The child-rearing environment and children's mastery motivation as contributors to school readiness

David MacPhee, Sarah Prendergast, Erin Albrecht, Aimeé Kleisner Walker, Jan Miller-Heyl

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**ABSTRACT**

In this study, mastery motivation was examined as a mediator of the relation between preschoolers' home environment—harsh, coercive rearing practices as well as cognitive stimulation—and a later indicator of school readiness. Findings from an ethnically diverse sample of Head Start families (N = 207) showed parent coercion, encouragement of learning, and parent-rated mastery motivation to predict school readiness a year later. Although parent-rated mastery motivation at pretest explained unique variance in later school readiness, tests of mediation were not supported. Notably, model testing found that observed mastery motivation task scores were unrelated to parent-rated mastery motivation or school readiness. These insights are informative for re-conceptualizing how mastery motivation is assessed, as well as current thinking about how targeting preschoolers' mastery motivation may help parents and early childhood educators to better prepare low-income preschoolers for early school success.

1. Introduction

Researchers have long been interested in the concept of motivation, in an effort to explain individual differences in adaptation (MacTurk & Morgan, 1995). One such construct in the early childhood literature is mastery motivation, defined as “the psychological force that stimulates an individual to attempt independently, in a focused and persistent manner, to solve a problem or master a skill or task which is at least moderately challenging for him or her” (Morgan, Harmon, & Maslin-Cole, 1990, p. 319). Consistent with its emphasis on the impetus to understand and control the environment, mastery motivation typically is assessed in terms of preference for challenge, exploration and persistence on moderately challenging tasks, and engagement with people and objects (e.g., toys, puzzles) in ways that support learning (Busch-Rossnagel & Morgan, 2013). It is for these reasons that mastery motivation is viewed as a key process that contributes to the approaches to learning dimension of school readiness (Fantuzzo, Perry, & McDermott, 2004). Indeed, the few longitudinal studies in this area find mastery motivation to predict academic achievement or school readiness, with readiness typically assessed by standardized tests of verbal and math skills (Mokrova, O’Brien, Calkins, Leerkes, & Marcovitch, 2013; Turner & Johnson, 2003).

From a translational perspective, insights about mastery motivation’s role in children’s school readiness could be instrumental in helping parents to better prepare preschoolers—especially those in low-income families—for success in kindergarten. Two findings support this assertion. First, in a nationally representative sample of kindergarteners, both parents and teachers rated children from lower-socioeconomic (SES) families, compared with their higher-SES peers, as significantly lower in persistence and approaches to learning as well as in academic skills (Garcia, 2015). Second, mastery motivation is malleable (McDermott, Rikoon, & Fantuzzo, 2014), with some studies finding that low-income children derive the greatest benefit from interventions that promote mastery motivation and early learning (e.g., Drotar, Robinson, Jeavons, & Lester Kirchner, 2009) but others finding limited impact of Head Start on aspects of mastery motivation (Administration for Children and Families, 2010).

Such findings suggest that SES gaps in school readiness might be reduced if preschools and parents better understood how to promote mastery motivation. However, explanations for why low-income children might exhibit lower levels of mastery motivation are limited. Some researchers (e.g., Turner & Johnson, 2003) have suggested that low-income parents' economic stress limits their parenting effectiveness and self-efficacy, reducing the number of opportunities children may have
to observe and model mastery. In addition, there is also a paucity of longitudinal research on mastery motivation as a component of developmental pathways to early school success, with research-based insights being especially critical as to how parents can support the children most in need of developmental scaffolding: low-income preschoolers (Yeung, Linver, & Brooks-Gunn, 2002).

Mastery motivation is intrinsic, but individual differences arise due to genetic and environmental influences (Morgan et al., 1990). Environmental influences on mastery motivation include parent factors such as negativity and control (Marsland, 2005) as well as the quality of the home environment (Wang, Hwang, Liao, Chen, & Hsieh, 2011). Similar family processes consistently predict disparities in school readiness for low-income children (Mathis & Bierman, 2015; Yeung et al., 2002): Low-income families more often use authoritarian parenting practices (e.g., Barajas-Gonzalez & Brooks-Gunn, 2014) and provide less stimulating home environments (Bradley, Corwyn, McAdoo, & García Coll, 2001). Such findings suggest that one pathway by which child rearing and cognitive stimulation in the home environment influence school readiness is through children’s mastery motivation. This mediational model has been examined piecemeal in several studies with more advantaged samples (e.g., Gilmore, Cuskelly, & Purdie, 2003; Moorman & Pomerantz, 2008), yet few studies have been conducted with low-income families in order to determine whether mastery motivation similarly accounts for the family environment-school readiness linkage. One exception is a study by Turner and Johnson (2003) with low-income, African American families. They found that parent- and teacher-rated mastery motivation mediated the relation between a positive parent-child relationship—indicated by closeness and autonomy support—and children’s later cognitive school readiness skills.

In this longitudinal study, we tested a mediational model whereby preschool mastery motivation was hypothesized to account for the relation between coercive rearing practices, as well as encouragement of learning, and later school readiness (see Fig. 1). Tests of mastery motivation as an intervening variable are uncommon—Turner and Johnson’s (2003) study is an exception—so the empirical and conceptual foundations of this mediational model are organized in the following sections by putative pathway. The first traditional criterion for full mediation to be supported is that each pathway in the model must be significant (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). An extensive literature shows that features of the home environment predict school readiness (e.g., Bradley et al., 2001; Brooks-Gunn, Rouse, & McLanahan, 2007), particularly rearing practices and encouragement of learning, both of which were tested as predictors in the current study. Then an overview is provided of research linking mastery motivation to school readiness (i.e., the mediator-outcome pathway). Next, we discuss how child-rearing practices and encouragement of learning in the home environment may influence mastery motivation (i.e., the predictor-mediator pathway). Mastery processes—notably development of persistence, and curiosity about objects and materials—are core learning objectives of Head Start (Administration for Children and Families, 2015), so it is important to establish that the home learning environment, rearing practices, and mastery motivation are linked to later school readiness in low-income samples such as the one studied here.

This study also focused on issues in assessing mastery motivation. Previous research with preschoolers has employed diverse measurement tools, each of which may tap into different facets of mastery motivation (Busch-Rossnagel & Morgan, 2013). A prototypic method of assessing persistence or engagement is to administer several challenging puzzle or shape sorter tasks, and then code how much time the child spends in active, task-directed behavior (e.g., Berhenke, Miller, Brown, Seifer, & Dickstein, 2011; Gilmore et al., 2003; Mokrova, O’Brien, Calkins, Leerkes, & Marcovitch, 2012; Moorman & Pomerantz, 2008). Examiner ratings of the child’s persistence on mastery tasks (Kelley, Brownell, & Campbell, 2000) or developmental assessments (e.g., the Behavior Rating Scale used in the current study; Martin, Ryan, & Brooks-Gunn, 2013) also have been used, sometimes in conjunction with coding of on-task behavior (Mokrova et al., 2012). Less common are children’s self-reports of whether they enjoy difficult tasks (i.e., preference for challenge; Aunola, Viljaranta, Lehtinen, & Nurmi, 2013) or parent- and teacher-rated persistence and preference for challenge (Turner & Johnson, 2003).

Fig. 1. Mediational model of Time 1 (T1) parent coercion and encouragement of learning predicting later (Time 2) school readiness through their indirect effect on mastery motivation. Initial estimates of the mediator and outcome variable are controlled for in order to avoid errors related to assumptions of stationarity.
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