Data Management Plan

Study Information:

Title: Supporting Teacher Enactment of the Probability and Statistics Standards (STEPSS)

Abstract: The REL Southeast will partner with Broward County Public Schools (BCPS) in Florida. As a result of recent increases in expectations of secondary-level students in the domain of statistics, teachers in Broward County, like those in the nation, continue to be challenged by the implementation of curriculum standards in statistics. Mathematics leaders are finding that the instructional materials provided by commercially available textbooks are falling short of the intent of the standards in this domain, and teachers typically do not have the background in statistics to fill the gap without further support.

The study will be guided by the following research questions:
1. What is the effect of STEPSS on cognitive complexity and classroom discourse in grade 7 statistics instruction, as measured by the IQA?
2. What is the effect of STEPSS on grade 7 students' conceptual understanding in statistics, as measured by the LOCUS 30-item post-test?

The STEPSS intervention involves teacher implementation of a 20-day instructional unit in statistics based around 11 lesson plans published by the American Statistical Association. Based around a four-step, guided- or structured-inquiry approach, the instructional unit focuses on the topics students are expected to learn in statistics in grade 7 (Bianchi & Bell, 2008; Franklin et al., 2007; Hopfensberger, Jacobbe, Lurie, & Moreno, 2012; NGA & CCSSO, 2010). Teachers in the schools assigned at random to the intervention condition will attend four days of workshops focused on supporting teacher implementation of the inquiry-based lessons.

The sample will include approximately 8,512 grade 7 students and 152 teachers from approximately 38 schools in BCPS. Administrative data will be used to identify BCPS schools that have at least 30 students and two teachers teaching the grade 7 regular or advanced mathematics course. Schools that meet these criteria will be randomly assigned to the STEPSS intervention or to continue business-as-usual statistics instruction in the comparison condition. The impact of assignment to the intervention condition on classroom instruction and student achievement will be estimated via a series of hierarchical linear models in which students will be considered as nested within teachers and teachers will be nested within school.

Authors: Robert C. Schoen, Sharon Koon

Principal Investigator's Contact Information: Florida State University, Learning Systems Institute, 4600 C University Center, Tallahassee, FL 32306. Phone: (850) 766-1333 Email: rschoen@lsi.fsu.edu

Data Sources:

Name of Data Source	Owner/Publisher of the Data	Year (s)	Variable(s)
Broward County Public Schools	Student Assessment and Research, Broward County Public Schools	2017/18 and 2018/19	Student demographics (that is, gender, race/ethnicity, English learner and former English learner status, and eligibility for the federal school lunch program) and student achievement data (that is, grade 6 and grade 7 mathematics FSA scores, grade 7 LOCUS scores)
Regional Educational Laboratory Southeast	Regional Educational Laboratory Southeast	2018/19	Parental consent for student participation and linking students to their grade 7 mathematics teacher within each school; classroom observation data generated through IQA

Data Confidentiality Procedures:

- All personally identifiable information for participants will be kept in a secure location and all digital information will be kept on secure password-protected servers. Only the research team will have access to personally identifiable information, and no links between direct identifiers and study code numbers will be retained after data collection and analyses are complete.
- James Elliot will serve as the project coordinator and will manage the consent process and database. Timothy Jacobbe will use a de-identified set of item-level data to generate scores for the LOCUS assessment. Sharon Koon will serve as the lead methodologist and will be responsible for randomly assigning schools to condition and conducting all data analyses.

Format for Final Data File:
Data from sources will likely be provided in a .csv formatted file.

If a Public Use File is not available, why?:
Broward County Public Schools has agreed to provide the Regional Educational Laboratory (REL) Southeast with administrative and LOCUS data that will be used to answer research question 2 but does not give permission for the REL Southeast to share these data with any outside entities, including the Institute of Education Sciences

Alternate Data File Template

Study Information:
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Description of the Sample:

Grade level(s): Participating students will be in grade 7.

Any specific subgroups: Participating schools with at least 30 students and two grade 7 mathematics teachers.

Sample size: Approximately 8,512 grade 7 students and 152 teachers from approximately 38 schools in Broward County Public Schools.

Data Information:

Data source #1: Broward County Public Schools

Variable Name (as it appears in the file)	Variable Definition	School Years
District_number	District number	2018/19
School_number	School number	2018/19
Studentid	Unique identifier for participating students	2018/19
Teacherid	Unique identified for participating teachers	2018/19
Gender	Student gender (M for male and F for female)	2018/19
Race	Student race/ethnicity (W for White, B for Black, H for Hispanic, A for Asian or Pacific Islander, I for American Indian or Alaskan Native, and M for multiracial)	2018/19
Lunch_status	Eligibility in the federal school lunch program	2018/19
EL_Status	English learner status (LF denotes a student that is being followed up for a two-year period after having exited an ESOL program, LY denotes a student that is enrolled in a program or receiving services, LZ denotes a student that has completed a two-year follow-up period after exiting an ESOL program)	2018/19
FSA_MATH	Florida Standards Assessments – Mathematics scale score	2017/18 and 2018/19
LOCUS	Individual student score on the 30-item LOCUS post-test	2018/19

Data source #2: Regional Educational Laboratory Southeast

Variable Name (as it appears in the file)	Variable Definition	School Years
Teacherid	Unique identifier for participating	2018/19

	teachers	
Teachercond	Condition indicator	2018/19
IQA_ts	IQA total score	2018/19

Analysis Information:

A SAS syntax file (as a .txt file) will be provided that includes details pertaining to data merging, cleaning, and transforming variables for use in the final analytic file.

Contact information:

Office(s) maintaining the data: The first source of data can be obtained from Dean Vaughn at the Office of Student Assessment and Research at Broward County Public Schools in Florida. The second source of data can be obtained from the REL Southeast.

Specific database(s) and fields to request: See tables above for this specific information.