DEVELOPMENT OF STATISTICAL LITERACY IN UNDERGRADUATE STUDENTS

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INTRODUCTION
Being statistically literate enables an individual to “consume and critically digest the wealth of information being produced in today’s society” (Rumsey, 2002). Recent modifications to this definition reflect the growing belief that statistical literacy extends beyond quantitative literacy or numeracy and includes the ability to read, interpret, and communicate using data. This has led to reforms in the method of teaching undergraduate statistics classes (Cobb, 1992; GAISE Report 2005). Research on statistics education has revealed that statistical anxiety has not only been linked to the interpretation of data (Balaglu, 1999), but may be more closely related to verbal reasoning than to mathematical logic (Zerbolio, 1999). Although this connection has been made, minimal research has been directed toward how verbal reasoning impacts statistical anxiety and statistical literacy skills among undergraduate college-level students (Collins & Onwueguzie, 2002).

METHOD
This pilot study seeks to examine the relationships between verbal reasoning, statistical anxiety, and statistical literacy. Students enrolled in undergraduate statistics classes at a Northeastern U.S. university were evaluated on their statistical literacy skills and level of statistics anxiety during the first week of a semester. To determine their high school academic backgrounds, students were asked about any prior Statistics classes, their SAT critical reading score and the number and type of any Advanced Placement courses attempted. Next, they completed a variety of assignments designed to assess their ability to interpret and evaluate data. Their verbal reasoning skills were measured using a performance assessment item, which was graded with a rubric developed to evaluate their ability to interpret a graphical display. Statistical literacy was measured with selected items from Schield’s (2008) Statistical Literacy Skills Survey. Finally, statistical anxiety levels were assessed via two subscales of the Statistical Anxiety Rating Scale (STARS): worth of statistics and interpretation anxiety (Cash, Cruise & Bolton, 1985).

REFERENCES