



Development and validation of the Relationship and Motivation (REMO) scale to assess students' perceptions of peers and teachers as motivators in adolescence[☆]

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ABSTRACT

Factor analyses of a newly developed measure designed to measure early adolescents' perceptions of peers and teachers as sources of scholastic motivation were conducted with a diverse sample of 7th and 8th grade students (N = 1088) in secondary schools. The Relationship and Motivation (REMO) scales measure perceptions of peers (P-REMO) and teachers (T-REMO) as motivators of school performance. Analyses confirmed a two-factor solution for the teacher items and a three-factor solution for the peer items, with acceptable internal consistency, and along hypothesized conceptual dimensions. Students' scores on the REMO were significantly associated with different aspects of academic achievement motivation and achievement goal orientation. Results indicate that the REMO scales are robust and well-suited for use in research on achievement and motivation in schools.

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Although there is widespread agreement in the literature that motivation results from an interplay between personality, social cognition, developmental history and social relationships (Waugh, 2002), some of these factors have received more attention than others. If one in particular has been understudied it is the role of relationships in the school context. Adolescence is an interesting period to study the role of relationships in scholastic motivation for two reasons. First, past research suggests an overall decline in scholastic motivation during this developmental period (Eccles, Midgley, & Adler, 1984; Eccles, Wigfield, & Schiefele, 1998; Harter, 1996). Second, social relationships outside the family take on new meaning and importance (Brown & Theobald, 1999; Cook, Deng, & Morgano, 2007; Fend, 1998).

Motivation is commonly defined as an intervening process or internal state of an organism that impels or drives it to action (Reber & Reber, 2004). In this sense, motivation is an energizer of behavior that plays a fundamental role in learning. As human beings we are naturally motivated to satisfy our drives and needs (Maslow, 1943) and, in the process, we learn the optimal ways of doing so. In the academic context, we define scholastic motivation as being the student's drive or need to

learn and master the classroom material. It has been shown that in adolescent students' scholastic motivation declines rapidly starting after the transition to secondary school and continuing throughout the first three years of high school (Harter, 1996), reaching its nadir in grade nine (Eccles et al., 1998; Watt, 2004; Zusho & Pintrich, 2001). Although these motivational changes vary across adolescents (Mouratidis, Vansteenkiste, Sideridis, & Lens, 2011), one can tentatively speak about an overall decline in scholastic motivation across the adolescent years.

Developmental contextualism (Lerner, 1986, 1991, 1992, 1998) provides an excellent framework from which to better understand this decline in scholastic motivation. Developmental contextualism is a theory of human development that focuses on the changing relations or coactions (Gottlieb, 1997) between the developing individual and his or her context. We believe developmental contextualism is a useful theoretical perspective for understanding the contemporary challenges involved in adolescents' motivation and their peer and teacher relationships in the school context. Using this theory, the development of the person-in-context is depicted as a function of dynamic processes embedded in multilevel interactions between a person and his or her contexts over time. Applied to students' motivation during the developmental phase of adolescence, student–student relationships and teacher–student relationships become essential influence factors. In line with the work of Hamre and Pianta (2006) who applied developmental contextualism to the school context, and specifically to the teacher–student relationship, we understand scholastic motivation to be one component of a dynamic process involving the interactions between the developing adolescent and his

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or her school context (peer relationships, teacher relationships). In addition, developmental contextualism provides a rationale for identifying and measuring students' diverse perspectives and perceptions and as such addressing questions of inter- and intra-individual differences.

In their role as students, adolescents spend a significant portion of their time in school. Not surprisingly then, the classroom setting functions not only as an educational arena, but also as a powerful social learning context (Harter, 1996). Based on the increasingly complex nature of social relationships during adolescence (Bukowski, Simard, Dubois, & Lopez, 2011) both the teacher–student relationship and the student–student relationship become essential for personal development (Birch & Ladd, 1996; Erikson, 1959; Harter, 1996) as well as for motivation (Harter, 1996; Wentzel, 2009a, 2009b; Wentzel, Battle, Russell, & Looney, 2010) and academic achievement (Flanagan, Erath, & Bierman, 2008; Raufelder & Mohr, 2011; Wentzel, 1998).

As research has shown, school-based peer relationships are an important context for social engagement and scholastic motivation (Juvonen & Wentzel, 1996; Ladd, Herald-Brown, & Kochel, 2009; Wentzel et al., 2010). Peers in school serve as potential companions and friends and can fulfill important social needs of the developing adolescent (Harter, 1996; Rubin, Bukowski, & Laursen, 2009; Rubin, Bukowski, & Parker, 2006). During the last decades several studies have provided evidence of the wide-ranging positive effects of peer relationships on academic achievement (Achermann, Pecorari, Winkler-Metzke, & Steinhausen, 2006; Birch & Ladd, 1996; Kindermann, McCollam, & Gibson, 1996; Ladd & Kochenderfer, 1996) and motivation (Kindermann, 1993; Wentzel, 2009a, 2009b). Findings from longitudinal studies (i.e., Coie, Lochman, Terry, & Hyman, 1992; DeRosier, Kupersmidt, & Patterson, 1994; Ollendick, Weist, Borden, & Greene, 1992) have shown that students who have troubled relationships with their peers later show poor school performance and higher rates of truancy. Furthermore, long-term social withdrawal negatively affects academic achievement, self-worth and psychosocial adjustment (Buhs, Herald, & Ladd, 2006) as well as compromises emotional well-being (Bukowski, Laursen, & Hoza, 2010; Newcomb, Bukowski, & Pattee, 1993; Schwartz, Gorman, Nakamoto, & Toblin, 2005).

Another important social relationship within the school context is the teacher–student relationship (Raufelder & Mohr, 2011; Wentzel, 2009a). In line with the developmental system theory (Lerner, 1998), Nickel (1993) has conceptualized the transactional model of the teacher–student relationship. This model points to the importance of understanding the teacher–student relationship by complex processes and dynamics that regulates them. While the student–student relationship has a strong influence on students' general well-being in school (Hascher, 2007; Raufelder & Mohr, 2011), the teacher–student relationship is central to the construct of interest (e.g., Birch & Ladd, 1996, 1997; Pianta & Nimitz, 1991) and the need for learning support (Pianta, Hamre, & Stuhlman, 2003; Raufelder & Mohr, 2011). Teachers not only instruct and provide feedback regarding students' academic performance, but also have a major impact on students' motivation to learn (Becker & Luthar, 2002; Pianta et al., 2003; Stipek, 2004; Wentzel, 2009b). Moreover, teachers act as role models for students and provide support from an adult other than a parent (Raufelder, 2007) as well as communicate their more general approval or disapproval for the student as a person (Birch & Ladd, 1996), which can affect students' sense of identity (Alerby & Hertting, 2007; Birch & Ladd, 1997, 1998; Jennings & Greenberg, 2009). This research demonstrates that the teacher–student relationship – similar to peer relationships in school – is important for adolescents on three levels: (a) personal development, (b) scholastic motivation and (c) academic achievement. Based on the developmental contextualism theory, all of them must be understood as interconnected and interdependent processes. In order to enhance our understanding of these abovementioned interdependencies and considering individual differences in motivational orientations and personal development, we developed the REMO scale.

1. Considerations in the development of the REMO scale

The REMO scale was developed using information from both the motivation and the social relationships in school literatures. Furthermore, aspects of developmental psychology were included in order to consider the specific developmental phase of adolescence. Based on the multi-dimensional character of motivation we focused not on any one specific aspect of motivation, but rather emphasized the interconnection between motivation and social relationships in school. Although much is known about the relationships between teacher and peer support and motivational outcomes (Wentzel, 1998; Wentzel et al., 2010), all existing knowledge based on quantitative research must be understood as a result of indirect measurement (i.e., the association between variables of motivation and variables of relationship). Items were developed to address the lack of existing motivation measures that incorporate both social relationships and motivation into one scale.

As mentioned, for most adolescent students positive social relationships in school promote academic motivation and achievement (Wentzel, 1996, 1998; Wentzel et al., 2010). In contrast, little is known about the academic motivation and achievement of adolescents who lack close friendship or social support from peers and/or teachers (Hamre & Pianta, 2006). We also developed the REMO scales to address this gap in the literature. In this sense it is an instrument that examines how students differentially rely on teachers and/or peers as sources of motivation, and is predicated on the notion that individuals learn and are motivated in different ways (Raufelder et al., 2013). The purpose of this study therefore, is to report on (a) the dimensionality of REMO and (b) evidence for construct validity based on relationships of REMO with measures of students' academic achievement.

2. Method

2.1. Participants

The participants (N=1088) were 12 to 15 year old 7th and 8th grade students (Mean_{age}=13.7 years; SD=.53) in 23 secondary schools across 71 classrooms in Brandenburg, Germany. Just over half (53.9%) of the students were girls (n=587). We examined this age group because of the fact that students' motivation declines rapidly starting after the transition to secondary school and continuing throughout the first three years of high school (Harter, 1996), reaching its nadir in grade nine (Eccles et al., 1998; Watt, 2004; Zusho & Pintrich, 2001). Due to the very low percentage of ethnic minorities in Brandenburg (2.6%), ethnicity data were not collected.

2.2. Procedure

Data were collected during the summer and autumn terms of 2011. For each class, data were collected on two consecutive days. Following the German guidelines regarding confidentiality and data protection, the permission to conduct the study was granted by the government department of education, youth and sport of Brandenburg. Parental permission for student participation was obtained through a process of active consent. The researchers introduced the students thoroughly to the questionnaires and given instructions on how to complete the measures. Participants were asked to complete questionnaires assessing peers as motivators (including Individual Learning Behavior), teachers as motivators, and academic achievement motivation. Furthermore, the students were informed that participation in the study was voluntary, that all their answers would be confidential and that they were not obliged to answer any questions. The 23 participating schools were selected randomly.

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