

APPLICATIONS OF TECHNOLOGY IN BEHAVIORAL INTERVENTIONS Marie Kirkpatrick, PhD, BCBA-D, LBA









BACKGROUND

Information

BCBA-D Former SPED Teacher Former SPED Paraprofessional

Research

• ABA in schools to support ASD/DD students

 Technology-based interventions • Teacher/staff training





- Assessing Challenging Behavior • Why Use Technology? Prerequisites for Technology Interventions for Challenging Behavior Interventions for for Skill

- Acquisition





FUNCTIONAL Behavior Assessment



Obtain information about the behavior in order to make a hypothesis about why behavior occurs (i.e., function)





01	Indirect (interviews, rating scales)
02	Descriptive (direct observation, ABC)
03	Functional analysis





FUNCTIONS Of Behavior

ATTENTION

- Adults or peers
- Postive or negative

TANGIBLE

- Items or toys
- Activities
- Edibles





- Demands
- Attention (people)



Trying to prevent the behavior from occurring









Change and/or remove the motivation to engage in challening behavior

Change or remove the evoking stimulus for challenging behavior



CONSEQUENCE Interventions

What to do when the challenging behavior does happen





03



Eliminate reinforcement for the challenging behavior

Teaching and reinforcing alternative or replacement behaviors

Schedule of reinforcement









Prevalence in society and schools





Prevalence in society and schools **Efficiency**





Can be customizable

Prevalence in society and schools

Efficiency





Can be customizable

Prevalence in society and schools

Efficiency

More cost effective over time





STUDENT PREREQUISITES For Technology



- Differentiate use of technology (tablets) for class/school rather than leisure (games, making videos)
- Touching or swiping on touch screen devices (motor skills)
- Likely not to destroy technology when upset





GENERAL Preveguisites



TECHNOLOGY-BASED INTERVENTIONS TO Reduce Problem Behavior



Journal of Behavioral Education (2022) 31:69–93 https://doi.org/10.1007/s10864-020-09406-1

ORIGINAL PAPER

Systematic Review of Behavioral Interventions Using Digital Technology to Reduce Problem Behavior in the Classroom

Marie Kirkpatrick¹ · Gabby Rivera¹ · Jessica Akers¹

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RESEARCH QUESTIONS

- What type of interventions?
- What kind of technology?
- What school setting and students?
- What type of problem behavior?
- Who were the interventionists?
- What was the quality and outcomes?





FINDING THE STUDIES

- Database search
- Look at the references
- Look at specific journals
- Look at specific authors





DATA EXTRACTION

- Participant demographics
- Intervention & technology type
- Implementer
- Treatment fidelity & social validity
- Quality & outcomes of study based on What Works Clearinghouse standards







RESULTS Students

19 studies



47%

30%

94%



Students with disabilities

Targeted disruptive behavior





RESULTS Intervention

19 studies



68%

63%

63%



Touch screen device

Teacher implemented





RESULTS Quality & Outcomes

43

19 studies

21

35%

52%

Single-case research design cases evaluated

Meet standards of WWC

Strong evidence of effect



IMPLICATIONS For Research

WHOLE CLASS

Limited research on class vs. individual interventions



INPLICATIONS For Research

WHOLE CLASS

Limited research on class vs. individual interventions **CLASS DOJO**

Teachers use this quite often but limited research supporting its effectiveness



INPLICATIONS For Research

WHOLE CLASS

Limited research on class vs. individual interventions **CLASS DOJO**

Used often but limited research supporting its effectiveness or how its being used



SELF-MONITORING

Best results with adolescents. Need more information with younger students.



WHATSElf-Monitoring?



An individual systematically observes their behavior and records whether they engaged in the target behavior



LESS ADULT PROMPTING

Shifts cues from teacher/staff prompts to a natural stimulus (i.e., checklist) to engage in the target behavior

INSTRUCTIONAL TIME

Student's will likely increase their on-task behavior and be more engaged during instructional time





BENEFITS OF Self-Monitoring

PAPER & PENCIL Self-Monitoring

- Define the target behavior
- Determine the intervals of time
- Determine the criterion
- Determine the reinforcer

On-task: Paying attention to the teacher, following directions, participating in the class or							
Instructional activities							
Time	Am I on-task?		Teacher Agree		Notes		
8:00	Yes	No	Yes	No			
9:00	Yes	No	Yes	No			
10:00	Yes	No	Yes	No			
11:00	Yes	No	Yes	No			
12:00	Yes	No	Yes	No			
1:00	Yes	No	Yes	No			
2:00	Yes	No	Yes	No			
3:00	Yes	No	Yes	No			
4:00	Yes	No	Yes	No			



Self-Monitoring Chart



DGTALSelf-Monitoring



I-CONNECT



MOBEGO

MOBEGO

in the Classroom

A look at supporting students with disabilities

Increasing On-Task Behavior Using Technology-Based Self-Monitoring: A Meta-Analysis of I-Connect

Gretchen Scheibel, MS, OTR, BCBA¹⁰, Kathleen N. Zimmerman, PhD, BCBA-D¹, and Howard P. Wills, PhD, MBA, BCBA

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-CONNECT in the Classroom

A look at supporting students with disabilities

29

64%

71%

Middle or high school

General education

in the Classroom

A look at supporting students with disabilities

DGTALSelf-Monitoring

I-CONNECT

MOBEGO

NOBEGO in the Classroom

Research with 3rd-8th grade students

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A Randomized Control Trial on the Effects of MoBeGo, a Self-Monitoring App for Challenging Behavior

Allison Bruhn, PhD¹, Joseph Wehby, PhD², Lesa Hoffman, PhD¹, Sara Estrapala, PhD³, Ashley Rila, PhD¹, Eleanor Hancock, MA², Alyssa Van Camp, PhD², Amanda Sheaffer, PhD², and Bailey Copeland, MA²

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NOBEGO in the Classoon

Research with 3rd-8th grade students

34

32%

82%

96%

Special education services

Male

General education

in the Classroom

Research with 3rd-8th grade students

CLASS

- Token economy
- Group contingency

CLASS Ppo Economy

 Individualized target behaviors Provide points contingent on doing those behaviors • Schedule of reinforcement- how often they get points • Turn in points for reinforcer

CLASS Ppo Economy

• Points should match the behavior • Response cost- taking away points • Bankruptcy!

Group Contingency

- 01 Independent
- 02 Dependent
 - Interdependent

03

CLASSDOJO Research

Group contingency

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Use of a technology-enhanced version of the good behavior game in an elementary school setting

Shauna Lynne¹ | Keit Daniel H. Tingstrom¹ |

Shauna Lynne¹ | Keith C. Radley¹ 🕕 | Evan H. Dart¹ 🕕 |

Daniel H. Tingstrom¹ | Christopher T. Barry² | John D. K. Lum³

CLASSDOJO Research

Group contingency

TECHNOLOGY-BASED INTERVENTIONS FOR Skill Acquisiton

A Systematic Review of Video Activity Schedules to Teach Autistic People

Marie Kirkpatrick¹, Nicole O'Guinn³, Jessica S. Akers², Tonya N. Davis², Roberta Carrillo

Vega¹, and Suzy Avery⁴

¹University of Texas at San Antonio

²Baylor University

³Marcus Institute for Autism

⁴Kennedy Krieger Institute

Activity Schedule

Sequence of videos depicting steps to complete a single activity

Activity Schedule

Sequence of videos depicting the order of completing multiple activities

RESEARCH QUESTIONS

- What ages?
- What kind of skills?
- What type of video activity schedule?
- Who were the interventionists?
- What environment?
- What was the quality and outcomes?

FINDING THE STUDIES

- Database search
- Look at the references
- Look at specific journals
- Look at specific authors

DATA EXTRACTION

- Participant demographics
- Type of video activity schedule, skill, and device
- Implementer and setting
- Generalization
- Quality and outcomes using SCARF

Participants

76 studies

49

49%

82%

40%

11-17 years old

Intellectual disability

RESULTS Intervention

76 studies

46%

54%

87%

Tablet device

Daily living skills

Within-activity approach

RESULTS SCARF

76 studies

WITHIN-ACTIVITY Video Activity Schedules

- Break down the task
- Create a video for 1-3 steps
- Sequence the videos in order
- Teach student how to use technology
- Collect data on accuracy of task completion

ACROSS ACTIVITY Video Activity Schedules

- Use activities the student already learned how to do
- Create a video for each activity
- Sequence the videos in order
- Teach student how to use technology
- Collect data on accuracy of task completion

Using a Video Activity Schedule with Social Script to Teach a Cooperative Game to **Autistic Children**

Marie Kirkpatrick, Mariela Gonzalez, Roberta Carrillo Vega, Gennina Ferrer, Aparna Mathew,

Lauren Gonazales, & Ivan Duarte

University of Texas at San Antonio

PARTICIPANTS

- 8 autistic children
 - 3 boys & 5 girls
 - Average age = 7

SETTING

- Summer camp
- Game small groups

GAME

- Feed the Woozle
- Hoot Owl Hoot

VIDEO ACTIVITY SCHEDULE

- iPad
- Keynote app

TAKING A TURN

- Roll the dice and say the number
- Place corresponding snacks on spoon
- Spin the spinner and say the move
- Pick up the spoon and do the move while walking to the Woozle
- Feed the Woozle and go back
- Put corresponding Woozle tokens on the board
- Give spoon to friend and say "That was fun! It's your turn!"

MY FINAlyts

- teacher/staff

• Technology can be a beneficial tool • Is it suitable for the student and/or teacher • Monitor progress for students and

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