



**College of Education and Human Development
Division of Special Education and disAbility Research**

Fall 2019

EDSE 621 001: Applied Behavior Analysis: Empirical Bases

CRN: 71806, 3 – Credits

Instructor: Dr. Barbara Kaminski	Meeting Dates: 08/26/2019 – 12/18/2019
Phone: 703-987-0132	Meeting Day(s): Thursday
E-Mail: bkamins2@gmu.edu	Meeting Time(s): 7:20 pm – 10 pm
Office Hours: by arrangement	Meeting Location: Fairfax, KH 15
Office Location: online	Other Phone: N/A

- **Note:** This syllabus may change according to class needs. Teacher Candidates/Students will be advised of any changes immediately through George Mason e-mail and/or through Blackboard.

Prerequisite(s): EDSE 619 B-

Co-requisite(s): EDSE 619 May be taken concurrently.

Course Description

Focuses on basic content of applied behavior analysis. Teaches how to implement behavioral procedures and develop behavioral programs for clients with fundamental behavioral needs.

Advising Contact Information

Please make sure that you are being advised on a regular basis as to your status and progress through your program. Mason M.Ed. and Certificate teacher candidates/students should contact the Special Education Advising Office at (703) 993-3670 for assistance. All other teacher candidates/students should refer to their faculty advisor.

Advising Tip

Have you met with an advisor? All students should make an appointment to meet with an advisor to outline a plan for completing coursework and non-course requirements such as testing. To make an appointment by phone or in person, go to <http://gse.gmu.edu/special-education/advising/>.

Course Delivery Method

Face-to-Face/In-Class format with learning activities which may include the following:

1. Class lecture and discussion
2. Application activities
3. Small group activities and assignments
4. Video and other media supports
5. Research and presentation activities
6. Electronic supplements and activities via Blackboard

Learning activities include the following:

7. Class lecture and discussion
8. Application activities
9. Small group activities and assignments
10. Video and other media supports
11. Research and presentation activities
12. Electronic supplements and activities via Blackboard

Learner Outcomes

Upon completion of this course, teacher candidates/students will be able to:

1. Describe philosophical assumptions underlying data-based decision making in applied behavior analysis.
2. Define, describe, identify, exemplify, and use direct measures of behavior.
3. Define, describe, identify, exemplify, and use indirect measures of behavior.
4. Construct and interpret equal interval graphs.
5. Construct and interpret standard celeration charts.
6. Describe, identify, and exemplify single subject experimental design.
7. Describe and exemplify data-based decision making using visual inspection of graphically presented behavioral data in the context of single subject experimental designs.
8. Describe and identify utility and factors affecting use of single subject designs for evaluating instructional, behavioral, and other interventions in applied settings.
9. Describe, identify, and exemplify ethical factors regarding data collection, data management, and data based decision making as described by the Guidelines for Responsible Conduct and the Disciplinary Standards.
10. Read, interpret, and evaluate articles from the behavior analytic literature.

Professional Standards

This course is part of the George Mason University, Graduate School of Education (GSE), Special Education Program for Applied Behavior Analysis Graduate Certificate. The content of the courses in this program is derived from the Task List published by the national Behavior Analyst Certification Board (BACB) as well as the Professional and Ethical Compliance Code for Behavior Analysts. The Professional and Ethical Compliance Code for Behavior Analysts is listed on the following website: <http://bacb.com/wp-content/uploads/2016/03/160321-compliance-code-english.pdf>. For more information on the Board and the examination, please visit the Board's website at www.bacb.com.

Required Textbooks

- Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). *Applied behavior analysis (2nd Ed)*. Upper Saddle River, NJ: Pearson. ISBN: 978-0131421134
- Foxx, R.M., & Mulick, J.A. (2015). *Controversial therapies for autism and intellectual disabilities: Fad, fashion, science, and professional practice (2nd Ed)*. New York, NY: Routledge. ISBN: 978-1138802230.

Recommended Textbooks

- American Psychological Association. (2010). *Publication manual of the American Psychological Association (6th ed.)*. Washington, DC: Author.

Required Resources

Given the possibility of computer or internet difficulties some students may experience from time to time, you must consider and identify alternative availability of computers and internet access to the ability to complete assignments in a timely manner. Similarly, you may need to have access to a scanner so that you can scan some of your assignments, save them as .pdf files, and then upload to Blackboard. Please locate one you can use regularly, and a back-up. Most copy centers (such as FedEx Office or Staples) have scanning services.

Additional Readings

- Labott, S. M., & Johnson, T. P. (2004). Psychological and social risks of behavioral research. *IRB: Ethics & Human Research*, 26, 11-15.
- Malott, R. W. (2002). Notes from a radical behaviorist: Is it morally defensible to use the developmentally disabled as guinea pigs? *Behavior and Social Issues*, 11, 105-106.

Additional readings are in the Appendix at the end of the syllabus. Note that the Research Worksheets assignment involves selection of articles from the list, not the entire list.

Articles which are published in the *Journal of Applied Behavior Analysis* may be downloaded directly from the journal's website at <http://www.ncbi.nlm.nih.gov/pmc/journals/309/> . To obtain articles from the list published in other journals:

1. Go to the GMU library website at <http://library.gmu.edu/> .
2. Click on Databases.
3. Scroll down to, and click on Psych Info.
4. Type in the title or other relevant information in the search term boxes.
5. Hit Search.
6. Locate the reference for the article in the resulting list.
 - a. If there is a doi number with the reference, click on it. A pdf of the article will appear shortly.
 - b. If there is no doi number, click on MasonLink.
 - i. Select the article from the information that pops up next, or
 - ii. Request a copy of the article through interlibrary loan if it is not available through our library.
7. Alternatively, you may visit or phone the Fenwick library (703.993.2250) on the GMU Fairfax, Virginia campus and ask a librarian for assistance.

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy).

Tk20 Performance-Based Assessment Submission Requirement

It is critical for the special education program to collect data on how our students are meeting accreditation standards. Every teacher candidate/student registered for an EDSE course with a required Performance-based Assessment (PBA) is required to upload the PBA to Tk20 (regardless of whether a course is an elective, a one-time course or part of an undergraduate minor). A PBA is a specific assignment, presentation, or project that best demonstrates one or more CEC, InTASC or other standard connected to the course. A PBA is evaluated in two ways. The first is for a grade, based on the instructor's grading rubric. The second is for program accreditation purposes. Your instructor will provide directions as to how to upload the PBA to Tk20.

For EDSE 621, the required PBA is Make Your Own Experiment and Final Exam Feedback. Please check to verify your ability to upload items to Tk20 before the PBA due date.

Assignments and/or Examinations

Performance-based Assessment (Tk20 submission required)

Final Exam. This test will consist of 50 items, and will be given as a pretest on the first night of class, and as a final exam at the end of the course. Credit toward your final score will only be given for your performance on this test as a final exam. After scoring the pretest, your instructor will provide you with a breakdown of your scores per content area addressed by the test (see Appendix). Similarly, after scoring the Final Exam, you will receive the breakdown of scores per content area. **This FINAL EXAM feedback must be uploaded to TK20.**

Final Exam: Complete on-line by 12/12/19 @11:59 EST. NO LATE EXAMS

Feedback form returned to you on 12/16/19

Feedback form uploaded (by you) to TK20 by 12/18/19 @11:59 EST

Make Your Own Experiment. This is a group assignment. Your group will be assigned two scenarios: one applied scenario and one basic research scenario. See instruction and Rubrics found in the Appendix at the end of the syllabus.

Submit Make your Own Experiment documents to TK20 by 12/5/19 @ 11:59 EST

College Wide Common Assessment (TK20 submission required)

None

Performance-based Common Assignments (No Tk20 submission required)

Research Worksheets. The Research Worksheet outline will be available on Blackboard. You will select one set of articles from the list in the Appendix and complete a research worksheet for each article in that set (completing five research worksheets in all. Worksheets turned in on time or early can earn a total of 10 possible points each; those turned in late can earn up to 9 points each.

Research Worksheets due by 11/21/19 @ 11:59 (to Blackboard)

Reflection Papers. In conjunction with your readings from *Controversial Therapies for Autism and Developmental Disabilities*, you will complete a 1 page Reflection Paper based on the given prompt for each reading assignment. Prompts will be provided on Blackboard. You will earn up to 5 points for each Reflection Paper. Late papers will earn up to 4.5 points. Due dates are indicated in the class schedule.

Problem Sets. You will complete these per instructions contained on each problem set. A total of 10 points is possible for each correctly completed Problem Set submitted on time; up to 9 points for those submitted late. *Incorrect responses may be corrected and resubmitted once, for up to ½ credit for each corrected response.* Corrected problem sets will be accepted up to the time of the final examination; none will be accepted afterward. Due dates are indicated in the class schedule.

Course Policies and Expectations

Attendance/Participation

You are expected to arrive on time for all class sessions, attend all class sessions, remain in class for the duration of each session, and to participate actively throughout the session. Course materials will be available on Blackboard for those who either missed class or need additional time with the materials. If you do miss class, you may also contact a classmate regarding notes and other activities that took place in your absence. A sign-in sheet will be circulated at the beginning of each session. **Each student signing in will receive 2 points for attendance.**

Signing in after the sheet has been returned to the instructor (e.g., arriving late) will earn 1 point.

One excused absence will be allowed per semester. This excused absence will not result in loss of attendance points. To be considered excused, you must contact the instructor as soon as possible and you must have a valid excuse.

Other than the one excused attendance, missed attendance points may not be made up. Perfect Attendance will be awarded 2 extra credit points at the end of the semester.

Inclement Weather Procedures.

If GMU is closed due to weather conditions, class will be canceled. If GMU is not closed but, in your judgment, travel poses a substantial risk, you may choose to skip class as an excused absence.

Late Work

All work is considered on-time if it is submitted by 11:59pm on the due date. Work submitted after the assigned due date will be assessed a 10% possible point penalty or as indicated above for each assignment.

Electronics

Cell phones must be turned off and/or set on vibrate. Computers are allowed for note taking and course-related work ONLY.

Grading Scale

Grading Criterion:

Grade	Percentage	Grade	Percentage	Grade	Percentage
A+	97-100%	A	96-93%	A-	92-90%
B+	87-89%	B	83-86%	B-	80-82%
C+	77-79%	C	70-76%		
F	69% and below				

Assignment	Possible Points/Instance	Number of Instances	Points Possible For Assignment
Attendance/ Participation	2 points per week	14 weeks (2/week)	28 points possible
Reflection Papers	5 points/paper	12 papers	60 points possible
Problem Sets	10 points/Set	8 Sets	80 points possible
Research Worksheets	10 points per Worksheet	5 worksheets	50 points possible
Make Your Own Experiment	20 points per Experiment	2 experiments	32 points possible
Final Exam	50 points	1 Exam	50 points possible

Total Points: 300

***Note:** The George Mason University Honor Code will be strictly enforced. Students are responsible for reading and understanding the Code. "To promote a stronger sense of mutual

responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code: Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.” Work submitted must be your own or with proper citations (see <https://catalog.gmu.edu/policies/honor-code-system/>).

Professional Dispositions

Students are expected to exhibit professional behaviors and dispositions at all times. See <https://cehd.gmu.edu/students/policies-procedures/>.

Class Schedule

*Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

CT = Controversial Therapies for Autism and Intellectual Disabilities (Foxy & Mulick)

ABA = Applied Behavior Analysis (Cooper, Heron, Heward)

Date	Topics (in class)	Assignments / Activities
Week 1 8/29/19	Review Syllabus Pretest	Read: <ul style="list-style-type: none"> Syllabus
Week 2 9/5/19	Introduction to observation, measurement, & single-subject design; Identifying and defining target behaviors	Read: <ul style="list-style-type: none"> <u>CT</u> Ch 1 <u>ABA</u> Ch 1, pp. 65 – 69 Due: <ul style="list-style-type: none"> Reflection Paper #1
Week 3 9/12/19	Measurement – Why bother? Direct Measures of Behavior: count, cumulative count, duration, rate, latency, interresponse time, extensity, intensity	Read: <ul style="list-style-type: none"> <u>CT</u> Ch 2 and 3 <u>ABA</u> pp. 73 – 80, 83 - 90 Due: <ul style="list-style-type: none"> Reflection Paper #2
Week 4 9/19/19	Measurement – Indirect Measures of Behavior: accuracy, intensity, trials to criterion, percentage, percentage occurrence, percentage intervals occurrence, permanent products, and other estimates; Selecting appropriate measures; General data collection issues	Read: <ul style="list-style-type: none"> <u>CT</u> Ch 4 <u>ABA</u> pp. 81 – 82, 85 – 87, 90 – 100 Due: <ul style="list-style-type: none"> Reflection Paper #3 Problem Set 1 (Direct Measures)
Week 5 9/26/19	Measurement – Improving and assessing the quality of measurement; accuracy, believability, reliability, interobserver agreement (IOA)	Read: <ul style="list-style-type: none"> <u>CT</u> Ch 5 & 8 <u>ABA</u> Ch 5 Due: <ul style="list-style-type: none"> Reflection Paper #4 Problem Set 2 (Sampling)
Week 6 10/3/19	Data Management: Graphic data display and graph preparation; maintaining data tables; data summary; equal interval graphs; cumulative count graphs; standard behavior/celeration charts	Read: <ul style="list-style-type: none"> <u>CT</u> Ch 6 <u>ABA</u> pp 127-149 Due: <ul style="list-style-type: none"> Reflection Paper #5
Week 7 10/10/19	General Issues in Measurement; Analyzing Behavior Change; Introduction to Research Design: Baseline logic	Read: <ul style="list-style-type: none"> <u>CT</u> Ch 7 <u>ABA</u> pp 149-155; Ch 7 Due: <ul style="list-style-type: none"> Reflection Paper #6 Problem Set 3 (Graphing and IOA)

Week 8 10/17/19	Withdrawal Designs (AB, ABA, ABAB, BAB, etc.); Component Analysis; Parametric Analysis	Read: <ul style="list-style-type: none"> • <u>CT</u> Ch 11 • <u>ABA</u> pp. 177 – 186 Due: <ul style="list-style-type: none"> • Reflection Paper #7 • Problem Set 4 (Celeration Charts)
Week 9 10/24/19	Alternating Treatments Designs and Pairwise Comparison Designs; Measuring choice, preference, and other phenomena	Read: <ul style="list-style-type: none"> • <u>CT</u> Ch 12 & 13 • <u>ABA</u> pp 187-199 Due: <ul style="list-style-type: none"> • Reflection Paper #8 • Problem Set 5 (Functional Control)
Week 10 10/31/19	Multiple Baseline Designs & Changing Criterion Design; Combining measurement and design elements to solve complex problems	Read: <ul style="list-style-type: none"> • <u>CT</u> ANY from Ch 15-24 • <u>ABA</u>: Ch 9; pp 226-230 Due: <ul style="list-style-type: none"> • Reflection Paper #9 • Problem Set 6 (Alternating Treatments)
Week 11 11/7/19	Evaluating ABA research: internal validity, social validity	Read: <ul style="list-style-type: none"> • <u>CT</u>: ANY from Cp 15-24 • <u>ABA</u> Ch 10 pp 230-252 Due: <ul style="list-style-type: none"> • Reflection Paper #10 • Problem Set 7 (Multiple BL)
Week 12 11/14/19	Being an educated research consumer: Evaluating published research, finding research relevant to behavior problems; Research Ethics	Read: <ul style="list-style-type: none"> • <u>CT</u> Chp 25 & 27 • Lobbott & Johnson (2004); Malott (2002) Due: <ul style="list-style-type: none"> • Reflection Paper #11 • Problem Set 8
11/21/19	Make you Own Experiment Week!	Read: <ul style="list-style-type: none"> • <u>CT</u> Ch 26 & 29 Due: <ul style="list-style-type: none"> • Reflection Paper #12 • Research Worksheets
Week 13 11/28/19	NO CLASS! THANKSGIVING	
Week 14 12/5/19	General Issues in Measurement and Experimental Design – Review of Designs and Functional Control	Due: <ul style="list-style-type: none"> • Make Your Own Experiment project documents to TK20 no later than 11:59 on 12/5/19
Week 15 12/12/19	Final Exam – must complete online (Blackboard) no later than 11:59 pm US Eastern Time on 12/12/19.	Due: <ul style="list-style-type: none"> • Submit Research Worksheets and revised problem sets by 11:59 pm on 12/12/19 • Upload feedback to TK20 no later than 12/18/19 11:59pm

Core Values Commitment

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <http://cehd.gmu.edu/values/>

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code (see <https://catalog.gmu.edu/policies/honor-code-system/>).
- Students must follow the university policy for Responsible Use of Computing (see <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <http://ods.gmu.edu/>).
- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to Tk20 should be directed to tk20help@gmu.edu or <https://cehd.gmu.edu/aero/tk20>. Questions or concerns regarding use of Blackboard should be directed to <http://coursessupport.gmu.edu/>.
- For information on student support resources on campus, see <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>

For additional information on the College of Education and Human Development, please visit our website <https://cehd.gmu.edu/students/>.

Appendix

Assessment Rubric(s)

Make Your Own Experiment

Purpose

Both basic and applied research add to the field of behavior analysis. Experimental behavior analysis involves basic research designed to add to the knowledge about behavior, whereas; applied behavior analysis focus on the application of these behavior principles to real-world situations. Given two hypothetical scenarios (one basic, one applied), you will complete the following: develop a behavioral definition, measurement system, recording form, procedures steps, single subject design selection, and graph. As you identify, measure, and assess behaviors, you will incorporate ethical and professional guidelines outlined by the BACB.

Instructions

[Include a clear description of the assignment to the students. Follow it with bulleted items for the tasks the students should perform. Indicate all formatting, file and submission requirements.]

1. Develop a Declaration of Professional Practice (for the applied scenario) based on the sample in the *Bailey & Burch text* **or** an informed consent form for participants, based on the BACB Professional and Ethical Code
2. Develop a behavioral definition for the identified interfering behavior;
3. Select a measure for the behavior of interest (and give the rationale for selecting this measure);
4. Develop a recording form for collecting data
5. Write step by step instructions for collecting data;
6. Select a design that will best answer the question asked (and give the rationale for that design);
7. Describe, step by step, how you will implement that design, indicating:
 - a. How you will begin baseline data collection;
 - b. Decision rules for introducing your intervention;
 - c. Decision rules for withdrawing and for reintroducing your intervention (if appropriate) or for introducing your intervention in another setting (or for another therapist, subject, behavior, etc.) (if appropriate); and
 - d. How you will control for relevant threats to internal validity
8. Construct a graph of possible data that would show functional control of the intervention over the behavior, using the design you chose.

[If the assignment / effort spans multiple weeks or has distinct parts which are completed and/or submitted separately, use sub-headers to break out and explicate each distinct piece.]

Grading

Declaration of Professional Practice (APPLIED Only)	0-1 Point	2 Points	3 Points
	<ul style="list-style-type: none"> · Any item is cut and pasted from an existing document · This is considered by the instructor for referral for academic dishonesty · Written like a permission slip · Missing 2 or more critical elements · Declaration of Practice is missing 	<ul style="list-style-type: none"> · Missing 1-2 elements of the consent form · Contains jargon or is difficult to understand · Declaration is completely in the student's own words 	<ul style="list-style-type: none"> · Describes Self · Describes Working Style · Client Responsibilities · Code of Conduct · Confidentiality · Payment and Fees · Written at no higher than an 8th grade reading level
Informed Consent (BASIC Only)	0-1	2	3
	<ul style="list-style-type: none"> · Informed consent is missing · Created inappropriately · Written like a permission form · Contains only jargon · Does not give enough information for a reasonable person to make a decision · Is a consent form for services 	<ul style="list-style-type: none"> · Informed consent missing 1-2 elements · Needs more detail to understand · Contains jargon or is written at too high a reading level · Is a consent to participate in the research project 	<ul style="list-style-type: none"> · Outlines Purpose · Outlines Risks · Outlines Benefits · Outlines Alternatives · In enough detail for participant to understand · Written at no higher than an 8th grade level · Is a consent to participate in the research project
Operational Definition and Measurement System	0-1	2	3-4
	<ul style="list-style-type: none"> · Definition is not appropriate to the research question · Definition is too vague to collect reliable data · Data collection procedure inadequate · Sampling and measurement procedures 	<ul style="list-style-type: none"> · Either Operational definition has some explanatory fictions · Either definition Does not pass the Dead Man test · Data collection is questionably appropriate · Not enough detail to show that student can 	<ul style="list-style-type: none"> · Operational Definition of dependent variable is in observable terms · Operational definition of independent variable is in observable terms · Avoids explanatory fictions · Passes the Dead Man Test

	<ul style="list-style-type: none"> are inaccurate · No data sheet provided · No IOA or treatment integrity 	<ul style="list-style-type: none"> carry out the data collection with fidelity · Either IOA or treatment integrity is missing · 1-2 errors in IOA or treatment integrity description 	<ul style="list-style-type: none"> · Measurement is Appropriate for Operational Definition · Rationale is provided for measurement system · Sampling and observation procedures are appropriate for the experiment · Materials are appropriate · Recording form provided for the paper · IOA is described · Decision rules are described for IOA · Treatment integrity form is created
Experimental Design	0-2	3-6	5-6
	<ul style="list-style-type: none"> · Procedure will not answer research question · Baseline not described · Not enough replications for functional control · Decision rules do not follow accepted practice in single-subject designs · Several threats to internal validity · No replication 	<ul style="list-style-type: none"> · Experimental procedure is adequate for the research question · Some decision rules questionable · May be difficult to implement from the description provided (not enough detail) · Some threats to internal validity that might affect functional control 	<ul style="list-style-type: none"> · Experimental design is appropriate to the research question · Baseline is described if appropriate · Decision rules for moving from one condition to another or counterbalancing are described · Description of how confounds are controlled for and functional control are described · Number of participants as well as replications are described
Graphing	0-1	2-3	4-5
	<ul style="list-style-type: none"> · Graph does not follow ABA conventions · Uses another graphing method than equal interval · Does not show functional control · Phase change lines are not created appropriately 	<ul style="list-style-type: none"> · Graph is missing 1-2 ABA conventions · Shows ideal functional control · Phase change lines are created appropriately 	<ul style="list-style-type: none"> · Sample graph is equal-interval · Follows ABA conventions for graphing · Phase change lines are created appropriately · Shows ideal functional control

	0	1	2
Bibliography and APA Style	<ul style="list-style-type: none"> · Replications are not cited or experiment is lifted from journals (instructor will take action re: academic honesty) · No citations are used · No format of the paper 	<ul style="list-style-type: none"> · Replications are cited · Citation style other than APA 6th edition is used · 1-2 errors in APA Style 	<ul style="list-style-type: none"> · Any replications are cited · APA 6th edition is used to format the paper and bibliography
TOTAL POINTS	COMMENTS		
/20			

	Objective	% Correct by Content Area
Experimental Design	Identify potential interventions based on assessment results and the best available scientific evidence	/24 =
	Review and interpret articles from the behavior-analytic literature.	
	Define and provide examples of functional relations.	
	Use withdrawal/reversal designs.	
	Use alternating treatments (i.e., multi-element) designs	
	Use changing criterion design.	
	Use multiple baseline designs, use multiple probe designs	
	Conduct a component analysis to determine the effective components of an intervention package.	
Conduct a parametric analysis to determine the effective values of an independent variable.		
Measurement	Identify the measurable dimensions of behavior (e.g., rate, duration, latency, or interresponse time).	/101 =
	Define behavior in observable and measurable terms.	
	State advantages and disadvantages of using continuous measurement procedures and sampling techniques (e.g., partial- and whole-interval recording, momentary time sampling).	
	Select appropriate measurement procedure given the dimensions of the behavior and the logistics of observing and recording.	
	Select a schedule of observation and recording periods.	
	Use frequency (i.e., count).	
	Use rate (i.e., count per unit of time).	
	Use duration.	
	Use latency.	
	Use inter-response time.	
	Use percent of occurrence	
	Use trials to criterion.	
	Use interval recording methods.	
	Use various methods of evaluating the outcomes of measurement procedures, such as inter-observer agreement, accuracy, and reliability.	
	Select a data display that effectively communicates quantitative relations.	
	Use equal interval graphs.	
	Use Standard Celeration Charts.	
	Use a cumulative record to display data.	
Interpret and base decision-making on data displayed in various formats.		
Ethical Standards	Reliance on scientific knowledge	/22 =
	Integrity	
	Rights and Prerogatives of Clients	
	Treatment Efficacy	
	Explain and behave in accordance with the philosophical assumptions of behavior analysis, such as the lawfulness of behavior, empiricism, experimental analysis, and parsimony.	

Additional Readings:

Automatically reinforced behavior:

Contrucci Kuhn, S.A., & Triggs, M. Analysis of social variables when an initial functional analysis indicates automatic reinforcement as the maintaining variable for self-injurious behavior. *Journal of Applied Behavior Analysis*, 42 (3), 679-683.

Falcomata, T.S., Roane, H.S., Hovanetz, A.N., Kettering, T.L., & Keeney, K.M. (2004). An evaluation of response cost in the treatment of inappropriate vocalizations maintained by automatic reinforcement. *Journal of Applied Behavior Analysis*, 37 (1), 83-87.

Groskreutz, M.PI, Groskreutz, N.C., & Higbee, T.S. (2011). Response competition and stimulus preference in the treatment of automatically reinforced behavior: A comparison. *Journal of Applied Behavior Analysis*, 44 (1), 211 – 215.

Ing, A.D., Roane, H.S., & Veenstra, R.A. (2011). Functional analysis and treatment of coprophagia. *Journal of Applied Behavior Analysis*, 44 (1), 151 – 155.

Rapp, J.T. (2006). Toward an empirical method for identifying matched stimulation for automatically reinforced behavior: A preliminary investigation. *Journal of Applied Behavior Analysis*, 39 (1), 137-140.

College instruction:

Critchfield, T.S., & Fienup, D.M. (2010). Using stimulus equivalence technology to teach statistical inference in a group setting. *Journal of Applied Behavior Analysis*, 43 (4), 763-768.

Fienup, D.M., Hamelin, J., Reyes-Giordano, K., & Falcomata, T.S. (2011). College-level instruction: Derived relations and programmed instruction. *Journal of Applied Behavior Analysis*, 44 (2), 413-416.

Perrin, C.J., Miller, N., Haberman, A.T., Ivy, J.W., Meindl, J.N., & Neef, N.A. (2011). Measuring and reducing college students' procrastination. *Journal of Applied Behavior Analysis*, 44 (3), 463-474.

Saville, B.K., Zinn, T.E., Neef, N.A., Van Norman, R., & Ferreri, S.J. (2006). A comparison of interteaching and lecture in the college classroom. *Journal of Applied Behavior Analysis*, 39 (1), 49-61.

Walker, B.D., Rehfeldt, R.A., & Ninness, C. (2010). Using the stimulus equivalence paradigm to teach course material in an undergraduate rehabilitation course. *Journal of Applied Behavior Analysis*, 43 (615-633).

Community applications:

Belfiore, P.J., Browder, D.M., & Mace, F.C. (1993). Effects of community and center-based settings on the alertness of persons with profound mental retardation. *Journal of Applied Behavior Analysis*, 26 (3), 401-402.

Cope, J.G., & Allred, L.J. (1991). Community intervention to deter illegal parking in spaces reserved for the physically disabled. *Journal of Applied Behavior Analysis, 24* (4), 687-693.

Ledgerwood, D.M., Alessi, S.M., Hanson, T., Godley, M.D., & Petry, N.M. (2008). Contingency management for attendance to group substance abuse treatment administered by clinicians in community clinics. *Journal of Applied Behavior Analysis, 41* (4), 517-526.

Manuel, J.C., Sunseri, M.A., Olson, R., & Scolari, M. (2007). A diagnostic approach to increase reusable dinnerware selection in a cafeteria. *Journal of Applied Behavior Analysis, 40* (2), 301-310.

O'Connor, R.T., Lerman, D.C., Fritz, J.N., & Hodde, H.B. (2010). Effects of number and location of bins on plastic recycling at a university. *Journal of Applied Behavior Analysis, 43* (4), 711-715.

Compliance:

Normand, M.P., & Beaulieu, L. (2011). Further evaluation of response-independent delivery of preferred stimuli and child compliance. *Journal of Applied Behavior Analysis, 44* (3), 665 – 669.

Normand, M.P., Kestner, K., & Jessel, J. (2010). An analysis of stimuli that influence compliance during the high-probability instruction sequence. *Journal of Applied Behavior Analysis, 43* (4), 735-738.

Schiff, A., Tarbox, J., Lanagan, T., & Farag, P. (2011). Establishing compliance with liquid medication administration in a child with autism. *Journal of Applied Behavior Analysis, 44* (2), 381-385.

Stephenson, K.M., & Hanley, G.P. (2010). Preschoolers' compliance with simple instructions: A descriptive and experimental evaluation. *Journal of Applied Behavior Analysis, 43* (2), 229-247.

Wilder, D.A., Allison, J., Nicholson, K., Abellon, O.E., & Saulnier, R. (2010). Further evaluation of antecedent interventions on compliance: The effects of rationales to increase compliance among preschoolers. *Journal of Applied Behavior Analysis, 43* (4), 601-613.

Driver safety:

Arnold, M.L., & Van Houten, R. (2011). Increasing following headway with prompts, goal setting, and feedback in a driving simulator. *Journal of Applied Behavior Analysis, 44*(2), 245-254.

Clayton, M., Helms, B., & Simpson, C. (2006). Active prompting to decrease cell phone use and increase seat belt use while driving. *Journal of Applied Behavior Analysis, 39* (3), 341-349.

Crowley-Koch, B.J., Van Houten, R., & Lim, W. (2011). Effects of pedestrian prompts on motorist yielding at crosswalks. *Journal of Applied Behavior Analysis, 44* (1), 121-126.

Van Houten, R., Hilton, B., Schulman, R., & Reagan, I. (2011). Using accelerator pedal force to increase seat belt use of service vehicle drivers. *Journal of Applied Behavior Analysis, 44* (1), 41 – 49.

VanWagner, M., Van Houten, R., & Betts, B. (2011). The effects of a rectangular rapid-flashing beacon on vehicle speed. *Journal of Applied Behavior Analysis, 44* (3), 629-633.

Education:

Hofstadter-Duke, K.L., & Daly, E.J. (2011). Improving oral reading fluency with a peer mediated intervention. *Journal of Applied Behavior Analysis, 44* (3), 641-646.

Lannie, A.L., & Martens, B.K. (2004). Effects of task difficulty and type of contingency on students' allocation of responding to math worksheets. *Journal of Applied Behavior Analysis, 37* (1), 53-65.

Melchiori, L.E., deSouza, D.G., & deRose, J.C. (2000). Reading, equivalence, and recombination with students with different learning histories. *Journal of Applied Behavior Analysis, 33* (1), 97-100.

Moore, J.W., & Edwards, R.P. (2003). An analysis of aversive stimuli in classroom demand contexts. *Journal of Applied Behavior Analysis, 36* (3), 339-348.

Resetar, J.L., & Noell, G.H. (2008). Evaluating preference assessments for use in the general education population. *Journal of Applied Behavior Analysis, 41* (3), 447-451.

Functional analysis methodology:

Bloom, S.E., Iwata, B.A., Fritz, J.N., Roscoe, E.M., & Carreau, A.B. (2011). Classroom application of a trial based functional analysis. *Journal of Applied Behavior Analysis, 44* (1), 19-31.

Dicesare, A., McAdam, D.B., Toner, A., & Varrell, J. (2005). The effects of methylphenidate on a functional analysis of disruptive behavior: A replication and extension. *Journal of Applied Behavior Analysis, 38* (1), 125-128.

Langthorne, P., & McGill, P. (2011). Assessing the social acceptability of the functional analysis of problem behavior. *Journal of Applied Behavior Analysis, 44* (2), 403-407.

Piazza, C.C., Fisher, W.W., Brown, K.A., Shore, B.A., Patel, M.R., Katz, R.M., Sevin, B.M., Gulotta, C.S., & Blakely-Smith, A. (2003). Functional analysis of inappropriate mealtime behaviors. *Journal of Applied Behavior Analysis, 36* (2), 187-204.

Rispoli, M., O'Reilly, M., Lang, R., Machalicek, W., Davis, T., Lancioni, G., & Sigafos, J. (2011). Effects of motivating operations on problem behavior and academic behavior in classrooms. *Journal of Applied Behavior Analysis, 44* (1), 187-192.

Geriatrics:

Buchanan, J.A., & Fisher, J.E. (2002). Functional assessment and noncontingent reinforcement in the treatment of disruptive vocalization in elderly dementia patients. *Journal of Applied Behavior Analysis, 35* (1), 99-103.

Burgio, L.D., & Burgio, K.L. (1986). Behavioral gerontology: Application of behavioral methods to the problems of older adults. *Journal of Applied Behavior Analysis, 19* (4), 321-328.

Dwyer-Moore, K.J., & Dixon, M.R. (2007). Functional analysis and treatment of problem behavior of elderly adults in long-term care. *Journal of Applied Behavior Analysis, 40* (4), 679-683.

Gallagher, S.M., & Keenan, M. (2000). Independent use of activity materials by the elderly in a residential setting. *Journal of Applied Behavior Analysis, 33* (3), 325-328.

Trahan, M.A., Kahng, S.W., Fisher, A.B., & Hausman, N.L. (2011). Behavior analytic research on dementia in older adults. *Journal of Applied Behavior Analysis, 44* (3), 687-691.

Parenting:

Allen, K.D., & Warzak, W.J. (2000). The problem of parental nonadherence in clinical behavior analysis: Effective treatment is not enough. *Journal of Applied Behavior Analysis, 33* (3), 373-391.

Gortmaker, V.J., Daly, E.J., McCurdy, M., Persampieri, M.J., & Hergenrader, M. (2007). Improving reading outcomes for children with learning disabilities: Using brief experimental analysis to develop parent-tutoring interventions. *Journal of Applied Behavior Analysis, 40* (2), 203-221.

Lafasakis, M., & Sturmey, P. (2007). Training parent implementation of discrete-trial teaching: Effects on generalization of parent teaching and child correct responding. *Journal of Applied Behavior Analysis, 40* (4), 685-689.

Phaneuf, L., & McIntyre, L.L. (2007). Effects of individualized video feedback combined with group parent training on inappropriate maternal behavior. *Journal of Applied Behavior Analysis, 40* (4), 737-741.

Thompson, R.H., Bruzek, J.L., & Cotnoir-Bichelman, N.M. (2011). The role of negative reinforcement in infant caregiving: An experimental simulation. *Journal of Applied Behavior Analysis, 44* (2), 295 – 304.

Psychiatric issues:

Dozier, C.L., Iwata, B.A., & Worsdell, A.S. (2011). Assessment and treatment of foot-shoe fetish displayed by a man with autism. *Journal of Applied Behavior Analysis, 44* (1), 133-137.

Lang, R., Register, A., Mulloy, A., Rispoli, M., & Botout, A. (2011). Behavioral intervention to treat selective mutism across multiple social situations and community settings. *Journal of Applied Behavior Analysis, 44* (3), 623-628.

Reyes, J.R., Vollmer, T.R., & Hall, A. (2011). Replications and extensions in arousal assessment for sex offenders with developmental disabilities. *Journal of Applied Behavior Analysis, 44* (2), 369-373.

Sparling, J., Wilder, D.A., Kondash, J., Boyle, M., & Compton, M. (2011). Effects of interviewer behavior on accuracy of children's responses. *Journal of Applied Behavior Analysis, 44* (3), 587-592.

Travis, R., & Sturmey, P. (2010). Functional analysis and treatment of the delusional statements of a man with multiple disabilities: A four year follow-up. *Journal of applied Behavior Analysis, 43* (4), 745-749.

Sports applications:

Reed, D.D., Critchfield, T.S., & Martens, B.K. (2006). The generalized matching law in elite sport competition: Play calling as operant choice. *Journal of Applied Behavior Analysis, 39* (3), 281-297.

Smith, S.L., & Ward, P. (2006). Behavioral interventions to improve performance in collegiate football. *Journal of Applied Behavior Analysis, 39* (3), 385-391.

Stokes, J.V., Luiselli, J.K., & Reed, D.D. (2010). A behavioral intervention for teaching tackling skills to high school football athletes. *Journal of Applied Behavior Analysis, 43* (3), 509 – 512.

Stokes, J.V., Luiselli, J.K., Reed, D.D., & Fleming, R.K. (2010). Behavioral coaching to improve offensive line pass-blocking skills of high school athletes. *Journal of Applied Behavior Analysis, 43* (3), 463-472.

Vollmer, T.R., & Bourret, J. (2000). An application of the matching law to evaluate the allocation of two-and three-point shots by college basketball players. *Journal of Applied Behavior Analysis, 33* (2), 137-150.