

## Verbal and Visuospatial Working Memory as Predictors of Children's Reading Ability

### Authors

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### Abstract

Children with reading difficulties often demonstrate weaknesses in working memory (WM). This research study explored the relation between two WM systems (verbal and visuospatial WM) and reading ability in a sample of school-aged children with a wide range of reading skills. Children ( $N = 157$ ), ages 9–12, were administered measures of short-term memory, verbal WM, visuospatial WM, and reading measures (e.g., reading fluency and comprehension). Although results indicated that verbal WM was a stronger predictor in reading fluency and comprehension, visuospatial WM also significantly predicted reading skills, but provided more unique variance in reading comprehension than reading fluency. These findings suggest that visuospatial WM may play a significant role in higher level reading processes, particularly in reading comprehension, than previously thought.

### Practical and Social Implications

Findings of this study support the notion that visuospatial WM contributes to reading outcomes. Children with reading difficulties may likely rely on visuospatial WM or imagery as a strategy to process written text and comprehension, and this knowledge should be incorporated when developing or implementing reading interventions or WM training programs for children with these skills deficits.

Interventions which focus on reading fluency and comprehension should also consider addressing verbal and visuospatial WM as strategies to aid in reading development. Although many intervention strategies rely on verbal cues and repeated readings of texts, children also use visual modalities such as visual imagery or visual diagrams and outlines for planning and connecting main ideas. As children learn to extract meaning from text, they learn to incorporate these comprehension strategies that allow them to simultaneously process the text while recalling information for future use.

### Citation

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## A Structural Model of Parent Involvement with Demographic and Academic Variables

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### Abstract

Parental involvement is well documented as a significant contributor to the self-efficacy and academic achievement of students. A structural equation model of parent involvement with family socioeconomic status, student gender, parents' aspirations for their children, mathematics efficacy, and mathematics achievement was tested to examine whether parent involvement in the 10th grade remains relevant to achievement. A sample of data pertaining to 8,673 10th graders from the Educational Longitudinal Study was analyzed. The results indicated that the fit of the measurement model to the data was good ( $\chi^2 = 3081.62$ ,  $df = 87$ ,  $p = .00$ , normed fit index [NFI] = .96, comparative fit index [CFI] = .96, root mean square error of approximation [RMSEA] = .064), as was the structural model ( $\chi^2 = 3470.69$ ,  $df = 94$ ,  $p = .00$ , NFI = .96, CFI = .96, RMSEA = .065). Although the effect was small in magnitude, parent involvement in advising had a significant indirect relationship with mathematics achievement via mathematics efficacy of 10th graders.

### Practical and Social Implications

Past research has demonstrated that parental involvement is a critical factor in children's academic achievement in school. Research has also shown that parental involvement and students' academic achievement are closely related to preadolescent students, student SES, and parent aspiration. What is not well known is the extent to which each of the variables plays a role in the model and inter-relates as a whole for the adolescent population.

The main finding from the structural model was that PI in advising showed a significant direct effect on mathematics efficacy and a significant indirect effect on mathematics performance mediated by students' mathematics efficacy, whereas PI in school had no significant effect on mathematics efficacy or on mathematics achievement. Although small, the significant indirect effect of parent involvement on mathematics performance through mathematics efficacy in this study suggests that this more covert form of parental involvement does not appear as a direct correlate of performance, but fosters other positive psychological and academic attributes and extends its effect in multiple ways, including high academic performance. A heightened level of parent involvement has been found to help children to become motivated and engaged in school (Pomerantz et al., 2007; Yun & Kusum, 2008), improve social competence (Hill & Craft, 2003), and encourage high academic self-efficacy (Marchant, Paulson, & Rothlisberg, 2001), resulting in improved academic performance from early childhood through adolescence. This finding also supports previous reports that home-based parent involvement is more important than school-based parent involvement (DePlanty et al., 2007) and also obliquely supports the theory that student age could have a moderating effect on the relationship between parent involvement and achievement (Hill et al., 2004).

Parent aspiration had a significant effect on both types of parent involvement, having a higher coefficient for parent involvement in advising than for parent involvement in school. Making significant paths from parent aspiration to parent involvement in school and at home corresponds to prior research results showing that parents who had high aspirations for their adolescent children were more involved in their children's education both in school (Overstreet et al., 2005) and at home. The current study's finding that showed a stronger path from parent aspiration to parent involvement in advising than to parent involvement in school can be viewed as a new addition to the research field.

In addition, parent aspiration was significantly and indirectly linked to mathematics efficacy and mathematics performance. Furthermore, parental aspiration was revealed to be the largest path coefficient leading to mathematics performance in the analytical model, which is consistent with the findings of Fan and Chen (2001) that parental education was one of the strongest predictors of children's academic achievement. Clearly, parents' aspirations for their adolescent children's educational attainment is a critical factor that is related to adolescents' academic achievement and deserves more attention from educational researchers to understand the nature and the

correlates of the construct. Parents who have higher levels of educational attainment tend to have high aspirations for their children's academic pathways.

To summarize, the study found that students' gender and SES and parents' aspirations were significant variables in students' mathematics self-efficacy and mathematics performance. They were also significant factors in parent involvement in school and in advising, drawing significant indirect paths to student's mathematics self-efficacy and mathematics performance. Importantly, the study showed that parent aspiration has a larger effect on parent involvement in advising than on parent involvement in school. Parent involvement in school failed to make significant direct paths to student's mathematics self-efficacy and mathematics performance. However, parent involvement in advising had a significant path to student's mathematics self-efficacy, making a significant indirect path to student's mathematics performance.

#### Citation

Choi, N., Chang, M., Kim, S., & Reio, T. G. (2015). A structural model of parent involvement with demographic and academic variables. *Psychology in the Schools*, 52, 154-167. doi: 10.1002/pits.21813

#### Changing College Majors: Does it Happen More in STEM and Do Grades Matter?

#### Author

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#### Abstract

This study examines the within-field persistence rates of physical science/engineering (PS/E) students compared with those of students in life science, business, social science, education, and humanities. The data are drawn from a nationally representative sample of college matriculates and include students' high school and college transcript information. PS/E students are the most academically prepared for college, as measured by high school mathematics and English performance, yet they earn lower within-field college grades than students earn in other fields. The results of logistic regression analyses show that the gap in college grades, net of background and preparation, partly explains why students in business, education, and humanities have higher persistence rates than students in PS/E. Moreover, the association between within-field college grades and persistence is strongest for PS/E students. Taken together, these results provide evidence that differences in grading across fields contribute to the relatively low persistence rates found among PS/E students.

### Practical and Social Implications

In general, the results from this study are consistent with the notion that college (PS/E) students routinely leave the field (Chen & Wako, 2009). This study moved beyond a focus solely on students in PS/E and compared persistence rates across fields. Despite being more academically prepared for college, PS/E students earn lower within-field college grades and have lower within-field persistence rates than students in business, education, and humanities. The differences in average grades explained part of the advantage in persistence found among students in these three fields. The relationship between college achievement and persistence is stronger for PS/E students than for students in other fields.

Introductory PS/E courses frequently use norm-referenced or curve grading, thereby creating an environment where students are competing against each other for a limited number of high grades (Barnes, 1997; Cairney, Hodgdon, & Sewon, 2008; Gasiewski et al., 2012). Critics have argued that the competitive nature of curve grading leads students to focus on performance above learning (Denzine, 2007; Seymour & Hewitt, 1997). In contrast, some fields (e.g., education, social sciences, and humanities) are more likely to use a criterion-referenced approach to grading (Achen & Courant, 2009; Angelo & Cross, 1993). Here, students are compared with a pre-established standard of achievement, which allows for the possibility and generally results in the awarding of more high grades. This approach minimizes competition and often encourages students to focus on learning opposed to performance (Denzine, 2007).

One of the key findings from this study is that PS/E students who receive lower than average PS/E grades are particularly susceptible to switching fields in a way that students in other fields with comparable grades are not. Differences in grading, particularly the more frequent use of curve grading in PS/E, may be one of the factors leading to this result. In their seminal work on leaving the sciences, Seymour and Hewitt (1997) found the most common criticism of existing assessment practices was "the lack of fit between the grade awarded, and the level of comprehension which students felt they had attained, the standard of work they had demonstrated, or the amount of effort they had expended" (p. 111). This mismatch (whether perceived or real) may contribute to decisions to leave the field. Furthermore, students exposed to curve grading often lack support from peers, as one student's grade depends on the grades of other students (Seymour & Hewitt, 1997). Many have argued that students who earn low grades in the sciences receive messages that they do not belong in the field (Kulick & Wright, 2008; Tobias, 1990).

### Citation

King, B. (2015). Changing college majors: Does it happen more in STEM and do grades matter? *Journal of College Science Teaching*, 44, 44-51.

### Placement and Achievement of Urban Hispanic Middle Schoolers with Specific Learning Disabilities

#### Authors

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#### Abstract

This study examined achievement gains in reading and math for Hispanic middle school students with specific learning disabilities in inclusive versus segregated settings in a large urban school district. The authors report learning gains for students with and without disabilities in inclusive versus segregated settings. Results indicate no significant difference in reading or math achievement in inclusive co-taught classrooms versus segregated settings. Implications for best placement and educational practices in urban middle schools are examined.

### Practical and Social Implications

Federal and state legislation have created explicit expectations for student performance and consequences for schools, teachers, and students that fail to meet expectations. These policy changes have raised the bar for all students and educators in America's public schools. As such, educational practitioners need to re-examine training provided for teachers working in inclusive programs and for differentiating to meet the needs of individual learners, particularly within the context of Common Core State Standards. Furthermore, collecting and evaluating data with a variety of assessments during the school year would provide ongoing information on the achievement of all students rather than excessive reliance on one high-stakes test. Student success depends in large part on the individual student's needs. With regards to students with disabilities, the variety of student needs and responsibility to address those needs increases. There are no clear remedies for increasing the achievement of racial/ethnic minority students or students with disabilities. Better education requires expanding the knowledge and skills of teachers to engage students and create positive, culturally responsive climates of instruction.

Inconsistent and mixed findings across the growing literature base suggest that an examination of the types and quality of instruction occurring in various class placements, particularly in urban schools and with culturally and linguistically diverse learners across grade levels and

exceptionalities, is warranted. Frattura and Capper (2006) developed an integrated comprehensive services model that includes four components: (a) focusing on equity, (b) establishing equitable structures, (c) implementing change, and (d) providing access to high-quality teaching and learning. The goal of this model is to prevent student failure and this is accomplished by building teacher capacity to reach the diversity of students and creatively plan to meet diverse and individualized needs. It is critical that as we shift toward a culture of common curricula and high accountability standards, we provide necessary supports to teachers and to schools to implement such structures for all learners. Educational researchers and practitioners alike need to re-examine the preparedness of teachers and the adequacy of instruction existing in urban inclusive class placements. In view of the findings of this study, equity of access to an inclusive education should be the norm for students with and without disabilities alike.

### Citation

Barrocas, L. & Cramer, E.D. (2014). Placement and achievement of urban Hispanic middle schoolers with specific learning disabilities. *Journal of Urban Learning, Teaching, and Research*, 10, 43 - 56.

### Identifying Gender Differences in Male and Female Anger Among an Adolescent Population

#### Author

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#### Abstract

This pilot study explored differences between the levels of anger expression and anger control by adolescent males and females. Eighteen participants (9 males and 9 females) completed a strength-based anger management group promoting wellness. Anger management group counseling consisted of a 10-week continuous intervention emphasizing anger reduction, anger control and appropriate anger expression. Results indicated gender differences in that females exhibited more anger expression, as well as less anger control. However, females had higher levels of overall improvement. The article concludes with limitations and implications for mental health counseling with adolescent populations.

#### Practical and Social Implications

Preliminary results indicate that differences existed, but that there also were distinctions between genders regarding the intervention itself. Females had better anger control (AC), but also had more anger expression (AX) compared to their male counterparts. However, females seemed to respond better to the intervention, as shown by their larger gains and improvement. Males improved

as well, but did not have the substantial progress observed in females. While past research may not have lent strong support for gender differences, this author hoped to reinvigorate interest in gender discrepancies. Females are an underserved population with regard to anger management; research has indicated that they experience anger sometimes at a rate paralleling or surpassing males (Cross & Campbell, 2011). However, due to societal stigma and cultural biases, many females do not receive anger management services. Therefore, only rigorous research can determine whether these problems truly exist by improving group research and outcomes (McCarthy, 2012).

Mental health counselors must be aware that both genders need services for excessive anger and should not allow personal biases and media influences to sway professional opinion (Gladding, 2012). In addition, mental health counselors must advocate for fairness and oppose stereotyped biases and ideologies pushed by society (Burt et al., 2012). According to Gray and Rose (2012), discrimination and internalized oppression begin by ignoring discriminatory societal practices. Only by remaining reflective and cognizant of personal biases can mental health counselors reduce problematic issues and model appropriate behaviors (Young, 2012).

### Citation

Burt, I. (2014). Identifying gender differences in male and female anger among an adolescent population. *The Professional Counselor*, 4, 531-540. doi:10.15241/ib.4.5.531

### The Roles of Large-Scale Sporting Event Volunteer Motivations in Predicting Behavioural Intention Within the Theory of Planned Behaviour

#### Author

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#### Abstract

The purpose of this study was: 1) to investigate the influences of the three components of theory of planned behavior (TPB; Ajzen, 1985) on intention to return to volunteer for future large-scale sporting events; 2) to examine the mediating roles of the three TPB components in the relationships between volunteer motivations and intention to return for volunteering. One hundred seven volunteers for the 2009 NCAA Men's Basketball Tournament completed a paper-based survey questionnaire. Results of multiple regression analyses revealed that subjective norm and perceived behavioral control (PBC) of TPB were significantly effective in predicting volunteers' intention to return. Subjective norm fully mediated the

relationships between motivations (i.e., personal growth and career orientation) and intention. The influences of motivations such as expression of value, community involvement, love of sport, and interpersonal contacts on intention are partially mediated by subjective norm.

### Practical and Social Implications

Knowing individuals' motivations to volunteer is the first step to understanding why people volunteer. Furthermore, satisfying these motivations is critical for sport organizations to recruit and retain volunteers year after year. Managers of volunteer activities could use the VMS-ISE to understand volunteer motivations that are specific for the context of large-scale sporting events.

Furthermore, Ajzen's (1985) theory of planned behavior (TPB) provided a missing connection between motivation and behavior, and the results of this study showed the importance of subjective norm and perceived behavioral control (PBC) in predicting the intention for returning to volunteer. Considering the biggest portion of the intention was explained by subjective norm, appealing to the potential volunteers as well as to the people around the potential volunteers would be important. This means when event managers recruit potential volunteers, broadening the target population of recruitment to the people around the potential volunteers would be helpful. In addition, promoting volunteering as pro-social behavior would make volunteering more socially desirable, which might induce social pressure for an individual to volunteer.

In this study, PBC was not as high as we had expected. This can be interpreted that there is more room to work on this area. By removing possible constraints that inhibit potential volunteers from volunteering, individuals' PBC on external factors can be improved. For instance, if individuals' PBC is low on certain issues, such as childcare and transportation, obstruct the individuals' intention to volunteer, the event organizations need to provide or suggest a childcare service and provide transportation to remove these constraints. Similarly, event managers should make a volunteer recruitment process, from registration to actual volunteer participation, for first timers hassle-free. Such hassle-free experience would lead to their high level of PBC, which could increase volunteer intention to return for future events.

### Citation

Bang, H., & Lee, C. S. (2014). The roles of large-scale sporting event volunteer motivations in predicting behavioural intention within the theory of planned behavior. *International Journal of Hospitality and Event Management*, 1, 111-134. doi: 10.1504/IJHEM.2014.066987

## Middlemen and Midwives of Reform: The In-Between Worlds of Albanian Educational Policy-Makers and Professionals

### Author

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### Abstract

Based on a vertical case study in post-communist Albania, this article examines how three local experts become 'in-betweens' who strategically mediate processes of social change. For example, they negotiate constructions of time and place, East and West, policy and practice, state and society. As they localize global educational models, the 'in-betweens' concurrently engage in re-making cultural meaning. This analysis thus enhances our understanding of the cultural complexity of international educational policy transfer and localization.

### Practical and Social Implications

The author argues that a more multifaceted model is needed to conceptualize the role of strategic 'in-between' actors who mediate, negotiate, and enact processes of educational policy re-contextualization and localization. By analyzing their positionality in the context of wider social, political, economic, historical, and cultural factors, we can better recognize the range of forces that frame and shape their choices and, in various contexts, 'constitute' their identities.

From this 'meso-scope' perspective, we can identify not only the wider global forces that act upon the in-betweens, but also the lateral and 'bottom-up' pressures that serve to shape and frame their identities and professional practice. At this intersection, we find both 'strategic resistance' (Anderson-Levitt 2012) leading to cultural production and also a mediated ('de-coupled') and re-contextualized appropriation of global discourses on legitimate and appropriate educational reforms in the context of democratization. In sum, this analysis of the crucial positionality of middle-range actors helps to bridge the conceptual divide between uni-directional models that privilege either macro- or micro-level processes.

### Citation

Gardinier, M. P. (2014). Middlemen and midwives of reform: The in-between worlds of Albanian educational policy-makers and professionals. *Comparative Education*, 51, 276-292.  
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## A Q Factor Analysis of College Undergraduate Students' Study Behaviours

### Authors

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### Abstract

This study attempted to better understand the study behaviors of undergraduate students by categorizing students into distinctive typologies based on their self-reported study behaviors through an exploratory approach – Q factor analysis. A sample of 152 undergraduate students completed a survey instrument, the Study Behavior Inventory. The Q factor analysis yielded a 2-factor structure. Participants exhibiting the 1st behavioral type demonstrated reflective, well-organized study behaviors and favored high-level thinking; thus were described as “Organized Holistic Learners.” Those exhibiting the 2nd behavioral type were found to manage time poorly and primarily focus on memorizing facts; thus were labelled “Disorganized Procrastinators.” Type 1 students had significantly higher grade point averages (GPAs) than Type 2 students. Student type was a significant predictor of academic achievement, as measured by self-reported GPA above and beyond students' attribute variables including sex, age, major, and enrollment status. Theoretical and practical implications were discussed.

### Practical and Social Implications

The findings from the current study have provided some potentially useful information concerning how we use the measurement as well as students' study behavior patterns. First, this study provided a unique analytical approach, Q factor analysis (QFA), to utilize the Study Behavior Inventory (SBI) to understand undergraduate students' study behaviors. Until now, the only way to use SBI was to calculate scores at the scale level obtained from R factor analysis to represent different levels of demonstrated study behaviors. But the results from QFA suggest that students' study behavior profiles/patterns (i.e., Q factors) are largely demonstrated by a few statement items. In other words, this study showed that students' typical learning behaviors could be differentiated by several items (including extremely ranked statements and distinguishing statements). If a similar Q factor structure can be replicated and a similar relationship between student type and academic achievement can re-emerge, QFA would potentially present an efficient way to use the SBI. In terms of understanding students' study behavioral patterns, by using undergraduate students' responses on SBI, it is possible to place them in one of two

groups based on, among other things, their levels of reflectiveness, organization, and tendency to think deeply while learning, as well as their willingness to ask for help. Group membership was found to be related to academic achievement with Type 1 students having higher mean GPAs than Type 2 students. If these findings can be replicated, the instrument can be used as a screening device for incoming students at an institution because it can be used to identify Type 2 students who may be at risk for lower achievement, and potentially address the behavioral shortcomings early in students' careers in higher education.

In addition, the results of such screening could be used to inform students about strengths and weaknesses in their study habits as well as the potential academic consequences associated with them. As the self-regulation literature has repeatedly suggested, self-awareness is critical for students to direct and regulate their own learning practices (Pintrich & Zusho, 2007; Zimmerman, 1998). Institutions should not only inform students that appropriate study behaviors can be taught which may lead to increases in GPAs (e.g., Cuesta, 2007) but, more importantly, provide learning support through training programs and workshops to help students adjust study behaviors and processes to be more conducive to academic success (Cuesta, 2007; Zimmerman, 2000a). Unless such interventions are available, we would argue against such profile analysis being performed on student bodies as mere labelling students could cause more harm.

### Citation

Yang, Y., & Bliss, L. B. (2014). A Q factor analysis of college undergraduate students' study behaviours. *Educational Research and Evaluation: An International Journal on Theory and Practice*, 20, 433-453. doi: 10.1080/13803611.2014.971817