

Using Increasing Intensity Designs to Evaluate Tiered Instructional Models

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Characteristics of increasing intensity designs

Tier one in a design of increasing intensity may be conducted class-wide to ensure that the class is overall effectively instructed

Increasing intensity designs are based on sequential intervention trials ordered on a continuum that builds in intensity (Barnett, Daly, Jones, & Lentz, 2004).

Procedures requiring less supervision or fewer modifications to the curriculum are tried early in the sequence

Intervention components are then added to find the least intensive intervention needed to meet the child's needs

Following class-wide intervention, small group interventions can be used to address children's additional needs in tier two

A withdrawal to baseline (A) can be introduced to strengthen the experimental control of the design; however, the real strength of the increasing intensity design lies in its application to practice.

The design is based on a response to intervention premise, where child response to each intervention phase determines movement to subsequent phases.

Step-by-step decisions are made as interventions are attempted, with more intensive interventions used as necessary

Based on insufficient response to class-wide or small group interventions, tier three becomes more specialized and individualized

In order to demonstrate technical adequacy, users need to

- Show defensible intervention selection (i.e. empirically based interventions organized in a logical sequence),
- Document intervention adherence, and
- Apply decision rules for within and between tier intervention changes

Potential of increasing intensity designs

Practical use of resources:

- Decision making relies on visual decision making (i.e. level and trend analysis), which can be accomplished within the classroom
- Using instructional an intervention trials as data organizers within increasing intensity designs allows for the analysis of appropriate intervention intensity

Aligned with disability reform:

- Focus on behaviors in natural settings as a basis for intervention planning
- Single case designs and assessment data can supply the basic data for educational decisions, with the foundation being positive change in response to the least and most natural intervention

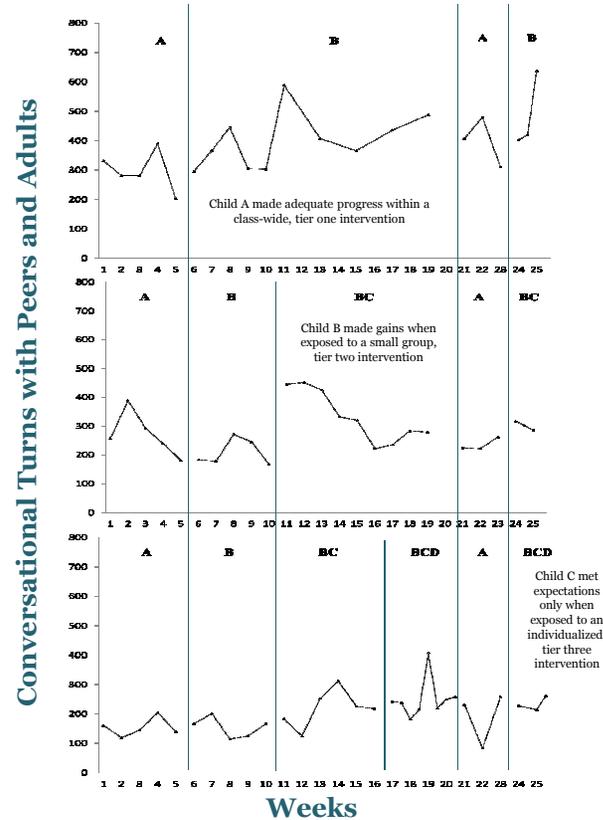


Figure 1. An increasing intensity across participants, single subject research design: The frequency of conversational turn taking across baseline (A) and phases B, BC, BCD, and a withdrawal to A for three child participants (tiers one, two, and three respectively)

Results and Implications for Practitioners

Results

- All 13 children increased conversational turn taking from the beginning to the end of the study
- Strength of functional relationship between intervention and behavior was variable across children
- Most children (even those with disabilities) were successful with a tier one intervention alone

Implications

- Teachers can use the data collection schedule and design characteristics to determine appropriate levels of intervention for inclusive programming
- Allows for systematic decision making to support progress for all children
- Selection of evidence based interventions aligned with tier 1, 2, and 3 characteristics essential for success

An examination of tiered conversational turn taking instruction using an increasing intensity design

Tier one for the study (UDL) was conducted class-wide to ensure that the dependent variable (conversational turn taking) was overall effectively instructed

An examination of the effects of tiered instruction on the frequency of conversational turn taking across 13 children with and without disabilities in an inclusive preschool classroom was conducted.

Each phase of the study was implemented in a progressive manner within an *increasing intensity across participants, single subject research design*.

Phase A is baseline, phase B is intervention phase one (Universal Design for Learning; UDL), phase BC is intervention phase two (UDL and Peer mediated instruction; PMI), and phase BCD is intervention phase three (UDL, PMI and Milieu Teaching; MT).

Following the class-wide intervention, a small group intervention (PMI) was used to address children's additional conversational turn taking needs in tier two

A withdrawal to baseline (A) was introduced for participants in each tier to strengthen the experimental control of the design

The participant's response to each intervention phase determined movement to subsequent phases.

At each phase change, decisions were made based on each child's (a) progress on a criterion referenced social-communication assessment (b) changes in mean, level, and trend and (c) mean level in comparison to class average during baseline. A more intensive intervention was added when child response to intervention was unclear

Based on insufficient response to class-wide and small group interventions, tier three consisted of a specialized and individualized intervention (MT)

Demonstration of technical adequacy was demonstrated throughout the study using

- A selection of evidence based interventions; however, a lack of research indicating research based tier one interventions lead to the selection of UDL as a tier one intervention. UDL has a theoretically sound literature base but was lacking empirical research – this study aimed to fill that gap
- Monitoring of intervention adherence at all levels. Weekly video monitoring paired with the completion of fidelity checklists for three levels of intervention guaranteed integrity
- Decision rules applied to each phase change described above

Future Directions for Tiered Instruction Research

Future Research

- Replication study of the current model or other models of tiered instruction
- A measure of social validity added to future research to determine the qualitative outcomes related to the implementation of tiered instruction (e.g. teacher burn out, level of frustration, contentment with results and integration with other classroom activities, etc.)
- Further research around tier one interventions (UDL and others) both as a component of tiered instruction and alone
- Follow up or longitudinal study to determine the long term benefits of increased conversational turn taking in preschool