

ABA Online Student Thesis Manual

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Introduction to the Thesis

In the Applied Behavior Analysis (ABA) Online Department at The Chicago School of Professional Psychology (TCSPP), a requirement for graduation with a Master's Degree includes the development of either an applied project or an advanced research project (i.e., thesis). Students who enter the PhD in ABA program are also required to complete a thesis, if they have not previously done so, before taking their competency exams. The thesis prepares students for further training at the doctorate level to conduct and publish behavior analytic research. The purpose of the thesis is to enhance the student's skills to:

- a) formulate a research question that is socially significant and important to the further development of applied behavior analysis, and
- b) apply sound research strategies in answering this question.

Broadly, the thesis requirements involve conceptualizing an original empirical research project or systematic replication of published empirical literature in ABA, conducting the research project, writing a scholarly paper pertaining to the research study, orally defending the project, and having the thesis project (both oral defense and paper) accepted by the student's Thesis Committee and the Department Chair. The student will be provided with opportunities to complete these requirements in the three-part course sequence *AB560 Advanced Research Project I, AB561 Advanced Research Project II*, and *AB562 Advanced Research Project III*.

AB560 Advanced Research Project I, is the first seminar focused on the behavior-analytic Master's thesis. The major learning objectives are the completion of the Introduction section of your thesis (including a literature review, rationale for the proposed research, the research question, a brief overview of your procedures, and references) and at minimum an outline of the Method section. (credit/no credit) (1 credit) The Department Manager or Student Manager will check grades for prerequisite courses before allowing students to register for AB560.

AB 561 Advanced Research Project II is the second seminar focused on the applied behavior-analytic Master's thesis. The major learning objective is submission of the proposal to the Institutional Review Board (IRB), gaining approval from the IRB, and collecting data for the M.S. thesis. (credit/no credit) (1 credit) Students must pass *AB560* before they will be allowed to take the third course in the sequence.

In AB562 Advanced Research Project III is the final seminar in preparing an applied behavioranalytic Master's thesis. Emphasis is on completing a piece of applied behavior-analytic research and writing up the thesis. The major learning objective is the completion of the M.S. thesis. (credit/no credit) (1 credit)

Because this manual specifies the procedures, requirements, policies, and objectives, we require that you fill out a form attesting that you have, in fact, read this manual https://app.box.com/files/0/f/5111278566/Required_Forms_for_Thesis. The ABA Department requires this form in order to verify that you have been provided with this manual, that you have read it, and that you therefore know about the procedures, requirements, policies, and objectives stated herein. The instructor of your Advanced Research Project courses may, additionally, have one or more quizzes based on content in this manual as part of the course objectives.

The Thesis Committee

Thesis Chair

Each student will conduct his or her thesis project under the guidance of a two-person Thesis Committee. The committee will consist of a Thesis Chair (also known as the "First Reader") and a Second Reader. The responsibilities of Thesis Chair will be assumed by the student's *AB560* instructor.

As per custom, your Thesis Chair is the head of your committee and should be the committee member with whom you confer first and finally regarding important decisions pertaining to your thesis and the research associated with it. Ideally, you will retain the same Thesis Chair and Second Reader across all three terms of your Advanced Research Project thesis courses.

You may change committee members only upon extreme, or clearly unusual, circumstances. A decision to change committee members must include a clear rationale and must entail the consultation and approval of the ABA Department Chair, as well as the current committee members. Please note that in the event of such a circumstance, this sort of change may delay your completion of a thesis in a timely manner, and that it will require that a new committee be constituted.

Selecting the Second Reader

After the Thesis Chair is identified, students will be responsible for selecting one additional Thesis Committee member. The "Second Reader" must be a faculty member in the ABA Department at TCSPP, and may be "full-time," with the designated rank of Assistant Professor, Associate Professor, or Full Professor, or may be part time, with the designated rank of Affiliate or Adjunct. The signatures of both readers will be required on any paperwork regarding the thesis, including both approval of the proposal and final approval of the completed project. In *rare cases*, a committee member outside the ABA Online Department at TCSPP may be on your committee, but this requires approval of the TCSPP ABA Online Department.

Each student must request approval from his or her *AB560* instructor (Thesis Chair) prior to inviting an individual to become a member of the student's Thesis Committee. A student should not ask a professional to join his or her thesis committee unless this person has first been approved by the student's Thesis Chair. Ideally, selection of committee members will occur no later than the first two class meetings of *AB560*. Students will be required to complete the *Applied Behavior Analysis Thesis Committee Membership & Topic Proposal Form*

(<u>https://app.box.com/files/0/f/5111278566/Required_Forms_for_Thesis</u>), obtain the appropriate signatures, and submit this form to their Thesis Chair (Instructor in *AB560*).

All students are required to provide written confirmation to the Thesis Chair of a potential Second Reader's willingness to serve on the committee. Generally, an email from the potential Thesis Committee member is sufficient for this purpose. When soliciting an individual who is not part of The Chicago School of Professional Psychology's (TCSPP) ABA faculty to become a member of a student's thesis committee, the student should request that the individual write "I agree to serve as a thesis member for (your name). I understand that I will be required to sit on both (your name)'s thesis proposal defense at TCSPP at the end of the ______ term and the completed thesis defense at the end of the ______ term."

The criteria for a person to sit on a student's Thesis Committee is that the individual has demonstrated expertise in behavior analysis and has earned a doctoral degree (e.g., Ph.D., Ed.D., or Psy.D.) in either applied behavior analysis, psychology, special education, or another discipline relevant

to the thesis research (in the case of the latter, the discipline of the potential committee member must be assessed by your Thesis Chair to determine relevance). Remember that approval for a Second Reader who is not a part of TCSPP is provided under special circumstances and requires Thesis Chair preapproval. In such cases, students may be permitted to have one of the following individuals serve as another committee member:

- a) a faculty member from another college or university that primarily focuses on an applied behavior analytic intervention model
- b) a director/supervisor of a school program or agency that uses an applied behavior analytic intervention model, or
- c) a clinician or consultant who uses an applied behavior analytic intervention model.

In the event that an individual can no longer continue to serve on a student's Thesis Committee (e.g., if he or she becomes ill), the same process described above will be used to identify a replacement committee member.

When Choosing Your Second Reader

- Ideally, you should select someone who has an interest and/or background in the topic that you intend to research. Make sure the Second Reader has been preapproved by your Thesis Chair before you invite them to the committee.
- Consider whether the two committee members will have strong methodological and/or theoretical conflicts with each other.
- Establish what kind of role your Second Reader will play. Some may want to see every chapter throughout the thesis process, while others only want to see a completed draft.
- Pay attention to your Second Reader, making sure to include him or her in the process of feedback and approval. When sending emails to your Thesis Chair regarding your thesis or its research, you may want to carbon copy ("cc") your Second Reader as well. You should always "cc" your Thesis Chair when you communicate with your Second Reader regarding thesis. Please ask your Thesis Chair what his or her policy is regarding such communications.
- Take into account your committee's comments before revising your work. Faculty edits and comments are generally made with the goal of improving the status and quality of your work. They are not meant as criticisms, but rather as useful guidance. The thesis represents a joint activity.
- Keep your committee members up to date on the status of your thesis and any changes you make in your research methodology. Frequently students will only meet on a regular basis with their Chair; the other committee member, however, should be kept up to date on important changes or events in the research plan. *Note that no change in procedure that results in the need for a revised consent form may be made without submitting an Amendment to the IRB and obtaining approval of that amendment first.*

Review TCSPP ABA Online faculty biographies here.

http://www.thechicagoschool.edu/Online/Meet_Our_Faculty?dlv_TCSPP-UserProfileSearch-Results-

Online=(dd_User%20Profile%20Department=Applied%20Behavior%20Analysis)(dd_User%20P rofile%20Areas%20Of%20Expertise=*)(dd_User%20Profile%20User%20ID=*)

Review TCSPP ABA Online adjunct biographies here.

https://tcs1.box.com/s/ueeh52k0uz9ivviqbr1h545skngz4eyy

Institutional Review Board Requirements

Because the thesis entails actual empirical research with human participants, the research must be approved by TCSPP's Institutional Review Board (IRB). The IRB's purpose is to assure that appropriate steps are taken by researchers to protect the rights and welfare of human research participants. All students developing and conducting thesis research will be expected to have read TCSPP's *IRB Policies and Procedures* and agree to abide by them. These can be found at https://my.thechicagoschool.edu/community/academicresource/irb/Pages/Additional-Resources.aspx. The *IRB Policies and Procedures Manual* can be downloaded at https://ego.thechicagoschool.edu/s/843/images/editor_documents/IRB/policies_procedures_manual.pdf

The research may also require the approval of other IRB's if the venue where the research is carried out has its own board. Moreover, the research must be carried out in accordance with, and adherence to, Behavior Analyst Certification Board (BACB) ethics, American Psychological Association (APA) ethics, and must apply acceptable behavior-analytic experimental design and methodological considerations. Ideally, the thesis should be a document that could be submitted to, and stand a reasonable chance of being accepted for publication in, a peer-reviewed scientific journal.

Online Course on Protecting Human Research Participants

Within the first 2 weeks of *AB560*, all students must provide documentation of completion an online ethics training course that focuses on the protection of human research participants. The direct link to the online course on protecting human research participants can be found at https://www.citiprogram.org/. Specific directions relevant to TCSPP can be found at https://my.thechicagoschool.edu/community/academicresource/irb/Pages/Application-Submission-Material.aspx. When a student completes the online course, he or she must provide a copy of the online course completion certificate in the the *AB560* assignment (for the Thesis Chair) and upload the certificate of completion into the IRB Electronic Submission System. Students should also retain a copy of their completion certificate for their own records should they need to provide evidence of completion.

When you take and pass the online course, you will be issued a certificate. As per TCSPP policy, this certificate is "good" for one year. That means that it expires one year after the date of issuance. The certification may be renewed every year, although that requires one to go through the course again. You will need to include the certificate as part of the package of forms and materials that you submit to the IRB. You will also need to include certificates for anyone who serves as a research assistant or observer for you.

Accessing the Electronic Submission System

- 1. Request a Profile: To request a profile in the system please complete the request form located at: https://my.thechicagoschool.edu/community/academicresource/irb/Pages/IRB-Application-Drop-Box.aspx
- 2. Please allow up to three business days to for the IRB office to process your request.
- 3. Accessing the System: When your profile request is complete, you will receive an email with the

necessary information to access the electronic submission system. This will include: a link to the site, a user guide document, and a quick-facts sheet. If you have trouble logging into the system please contact the IRB office at irb@thechicagoschool.edu

Developing Informed Consent Forms

All students will be required to develop a written informed consent form for use with the participants in their thesis research studies. The *Template: Written Informed Consent Form* and *Template: Oral Consent Script* can be found at https://my.thechicagoschool.edu/community/academicresource/irb/Pages/Application-Submission-Material.aspx. The *AB560* instructor (Thesis Chair) will work with each student to develop the informed consent form for his or her study. The Thesis Chair will likely be able to provide models of appropriate informed consent forms. Prior to conducting thesis research, each student's proposed informed consent form must be approved by TCSPP's IRB. Normally, the proposed informed consent form is submitted to the IRB along with the student's application to conduct research (see section below *Developing the IRB Application*).

The purpose of the written informed consent form is to document the consent process for research participants. It consists of a description of the specific research project, the procedures each participant will undergo, and a clear statement of the individual's rights as a research participant. In addition, if you foresee that you might wish to record and show video footage of your study at a later date (such as in a professional conference presentation), then you must include this request in your informed consent form. Informed consent must normally be obtained in a written format that requires the participant's signature, or the signature of the participant's legally authorized guardian or representative. In all cases, a copy of the written informed consent, signed by both you and the participant (or legal guardian) must be given to the participant unless the IRB specifically waives this requirement.

Developing the IRB Application

Prior to conducting thesis research, each student's application must be uploaded and approved electronically by TCSPP's IRB. Specific directions on accessing the electronic submission system can be found at <u>https://my.thechicagoschool.edu/community/academicresource/irb/Pages/Application-</u> <u>Submission-Material.aspx</u>. The Director of the IRB committee (as of Fall 1, 2015) is Alicia Cook. IRB application questions can be routed to the IRB Director at <u>IRB@thechicagoschool.edu</u>.

There are three levels of IRB review of informed consent forms and research proposals. The first level is *exempt review*, which essentially means that the IRB has determined that the proposed research is "exempt" from further IRB review. An example of research exempt from IRB review would be conducting research on commonly accepted instructional practices. It is highly unlikely, however, that any research conducted for the thesis in ABA will qualify as exempt because many graduate students will be working with a sensitive population (e.g., individuals with developmental disabilities). The next level of IRB review is *expedited review*. Most thesis research will fall under this category. Expedited review is to be used when "not more than minimal risk" is possible for the study participants. When completing the expedited review form, you will be asked to identify why your research should receive expedited review. For most of the research generated for a thesis in the ABA program, students should indicate that Category 7 is the most relevant:

Category 7: Research on group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs

or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Two members of the IRB will review your submission. The IRB will attempt to inform you of their decision within 14 days of receiving your application. Of course, this time frame may be extended if you submit something to the IRB during off times, such as winter break.

The third level of IRB review is *full committee review*. It is unlikely that you will be conducting research at this level. An example of *full committee review* might involve the use of extinction only as a treatment for self-injury or aggression.

In almost all cases, the IRB will raise one or more questions or make suggestions that you will need to address in a revised submission to the IRB. In the cases of resubmission, only the Director of the IRB will need to review the materials you have submitted. Because this second review period could take up to 1-2 additional weeks, however, you should prepare your submission carefully. The fewer revisions you need to make, the faster your application will be returned to you. Make sure that all appropriate rules for spelling and grammar are followed in your IRB submission. Your IRB submission should exemplify maximal professionalism and care on your part. The IRB reserves the right to return submission materials if spelling and grammar problems are common. You simply must write clearly and provide all of the requested information to make the process smoother. Make sure that you and your Thesis Chair carefully review these documents before submitting them to the IRB.

The most important thing that you can do is try to get your applications in as soon as possible. You may need to politely remind your Chair to sign the electronic application because it won't be reviewed until the Chair signs it. For example, if your Chair misses the e-mail asking him or her to sign, the application can sit for weeks in limbo while you think its being reviewed. After it comes back from pre-review, you need to make any edits as quickly as possible and get it turned back in so it is sent to a reviewer. Also, if it has been 2 weeks since the Chair signed it and you haven't heard back about the pre-review, or 3 weeks since you turned in the edited version after the pre-review and you haven't gotten an approval letter, you should contact the IRB to politely ask where it is in the process. Sometimes the IRB needs to prompt reviewers or there is a backup of approval letters, but once in a while the letter has already been sent, but the e-mail system failed to send it, so we encourage you to stay on top of applications and not wait for weeks if you haven't heard anything.

You, and upon the advice of your Thesis Chair, may want to submit your proposal as a poster session for the Association for Behavior Analysis International (ABAI) convention, traditionally held at the end of each May. ABAI periodically changes the rules and requirements regarding empirical research submitted in poster session form, so please consult with your Thesis Chair regarding this matter. By submitting your research as a poster to ABAI, and given that it is accepted by ABAI, and if you actually do present it at the convention, then one additional benefit you will accrue will be the privilege of adding this presentation as a line entry under Presentations in your curriculum vitae (CV). The ABA Department at TCSPP strongly encourages its students and graduates to further their professional careers by submitting papers to and making presentations at international, national, regional, and state conventions. It is also in your own best interest for your career to do so as well.

Once IRB approval is formally granted (usually via email), then, but only then, may a student begin to conduct research sessions. This policy also pertains to recruiting participants, obtaining informed consent, and to conducting baselines, preference assessments, pre-tests, and other phases that typically mark the beginning of research. None of these initial or early phases or assessments or tests or recruiting may be carried out or be initiated until IRB approval has been granted.

Helpful Tips for Completing Your IRB Application

•If you are conducting your research at a particular site, you must have a letter on the letterhead of the agency/institution/setting where you are selecting participants for your study that gives you permission to conduct your research at that site. The letter must be signed by a "responsible party" (e.g., the agency's Director).

•Informed consent is required for almost all studies that include human participants. Adult participants who are their own guardians sign an informed consent form. For adults who are not their own guardians, the informed consent form must be signed by the legal guardian, and the participant must provide assent, either by signing an assent form or by stating their assent after you read them an assent script.

•For participants under the age of 18, you will need an assent form or script. The assent form is an informed consent form written in the language that you believe will be understandable by your participants. An assent script is read to participants who cannot read and sign an assent form, and typically there is a place to indicate whether the participant provided assent on the form. You also must have an informed consent form that is signed by a parent/guardian. For both the assent form and the informed consent form, please check the readability level. One way to do this is in Microsoft Word, using the Spelling Check under Tools on the menu. An option in this function is readability level. Please check the readability level with respect to the population who will be reading the consent or assent form. If the level is too high, then please edit the form downward: Use shorter sentences, words with fewer syllables, and less jargon.

•If there is the possibility for distress to participants from participating in your study, you should provide referrals and state this clearly in your IRB application, indicating the specific referrals you will provide. Referrals for possible distress engendered by participation in the study will be general referral sources, for example, 800 numbers for AA, ANAD, emergency talk lines, and general referral numbers from organizations such as IPA.

•Your Thesis Chair and/or you as principal investigator keep copyright permissions and ownership, as per TCSPP policy.

•You must indicate and be realistic on the amount of time that participation in your study will entail. Be aware that single-subject research designs may extend across weeks or even over several months.

• "Anonymous" means that no one has any way of knowing who gave responses or can figure out who a participant is. Participants who are anonymous are not identified by name. You as principal investigator will not know the identities of anonymous participants.

•"Confidential" means someone (including the researcher) could know which participant gives which information/data. However, confidential information must be secure. You, as researcher, will need to use pseudonyms for your participants, and only you should have or keep a code form so that you know who is who. Please use the terms "confidential" and "anonymous" correctly on the application.

•To ensure true confidentiality and/or anonymity, you will need to refrain from mentioning in your final thesis the specific name of the agency or school where the research was conducted. This is because your thesis, in the participant subsection of the method section, must include sufficient demographic information (age, gender, ethnicity, diagnosis, etc.) in order for the thesis to be "technological," such that it could be replicated and extended.

•According to APA guidelines, research materials are to be kept for a minimum of five years. This includes all recorded data and includes audio/videotapes and recordings. Please indicate this in the appropriate areas of the IRB application and consent. •Please include all mandatory language required by the IRB in the informed consent form and other forms. An informed consent form template is available on the IRB website.

•You will need to conduct a debriefing interview and describe that in your IRB application.

•Describe all risks in the consent form. Do not label them as "low" or "minimal" in the consent form; just describe what the specific risks are. You should also indicate what you will do in the study to minimize the risks.

•Do not exaggerate the benefits to participation in the consent form. Stick to the data that you can collect; don't go beyond the data. Money for participation is not considered a benefit of participation, but any remuneration must be described in the IRB application and consent form.

•Ask for more participants than you need, in case of participant dropout or termination of participation or failure to meet qualifications during pre-assessments. The IRB wants to know the maximum number of participants who may sign a consent form. You should overestimate, just in case.

Required Forms for Thesis Coursework

In *AB560*, all students will have access to copies of the necessary forms that pertain to the thesis process. These forms are located in the course website. These forms include:

Applied Behavior Analysis Thesis Manual Form

Applied Behavior Analysis Thesis Committee Membership & Topic Proposal Form

Notification of Thesis Document Completion

Thesis Defense Completion Form

Sample Title Page

Thesis Rubric I: Thesis Proposal

Thesis Rubric II: Thesis Document

Thesis Rubric III: Oral Defense

Applied Behavior Analysis Thesis Sharing Form

Required Readings for Thesis Coursework

If you have not already done so, students should obtain copies of the following (Most sources will have already been purchased or downloaded in prior courses for the M.S. in ABA program):

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

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Also, The Behavior Analyst Certification Board's Professional and Ethical Compliance Code. (download at <u>www.bacb.com</u>)

Your textbook or readings from AB551 Research Methods. One example is:

Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research* (3rd ed.). New York: Routledge.

In addition to the reading sources outlined above, each Thesis Chair may also recommend additional readings for their sections of *AB560*. As part of developing his or her own thesis research area, students will also be responsible for reading and summarizing a substantial number of peer-reviewed research articles relevant to their thesis study. Students will be required to provide copies of each article read and summarized to the Thesis Chair. Students should also keep copies of the relevant articles so that they can refer to previously summarized articles for additional information when needed or requested by the Chair and/or committee members.

Description of the Advanced Research Project Courses

This section provides a brief description of the three Advanced Research Project (ARP) courses that the student takes. Eligible ABA students enroll in three terms (3 credits total) of Advanced Research Project: *AB560*, *AB561*, and *AB562*. Each course is 1 credit, graded on a Credit/No Credit basis. A passing grade in all prerequisite courses is required in order for a student to take the ARP courses. The instructor of the ARP classes is the student's Thesis Chair. The student also selects a Second Reader to help supervise and evaluate the project.

A Thesis Committee Membership & Topic Proposal form

(https://app.box.com/files/0/f/5111278566/Required_Forms_for_Thesis) must be completed and submitted to the ABA Department Chair, who must approve the Second Reader. Students must enroll in *AB560, AB561*, and *AB562* in order to produce a Thesis and thus meet that requirement for earning a Master's Degree or as prerequisites for the PhD in ABA. These courses are named Advanced Research Project, but are also informally known as Thesis. The timing of these courses will depend on your cohort. A typical M.S. student sequence might be *AB560*, in your 9th term, *AB561* in your 10th term, and *AB562* in your 13th term. PhD students who are taking thesis classes typically have *AB560*, AB *561*, a term off for IRB review, and then finish with *AB562*.

AB560 Advanced Research Project I

In order to pass the first term (*AB560*), the student must complete all course requirements and must also (a) determine a research topic and further a research question, and (b) prepare and turn in a draft of the Introduction section of the thesis proposal. The thesis proposal will include a title page, an Introduction, and a Method section. A first draft of the Introduction must be complete for the student to pass *AB560*. The student will continue to work on the thesis proposal during *AB561*. During the AB560 term, each student submits proof of completing the online training on the use of human subjects in research required by the IRB, Please note that this certificate is one of the items that must be included when a proposal is submitted to the IRB.

Preparing the formal research question. By the second class meeting of *AB560*, all students will be required to submit a 3-5 page research question proposal. The proposal should include an identification of the relevant independent and dependent variables, the social significance of the targeted skill set(s), a rationale for the research question (i.e., why the study is of importance), a

general description as to how the research would be carried out, where the setting will be, who the participants will be, and a graph with hypothesized data. The research study proposed must be able to be conducted ("run") in a reasonable time (approximately two months). It is also important to consider the availability of resources for your study before deciding on a project (e.g., cost of materials, access to participants, available time to conduct the study). A more detailed handout regarding this requirement will be presented at the start of the *AB560* course.

Literature review and article synopses. As a requirement for the thesis proposal, each student will review major relevant research articles appearing in peer-reviewed, refereed journals in your area of study.

- A minimum of 15-20 articles should be reviewed in your literature review (a major part of the thesis proposal Introduction section).
- Prior to being incorporated into the literature review, students must write a double-spaced 1-2 page synopsis of each study including its (a) purpose, (b) methods used, (c) experimental design used, (d) results, and (e) implications. Students are invited to use an article summary guide provided by their *AB560* instructor.
- Students must also submit paper copies of each journal article along with the article's synopsis to their Thesis Chair.
- Finally, students should then summarize these 15-20 articles in a 5-10 page literature review paper written in the style of the most recent edition of the American Psychological Association Publication Manual.
- This literature review paper will later serve as the primary component of the Introduction section of the formal thesis research proposal.

In general, the literature review should include relevant primary articles in ABA that are related directly to your research topic. Students should always read the original articles (the primary source) and not rely solely on another author's review of the literature (which is a secondary source). A successful literature review demonstrates a researcher's command of the primary literature relevant to your research question. Your review should show the "data gap" that your research will fill or address. Your review should also be critical in describing problems in design or interpretation evident in prior studies.

Note: Later when you are writing/revising your final thesis paper, make sure you update your literature review from its prior version in your proposal. New studies may have been published since your thesis proposal was approved!

Formal written proposal of thesis research. A written thesis research proposal includes:

- a) Abstract summarizing your proposed study
- b) Review of the relevant research literature (Introduction)
- c) Statement of the research problem and the rationale for your proposed empirical research (near end of Introduction)
- d) Comprehensive Method section including a detailed description of the participants, setting, materials, experimental procedure, experimental design to be used, reinforcer assessment (if relevant), inter-observer agreement measurement system, procedural integrity assessment system, generalization assessment used, social validity measures used, etc.
- e) Hypothesized Results section that describes how the data should turn out and how they will be analyzed

- f) Discussion of the hypothesized data that integrates the findings with the research literature presented in the Introduction
- g) Reference section in which all studies cited in the paper are listed in APA format
- h) Tables
- i) Figure(s) depicting the hypothesized data in graphical form using a computerized graphing program (e.g., Excel®, GraphPad®, Sigmaplot®, etc.)

The proposal should be of sufficient detail and length (about 15-25 double-spaced pages) and include sufficient references to allow others to determine the relevance and value of the topic selected. The student's *ABA 560* Thesis in ABA I instructor will evaluate the proposal with respect to: scholarly contribution of the thesis to the discipline of ABA, experimental methodology, style (APA guide), grammar, and clarity. More specific information on the content of the thesis proposal can be found in *Section II Writing the Thesis/Thesis Proposal*.

After the thesis chair approves of the document, it's then sent to the second reader for review. Once the second reader's edits are incorporated, the student then submits the IRB application. Thesis chairs declare their students' readiness for defense, again based on incorporation of the chair's and second reader's edits.

A timeline of activities for AB560 are included in the syllabus available in the course.

AB561 Advanced Research Project II

In order to pass the second term (*AB561*), the student must submit a proposal to the Institutional Review Board (IRB) by the middle of that term. Before submitting to the IRB, the student must have a completed draft of the thesis proposal (Introduction and Method) approved by the Thesis Chair and Second Reader. Once the thesis proposal is approved by the committee, the student and Thesis Chair work on the IRB application and may consult with the Second Reader during this process, though this is not required. If the student fails to complete these objectives, then the instructor may choose to give the student a grade of No Credit for the course, which requires the student to re-take the course. Alternatively, if the student has shown progress but has not completed the requirements, his/her Thesis Chair may give the student a grade of In Progress or Incomplete, allowing the student two or six weeks, respectively, to complete and submit an IRB proposal before the onset of the following term and earn Credit for the course.

A timeline of activities for AB561 are included in the syllabus available in the course.

AB562 Advanced Research Project III

In order to pass the third thesis class (*AB562*), the student must conduct and finish data collection, complete writing the thesis manuscript, and then submit the final manuscript (Title Page, Table of Contents, Acknowledgements, Abstract, Introduction, Method, Results, Discussion, References, and Appendices), and receive final approval from the thesis committee and Department Chair. In addition, the student must pass an oral defense of the thesis. Please note that the final document must be approved by both committee members (Chair and Second Reader) before the student may be allowed to participate in the oral defense. At least one oral defense will be scheduled each term. Completion of both the final document and the oral defense by the end of the term is required to receive a passing grade for AB562. If these requirements are not met, the student will receive a No Credit in the course and must re-take it. Alternatively, if the student has made progress but has not completed all requirements, he/she may receive Credit for the course and must enroll in *AB998*, Thesis Maintenance, for the next term. In order to

pass *AB998*, the student must complete the requirements for *AB562* by the end of the next term. This includes the final draft of the thesis and passing the oral defense.

Instructors may choose to give students an Incomplete or In Progress for any of the thesis credits; however, the grade must be changed to either "Credit" or "No Credit" according to TCSPP guidelines. Grades will only be changed to "Credit" if the student completes the requirements for *AB 560*, *AB 561*, or *AB 562* before the last day to change the Incomplete or In Progress grades (see TCSPP Student Handbook for deadlines). A grade of "No Credit" will result in an academic development plan (ADP). If the ADP requirements are not met and the student receives two consecutive grades of "No Credit," the student will be referred to the Student Affairs Committee-Academic Integrity for unsatisfactory progress on the thesis project and may be dismissed from the program. A Thesis Chair may require, or the student may request, an ADP at any time. The ADP is designed to be a supportive tool, not a punitive action. The ADP represents a tool to help students stay on track for a timely graduation.

A timeline of activities for AB562 are included in the syllabus available in the course.

A Note on Graduation

Master's students who have not completed the thesis requirements by graduation may be able to participate in the graduation ceremony; however, they will not receive their diploma until all thesis requirements have been met with satisfactory completion. If a student will complete the thesis project by end of the term in which the graduation ceremony occurs, he/she can participate in the graduation ceremony. If a student is likely to finish all requirements, including thesis, by the end of the term following the graduation ceremony (i.e., the Fall 1 term immediately following a July graduation ceremony), he/she may be able to participate in the ceremony if the Department Chair and Dean approve his/her petition to participate in the graduation ceremony. A student has not graduated until all degree requirements have been met and the degree has been conferred. Moreover, a student may not state that he/she has graduated if his or her degree has not been conferred; such a statement would be an ethical violation.

PhD students will not be allowed to sit for their competency exams until all thesis requirements have been met with satisfactory completion.

Writing the Thesis/Thesis Proposal

APA Format

Students are required to write both their thesis proposal and completed thesis paper in the format of the American Psychological Association (6^{th} ed.). Neither paper can be approved if it is not written in correct APA format.

Note: Whenever you submit any of your writing to your thesis chair, be sure to proof read every single word and check for APA format from beginning to end. You need to proof read the entire document every time you make a change as this is the only way to catch inconsistencies.

The Issue of Future/Past Tense

Students often question what grammatical tense they should use in their research thesis papers. When writing your thesis proposal, you should always use future tense for describing anything you will be doing when you actually run your study. For example, "The present study will use three children with autism as participants." When describing expected data in your thesis proposal, you should write something like "It is hypothesized that [DV] will remain low during baseline and will increase systematically during treatment. Hypothesized data can be observed in Figure 1."

When writing the final version of your thesis (after you have conducted the actual study), you should always use past tense when describing what you already did and what results you found. For example, "The participants in the present study were three children with autism." When describing actual obtained data, you should write something like "The data show that [DV] was low during baseline and increased systematically when treatment was introduced. These data can be observed in Figure 1."

Note, however, that whenever you are directing the reader to view something, such as a table or figure, that the tense you should use is present tense. For example, you should write "Table 1 shows the different examples used to teach play initiations for the three children with autism in the present study."

Thesis/Thesis Proposal Manuscript Cover Page

The cover page of your manuscript should follow APA format with the exception of the following additions:

- a) Below your affiliation (The Chicago School of Professional Psychology) you should include the heading Thesis Committee: followed by a serial listing of your committee members (no need to include their affiliations). Following your Chair's name, write in parenthesis the label (Chair).
- b) Below this write Thesis proposal submitted in partial fulfillment of the requirements for the M.S. (or Ph.D.) in Applied Behavior Analysis (for the proposal) or Thesis submitted in partial fulfillment of the requirements for the M.S. (or Ph.D) in Applied Behavior Analysis (for the final paper).
- c) Beneath this write the date of the version of your manuscript in formal format (e.g., December 3, 2015). Each time you send a version of your manuscript to either your Thesis Chair or to your full committee make sure to update the date on the title page. This will assist them in keeping track of different manuscript versions.

As an aside, you might find it advantageous to keep different versions of your manuscript saved on your computer because there are occasions when an earlier version of your manuscript is "mined" for certain sections. In this way you can go back to earlier drafts and copy sections that now need to be reinserted into your current version of the manuscript. To reduce the likelihood that you might over-write a file, it is recommended that you save each version of your thesis or thesis proposal with the date as part of the title (e.g., Smith_thesis_May15.doc).

Thesis/Thesis Proposal Abstract

Always write your abstract last after all the other sections of your paper are completed. Far too often, students try to write the abstract first and use it as a framework for writing the rest of the paper. Write the abstract last so that it serves its actual purpose as a summary of what you have done. The abstract should never exceed one page in length. Usually it is structured such that the sentences comprising it appear as something similar to the following:

"The purpose of the present study was (will be) to investigate the effects of [insert IV] on [insert DV] with [x participants] using a [insert name of] experimental design. During baseline, participants were exposed to [describe procedure in 3-4 sentences]. During intervention, participants were exposed to [describe procedure in 3-4 sentences]. Correct responding was defined as [insert definition]. In addition, [social validity or generalization] was assessed by [insert assessment used]. The results showed that [IV] was successful in increasing/decreasing

[DV]. In addition, generalization measures showed that [describe results]. These results provide [insert implications of study]."

Chapter 1: Introduction

The purpose of the Introduction is to provide the background and rationale necessary for a reader to identify the merits of your study. That is, does your study contribute to what we already know about a teaching procedure, skill to be learned, or learning principle? Reference at least 15-20 research articles in the Introduction. The description below touches upon the major points contained in a quality Introduction.

Define the statement of the problem in the first paragraph. This definition should be based on existing prior research studies. Examples include something like these:

"Children with autism often exhibit deficits in [insert behavior of interest]. These refer to [define or describe behavior] (Brady, Partridge, & Cunningham, 1991; Montana & Washington; 1995; Walden, Skinner, & Chomsky, 1966)."

or

"A number of studies have investigated the use of [insert name of teaching methodology] to teach [insert population of learners] how to [insert behavior of interest]. [Name of teaching methodology] refers to [describe teaching methodology] (Patriarca & O'Rourke, 2002)."

Structure the Introduction such that the first paragraph defines the major behavior (or treatment methodology) of interest and the second, third, fourth, etc. paragraphs all describe the relevant research studies concerning this area of interest. When you write the paragraphs that describe the relevant research literature about your area of interest, make sure to clearly describe:

- (a) any problems with the studies
- (b) any variables that could have been investigated but were not
- (c) any controversies surrounding the research findings (such as contradictions in results).

Make sure to provide a transition statement at the beginning of each paragraph that connects it to the previous paragraph(s). Transition statement examples include writing something like:

(a) "Another study that has been shown to support the use of [treatment X] to increase [behavior Y] was conducted by Carr and Durand (1985). In their study they..."

(b) "In contrast with previous studies, Flynn and Lo (2015) found that [treatment X] did not increase [behavior Y]..."

(c) "Although the previous studies described did not provide an assessment of generalization for [behavior Y], Asmus et al. (2002) did provide such a measure. In their study they..."

(d) "In addition to using [insert treatment methodology already described] to teach [insert behavior], another method that has been used is [insert treatment methodology to be described]. This involves [describe the methodology...]. This was used by Wallace et al. (2004) to teach children with autism to..."

Provide an argument in the introduction such that it should be fairly obvious to readers what the purpose of your study will be before they read your description of it in the last paragraph of the introduction. At the end of the last paragraph of the Introduction you should literally write "The purpose of the present study is to [determine whether; assess the effects of; identify variables in; etc.] the [insert IV] will increase/decrease the [rate; frequency; percentage correct; etc.] of [insert DV]." This statement is sometimes referred to as the study's presenting question. The last paragraph of the Introduction should also say in it somewhere "This will be accomplished by [insert about 2-3 sentences BRIEFLY describing the procedure to be used in the present study]." If your study is a systematic replication of an already existing study, you should clearly state how your study improves upon, or alters, that study and why this is important.

Chapter 2: Method

Every study must be described in terms of specific methodological components. The most important characteristic of the Method section is that it permits the reader to determine whether the manner in which your study was conducted allows a determination about the functional (cause-and-effect) relationship that exists between the IV and DV. A description of the methods of the study, for example, might reveal a confound that you were not aware of. In such a case, it would not be possible to determine that there was a valid treatment effect in your study.

Another characteristic of the Method section is that it would allow another researcher to replicate your study based on your description of it. As you are aware, many new studies are based on systematic replications of older studies. A poorly written Method section would make it very difficult to successfully replicate a study.

For every section of your Method section, it is important to not only describe what was (or will be) done in the study; you must also include a rationale as to why you conducted (or will conduct) your study this way. For example, why did you choose the participants you did? Why did you conduct the study in the setting you described? Why were particular trials used? Why did you use the reinforcers you did? Why did you use the experimental design you did?

Participants. Almost without exception, the first sub-heading is for Participants. The participants should be described as fully as possible including gender, age, location of current placement, how selected, any current diagnoses, any pre-experimental pre-requisite skills, etc.

Setting. The second sub-heading is usually Setting. This should be described in terms of the site in which your study was conducted, the room used, the contents of the room, the seating location, etc.

Materials. The third sub-heading is for Materials. This section would describe any curricular or teaching materials used. It might, for example, describe video models, activity schedules, flash cards, audio players, panels used to present stimuli, stimuli used in teaching, etc.

Other Sections. The next sub-headings described often depend on preference of the author. That is, there is some latitude as to what comes next. Sections on **Experimenter**, **Response Definitions**, **Dependent Measures**, **Pre-experimental Assessments**, **Reinforcer Preference Assessments**, **Data analysis**, etc. will likely be included.

Experimental Design. In this section, describe the design used by identifying what each phase or condition refers to. You should also describe the "logic" of the design used. That is, why is this

design better than another for identifying a functional relationship between your IV and DV? The design used should have at least 3 comparisons of baseline to treatment conditions; more comparisons are better. This requirement ensures that you will be able to infer that there is experimental control (a functional relationship) in your study.

For your experimental design, you should minimally use (a) an A-B-A reversal design (but an A-B-A-B is better), or (b) a multiple-baseline across at least 3 participants/settings/responses or (c) an alternating treatments design (preferably with an included baseline and final "better treatment" phase).

If your study uses either an alternating-treatments design or a reversal design, it certainly strengthens the design if you also embed it within a multiple-baseline design. In cases in which there is no reversal effect or a difference between your treatments in an alternating treatments design, having these designs embedded within a multiple-baseline design will generally still allow you to demonstrate minimal experimental control. Students should discuss design options with their Thesis Chair to determine the appropriateness of each one for their study.

Procedure. Perhaps the most important sub-heading is Procedure. In this section, explicit descriptions are provided about how the study was (will be) conducted. Generally, there will be descriptions of the Baseline condition, treatment(s) condition(s), training versus probe trials, any generalization trials, any social validity measures, etc. This section should be detailed to the extent that another researcher could replicate the study.

Inter-observer Agreement and Procedural Integrity. Typically this is the last section in your Method section. IOA (sometimes known as inter-rater reliability) generally refers to the degree to which observers report the same values after measuring the same events. To determine IOA, data are collected by an independent, secondary data collector during at least 33% of randomly selected sessions in each phase of the study. These data are collected for all DVs for all participants. Although 33% is the minimal standard for IOA, conducting IOA on more than 33% of the sessions is always better.

Procedural integrity data (also known as treatment integrity, independent variable integrity, or procedural fidelity) are collected to provide information on the correct implementation of the independent variable. Data are typically collected per session on the implementation of the essential components of treatment. These include instructions, prompts, treatment procedures, delivery of consequences, and any other relevant environmental variables. Data may be collected per opportunity, per interval, or per session. Procedural integrity data are collected during at least 33% of randomly selected sessions in each phase of the study. These data are collected for all levels of the IV for all participants. IOA on procedural integrity data are collected during at least 33% of these procedural integrity sessions.

If IOA or procedural integrity data are below 80% during a session, observers (data collectors) should be retrained via review of the operational definitions and procedures, as well as discussion with the primary experimenter during practice collecting data and/or implementing the IV. A session whose IOA falls below 80% may then be rescored but any rescored sessions should be reported in the data analysis.

IOA and procedural integrity data for any sessions should be calculated within 2 days of running that sessions so that changes in observer (data collector) training may be made as necessary. In addition, before a phase change is made in the experiment, IOA and treatment integrity

calculations from the previous phase should be completed. Although IOA and treatment integrity data may be collected either in vivo or from video, it is recommended that all sessions are videotaped if possible so that sessions may be rescored if necessary.

Following your description as to how IOA and procedural integrity assessments were carried out, you should then describe the actual data obtained for IOA and procedural integrity in this section.

Chapter 3: Results

The purpose of this section is to determine whether you have established a functional relationship between the IV and DV in your study. It is usually a good idea to begin this section by reiterating the purpose of your study in one sentence. It is then appropriate to refer to your main graph by writing something such as "Figure 1 depicts the percentage of trials in which requests for assistance were emitted by the participants as a function of condition. As can be seen in the figure, ..."

When you describe data, it is generally a good idea to write about

(a) the level of your data (are the values of your DV low or high?) - In an experiment, the level of your data should be systematically different across baseline and treatment.

(b) the trend of the data (is it stable, increasing, or decreasing?) - In an experiment, the trend of your data should be stable in baseline or moving in a direction that is opposite to that expected in treatment.

(c) variability of the data (are the data points fairly consistent or do they move up and down across a wide range of values?). - In an experiment, the variability of your data should be minimized to the greatest extent possible so as to more clearly observe treatment effects.

When you have finished your data descriptions, you can then write "Based on these data, we can infer that the (insert treatment) was successful (or not successful) in increasing/decreasing the (insert target behavior) for (insert study participants)." Obviously if you are writing your proposal, you would refer to your data as hypothetical.

If you have any secondary data to present (such as social validity data), you can now move on to those in your paper. Please note that you should also have a Figure Captions page that identifies all axes on the figure, what the data symbols stand for, what the conditions are, and who the participants are.

For data related to inter-observer agreement, procedural integrity, and reinforcer preference assessment, it is typically the practice to include those data in the Method section following your description of how these will be conducted.

Chapter 4: Discussion

The Discussion section should begin with a statement regarding whether the hypothesized outcome was supported by the study's data. No actual data should be described as these were described in the Results section. You should then explain how the results compare with past results from prior studies. That is, are your results consistent with them, do they add to them, etc. You should also describe any methodological weaknesses and/or strengths in your study. Be sure to include suggestions for possible practical applications of your study and to include suggestions for future research on the topic.

References

Remember that APA format is very specific about how your References should appear. Although it may seem trivial to have your reference section in correct APA format, remember that sloppiness in one section of your manuscript often leads a reader to ask whether you were sloppy in other areas. In addition, all references found in the Reference section should also be mentioned in the text of your paper and vice versa. No article citation should be found in one section without it also being found in the other.

Tables and Figures

All tables and figures should follow APA format. In general, tables are used to describe trial order, trials used for each participant, summary data that are not better suited for a graph, etc. Figures are used primarily to present your data for the purposes of being able to infer a functional relationship between the independent and dependent variables in your study.

In the text of your manuscript, make sure to alert the reader as to when you are referring to the tables and figures. Write something such as "Table 1 depicts the summary data for procedural integrity. As can be seen in the table..." or "Figure 1 depicts the percentage of trials in which play initiations were emitted by the participants as a function of condition. As can be seen in the figure, ..."

Appendices

Appendices usually contain sample data sheets, sample social validity forms, and samples of verbal or written instructions to participants (if comprehensive).

Word Usage Cautions

- Avoid use of "I" or "we" unless such a reference to yourself was germane to running your particular study
- Do not write mentalistic statements such as "I feel; I think; I know" or "the participants knew/thought/felt/believed/wanted" etc.
- Do not use casual language or slang terms ("...it was really hard for participants to learn...")
- Keep the drama of words used to a minimum ("Magnificent results"; "This amazing study...")
- Affect vs. effect: Affect is used as a verb (to make someone/something change such as "The presentation of video models affected the degree to which children learned to assist another person..."); Affect is also used as a noun when it refers to outward mood ("His affect was rated as maximally happy on a scale of 1-5"); effect is generally used as a noun to refer to an outcome that occurred ("The effect of the intervention was that it increased the rate of responding..."). Although rarely used in APA-style papers, effect can also be used as a verb meaning "to bring about" ("To effect change in society, citizens should join political parties.").
- Write "Should HAVE" or "Would HAVE" not "OF"
- The word "see" should only be used when it pertains to vision. Don't use it to mean "identify" or "determine." Incorrect: "The purpose of the present study was to see whether..." Correct: "The purpose of the present study was to determine whether..."
- The word "significant" should only be used with an inferential statistical test. Don't use it to mean "important" or a large amount.
- The word "data" is the plural word for "datum" (singular); it means "many pieces of information." As a memory aid, always write "these data" to prompt you to remember that the word is plural.

• Watch usage of the word "being." Do not use it to mean "were" (e.g., "Ten participants being TCSPP students.") It is also not appropriate to use "being" when you intend to convey the idea of causality or to say "because": "Being that the first participant reached criterion..."

Protocols for Submitting Your Thesis/Thesis Proposal

Your Thesis Chair will certainly review many versions of your thesis/thesis proposal in the course of its development. Submit your document in the thesis course, or directly to the Chair, in a timely fashion. Your Thesis Chair will typically need up to a week to provide feedback to you. Each Thesis Chair has his or her own preferences as to how you should submit copies for review.

As a matter of professional courtesy, when you email a copy of your thesis/thesis proposal to your Thesis Chair and/or Second Reader, make sure to name the file something like this: *yourlastname-thesisproposal-date.doc or yourlastname-thesis-date.doc*. Remember that your committee members are likely participating in multiple student thesis committees and it is difficult to keep track of each student's electronic files if they are all named something generic like *thesis.doc*. In addition, all completed thesis papers will be electronically archived and proper file naming will help facilitate this process.

Prior to the defense of your thesis or thesis proposal, you should make sure that your Thesis Chair and Second Reader have a copy of the paper at least one week in advance. It is an unrealistic expectation for committee members to be able to adequately review and make recommendations on your paper with less time than this. If you cannot get the document to your committee members with at least a week's notice, you will need to ask for permission from them to send it later.

Conducting Your Thesis Research Study

Strategies for Running Your Thesis Study

All students should work with their Thesis Chair to develop a research study running book. This is a large binder that contains all relevant paper materials for running your study. It should minimally contain:

- dependent variable data collection sheets
- inter-observer agreement data sheets
- procedural integrity data sheets
- any social validity data sheets
- any reinforcer preference assessments conducted
- the predetermined order of trials you will run for each experimental session
- any trial counterbalancing or randomization procedures you have done
- the operational definitions of your independent and dependent variables
- your printed graphs (should be updated EVERY time you collect a data point)
- copies of your consent letters (keep the originals in a safe place)
- copies of your IRB approval forms (keep the originals in a safe place)
- a descriptive daily log describing what happened during each experimental session (such as problems that might have cropped up)
- copy of your thesis proposal manuscript

Piloting Your Study

Students should also plan on conducting a "dry run" (or pilot) of at least a few mock sessions prior to beginning your actual study. Obviously, you would not use your actual participants for the pilot test of your procedures. Rather, you should try to obtain the services of another person to sit in and play the part of your participant. Piloting your study will usually provide you with a better idea as to what needs adjusting in the running of your study. Students are often surprised in a mock session to learn that things do not run as well as planned. You may, for example, find that your study materials are not as easily accessible as you thought, or that your participants can see materials they shouldn't, or that your reinforcers are not as accessible as they need to be, etc.

Collecting Data

At the conclusion of each day's experimental session, it is tempting to simply close up your materials and move on to other activities in your life. Running a successful study, however, requires that you analyze your data at the conclusion of each running day and insert it into your study's graph. Due to the nature of single-subject research designs, it is imperative that you have access to the most-up to date data at all times. Determining when to change conditions, for example, cannot be accomplished successfully without access to the most up-to-date data. University research laboratories are filled with stories of studies that were invalidated due to incorrect condition or phase changes based on non-current data.

Your Thesis Chair will typically require that you email your data on a daily basis. It is not acceptable to send your data to your Thesis Chair as a table or list of values. These data MUST be contained within an appropriate graphical format (e.g., Excel). In your email you should provide your recommendations for next steps (e.g., when you think a condition change might need to be implemented or whether you think that a condition should run longer). You must also give a rationale for your recommendation. For example, you might write:

"As you can see in my graph (attached), I've now run 6 data points in baseline for all 3 participants in my multiple-baseline across-participants design. The data path for all 3 participants is stable, low, and not variable. Since my treatment should produce increases in the DV, I think we should now start treatment for the first participant and keep running the other 2 in baseline. Do you agree with this decision?"

Always keep in mind that the Thesis Chair's expertise in conducting research should be accessed by you regularly to ensure that condition changes occur at the appropriate time.

Professional Behavior

Remember that the participants in your study are essentially donating their time. As such, you should always treat them with the utmost respect. Make sure to arrive on time for research sessions and to conduct yourself in a professional manner. You should make it clear to the parents of any children you are working with at home that you cannot be expected to be alone in the house with the child or to bring the child to another location. In addition, you should make it clear that the purpose of your visit is to conduct research and not to conduct an intervention session or to provide child care. Additional details can be found in the BACB ethics code at www.bacb.com.

Outside of the research setting, if you discuss your research with colleagues, other parents, or other clients, makes sure that you do not identify your participants in any way so as to maintain their confidentiality. Additional details can be found in the BACB ethics code at <u>www.bacb.com</u>.

Reporting Abuse or Neglect

During your study, you may conduct sessions in a variety of settings including schools, hospitals, clinics, and homes. If you are given information or observe something that gives you reasonable cause to believe that a child has been abused or neglected by a caregiver, you are required by law to immediately notify the proper authorities. If you have any questions about this information, please discuss them with your Thesis Chair immediately.

Addressing Problems During Research

The following problems have been known to occur:

•You cannot recruit participants or get them in a timely manner. Consult with your Thesis Chair. You may need to change how you go about recruiting participants, which will require an amendment to the IRB application if the new method was not in the original application.

•You have a participant who drops out of your study. Note that a participant may do so at any time, without having to explain or justify his/her leaving. You cannot penalize a participant for discontinuing his/her participation. You may need to replace that participant. Did you specify a sufficient number of participants in your IRB proposal? If not, then you may need to get permission from the IRB to add more participants, which could delay your research.

•A child participant may withhold or withdraw his or her "assent." That withholding or withdrawal may manifest itself as refusing to participate, or eloping from the research setting before or during the session. Because a person may be "having a bad day," you should give a participant several opportunities to continue participating. A good rule of thumb is that if a participant expresses or manifests refusals across at least three session opportunities, then that person has apparently expressed a desire to discontinue participation. You may have to replace that individual as a participant.

•A parent or legal guardian can remove a minor from further participation, at any time, for any reason whatsoever, and again without having to justify or explain why. In this case, you likewise may need to replace the participant with a new participant.

•IOA results are low. This signals that you need to take some action to increase interoberserver agreement levels. The same goes for treatment integrity levels.

•Participants do not show up for scheduled meetings. Consider arranging new meeting times or what works best for your participants. Your focus should be on "doing what it takes" to meet the needs of your research, so you may have to change your own schedule to the extent possible. It may also be the case that if participants do not show up for meetings, this result may indicate that they have effectively discontinued participation. Plan on replacing such participants if necessary.

•You are ill or cannot make a planned session. Inform your participants, assistants, and others at your site right away, and also email your Thesis Chair.

•Sessions do not go as planned. You may need to adjust your procedures.

•Results do not match those of the study you are replicating. That's ok. A failure to replicate a previous study is, in fact, a possible outcome. But you also have an obligation to determine how well and to what extent you have actually replicated the prior procedures. If there are too many differences between your study and the prior one, then these differences could account for the different results.

•You are expected to demonstrate experimental control during the implementation of your experimental design. You do not produce an effect. If you are not producing an effect, you may need to reconsider (a) the independent variables that you are manipulating, and (b) the experimental design and procedures.

•You have run too few sessions, or have not run them often enough. You may need to run more sessions.

•You ran a session but lost the data for it. This may be considered to be an "Ignored Day." You should take whatever efforts you can to ensure that you have one or more back-up copies of your data, however.

•Your results are confounded. Deal with this problem at the earliest possible time. Be aware of and make notes of possible extraneous variables. A study that is confounded may have to be rerun. You may need to make additional efforts to control for any identified extraneous variables. Moreover, you may need to re-run a phase or condition of your research, or run a new participant or set of participants, or re-run the entire study if it has been confounded.

•Consult with your Thesis Chair on any and all such issues as necessary.

Checklist of Steps to Developing a Thesis

- 1. Your ARP course instructor will become your Thesis Chair and instruct the three Advanced Research Project courses that you take.
- 2. Select a Second Reader who is knowledgeable of the thesis subject matter, or who has other pertinent skills, such as a strong research methods background.
- 3. Take and pass the online course as required by the Institutional Review Board (IRB) on the use of human subjects in research, and receive a certificate when you pass the course. The certificate becomes part of your proposal, and is mandatory.
- 4. Work with your Thesis Chair to write a complete thesis proposal, including a complete Introduction and Method section. After several drafts and revisions, the Thesis Chair approves the proposal for review by the Second Reader. Note: it can be very advantageous to communicate with the Second Reader throughout the proposal process.
- 5. Submit the thesis proposal to your Second Reader. The Second Reader may make and/or request revisions. Please make these revisions right away. Obtain approval of the proposal from the Second Reader. Approval by the thesis committee indicates ABA faculty endorsement of the research topic, purpose of the study, experimental design, and methods.
- 6. Submit a formal written and completed proposal to TCSPP's IRB for their approval. Your experimental research and data collection cannot begin until you have received IRB approval. The IRB may ask for revisions before approval is granted. Any revisions must be made and the proposal must be resubmitted for further review.

- 7. After receiving IRB approval, conduct the research. This step includes getting approval from your Chair to begin collecting data, changing independent variables as planned or needed under the close guidance of your Thesis Chair, presenting your data on charts or graphs weekly in class, and discussing any issues with your class and/or with your Thesis Chair.
- 8. Write up your thesis research study according to the Publication Manual of the American Psychological Association (6th ed.).
- 9. Present and defend your thesis to your committee. Make recommended changes or edits as necessary.

Defending Your Thesis/Thesis Proposal

Preparing to Defend Your Thesis/Thesis Proposal

You should meet with your Thesis Chair to discuss your written thesis/thesis proposal manuscript and an accompanying visual presentation well in advance of the date of your oral defense. Your Thesis Chair will be able to provide suggestions and to "quiz" you on questions you will likely encounter during your defense. It is advisable to present a "dry run" of your PowerPoint to your Thesis Chair prior to the actual defense. Your Thesis Chair may also suggest that your student peers serve as an audience for the practice run of your defense.

When your Thesis Chair has approved your manuscript and visual presentation, you should then email both of these to your Thesis Committee members. In your email, however, you should ask the members whether they would rather have hard copies provided by you. As a professional courtesy, please make sure to email your materials to the committee at least 5 business days in advance of your defense. Remember that most, if not all, members of your committee will likely to be sitting on other student thesis committees that may meet around the same time as your defense. As such, the committee members' available time for reading your materials will be limited.

Prior to presenting, students often ask what the format of their presentation will be with regards to committee questions. You should generally be prepared to be interrupted at any time by questions from members of your committee. For the most part, questions will take on any of three different forms: (a) clarification questions about something you've just described, (b) probing questions to prompt you to explain something more fully or to define a term/procedure in ABA, and (c) theoretical questions regarding learning mechanisms responsible for particular study outcomes. For the most part, the last question type will be saved for the end of your presentation. The first two types, however, may be asked of you during your presentation at any time. You should have a copy of your manuscript with you during the defense so that you may write down any suggestions/revisions offered by your committee members. Some Thesis Chairs prefer that the student makes these additions while other Thesis Chairs offer to write these suggestions down for the student. You should consult with you Thesis Chair to determine how he or she wants to handle committee feedback that might require manuscript revisions.

Prior to presenting, students also often ask how long the defense will/should be. In general, you and your Thesis Chair should plan on a block of one to two hours for your defense. Your presentation itself is usually shorter than this (approximately 15-20 min), but questions and discussions tend to use up a large amount of time during your defense.

Questions You Might Expect at the Defense of Your Thesis/Thesis Proposal

Part of the purpose of your defense is to assess your mastery of a wide range of behavior analytic content in addition to your study. As such, you may be asked questions that range from fairly basic to complex. To allow you to prepare for such questions, you should meet with your Thesis Chair to practice

answering them. Your Thesis Chair will also certainly have additional questions you might be asked to discuss with you. The following are only a small subset of the questions you might be asked:

- How does the experimental design you've used control for confounding variables/allow you to infer a functional relationship?

- Why do you think your data allow you to conclude that the intervention was effective?
- Why did you use those particular reinforcers?
- Why did you use that particular fading routine/prompting procedure?
- What does your study add to the already existing research literature on this topic?
- Why is it important to assess procedural integrity? Interobserver agreement?
- Why is it important to assess/program for generalization?
- Why is a social validity measure important to conduct?
- What might be some important questions to assess in future studies you might conduct?

IMPORTANT: Use the attached Thesis Proposal Rubric

(<u>https://app.box.com/files/0/f/5111278566/Required Forms for Thesis</u>) to score your own proposal before submitting it to your Thesis Chair. Your Chair and Second Reader will use this rubric to evaluate your proposal; therefore, you should use the rubric yourself to make sure all sections are present and adequate before submitting your document for review, to avoid delays in approval of your document.

Thesis/Thesis Defense Professional Protocols

For your defense, you should dress in a professional manner as if you are presenting at a conference. Your Thesis Chair is a good resource to ask about this if you are unsure about current professional dress standards.

Remember to bring your own paper copy of your thesis/thesis proposal so that you can write down any suggestions/feedback offered by your Thesis Committee. You should also bring a pen or pencil to insert these comments as needed. You may electronically record your defense only if your Thesis Chair and all Committee members agree to it. You should speak to your Thesis Chair about possibly recording your defense well in advance of your defense date.

Arrive prior to your presentation defense time by at least 30 minutes to set up. Your Thesis Chair will have already selected a suitable room or arranged a web-based meeting space for your presentation. Make sure to check that all equipment is in working order and that your visual presentation is functioning. If meeting by web, a practice run is recommended to ensure your presentation can be viewed and you feel comfortable. Arrive to any web-based meeting with a headset to prevent audio difficulties. Because computer file malfunctions do happen, it is essential that you have your presentation on a backup storage device or that someone else can show the screen for you. For example, make sure your Chair has a copy of your visual presentation and materials. Although it might seem to be overkill, having a flash drive with

your presentation saved on it is actually a good idea just in case the file on your computer becomes corrupt for some reason.

If presenting in person, students are urged to invest in the purchase of a wireless combination laser pointer/PowerPoint remote control for their presentations. This is essentially a small two- part device. The transmitter is plugged into a USB port on the computer which then allows you to advance slides from a distance with the remote. It also contains a laser pointer that you can use to highlight parts of your presentation, such as your graphs. Your Thesis Chair can recommend a model for you. This is also a very useful professional tool for presenting at future conference symposia in which you might be asked to participate. Please note that if you are presenting your work in a room with an LCD screen, the laser pointer will not work and you will need to use the computer mouse pointer.

Stylistic Issues for Your Visual Presentation

Your visual presentation, such as a PowerPoint slide deck, should be treated as a representation of your professional work and accomplishments. As such, its appearance is very important for conveying the appropriate message to the committee. The following are some tips to help you achieve this:

- Use a font size that is adequately large. Generally, your font size for "body text" should be between 20-30 points. The slide title text is usually larger than the body text.

- Avoid decorative fonts. Use something like Arial, Calibri, or Verdana. Although Times Roman is often the default text in PowerPoint, it is a bit more difficult to read due to the presence of "serifs" (decorative bars on the ends of lines that make up the letters). Arial, Calibri, and Verdana are known as "sans serif" fonts ("sans" means "without").

- Omit clipart if it is not relevant to understanding the study. For example, do not insert any graphics whose purpose is just to fill up space, such as generic clipart of happy children. Graphics that should certainly be included are your figures (graphs). It is also helpful to have imbedded photos of the actual study setting (such as the desk or table used to conduct sessions), materials, and data sheets you've used (or plan to use). No photos should appear of participants, experimenters, or exterior of the school/agency/site.

- When you present your graphs, it is sometimes helpful to have multiple slides in which you only introduce some of the data at time. For example, in a multiple-baseline design, you might present a slide in which you only show the baseline data for the participants. Your next slide might show the treatment data for the first participant while continuing to show the baseline data for the other participants. Next, you might show the treatment data for both the first and second participants, etc. All of this is accomplished by simply drawing a white square in PowerPoint over the part of your graph that you do not want to show.

- To minimize distractions, do not use any sound effects or "busy" transitions between slides (e.g., panning in or out).

- If you are technically advanced, you can use embedded video, such as in the case of a study that employs a video model to teach a skill. Check with your Thesis Chair for appropriateness.

Presenting Your Thesis/Thesis Proposal for Defense

At the assigned start time of your defense, your Thesis Chair will generally introduce you and will let you know when to begin. You should always begin your presentation by thanking everyone for being there and for their helpful suggestions for your research. Limit your "thank you" to no more than 2-3 sentences.

Your first slide should generally echo what the cover page of your manuscript has on it. That is, the slide should have the title of your paper, your name and affiliation, your Thesis Chair and committee members' names, and the words "Thesis (or Thesis Proposal) presented in partial fulfillment of the M.S. degree in Applied Behavior Analysis." While this slide is on the screen, you only need to read the title of your study ("The title of my thesis/thesis proposal is...) before moving on to the next slide.

Next, the presentation should cover the relevant background literature (your manuscript's Introduction) and rationale of your study. Although this does not have to be as detailed as it is in the manuscript itself, you should plan to make a strong argument as to why your study contributes to the already existing literature. Your defense of your thesis proposal should be a bit more detailed in this section than it will be when you make your final thesis defense.

You should be explicit in saying things such as "the present study adds to the existing literature by (describe the relevant point)." You do not want to omit this point. Typically, no more than approximately 5 slides should be devoted to the background literature/rationale. Your Thesis Chair can discuss with you the appropriateness of the length of your background literature/ rationale section. One thing to keep in mind is that your committee members have already read your manuscript. As such, there is less need to be very detailed in this section of the presentation. At the conclusion of your background literature/rationale, ask the audience "Are there any questions before I move on?" before you continue.

Following the background literature/ rationale section, you should begin describing the Method section. The participants who contributed to the study are described first in their own slide. Next, the setting should be described. What follows next depends on the particular study, but you should have separate slides for stimuli or materials used, any pre-experimental assessments you may have conducted, any reinforcer assessment you conducted, the experimental design used, what the independent and dependent variables were, etc. After these, you will describe the actual procedure for conducting experimental sessions in as much detail as possible. At the conclusion of the Method sections, you should again ask the audience if anyone has a question.

At this point, state "I would now like to show you the results of my study." In most cases, your main graph should be presented. Make certain to first identify all axes on the figure, what each data symbol stands for, what the conditions are, and what the names of the participants are, before you do any describing of the actual data. When you describe data, it is generally a good idea to speak about level, trend, and variability. You should point out any differences in the data across conditions. When you have finished this description, you can then say "Based on these data, we can infer that the (insert name of IV or treatment) was successful (or not successful) in increasing/decreasing the (insert name of DV) for (insert number and descriptor of participants)." Obviously if you are presenting your proposal (and not your completed thesis), you would refer to your data as hypothetical. If you have any secondary data to present, you can now move on to those. Secondary data are generally those pertaining to social validity or occasionally to summary data that were not part of the original study hypothesis.

In the final section of your presentation, the Discussion, you should first reiterate what the results showed. You should then describe how these findings have contributed to our further understanding of

the existing research literature by referring back to at least some of the studies described in your Introduction. You can also describe future studies that might be useful to conduct based on the findings of your study. Lastly, you should describe any indentified or potential weakness of your study (e.g., delayed multiple baseline) and what might be done to remedy these problems were it to be conducted again. Of course, if you are presenting your proposal and not your completed thesis, you will not likely have any potential limits to speak about.

After your Discussion section is presented, you should also have a slide with your references on it. Once this is presented, you should ask if there are any additional questions or comments. Often committee members will have reserved a few theoretical questions to ask you at this point. Your Thesis Chair will generally allow you the opportunity to field these questions without interruption. He or she may, however, ask for a clarification of a question from a committee member if you are not answering it in the manner it was intended. On occasion, questions may come up that start a discussion among the committee members themselves. You should not view this as anything negative about your study or your presentation. As you are probably aware, professionals often engage in interesting theoretical discussions when the opportunity arises!

When the discussions have run their course, your Thesis Chair will ask you to leave the meeting space so that the committee members can discuss the merits of your research and your defense of it. Once the committee has finished its deliberations, you will be notified to return to the meeting space, so stay available to your chair via phone. Typically, the wait time for the Thesis Committee to deliberate is about 5-10 minutes. Students should be aware that there is no correlation between the length of the deliberation period and the outcome for your defense.

After you are asked to return to the meeting, your Thesis Chair will give you the decision of the committee. There are three possible outcomes: (a) approved with no revisions, (b) approved with minor revisions, or (c) not approved; requires substantial revisions and another presentation/defense.

The first scenario, *pass* is extremely rare. Most research papers can be improved in some area and it is the responsibility of the Thesis Committee to make any suggestions that will achieve this objective.

The second scenario, *conditional pass*, requires that you meet with your Thesis Chair to discuss any suggested additions/revisions suggested by your committee. Typically, committee members will submit their marked up copy of your manuscript to you at the conclusion of your defense presentation. Your Thesis Chair will likely wish to view these suggested edits or suggestions prior to your making any changes in the thesis/thesis proposal paper. Students should understand that it is not required to incorporate all suggestions made by committee members. Rather, your Thesis Chair will help guide you with regards to which changes are most relevant/necessary. For the most part, committee members do not request to read another draft of your paper if only minor revisions are required. Rather, they leave it up to you and your Thesis Chair to collaborate on the changes together. It is the prerogative of a committee member, however, to request to see another draft prior to final approval. This request is usually decided upon at the conclusions of the oral defense.

The third scenario, *failure*, requires substantial revisions to the study itself and/or the paper. It also requires that all committee members are given a revised version of the manuscript once the student and Thesis Chair have addressed the suggested changes. The student must also defend the research to the committee members a second time. If a student does not receive the committee decision of either approved with no revisions or approved with minor revisions following their second defense, then the student may be dismissed from the ABA Master's program.

Committee members sign the Thesis Completion Form

(<u>https://app.box.com/files/0/f/5111278566/Required_Forms_for_Thesis</u>) and the Thesis Rubric Forms (<u>https://app.box.com/files/0/f/5111278566/Required_Forms_for_Thesis</u>). The forms will be placed in the student's academic file. These forms are required before your Master's degree can be conferred.

Presenting Your Thesis Research Professionally

If your study has enough scientific merit, it may be suitable for publication in an ABA journal. Your Thesis Chair and committee members will discuss this scenario after you defend. You should coordinate any write-up for publication with your Thesis Chair, not on your own. That is, the coordination of the publication process will be a collaboration between your Thesis Chair and you. When writing up your thesis for publication, please give your Thesis Chair copies of all relevant articles and highlight the areas that were cited in the thesis.

If you are asked to present your thesis research at any professional conferences, it is appropriate to contact your Thesis Chair to discuss this possibility first. You should not prepare and present your research at a conference without first consulting your Thesis Chair about author order, content, affiliation, etc. After speaking with your Thesis Chair, you should also ask permission from your thesis committee and invite them to look over a draft prior to submission for presentation. Remember that your thesis research study is a collaborative project among you and your thesis committee.

Thesis Policies

The following are policies of either The Chicago School of Professional Psychology (TCSPP), the ABA Department, or both.

The student must complete a master's thesis that is behavior-analytic and which meets all of the policies, procedures, requirements, and objectives stated in this Thesis Manual. Successfully completing the thesis entitles the MS in ABA student to graduate, provided that all other program requirements (coursework, practicum, etc.) have been met and completed. Successfully completing the thesis entitles the PhD in ABA student to sit for competency exams, provided that all other program requirements (coursework, etc.) have been met and completed. A student who has not completed a thesis cannot graduate or sit for competency exams. The same goes for completing a thesis but not completing yet the other program requirements.

The policies stated in this Thesis Manual apply starting the Fall term 2015. Errors or inconsistencies in the policies, procedures, requirements, or objectives as stated in this manual are subject to correction or revision without compromising the same or otherwise invalidating them.

The student is expected to have access to, to read, to be aware of, to know, and to abide by the policies stated in this Thesis Manual. Ignorance is not considered an excuse. If something is unclear, you should ask questions in order to fully understand a policy.

No individual exceptions to the policies, procedures, requirements, or objectives stated in this Thesis Manual can be made or granted.

Students are expected to complete work in a timely manner. This timeliness includes attention to deadlines. Deadlines cannot be abrogated. Work products (e.g., thesis drafts) must be turned into a Thesis Chair and/or Second Reader in a timely manner with respect to the deadlines.

A Thesis Chair and a Second Reader each are entitled to two weeks to provide feedback on a thesis draft upon occurrence of its submission by a student. Two weeks refers to 10 business days, excluding holidays, vacations, conferences, or between-term days. For example, if you turn in a draft of a thesis or thesis proposal on October 1 to your Second Reader, then that individual has until October 14th to return your thesis with edits and other feedback.

Given a scheduled thesis Oral Defense date, you must get your thesis draft to your Second Reader more than two weeks ahead of that date in order to defend on that date. This is a minimum time requirement and may not be acceptable to your Thesis Chair and Second Reader. Your Thesis Chair and Second Reader can agree to review documents last-minute, but that does not mean you will be approved for defense. You will still need to make any and all necessary revisions and allow the Thesis Chair and Second Reader to review the final document before you are approved for defense. The Thesis Chair and Second Reader, as noted previously, are entitled to two weeks to review all drafts, and then you will need time to make the corrections and to attend to the other comments and suggestions that were made.

You can submit your thesis proposal or thesis draft to your Second Reader only upon approval of your Thesis Chair.

No individual thesis Oral Defense dates can be arranged. As policy, the ABA Department schedules thesis Oral Defenses only once per term, generally at the end of the term.

The Oral Defense does not represent only a ceremonial activity. It is possible to fail an oral defense. Though very rare, students have occasionally failed. Failure may require a rewrite of the thesis, a redo of a visual presentation, conducting additional research sessions, or even starting over, or all of the preceding. A student has the right to defend a thesis again at a later date, provided that the requirements established by the faculty at the present defense have been met, and then again only upon approval of the student's Thesis Chair and ABA Department Chair.

Outcomes in Oral Defenses include Pass (no additional work is required from the student), Conditional Pass (the student must accomplish some specified tasks, such as revising the thesis document, before the faculty signs off on the thesis defense completion form), and Failure (the student must re-do the thesis defense and may also be required to revise his/her document, conduct further sessions, or even start over from scratch). The ABA Departmental faculty who are present at an Oral Defense have the right to judge the quality of the defense and to vote on the acceptability of the presented thesis. Votes can include Pass, Conditional Pass, Abstention, and Fail (or Not Passed). Each student is assessed and voted on separately. It is Departmental policy to discourage a student from presenting an Oral Defense if, in the estimation of the student's Thesis Chair or thesis committee, the student's thesis is not yet ready for defense. Students are not allowed to put themselves onto an Oral Defense schedule; their Thesis Chair must do that.

Students who do not meet the requirements to defend at the end of their third thesis course (AB562) are required to enroll in a 1-credit course named Thesis Maintenance. You may need to enroll in Thesis Maintenance more than one term. There is a time limit on completing your thesis before you are

academically withdrawn from TCSPP, however. (See the TCSPP Student Handbook regarding the Maximum Timeframe policy.)

You can submit your proposal to the IRB only upon the approval of your Thesis Chair.

Thesis proposals, thesis drafts, and the final thesis document must be written using APA format as specified and detailed in the APA Publication Manual (6th Edition).

The final thesis document must contain all of the sections specified in this Thesis Manual. The final thesis document will be submitted electronically to the Department Manager, though a thesis committee may require that the student also submit a paper copy.

The final thesis should be a document and project that is worthy of (a) being presented at a professional conference or convention (e.g., at the ABAI convention), and (b) being submitted as an article to a peer-reviewed scientific/academic journal. The thesis product should be of sufficient quality that it stands a reasonable chance of being accepted for presentation and publication. You are not required to present or publish it, however.

For a thesis submitted as a poster or paper to be presented at a convention, or submitted to a journal for publication, you should recognize that the thesis product was the result of a joint effort. Accordingly, while you may list yourself as first author, you should also give your first and second readers the option of being co-authors and discuss the submission. Approval of the submission by all co-authors is required before any proposals are submitted for and presented at conferences and before any manuscripts are submitted for publication.

Thesis research must be carried out ethically, and in accordance with rules and policies established and published by the Behavior Analyst Certification Board (BACB) and the American Psychological Association (APA). Students are expected to treat participants, parents and guardians, staff, assistants, teachers, administrators, and their professors and instructors professionally and with courtesy at all times. Failure to abide by this policy may result in a referral to the Student Affairs Committee -- Professional Comportment of TCSPP.

If problems or personal conflicts arise, you should attempt to resolve these ethically, honestly, directly, and immediately. You should first attempt to resolve any conflict with the person with whom you have the conflict. You should then seek the advice of your Thesis Chair, and next up the chain, the ABA Department Chair. If you and your Thesis Chair have an irresolvable problem, then you may need to be assigned a new Thesis Chair and form a new thesis committee, as directed by the ABA Department Chair.

Your thesis committee members retain the right to resign from your thesis committee. Their continued participation on your committee is contingent upon your ethical implementation of your thesis and its research, as well as on your courteous and professional demeanor.

No part of a thesis may be plagiarized. No data may be fabricated. No cheating with respect to any procedures will be allowed. Cases of plagiarism, fabrication, or cheating can and will be referred to the Student Affairs Committee -- Academic Integrity of TCSPP. This committee has the authority to take corrective and disciplinary action, which could include dismissing a student from school. Cases of

fabrication or cheating discovered after a student has already graduated could result in rescission of the degree, and in the case of ABA students who have become Board Certified Behavior Analysts (BCBAs), could also result in loss of certification.