Extended Summary

High School Students’ Use of Context and Statistical Knowledge Forms in Analyzing Data
Timur Koparan, Bülent Güven, İlhan Karataş

Purpose and Significance

Context knowledge is identified as an important component in statistical education but research in this area is very limited. In this study was tried to determine how students use the context knowledge in data analysis. The purpose of this study is to determine how students use the context knowledge in data analysis by using the Dapueto and Parenti (1999) Model. This study provides research-based knowledge for teachers in planning learning goals, designing learning tasks, and predicting the kind of statistical thinking.

Method

A survey research method was used in this research. The working group consists of 120 high school students from 11th grades. A performance test on data analyzing was developed. This performance test is include three questions for comparing the two data sets. The performance test was applied to total 120 students studying at six different 11th grade classes of two high school in Trabzon during 2012–2013 academic year. Students’ responses were analysed using Dapueto ve Parenti (1999) Model.

Results

According to the qualitative analysis context information is the most widely used form of reasoning in statistical task. Only the use of mathematical and statistical knowledge was just as much as the use of context information. Both mathematical-statistical and context knowledge were quite a few of the answers that reflect the way of thinking.

Discussion

The findings show that the majority of students had applied only the knowledge of the context. Indeed, Pfannkuch and Wild (2004) expressed that students ignore the data describing the data values based on the context knowledge and only benefited from their
stated beliefs. In addition, as much as the use of mathematics-statistics knowledge only observed the use of context knowledge. Langrall et. all (2005) stated that students use mathematics-statistics knowledge rather than context knowledge. Two forms of reasoning were seen in this study. Use of both forms was quite low. Student responses included very few critical attitude. Therefore, students should use the actual data in different context. More time should be allotted for discussion on the statistical tasks.

**Conclusion**

In this study was tried to determine how students use the context knowledge in data analysis. Forms of reasoning of students in each category are presented in detail. Results showed that context knowledge is the most widely used form of reasoning in statistical task. This information is believed to be useful to teachers in terms of better plan increasing the quality in terms of increasing the quality of planning and teaching courses.