Instruments Used in Doctoral Dissertations in Educational Sciences in Turkey: Quality of Research and Analytical Errors

Engin KARADAĞ
Eskişehir Osmangazi University

Abstract
The aim of this study was to define the level of quality and types of analytical errors for measurement instruments used [i.e., interview forms, achievement tests and scales] in doctoral dissertations produced in educational sciences in Turkey. The study was designed to determine the levels of factors concerning quality in research methods and the case study model was used. Theoretical universe for the study was 324 doctoral dissertations in educational sciences in Turkey from 2003 to 2007. Sampling group was consisted of 211 doctoral dissertations accessed through online in the National Thesis Center. In order to collect the data, an evaluation form was developed by the researcher and the data analysis method was epistemological document analysis. In the analysis process, frequencies, descriptive statistics, and typology analysis techniques were used. The findings indicate that the properties of measurement tools used in dissertations in educational sciences were absent and that the most common analytical mistake was the absence of validity.

Key Words
Research in Educational Sciences, Measurement Instrument, and Design Errors.

The number of educational research concerning the educational system has gained an important role in the decade. While some of the published studies have created a basis for educational reforms, another portion has tested the results of previous research and the reliability via literature review (Balci & Apaydın, 2009; Odom et al., 2005; Onwuegbuzie & Daniel, 2003). In parallel to this growth in quantity, inquiry process of educational research, the results reached through the conduct of research and the availability of high quality works are quite important. When these studies were examined, some authors’ findings included misconceptions, contrary to the reality, opposite findings were expressed. This study provides an important and necessary synthesis of studies (Dunkin, 1996).

Kiefer, Reese, and Thompson (2001) determined that variance and covariance analyses, regression analyses, and correlation analyses had been frequently used in 756 articles issued in Journal of Counseling Psychology (JCP) and American Educational Research Journal (AERJ) between 1988 and 1997. In addition to American oriented journal analysis, in Onwuegbuzie’s (2002) study published in British Journal of Education Psychology (BJEP) in 1998, the most frequently used analyses procedures were variance, covariance, and factor analysis.

Purpose
The purpose of this study was to examine the quality of research, measurement instruments and the types of analytical errors in doctoral dissertations in educational sciences produced in the Turkish universities.
Method

Research Design

While conducting the research, which aimed to determine the measurement instruments used and the analytical errors in the doctoral dissertations in educational sciences between the years of 2003 and 2007, the case study design had been used in addition to the other qualitative research designs (Creswell, 1998; Merriam, 1998; Yıldırım & Şimşek, 2005).

Universe and Sampling

The theoretical universe of this research was the doctoral dissertations produced in Turkey in education sciences. Yet, the theoretical universe to study, which was identified by taking into consideration the improvements in methodology and whether they were up to date, included 324 doctoral dissertations education sciences between the years of 2003 and 2007 (Yüksek Öğretim Kurulu [YÖK], 2008). The distribution of doctoral dissertations when the year was taken as the unit of analysis was as follows: 2003 (n=43, 13.2%), 2004 (n=50, 15.4%), 2005 (n=50, 15.4%), 2006 (n=84, 25.9%), and 2007 (n=97, 29.4%). In the research, a sampling was not used since the researcher was able to reach all the dissertations except 211 dissertations due to the restrictions of usage. As a result, the examined distribution of doctoral dissertations based on years was as follows: 2003 (n=6, 2.8%), 2004 (n=7, 3.3%), 2005 (n=30, 14.2%), 2006 (n=79, 37.4%), and 2007 (n=89, 42.1%).

Instrument

The Education Research Evaluation Form: The form developed within the scope of this research was prepared with the intention to determine the measurement instruments used in doctoral theses in educational sciences and their percent ages were as follows: (1) scale (n=163, %63.1) and (2) interview form (n=54, %20.9), (3) achievement test (n=32, %12.4) and (4) observation form (n=9, %12.4).

The general quality levels of measurement instruments vary from 0.68 to 5.57 based on the item. The total average point of measuring instruments was calculated as 2.18 [SD=1.46, Median=1.86]. The quality levels of interview forms vary from 2.51 to 5.34 based on the item. The total average point of interview forms was calculated as 3.85 [SD=2.08, Median=3.67]. The quality levels of achievement tests vary from 1.19 to 4.97 based on the item. The total average point of achievement tests was calculated as 2.39 [SD=1.28, Median=2.20].

The quality levels of measurement instruments in doctoral theses was insufficient and vary from 0.05 to 7.56 based on the item. The total average point of measurement instruments in doctoral theses was insufficient and it was calculated as 3.63...
The quality levels of reliability properties which scales must have was insufficient; according to the qualitative resolution, 4 different mistakes were detected. 

(i) Presence of mistakes in the detection of behavior scales. 

(ii) Detection of negative and positive items quantities were not equal in behavior scales.

The quality level of validity property which scales must have was insufficient; according to the qualitative resolution, 6 different mistakes were detected. 

(i) Presence of mistakes regarding article factor loadings (Şencan, 2005). 

(ii) Presence of unnecessary info about factor analysis results. 

(iii) Presence of mistakes regarding article factor loadings (Şencan, 2005). 

(iv) Presence of mistakes regarding article factor loadings (Şencan, 2005). 

(v) Lack of information provided confidence parameters (Cohen, Manion, & Morrison, 2005). 

(vi) Deleting item after reliability operations of the scale had been made (Appleton, 1995; Carmines & Zeller, 1982; Chen, 2003; Henson, 2001).

Although new scales were developed in most of the theses, it was detected that 26 scales in English were adapted to Turkish. The quality level of scale adaptations was also insufficient; based on the qualitative resolution, 3 different mistakes were detected (i) lack of information regarding adaptation. 

(ii) Adaptation being only limited by translation (Baloğlu & Karadağ, 2008). 

(iii) Adaptation being made in groups which had different properties than the research subject. The main problem in scale adaptation was that many verbs do not have Turkish translations. For example, like, enjoy, or love are translated into Turkish as “sevmek” (Gülgöz, 2005). Besides, the fact that a word not
being present in a language does not prove that the concept was not present in that culture had always been a matter of discussion (Hambleton & De Jong, 2003; Whorf, 1956). The results of Büyükoztürk and Kutlu (2006) on the same subject support the results of this research and the comments that have been made.

References/Kaynakça


