SINGLE SUBJECT/CASE RESEARCH METHODOLOGY

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Definitions of Single Case Methodologies

- A rigorous, scientific methodology used to define basic principles of behavior and establish evidence-based practices (Horner et. al., 2005);
- A quantitative approach that examines functional relationships between a behavior of interest and one or more interventions (Lewis & Gage, 2015);
- Designs that are applied when the sample size is small and each individual serves as their own control (Gay & Airasian, 2003);
- Individual participants are studied by taking repeated measurements of dependent variables and systematically applying and withdrawing the independent variable (Ottenbacher, 1986);
Objectives for today’s presentation

• Provide a list of facts about single case methodology

• List and explain the essential features of single case research methodology

• Illustrate and explain two primary types of single case designs

• List examples socially significant outcomes that have been addressed through single case research

• Consider ways to apply single case methodology in the context of our work at UNI
Background facts about single case methodology

- Roots are in the fields of developmental and clinical psychology (Univ. of Washington). Began in the late 1960s
- Viewed as an alternative to quasi experimental designs which have a treatment and control group
- Most prevalent in special education, but also exists in the fields of medicine, psychiatry, nursing, rehabilitation, geriatrics, athletic training and coaching, social work, criminology, psychology, and other areas
- Designed to address and resolve problems of social importance and significance
- Is a leading methodology for producing evidence-based practices in the field of special education
Essential Features of Single Case Methodology

1. Repeated and trustworthy measurement of the target behavior(s)

Number of comments made during a 15 min whole class discussion
Trustworthy Measures

• Based on observation in structured experimental conditions
• Focus on discrete and specific measures of behavior examining frequency, rate, duration, latency, quality, etc.
• Preparation for data collection requires a formal training process learning behavioral definitions and scoring procedures and then considerable practice
• Requires establishment of inter-rater agreement and then intermittent checks and levels of 85% or better
• Requires stability of data before a change of experimental conditions
2. Repeated and systematic introduction and withdrawal of an intervention to compare with a baseline condition
Analysis of Effects within Participants
Two primary types of single case designs

- Reversal or ABAB Design
Multiple baseline across participants, behaviors, or settings
List of behavioral outcomes that have been addressed with single subject research

- Increasing drivers adherence to the speed limit
- Increasing people’s visits to residents of nursing homes
- Increasing recycling or conservation of electricity
- Improvement of students reading, math, and other academic skills
- Improving college students’ studying/preparation for tests
- Reducing binge or problem drinking with college students
- Improving parents’ ability to care and advocate for their children with disabilities
- Improving children’s ability to follow classroom rules and engage in socially acceptable behaviors
- Improving individual’s adherence to a specified health improvement plan
Opportunities to Conduct Single Case Research

• In the field settings where we work, such as schools, homes, hospitals, clinics, or other community settings

• Improvement of students’ success and learning in courses

• With our graduate students and advanced honors or undergraduate students