



Enhancing Behavioral Assessment and Interventions with iPod Touch/iPhone Applications.

Paul Chrustowski, Ph.D,
&
Future Help Designs:
Glen Konopaskie, Director of Product Design
&
Christian Marcillo, Director of Creative Design

Using today's technology to advance our field



Presentation to the Behavior Analysis Association of Michigan, February 25, 2010



Our Objectives:

To introduce you to two of the latest technological advances to assist in behavioral assessment and behavior intervention implementation.

To demonstrate how design of these tools is in keeping with the tenets of Applied Behavior Analysis in its emphasis on accountability, accurate documentation, and data-based decision-making.



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The Next Generation of Behavioral Assessment Tools

Introducing...2 new applications from Future Help Designs



iBAA
Behavioral
Assessment
Application



*Keep In
Mind*
BIP
application



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Optimal Behavioral Assessments:

- yield *meaningful* and *useable* data
- are *unobtrusive* to both the observed subject / student and the observational environment
- maximize the *clinician's ability to fully attend* to the subject/student
- are *time and cost efficient*

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How Can iBAA Assist in the Optimal Behavioral Assessment?

Different target behaviors and environments dictate different levels of assessment.



iBAA provides options for all levels of behavioral assessment:

- Qualitative
- Quantitative (interval)
- Functional Behavioral Assessment (ABC recording)



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Approaches to Behavioral Assessment: "No" Tech

- Qualitative assessment
- Observe subject/student and summarize your observations in a anecdotal narrative



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Approaches to Behavioral Assessment: "No" Tech

- iBAA default settings are designed for use in a classroom environment.
- Fully customizable to any observational setting: residential, clinical, treatment facility, research / laboratory setting, etc.

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Approaches to Behavioral Assessment: "No" Tech

- Pro— Can yield valuable data for a keen observer specializing in human behavior.
- Good when reasons for referral are vague, when there is no clear target behavior identified, and no hypotheses formulated yet.
- Con—No quantitative data for accountability or data based decision making.
- "If it can't be graphed, it's not real data."

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Approaches to Behavioral Assessment: Low Tech

- Basic quantitative data.
- Behavioral frequencies.
- Enter observation session with a clear, predetermined operational definition of the target behavior.
- Observe, count and tally.



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Approaches to Behavioral Assessment: Low Tech

- Problems: Not all behaviors are discrete enough to count frequencies.
- E.g. In a 20-minute observation, the student is not on task at all. If the target behavior is academic engagement, is that one incident of off-task behavior? 20????
- Solution: Interval recording.

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Interval Recording

- Break a unit of time into smaller equal intervals and record whether or not a behavior occurs during that interval regardless of the actual number of discrete incidents of the behavior in that interval or the duration of time in that interval spent engaged in that behavior.
- This provides quantifiable data for decision making, hypothesis testing, and intra or inter student comparisons.

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Interval Recording



- However, observation has become more complicated.
- Observer must keep in mind behavioral categories, observe the subject/student, *and* keep track of time.

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Interval Recording

- iBAA provides options for full customization of target behaviors and interval length.
- Designed with classroom observation in mind, default settings are based on the recommendations of leading researcher in school psychology, Edward Shapiro.



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Interval Recording

- Actively engaged: reading orally, verbally responding to a teacher, doing a paper to pencil activity.
- Passively engaged: reading silently, listening to instruction.
- Off task: can further break down into off task motor, off task verbal, etc.

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Interval Recording



- Dan Reschly, leading researcher in Response to Intervention (RtI), special education and school psychology recommends the following categories for problematic behaviors:

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Interval Recording

- Noisy: talking out of turn, yelling/shouting out, singing, humming, arguing, tapping.
- Inappropriate location: out of seat without permission.
- Physically negative: pushing, hitting, fighting, aggression, provoking, intimidating, threatening, etc.
- Using these broad categories will encompass the vast majority of the most common teacher complaints about student behavior.

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Existing Tools to Assist with Interval Recording

- Higher Tech:
- *Gymboss* interval timer
- *Watchminder*



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Existing Tools to Assist with Interval Recording

- Such tools can be programmed to provide an alert to the observer at the end of predetermined intervals, freeing the observer from keeping track of the time.
- Alerts can be vibratory to minimize disruption to the classroom environment.

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Existing High Tech Tools for Behavioral Assessment

- Software has been designed and marketed for use on laptops and PDAs to assist with interval recording.



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Existing High Tech Tools for Behavioral Assessment

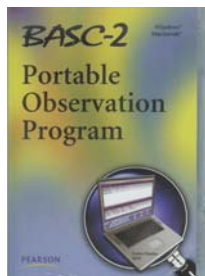
- Allows for the portability of technological tools into the classroom.
- Behavioral data is directly entered into the laptop or PDA for the software to tally and provide graphs.
- The program keeps track of the intervals, allowing the psychologist or behavior analyst to focus more on the student/subject and not on the stopwatch.

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Existing High Tech Tools for Behavioral Assessment

- Behavioral Assessment System for Children— Second Edition, Portable Observation Program
- (BASC-2, POP)



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Existing High Tech Tools for Behavioral Assessment

- BASC ROP: Intervals are indicated by a screen flash, followed by an opportunity to enter the behavioral data.
- Behavioral categories can be customized to a degree.



Existing High Tech Tools for Behavioral Assessment

- BOSS: Behavioral categories are preset.
- Does provide option for peer referenced recording.
- Intervals are indicated by an audible cue which can be disruptive to the observational environment.



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Problems / Limitations with Existing High Tech Behavioral Assessment Tools

- End of interval alerts are still either:
 - 1.) audible and potentially disruptive to the observational environment or
 - 2.) visual (e.g. flashing screen) requiring that the observer still, to some extent, take his/her attention off the student/subject.
- Customization of behavioral categories is limited or nonexistent.
- Set up can be complicated and cumbersome.

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Problems / Limitations with Existing High Tech Behavioral Assessment Tools

- Limited options for recording of additional data for Functional Behavioral Assessments (FBAs), such as ABC recording (Antecedents, Behaviors, Consequences).

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iBAA Does What All Existing Tools Do, Plus Addresses Limitations of Other Tools



- Portable, unobtrusive, and discrete to use
- Does not require an additional device
- Allows for customization (i.e. behavioral categories, length of intervals, etc.)
- Keeps track of intervals

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iBAA Does What All Existing Tools Do, Plus Addresses Limitations of Other Tools

- Provides discrete end of interval alerts (i.e. vibratory or audible to observer only via Bluetooth headset) thus maximizing the observer's capacity to more fully attend to the student/subject and the observational environment.



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**iBAA Does What All Existing Tools Do, Plus
Addresses Limitations of Other Tools**



- Allows for direct and easy entry of behavioral data
- Stores, tabulates and summarizes behavioral data for easy analysis and comparison
- Ensures security and confidentiality of entered data

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**iBAA Does What All Existing Tools Do, Plus
Addresses Limitations of Other Tools**



- Provides options for recording of peer referenced data, antecedents and consequences for FBA, and qualitative notations
- Provides options of switching between different types of observations (i.e. qualitative observation, interval recording, and Functional Behavioral Assessment) without loss of data.

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**•INSERT DEMO
HERE**

Behavioral Intervention Plans

- If behavioral data leads to the development of a Behavior Intervention Plan (BIP), there are limited tools to assist with BIP.
- Other software designed to assist in the development and writing of a Behavior Intervention Plan (BIP).

ARCHITEXT
Behavior Action Planner

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Behavioral Intervention Plans

Often Behavior Intervention Plans necessitate keeping track of longer intervals:

- administering reinforcement to subjects at specified times,
- prompts for those implementing the plan,
- presentation of discriminative stimuli (S^Ds)
- prompts for self-monitoring, etc.

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Behavioral Intervention Plans

- Therefore, one could utilize tools such as the *Watchminder* (already mentioned) which can be programmed to keep track of the interval, provide a vibratory or auditory alarm, and provide a brief visual prompt.



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Behavioral Intervention Plans

- Problems / Limitation with *Watchminder*.
- Offering so many functions on a watch device makes programming challenging with only 4 small buttons to program all functions.
- Device is a bit “clunky” and may attract unwanted attention from others.

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Behavioral Intervention Plans

- Less cumbersome tools are available to provide vibratory and/or auditory alarm prompts at specified intervals, but without the visual prompt.
- E.g. *Motivaider*



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Keep In Mind

- Utilizing the latest technological advances for iPhones and iPod Touch and Bluetooth



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Keep In Mind



- Delivers customizable notifications / prompts to any mobile device or computer.
- Prompt type and length are limited only by the users' imagination and can consist of brief cue words, detailed instructions, or visual / pictorial cues.
- User-defined intervals with options for random intervals.

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Keep In Mind



- **Uses are limitless:**
- Deliver random attentional cues for students with ADHD.
- Delivery of visual schedules to students with Autism Spectrum Disorders (ASD).
- Provide reminders for basic Activities of Daily Living for individuals with Traumatic Brain Injury or memory impairment.
- Treatment and medication compliance.
- Self monitoring for weight loss, smoking

cessation and other habit interventions.
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Keep In Mind



- **Uses are limitless:**
- Deliver prompts for parents / teachers to take data at specified times or administer reinforcers.
- Deliver affirmations or motivators to clients with depression.
- Coaching prompts and encouragement for a variety of skill development interventions.

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Keep In Mind



- **Uses are limitless:**
- Only product of its kind that allows for feedback from the client to the clinician in response to the prompt for data-gathering and accountability.
- E.g. Application administers prompt to remind client to take medication. Client then would respond back to the clinician for verification after the client takes medication.
- Clinician can then keep track of, summarize and graph client response to treatment.

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• INSERT DEMO
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Contact

Dr. Chrustowski can be reached at....

www.drchrustowski.com

cspsych@cavtel.net

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