieved from <http://archives.gadoe.org/ReportingFW.aspx?PageReq=211&PID=61&PTID=67&CTID=217&SchoolId=ALL&T=0>
- Forgasz, H. J., & Leder, G. C. (2008). Beliefs about mathematics and mathematics teaching. In P. Sullivan & T. Wood (Eds.), *International handbook of mathematics teacher education, Vol. I: Knowledge and beliefs in mathematics teaching and teaching development* (pp. 173–192). Rotterdam, The Netherlands: Sense Publishers.
- Fortune. (2017, February 6). Bond king says the U.S. economy is headed for recession. *The Fortune*. Retrieved from <http://fortune.com/2017/02/06/bill-gross-predicts-recession/>
- Hamilton, S. (1983) The social side of schooling: Ecological studies of classrooms and schools. *The Elementary School Journal*, (4), 313.
- Isaacs, J., & Healy, O. (2012). *The recession's ongoing impact on children, 2012: Indicators of children's economic well-being*. The Urban Institute.
- Leatham, K. R. (2006). Viewing mathematics teachers' beliefs as sensible systems. *Journal of Mathematics Teacher Education*, 9(1), 91-102. doi:10.1007/s10857-006-9006-8
- Leonard, J. (2011). Using Bronfenbrenner's ecological theory to understand community partnerships: A historical case study of one urban high school. *Urban Education*, 46(5), 987-1010.
- Luhby, T. (2010, September 11). *Teaching: No longer a recession-proof job*. CNN Money.

National Council on Teacher Quality. (2013, May) The recession's impact on teachers' salaries.

*National Council on Teacher Quality Report.*

Parsons, T. (1959) The school class as a social system: some of its functions in American society. *Harvard Educational Review*, 29, 297-318.

Raymond, A. M. (1997). Inconsistency between a beginning elementary school teacher's mathematics beliefs and teaching practice. *Journal for Research in Mathematics Education*, 28(5), 550-576.

Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. In J. Sikula (Ed.), *Handbook of research on teacher education* (pp. 102-115). New York: Macmillan.

Rokeach, M. (1968). *Beliefs, attitudes and values: A theory of organization and change*. San Francisco: Jossey-Bass.

Sawyer, A. G. (2014). *Factors affecting elementary mathematics teachers' beliefs over time*. Unpublished doctoral dissertation, University of Georgia, Athens.

Spangler, D. A., Sawyer, A. G., Kang, E. K., Kim, S., & Kim, B. (2012). Transition to teaching: Beliefs and other influences on practice. In L. R. VanZoest, J.-J. Lo, & Kratky, J. L. (Eds.), *Proceedings of the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 753-756). Kalamazoo, MI: Western Michigan University.

Stein, M. K., Smith, M. S., Arbaugh, F., Brown, C. A. & Mossgrove, J. (2004). Characterizing the cognitive demands of mathematical tasks: A task-sorting activity. *Professional development guidebook* (A supplement to the National Council of Teachers of Mathematics 2004 Yearbook). Reston, VA: National Council of Teachers of Mathematics.

Tankersley, J. (2013, March 3). As good as it gets? *The Washington Post*, pp. G01.

Vigdor, J. (2013). Solving America's math problem. *Education Next*, 13(1).

Waller, W. (1967) *The Sociology of Teaching*. New York: Wiley.