ATTITUDES TOWARD RESEARCH METHODOLOGY AMONG PSYCHOLOGY STUDENTS: ASSESSMENT OF AN EDUCATIVE INTERVENTION PROGRAMME*

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Abstract

In this paper we present a research project in education with the aim of improving students’ attitudes and skills in research methodologies. Students involved in this project will use real research data in order to develop a research project in which they will test their own hypothesis using different statistical methods. The purpose is to develop research skill by: A) working in a team, B) using electronic data bases for developing their theoretical background, C) definition of the study objectives, D) variables definition, E) analysis strategies, F) analysis of results, and G) discussion of results. We expect that by following these steps students will show higher proficiency in their methodological skills as well as more positive attitudes toward psychological methods than students not involved in this project. To analyze the results of this educative project a cohort design with pre-post measures will be used.

Keywords
Innovation, technology, research projects, math anxiety, statistic anxiety, attitudes toward research methodology.

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1. MATH ANXIETY, STATISTIC ANXIETY

There is a common understanding in psychology and behavioral sciences that students of all grades experience a wide range of difficulties when attempting to study methodological courses focused on quantitative research (see Pérez-Tyteca, Castro, Segovia, Castro, Fernández, & Cano, 2008 [1]). In fact, if psychology students could choose to drop one required course from their curriculum it would be statistics (Conners, McCown, & Roskos-Ewoldsen, 1998 [2]). This is supported by literature which suggests that up to 80% of students experience statistic anxiety (Onwuegbuzie & Wilson, 2003 [3]).

A main source of explanation is the more widespread anxiety associated to the study of Mathematics (Pérez-Tytec et al., 2008 [1]; Onwuegbuzie & Wilson, 2003 [3]; Rodarte-Luna & Sherry, 2008 [4]). Math anxiety has been defined as “the panic, helplessness, paralysis, and mental disorganization that arises among some people when they are required to solve a mathematical problem” (Tobias & Weissbrod, 1980 [5]). Including physiological (e.g., increased heart rate, sweating, sickness, fear of passing out) and psychological symptoms (e.g., uncertainty, unmanageable uneasiness, panic-stricken worry, sudden memory loss, sensation of complete paralysis). In order to examining key influences on anxiety and match performance, researches have followed several paths (McKee, 2002 [6]). Early research tradition in this area of inquiry explored the notion that this was associated with gender (Fennema & Sherman, 1976 [7]) and other predominant demographic attributes (e.g., experience in mathematics and general scholastic ability, Zimmer & Fuller, 1996 [8]); more recent research has explored in more detail the specific role of attitudes but focusing particularly on measures of anxiety (Cashin & Elmore, 2005 [9]; Hanna, Shevlin, & Dempster, 2008 [10]; Hyde, Fennema, Ryan, Frost, & Hopp, 1990 [11]; Márquez, 2004 [12]; Onwuegbuzie & Wilson, 2003 [3]). In fact, anxiety is always an important outcome variable in these studies since they have consistently showed a negative relationship between math anxiety and performance (Feinberg & Halperin, 1978 [13]; Lalonde & Gardner, 1993 [14]; Onwuegbuzie & Daly, 1996 [15]; Onwuegbuzie & Seaman, 1995 [16]; Pretorius & Norman, 1992 [17]; Zeidner, 1991 [18]).
person’s self-belief in their ability to cope with the calculations and mathematics related to statistics. The ‘ask for help’ subscale attempts to assess the anxiety experienced when an individual intends to ask for help on a statistical problem. The final subscale, ‘fear of statistics teachers’, claims to measure students’ perceptions of their statistic teachers.

3. RESULTS

To analyze the results of this educative project, a multi-group cohort design with pre-post measures will be used (Boruch, 1975 [49]; Campbell & Fiske, 1959 [50]; Campbell & Stanley, 1963 [51]; Cook, & Campbell, 1979 [52]; Garcia, Frías, & Pascual, 1999 [53]; Judd & Kenny, 1981 [55]; Jurs & Glass, 1971 [55]; Trochim, 1982 [56]). There are four lines in the design indicating that the study will comprise four groups (see Fig. 1). The methodology is quasi-experimental (Chow, 2002 [57]; García et al.1999 [53]): the four groups are non-randomly assigned as indicated by the "N". Both first groups are measured before the treatment occurred as indicated by the first "O" in each line ("O₁", indicate academic achievement and "O₂", statistic anxiety). Following this pre-observation, the group in the first line received the treatment while the group in the second line did not (participation in the study will be voluntary). Respect to both first groups, two groups are non-randomly selected with one group receiving the program and one acting as a comparison. Both groups are measured after the program is administered.

![Fig. 1. Design of study](image)

We will use the third cohort group to help rule out the testing threat. The cohort will be the entire grade from the previous academic year. Finally, the four group only are measured subsequent to the program.

References


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