

Culture, Self-Regulation and Academic s in Preschool

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Abstract

The development of self-regulation in early childhood students is imperative for the development of higher level thinking skills. Thus, the ability to self-regulate has been link to academic achievement and as a better indicator of school readiness. However, the research does not look into culture or cultural factors as a variable that may influence the development of self-regulation. Minority students such as Latino and African Americans are considered to be at a higher risk for not developing these regulatory skills. Hence, this research looks at the associations between early childhood students, self-regulation, academics, and culture. Specifically, the research analyzes results from candidates that were either Latino American culture and African American culture. A one-way ANCOVA was conducted to compare the development academics for both cultures while controlling for self-regulation. A total of 60 preschool students participated in this study. The overall ANCOVA was significant, $F(1,66) = 11.50, p < .000$. The strength of the relationship between the independent variable and the dependent variable was very strong, as assessed by

Index terms— self-regulation, culture, early childhood culture, self-regulation, and academics in preschool.

1 Introduction

he capacity to consciously regulates one's overall behavior and emotion is central to human nature (Bronson, 2000). Research suggests that cultural factors can affect academic achievement (Li-Grining, 2012). Thus, the ability to teach students self-regulation skills in a culturally supportive way can assist students to become academically competent. Culturally supportive teaching of self-regulation is considere done effective way in closing the achievement gap between minorities in schools (Li-Grining, 2012). Self-regulation is the ability for a child or adult to control emotions, impulses, and cognition. In early childhood, the ability to self-regulate requires substantial guidance from adults as children are merely developing these skills (Bronson, 2000).

Educators and adults model behavioral and emotional responses that children come to understand through non-verbal or symbolic communication. Bronson (2000) suggests that when a child is given the responsibility to care for younger siblings, they can model these learned responses. This, being common practice in some minority families in the U.S, develops self-regulation skills. Consequently, there is no current body of research that measures the relationship between culture or the cultural upbringings of African American and Hispanic/Latino preschool students and levels of self-regulation and academic achievement (Liew, 2012; Raver et al., 2011).

2 II.

3 Culture

Most subcultures, in the United States are based on the ideology of maintaining one's own values and/or perspectives on identity, role functions while allowing a certain level of inclusion/adoption of some American society's values and core traditions. There are two main types of culture that exist and often do not become subcultures. Meaning, they do not adopt new values into their traditional practices. A subculture is a group

of people within a major culture that distinguishes themselves from the majority of the culture. Henceforth, a subculture has some similar and some unique attributes when matched with the major culture. Individualistic cultures, for example, focus on the concepts of self-reliance, the ability to make an independent decision without factoring in immediate and/or extended family, and the right to a private life. On the contrary, in collectivist cultures one is expected to consider one's immediate and extended family/tribe when making any decisions. The term familism is used to describe the dominant social emphasis that is given to the needs of the family/group first. In fact the term of familism has been suggested by research to be key in students' socio-emotional components of development (Crosnoe, 2006; Galindo & Fuller, 2010).

4 III.

5 Hispanic Americans and African Americans

African American and Hispanic/Latino Americans are two major collectivist subcultures in the U.S today. Both cultures have many similarities, such as the aspect of encountering degrees of systematic discrimination in today's society. These cultures have also faced the negative consequences of individual racism and having to accept their minority status. Yet, according to Caughy, O'Campo, Randolph, and Nickerson (2002) these issues have allowed them to maintain their main aspects of their respective identities and cultures. The inability for child to maintain ones cultural identity can affect the ability of self-expression in school. Thus, compromising academics (Crosnoe, 2006).

6 IV.

7 African American Culture

Consistent with Caughy, et al (2002) the African American culture focuses on specific cultural upbringing elements that differ from the Hispanic/Latino culture. These cultural aspects have a direct impact on their academic development (Caughy et al., 2002). Specifically, they impact the regulatory aspects that provide key competencies for students in a school environment. The African American culture historically was severely discriminated against and yet, accomplished many of the civil rights they have today. Nonetheless, many African Americans still confront challenges in the upbringing and in the maintenance of their cultural values. African Americans must "negotiate three realms of experience: the mainstream, the minority, and the Black cultural experience" (Caughy et al., 2002; Caughy et al., p. 1611). African American parents must teach their children to function, become social, and functional U.S. citizens while accepting the concept of being perceived as a minority that has negative connotations (Caughy et al., 2002).

Although African American families are more of an individualistic culture, role flexibility can take place. Categorizing them as more of a collectivist culture. Role flexibility is when the mother sometimes plays the role of the father and thus functions as the head of the family. Additionally, not only is this culture matriarchy in nature but role flexibility also exists when older siblings in the family must sometimes carry out or function as a parent or caregiver to younger siblings. The concept of role flexibility among African American families can be extended to include the parental role assumed by grandfather, grandmother, aunts and cousins. Role flexibility in younger children influences their emotional and behavioral development and acquisition of higher executive functions (Raver, 2009).

V.

8 Hispanic American Culture

Hispanic/Latino Americans confront different obstacles than African Americans in society. According to Li-Grining (2012) this particular collectivist subculture focuses around the concepts of familism, acculturation, language and migratory factors. The Hispanic culture centers on the needs of not only the immediate family but that of the extended family when making decisions. This subculture, typically not only adheres to their cultural values but also to the adoption of that of the Anglo-American culture (Li-Grinning, 2012).

This particular subculture also faces challenges that affect the adjustment component of children in the U.S. as a result of being of immigration status and facing language barriers. As Bronson (2000) states, children learn emotional and behavioral responses from their parents and the being of an illegal status in the U.S makes parents worry about their future thus, children grow up with fear of separation from their families. This in turn can make them more reserved in school and negatively influence their overall development. Children very early on take a role of becoming the family's interpreter and this responsibility on young learners can influence their regulatory acquisition skills. Taking the role to care for younger siblings affect the disposition and development of self-regulation (Bronson, 2000). As with the African American culture this aspect in Hispanic/Latino students has a negative cultural identity and conflicts when adjusting to the Anglo-American culture (Leroy & Manning, 1992). Additionally these factors severely affect the social and academic components in child development. It also affects self-regulation and academic achievement (Li-Grining, 2012; Raver 2009). Thus, it is important to understand and teach regulatory skills among minority cultures as these aspects influence their academics (Liew, 2012; Raver et al., 2011).

9 VI.

10 Preschoolers Today

Today's kindergarten children are expected to be able to self-regulate their emotions and behaviors when entering school. They are expected to specifically internalize and follow set classroom rules (Denham et. al, 2012), as well as know a myriad of literacy and mathematical concepts. Miller and Almon (2009) report that 76% of New York City kindergarten teachers spend more than an hour of their classroom time in literacy instruction, 26% of them spend more than an hour on math, and about 79% report spending time on testing preparation. Based on this data, it is important that young children attend a preschool setting in order to handle and be prepared to meet the academic rigor that must be mastered beyond their developmental level in a formal school setting (Miller & Almon, 2009). Interventions that facilitate the development of self-regulation as a critical component have been designed and implemented in some preschools and/or Head Start Programs (Rimm-Kaufman & Wanless, 2012).

11 Self-Regulation

Bodrova and Leong (2008) state that self-regulation is best taught to young children by allowing them creative opportunities in which to practice the rules of certain behaviors and apply those rules to new situations. Based on the Vygotskian perspective the ability to act intentionally involves the internalization of higher mental functions that develop through social relations between parent/caregiver and child, teacher and child, or older peer and child. Self-regulation has also been defined as having two major factors. The first refers to the capacity to monitor inhibitory aspects. Inhibitory control refers to the ability to suppress impulsive thoughts or behavior and resist the surrounding temptations and additional distractions. The second factor is working memory, which is the ability of a child to hold, update, and manipulate verbal and nonverbal information. Self-regulatory skills represent an important developmental factor in young children as this allows them the control over their thoughts and feelings and behavior.

In a classroom setting the ability to self-regulate is shown when a child stops doing what they are engaged in when a teacher says to stop. This can extend to an academic context because children's level of self-regulatory skills correlates to the level of attention given to math and literacy concepts in school (McClelland et. al, 2007). Research (Bronson, 2012) suggested that preschool students, who lack social-emotional regulatory skills, when assessed in kindergarten, were found to demonstrate less language, literacy, mathematical, and general knowledge acquisition.

12 VIII.

Vygotskian Framework Vygotsky (1978) proposed that the concept of language in a child serves as a tool for the development of self-regulation. Language is a mediating variable between functions of cognitive regulation (Roebbers, & Schneider 2005). Vygotsky (1978) stated that private speech originates from the child's interaction with his/her social world, and thus social speech between child and parent or caregiver, serves as a guide to regulate behavior and attention (Vygotsky, 1978; Winsler et. al, 2009). Children communicate with adults and older peers and observe their actions/behaviors in order to regulate their own behaviors through the use of communication with oneself or 'private speech' (Vygotsky, 1978). Ogan (2008) describes the process of private speech as becoming internalized as inner verbal thoughts, which leads to the ability to then self-regulate cognitive processes and direct and control one's behavior. Day and Smith (2013) report that private speech does not only have associations with cognitive regulation but that it explicitly allows a young child the ability to regulate their emotions.

Developing language is used as a regulating or mediating tool for preschool children (Winsler et. al 2009). For example, a preschool child will verbally instruct oneself how to properly carry out an activity based on previous adult or older peer instruction. Receiving instructions from adults or peers contributes to the development of self-control, as this is closely related to receptive vocabulary in children (Carlson, Moses, & Claxton 2004). Perner, Lang, and Kloo (2002) also suggest that there is a strong association between receptive language and cognitive-regulation. According to Gruber and Goschke (2004) regulatory skills emerge from a dynamic interaction between the prefrontoparietal and prefronto-temporal cortical networks, which mediate attention, and the left hemispheric premotor and parietal brain region, which mediates language. These verbal instructions become inner thoughts, allowing children to direct attention and behavior through thoughts only. It is here where self-regulatory skills acquire a deeper meaning.

13 IX.

14 Statement of the Problem

Research demonstrates that students who enter kindergarten without self-regulatory skills are at greater risk for difficulties such as peer rejection and low levels of academic achievement (Denham et Miller & Almon (2009). Specifically, Li-Grinning (2012) states that it is more prevalent in students of a minority background to have less regulatory skills impacting their academic abilities.

The challenge arises when early childhood programs are replaced by a system whose emphasis is not on holistically teaching students in cultural responsiveness environment (Bronson, 2000). Thus, the following research question was used to guide this research: Do African American and Hispanic/Latino cultures display different levels of academic achievement when the level of self-regulation is controlled in preschools?

X.

15 Methods

This study took the form of a quasi-experimental design where data was collected from two preschool group settings who specifically used curricula that support self-regulation and academic skills. The ethnic composition of the final sample was approximately 56% Hispanic/Latino, 43% African American. Of the total sample, 44 of the students were male and 25 were female.

16 Table 1: Demographic Characteristics of the Sample

17 Setting

Data was collected from two preschool settings. Both settings were similar in Social Economic Status (SES) and both curriculums allow for emotional and behavioral developments through social and academic aspects. The first setting was a state funded UPK program in a low SES, ethnically diverse district. The program offers three classes of morning and afternoon half-day sessions. The languages spoken in the district were English, Spanish, and French Creole.

The second school was a federally funded Head Start program. The Head Start is located in the same ethnically diverse community as the UPK program. This Head Start setting had a total of 5 classes. This setting was also similar in SES, culture and language proficiencies as the UPK setting. The Head Start also offered the students a morning and afternoon program as well as a full day program.

18 XII.

19 Instrumentation

Standardized assessments were used to further analyze and compare the relationship between self-regulation, language skills, and culture. The outcome measurements in this study were chosen because they each provided the test in both English and Spanish. Based on Leung and Brice (2013) it is imperative that bilingual students are not tested from a monolingual approach.

20 XIII. Self-Regulation Measures

The Preschool Self-Regulation Assessment (PSRA) was a battery of self-regulatory tasks that were adapted from Murray and Kochanska's (2002) effortful control tasks and executive control tasks. PSRA was a one-on-one direct assessment measure that was developed to evaluate self-regulatory skills in preschool students. The tasks were developed to assess children's Get Ready to Read (GRTR).

Get Ready to Read (GRTR) was a criterion-referenced assessment that screened preschool children's development in emergent literacy skills. This test was also available in Spanish for non-English speaking students. This test specifically measured print knowledge and phonological awareness. The GRTR was developed in English and standardized with a total of 342 children. The participants were from two locations, Suffolk County, NY, and Tallahassee, FL (Whitehurst, 2001).

21 XV. Expressive and Receptive Vocabulary Assessments

Vocabulary assessments were administered individually to all participants. A Spanish version was administered to Spanish-speaking participants. The Expressive One Word Picture Vocabulary English (EOWPVT-4) and Expressive One Word Picture Vocabulary Spanish (Brownell, 2000) -(EOWPVT-Spanish) were norm-referenced assessments that measured the English and Spanish speaking vocabulary of preschool children. The tests consisted of illustrations that each represented an object, action or concept. The raw scores obtained were used to report standard scores and percentile ranks. The test was administered to participants in English (monolingual children) and Spanish (Spanish-speaking children).

22 XVI.

23 Pre-Ipt Oral

The Pre-Idea Proficiency Test (Pre-IPT) was a nationally normed oral language proficiency assessment in English and Spanish. These tests evaluated students' oral speaking proficiency. Scoring was converted to Non-Limited, or Fluent/Competent designations (Ballad & Tighe, 2010). The students were tested individually in either English or Spanish. The Spanish test version was not a translation of the English version but rather a different test all together (Ballad & Tighe, 2010). The Pre-IPT-Oral Tests assessed proficiency in four domains of oral language: vocabulary, grammar, comprehension, and verbal expression (Ballad & Tighe, 2010).

24 XVII.

25 Language Surveys

The language assessments used provided an English and Spanish version of the tests. Based on two surveys students were either tested in in English or in Spanish. The first survey/form was given to all incoming preschool families in both settings. This home language survey asked for the languages students spoke at home, and ethnicity.

The second survey used was a language acquisition survey given to the teachers. Teachers identified the level of English language of the participants. This survey was modified from the Tabors and Snow (1994) framework that suggests that there are five levels of language. XVIII.

26 Data Collection

All participants were tested during a two-week period to assure that they were tested around the same time and reduce maturity effects. The participants were administered each test, following each test procedure and protocol.

The students were tested in their dominant language. Those who spoke English were tested in English and Hispanic Students who did not speak English were tested in Spanish to better assess for content knowledge. The four participants that spoke French-Creole were also tested in English, as the assessments did not have a French-Creole version. Results

27 XIX. Data Analysis and a Priori Criteria

The current study was designed to examine the linear relationship between culture, cognitive selfregulation and academic achievement. Dependent variables for this study were academic skills. Independent variables for this study included culture and self-regulation as a covariate.

The examiner provided descriptive statistics; mean and standard deviation. Pearson r correlations were conducted to analyze the data collected. A preliminary analysis of data was also conducted to determine the distribution, outliers, and accuracy of the data. A paired t -test was conducted to examine participants' scores between IPT, GRTR, Expressive/Receptive assessments and PSRA. Correlations between aforementioned academics measures and self-regulation measures were conducted as well.

Prior to addressing the research question in this study, raw scores of each task in the PSRA were converted to z scores. The z scores were then combined into two types of self-regulation skills. The pencil tap and turn task were combined to measure cognitive control. The toy wrap, toy wrap wait, snack delay and tongue tasks were combined to measure impulse control (Smith-Donald, et al., 2007). The reason for creating z scores were to create one score for cognition and one for impulse as the PSRA has multiple sub tests and this method created a transparent way of analyzing the relationship between IPT, GRTR, Expressive/Receptive and both PSRA measures. Computation of a composite impulse and cognitive control variable was vital to this study as each variable not only is distinguishable, both neutrally and behaviorally, but distinct theoretically and practically as well (Denham, Warren-Khot, Bassett, Wyatt, & Perna, 2012). Denham et al., (2012) classifies the pencil tap and turn task in this study as cognitive tasks, while the snack delay, tongue task, toy wrap and toy wrap wait tasks are classified as more reflexive and under stimulus control. In addition to previous research, the variables for impulse and cognitive control were correlated and suggest that these two variables do measure different types of self-regulation, as the correlations coefficients were less than .8. Therefore, variables classified under impulse control and variables under cognitive control were kept as two separate variables and measurements of self-regulation.

Analysis of Co-Variance (ANCOVA) was conducted to reduce within-group error variance and eliminate any confounds and to adjust or control for differences between the groups based on another, typically interval level, and variable called the covariate. The ANCOVA is an extension of ANOVA that provided a way of statistically controlling for the effects of continuous or scale variables in the study.

28 Research Question

Do African American and Hispanic/Latino cultures display different levels of academic achievement when the level of self-regulation is controlled in preschools?

A one-way analysis of co-variance (ANCOVA) was conducted. The independent variable, culture involved two levels: African American preschool students and Hispanic/Latino preschool students. The dependent variable, academic skills, was the level of the combined scores in oral proficiency, expressive/receptive language, and emergent literacy skills. The assumptions for ANCOVA were met. In particular, the homogeneity of the regression effect was evident for the covariate, and the covariate was linearly related to the dependent measure. The covariate measured the level of self-regulation and was significant, $F(1,66) = 11.50, p < .000$. The F tests the effect of Culture. This test is based on the linearly independent pair wise comparisons among the estimated marginal means and was statistically significant at $F(1,66) = 21.42, p < .000$ with a large effect as suggested by $\eta^2 = 25\%$.

The overall ANCOVA was significant, $F(1,66) = 11.50, p < .000$. The strength of the relationship between the independent variable and the dependent variable was very strong, as assessed by η^2 with the Culture factor

accounting for 25% of the variance in the dependent measure accounting for the constant level of self-regulation (Cohen, 1988). The relationship between the covariate and the dependent variable did not differ significantly as a function of the independent variable, as the interaction effect was significant at $F(1,66) = 21.42, p < .000, \eta^2 = .25$. African American preschool students performed better in academics than Hispanic/Latino students as they had the largest adjusted mean ($M = 88.42$). Hispanic/Latino preschool students had the smallest adjusted mean ($M = 76.29$). Follow up tests were conducted to evaluate pair wise differences among these adjusted means. Based on the LSD procedure, the adjusted mean for African American and Hispanic/Latino students differ significantly

29 XX. Discussion

Current educational policies, such as CCSS and Race to the Top, do not allow for focus on cognitive control skills in preschools, which serve as indicators of school success (Arslan et al., 2011; Denham et al., 2012). Race to the Top is a competitive grant that required more rigorous learning standards to be implemented and greater accountability on multiple levels. These common core standards primarily focus on constructional and academic types of activities in classrooms. Additionally, the element that grants, under this policy are based on competition and not the need thus raising concerns for the development of preschool students. The results of statistically significant relationship in this investigation between academics, self-regulation and culture provide evidence for educators to question current curricula. The primary focus of this study determined using a One-Way ANCOVA statistical method, indicated a significant difference in the academic development of preschool students and their cultural background when controlling for level of self-regulation. This primary finding was supported by the results of the ANCOVA. The statistical analysis suggests that African American preschool students perform better academically than Hispanic/Latino students.

One possibility for the results could be attributed to factors in each culture and how they have a direct influence of the social and academic development of these students. While there are many similarities between the African American and Hispanic/Latino subcultures, the differences that they each face can be a major revelation as to why African American preschoolers outperformed Hispanic/Latino students in this study after controlling for the ability to cognitively self-regulate. One main difference is that African American families do not have to be concerned with immigratory status in the U.S. Thus this growing concern is passed down to many students as they see their parents worry about this aspect, in turn negatively affecting their levels of safety and stability which is reflected in the school setting. Another possible explanation for the significance in this study can be related to language barriers in the adults that lead to having students serve as interpreters very early on. This responsibility that young students take on as part of their role, impacts the ability for a child to develop freely and overall differently than those students not required to mature at a faster rate.

While maturity is often seen as a positive component in development when it is done at age levels that a child needs to dramatically play and focus on other major skills such as socialization and self-regulation, this level of maturity deters young learners from developing their self-efficacy, self-regulation skills thus affecting academic skills.

A third possibility is that due to the history in the African American culture educators have learned to incorporate it into their classrooms more efficiently than other growing subcultures. While we use the term multiculturalism in America today and try to incorporate it in the classroom, the question of are teachers truly prepared to be multicultural educators in this fast growing society is raised. Are higher educational programs truly preparing future educators to become sensitive to different cultures and truly embrace and have their lessons reflect the cultures of the students in their classrooms? Or are we preparing teachers to simply learn and celebrate African American culture and Hispanic/Latino cultures on certain days of the school calendar?

Perhaps the emphasis of closing the gap is not as simple as acknowledging for diversity but preparing educators to become culturally responsive in finding relevant connections between students and subject matter. According to the U.S census in 2011 50.4% of U.S. birth were made up of minority children, thus teaching and learning in a culturally responsiveness and self-assessment environment must be implemented so that specific subcultures do not fall behind. It becomes crucial for these students to be successful to have an educator that can then create a stigma free, emotionally safe, supportive, open communication, prompts acceptance, and has high expectation for all students becomes important for many minorities in schools today. The learning environment must be representative of the students in the class in order for all students to succeed.

Educators need to support the development of self-regulation in minorities especially in Hispanic/Latino preschoolers so that they make deliberate efforts to bring these functions into consciousness. It is key that we imbed and prepare children to become aware of the external standards set forth in a classroom and teach them that their performance impacts their own learning acquisition directly. We need to train our educators not only to see the importance of teaching academic content but teaching the content in a multicultural sensitive manner and become sensitive and able to attend to each culture's need.

Figure 1: Table 2 :

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