



MS in ABA Program Student Thesis Manual

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I. Introduction to the Master's Thesis

In the Applied Behavior Analysis (ABA) Department at The Chicago School of Professional Psychology (TCSPP), a requirement for graduation with a Master's Degree includes the development of a written Master's Thesis, and the subsequent oral defense of the thesis. The thesis itself is a written document, prepared in electronic form, that is based on actual empirical research conducted by the student under the supervision of a two-person faculty committee. While the physical size of thesis documents varies, students often want to know a good "ballpark" figure, so you might count on having upwards of 35 pages of text, accompanied by additional pages of charts, graphs, tables, and various appendices. The actual number of pages varies because no two theses are the same.

Because the thesis entails actual empirical research with human subjects, the research must be approved by TCSPP's Institutional Review Board (IRB). 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.

As a general policy you should consider the thesis to be a "replication and extension" of previous behavior-analytic research. You are not required to make an original contribution to human knowledge with a thesis. Such original contributions are for doctoral dissertations. Replicating and extending previous research generally means repeating the procedures, but differentiating them somewhat, from a prior study. When you succeed in actually replicating and extending prior research, this will expand our scientific database of knowledge about behavior.

The thesis, and your defense of it, represents the culmination of your graduate school experience. As a basic rule of thumb, you should consider the thesis as constituting one third of the requirements for your degree. The thesis, therefore, in a very real sense is equal in value to all of your coursework or to all of your practicum experience (the other two-thirds of the requirements for your degree). In other words, please take the thesis process seriously.

When you are ready (have completed your research and have produced a draft acceptable to your committee), then you will need to orally defend your thesis. In the history of academia such oral defenses have a long tradition of being part of the "rite of passage." But the oral defense is not simply a mere formality. If you are truly not ready to defend by a certain date, your Thesis Chair should advise you not to defend and to plan on scheduling a later defense date. It is possible not to pass an oral defense. In the oral defense you present your research, and the faculty ask you questions about it, which you need to answer. Almost all students succeed at their defense. But there is much to do before you get to that point. The next sections describe the procedures and requirements for going about getting a thesis accomplished so that you may successfully earn your Master's Degree.

The thesis is also known as an "advanced research project." The project must be an empirical (i.e., experimental) research project. Each project must demonstrate the student's ability to:

- Locate and review relevant literature, write about key conceptual issues, and critically evaluate previously published work;
- Design and conduct behavior-analytic research (note: research should be a direct or systematic replication and extension of a previous study);

- Conduct appropriate graphical (and sometimes statistical) analysis of relevant data;
- Communicate the introduction, purpose and rationale, methods, analyses, results, discussion, references, and appendices of the research project in written as well as oral format.

Applied behavior-analytic thesis projects will be experimental in nature and should reflect sound methodological design characteristic of behavior-analytic research (e.g., strong behavioral measures, single-subject designs, appropriate participants and control conditions, etc.).

The final thesis manuscript submitted to the ABA Department should make a contribution to the field of Applied Behavior Analysis and should be of a quality that would merit submission to a scholarly scientific journal. Students should also plan to submit their work in the form of a poster or paper presentation to professional conventions or conferences. Students will be encouraged to submit their projects to professional conferences (such as ABAI, IPTC, MABA, MoABA, etc.) or to journals for publication.

The final step to the thesis process is the Oral Defense, followed by any revisions to the final document requested at the Oral Defense. Students will create a Powerpoint presentation of their completed thesis and present their thesis to the ABA Department faculty and other members of the TCSPP community.

The sections of this manual below provide you with an overview of the procedures needed to complete a thesis, and then goes into depth regarding each of the procedural steps. Please read this manual and please consult it on a regular basis during the year in which you develop and ultimately defend your thesis. Most of the answers regarding questions that you may have about the procedure, or about school or departmental policies, will be found in this manual. Therefore, you should consult this manual first.

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 (Appendix A). 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.

II. Master's Thesis Procedure and Requirements

Overview

To complete the Master's Thesis there are several major steps and their accomplishments that you will need to do. The following is an overview of this procedure. The basic steps of the procedure are described in detail afterwards.

- Take and pass the three Advanced Research Project courses: AB560, AB561, AB562
- Get a program faculty person to agree to be your Thesis Chair
- Get a Second Reader from the ABA program faculty
- Select a Thesis Topic
- Develop an experimental question (i.e., a Statement of the Problem)
- Pass an online course on ethics, informed consent, and the use of human subjects in research
- Write a proposal consisting of Introduction and Method sections
- Obtain a written permission from the site where you plan to conduct your research (if necessary)
- Complete and submit a proposal to the IRB
- Only upon IRB approval, begin data collection under the guidance of your Thesis Chair
- Complete your data collection, write your Results and Discussion, and revise your Introduction and Method as needed
- Complete a draft of your thesis, including all other components
- Turn in and get feedback on your draft from your Thesis Chair
- Upon approval from your Thesis Chair, submit your draft to your Second Reader
- Make revisions suggested by Second Reader in consultation with Thesis Chair
- Prepare a Powerpoint presentation for your Oral Defense
- Upon approval to defend from both committee members, present your Oral Defense
- Make final revisions recommended at the Oral Defense
- Turn in final draft to your committee and ABA Department Manager
- Optional: Later on, present your thesis at a convention and/or submit it for publication (not required for degree).

Advanced Research Project

This section provides a brief description of the three Advanced Research Project (ARP) courses that the student takes.

Eligible ABA students enroll in three semesters (3 credits total) of Advanced Research Project: AB560 (Year 1 Summer), AB561 (Year 2 Fall), and AB562 (Year 2 Spring). 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 faculty member teaching the ARP classes is the student's Thesis Chair. Students should select a Thesis Chair based on common research interests. The student also selects a Second Reader to help supervise and evaluate the project. Selection of topics and committee members is described in subsequent sections.

A **Thesis Committee Membership & Topic Proposal** form (see Appendix B) must be completed and submitted to the ABA Department Chair, who must approve the committee.

Description of the Advanced Research Project Courses

Students must enroll in AB560, AB561, and AB562 across three semesters in order to produce a Master's Thesis and thus meet that requirement for earning a Master's Degree. These courses are named Advanced Research Project, but are also informally known as Thesis. AB 560 meets during the summer term, AB 561 in the fall semester, and AB 562 in the spring semester. As noted elsewhere in these policies, a student may enroll in AB 560 only upon having met all of the prerequisites (e.g., passing the Research Methods course with at least a B- grade, among the other courses that must be passed), and then only after having selected a Thesis Chair. Therefore, during the spring semester of the first year, and before registration for the summer semester, the student should arrange to meet with ABA Department faculty members to discuss potential research topics and mutual interests. Please refer to the section in this manual entitled How to Choose Your Thesis Committee.

Advanced Research Project I. In order to pass the first semester (AB 560), 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 AB 560. The student will continue to work on the thesis proposal during AB 561.

Some Thesis Chairs may request and arrange during the AB 560 summer semester that each student takes the online training on the use of human subjects in research required by the IRB, and submits a copy of the certificate issued when the student successfully completes and passes the online course. Please note that this certificate is one of the items that must be included when a proposal is submitted to the IRB.

Advanced Research Project II. In order to pass the second semester (AB561), which meets during the fall semester, the student must submit a proposal to the Institutional Review Board (IRB) by the middle of that semester. 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 semester and earn Credit for the course.

Preferably, you will complete and submit a proposal to the IRB by October. The IRB strives for a 2-week turn-around during the semester; the time it takes to receive feedback from the IRB depends on the number of IRB members and the number of proposals in the queue at that time. Before your proposal is reviewed by the IRB, it is reviewed by IRB staff persons who make sure that the proposal is complete, that all forms have been filled out and completed properly, that all questions have been addressed and appropriately answered, that the online training certificate has been included, and that other minimum requirements and standards have been met. If IRB staff persons find that the submitted proposal is deficient or contains errors, then it will be sent back to the student, along with an email to the student and the student's Thesis Chair, detailing the items that must be addressed and corrected before the proposal may be resubmitted to the IRB. Once corrections and appropriate edits have been made by the student, then the proposal must be resubmitted to the IRB.

Given the preceding, it is possible that your proposal may undergo several cycles of submissions to the IRB Committee. Therefore, it is in your own best interest to ensure that your proposal is as complete, as accurate, and as correct as possible before submitting it.

You, and upon the advice of your Thesis Chair, may want to submit your proposal in a timely way such that you may appropriately submit it 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.***

Advanced Research Project III. In order to pass the third semester (AB562), which meets during the spring semester, 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 semester. Completion of both the final document and the oral defense by the end of spring semester 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 summer semester. In order to pass AB998, the student must complete the requirements for AB562 by the end of the summer semester. 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 Note on Graduation

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 semester 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 semester following the graduation ceremony (i.e., the Fall semester 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.***

III. Basic Steps to Developing and Completing a Thesis

1. Take, complete, and pass with a grade of “Credit” each of the three Advanced Research Project courses.
2. Select a committee chairperson. This individual will become your Thesis Chair and will instruct the three Advanced Research Project courses that you take. Then, also 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. 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.
4. 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.
5. 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.
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 edition). The final project should be of publishable quality and should make a contribution to the behavior-analytic research literature. Your Thesis Chair must approve a final draft before it is sent to the Second Reader for review. The Second Reader may request and/or make revisions. Obtain final approval from both your Thesis Chair and your Second Reader.
9. After the final thesis write-up draft has been approved, you will present your thesis research to the ABA Department faculty via Powerpoint presentation at a public Oral Defense. This presentation will be open to students and faculty in the TCSPP community, and anyone can ask questions. Questions posed to the student must be answered, as this is considered a major part of a defense. After your presentation, the faculty will meet and let you know if you passed the thesis defense, and what final revisions, if any, must be made before they sign off on your document.
10. Committee members sign the **Thesis Completion Form** (Appendix C) and the **Thesis Defense Form** (Appendix D). The forms will be placed in the student’s academic file. These forms are required before your Master’s degree can be conferred.

Points to Keep in Mind While Developing Your Thesis

1. You must allow your Thesis Chair and also your Second Reader up to two weeks (10 business days) for review of any drafts. This time does not include holidays, professional conferences, or semester breaks. Please keep this 2-week turnaround time in mind when preparing to hand in a draft, or with respect to any expectation that you might have for the reviewed draft to be returned to you.

2. You must keep your Second Reader informed of when you plan to defend your thesis and send him/her drafts in an appropriate time frame. Students cannot proceed to an Oral Defense without the thesis having been reviewed and revisions approved by both the Thesis Chair and the Second Reader. Faculty members are frequently flexible and may provide fast turnaround, but students nevertheless should plan for a 2-week turnaround. To emphasize this point, a Second Reader is entitled to those full two weeks before the Oral Defense, with additional time for the student to make the revisions before approval to defend the thesis is granted.
3. The thesis must be completed within the maximum time frame allowed for the student's Master's degree program (see TCSPP Student Handbook for maximum time frame policies).
4. One grade of "No Credit" in Advanced Research Project will result in an issuance of a formal Academic Development Plan (ADP). As noted previously, an ADP is issued for instructional and guidance purposes. Failure to follow the ADP, however, will result in a referral to the Student Affairs Committee-Academic Integrity (SAC-AI), whereupon disciplinary action may be taken. Two grades of "No Credit" may result in dismissal from the program.

**It is important to note that if a student has finished all coursework and is still completing his/her thesis, the student must register for Thesis Maintenance (AB998) until completion of the thesis. If AB560, AB561, and AB562 have been completed and the thesis is not finished, the student must register for AB998 each semester until completion.

IV. Developing the Thesis Proposal

a. How to Choose a Topic for Your Thesis

Please note that this phase, choosing a topic, also runs concurrently with selecting and getting a faculty person to serve as your Thesis Chair and another faculty person to serve as your Second Reader. Therefore, during this phase, your topic may change. This is why, as noted in the numbered list below, you should have in mind several possible topics.

Choosing a research topic often proves to be a difficult part of the thesis development process. There are several ways you can select a topic, however. These methods include:

1. Develop a topic in an area of behavior analysis that seems to interest you:
 - a. List research topics that have been of interest to you or which have become of interest to you in your graduate and/or undergraduate career.
 - b. Think about the top three issues you might want to study, review the research in those areas, and then turn them into research questions. You should plan on a couple of different research ideas in case one of them turns out not to be feasible.
 - c. Look for researchable questions that may need answering at your field placement sites, then peruse the published literature to determine to what extent they have been researched previously.
 - d. Review papers you have written for classes, looking for a pattern of interest.
 - e. Look at class notes; your professors may have pointed out potential research topics or commented on unanswered questions in the field.
 - f. Study the Discussion sections of journal articles (e.g., *JABA*) for their suggestions regarding future research needs and questions. Likewise, attend to the statements regarding limitations in those same Discussion sections. Often, you may replicate and extend a study by addressing one or more limitations that occurred in previous research.
 - g. Find out what the field needs. What are some unresolved questions or issues? Where are some deficiencies, gaps, or unfulfilled needs?
 - h. Talk with your professors or advisor about possible topics. Often your professors may have lists of research topics, or even may have established “lines” of research that include the Master’s Theses of students in cohorts that preceded you.
 - i. Review previously conducted and successfully defended Master’s Theses that have been carried out here at TCSPP. Again, attend to the limitations and the suggestions for future research reported in the Discussion sections of those theses. Past theses are housed by the Department Manager in printed or electronic form. The Department Manager can print a thesis for you, or give you a document to copy upon request.
 - j. Note: During Spring semester of your first year, in Research Methods class, a major assignment is the research proposal. This assignment can be used as the basis for your thesis proposal; therefore, it is beneficial to start thinking about thesis and decide on potential topics before your second semester.
2. Once you have determined one or more research topics, you should meet with your Thesis Chair to decide upon the topic and research question to be investigated. Your Thesis Chair should help you determine (a) whether the topic is worthwhile (i.e., of interest and use to the field and thus not trivial), (b) whether the research question is either too broad or better addressed as a doctoral dissertation instead of a thesis, and (c) whether the research is feasible and can be reasonably carried out in the time frame of less than a year. You should have this meeting during the first spring or summer term.

3. Consider how you will access subjects/participants in the project (determine if the site in which you wish to conduct your research has its own IRB, and/or what its policies are regarding the approval and conduct of research). Sometimes the availability of and access to participants will help determine which research topic to pursue. Note, however, that the thesis should not be planned around specific participants. These people do not have to agree to participate in your study; therefore, a study designed for specific individuals may result in difficulties in subject recruitment.
4. Once you have a general idea of the topic you wish to pursue, and if your Thesis Chair agrees, then you should locate and read any review articles that have been published in journals. More recent reviews will be better because they will provide an overview of recent issues and trends on the topic. However, you may need to refer to seminal articles or other publications as well.
5. Your next step, after determining a topic or problem, will be to formulate a research question. Review the existing literature in an area of research; as you become more familiar with an area of research you may begin to identify research questions that have not yet been addressed.
6. Both direct and systematic replications of earlier work make useful theses. Again, this issue refers to replication and extension.
7. Focus your research question such that a clear answer can emerge.
8. Keep the following cautions in mind:
 - a. Get feedback on a potential topic from your Chair early on; your topic may not interest others in the field as much as it interests you.
 - b. If your experimental question has not been answered, then do scholarly research to discover why.
 - c. Be aware of the possibility of null results: When you find a good research question that no one else has tested, it is always possible that others HAVE conducted the research and failed to get interpretable results.
 - d. A “good” thesis is a doable thesis; a smaller, well-controlled study is better than a larger study with less control.
 - e. Your thesis research and the resulting thesis document should respect the seven dimensions of applied behavior analysis as defined by Baer, Wolf, and Risley (1968).

b. How to Choose Your Thesis Committee

Please note that selecting members of your thesis committee will be an activity that runs concurrently with your development of your research topic. Your topic may change, and your choice of faculty persons to serve on your committee may change, during this phase, as you try to match up topic, research question, and the most appropriate committee members.

Requirements for Your Thesis Committee

- The committee will consist of at least two and generally no more than four members. Most committees have two members. One member is your Thesis Chair, also known as your “first reader.” The other member is known as your “Second Reader.”
- Two core committee members, your Chair and Second Reader, must be program faculty members in the Applied Behavior Analysis Department at TCSP. The signatures of these two individuals 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 Department at TCSPP may be on your committee, but this requires approval of the TCSPP ABA faculty.

- You must ask a program faculty person to serve as your Thesis Chair, and you must do the same with your intended “Second Reader.” Please note that ABA Department program faculty persons have the privilege of accepting or declining to serve on your thesis committee.
- Your Thesis Chair will be responsible for supervision of your thesis, including approval of the research methods and conduct of the study.
- Before registering for AB560, Advanced Research Project 1, the first thesis course, the student must obtain permission from the faculty member who has agreed to serve as the student’s Thesis Chair. Please note that you must obtain the consent and agreement from a member of the ABA Department program faculty person first, before enrolling in that faculty person’s section of AB560. The ABA Faculty typically do a “match” between students and Thesis Chairs prior to registration for AB560, depending on student and faculty interests and expertise, as well as student preference for a particular faculty member. Typically, students can secure a Chair early by meeting with faculty members, choosing a faculty member to be the Thesis Chair, and asking the preferred faculty member to agree to be the Chair. There is a possibility that this may change during the “match” process, to ensure that faculty members have a similar number of Thesis Advisees. The Department Manager will check grades for prerequisite courses before allowing students to register for AB560.
- Up to two additional persons may serve as auxiliary committee members. Their guidance and feedback on the thesis project will be valued as much as that provided by core committee members, but their signatures are not required on paperwork regarding the thesis. Any such additional committee members should have doctoral degrees, preferably in behavior analysis or an allied field. All committee members must be familiar with or have expertise in the topic of the thesis. Each student must confer with the Thesis Chair prior to the selection of other committee members to assure that this criterion is met and to secure approval of the ABA Faculty and Department Chair.
- As per custom, your Thesis Chair heads up 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. You will retain the same Thesis Chair and Second Reader across all three semesters 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.

When Choosing Your Committee Keep the Following Points in Mind

- Choose committee members who know your work well and whose feedback has benefited you in the past. Ideally, you should select committee members who have an interest and/or background in the topic that you intend to research.
- Make sure that at least two of your committee members are program faculty at TCSPP or have been approved by the faculty. A program faculty member is “full-time,” and has at least the designated rank of Assistant Professor. Other appropriate ranks are Associate Professor and Full Professor. Inappropriate

faculty persons would include those who are Adjunct faculty, unless they have been approved to serve on your committee by the ABA Department faculty.

- Consider whether potential committee members will have strong methodological and/or theoretical conflicts with each other.
- Talk to other students who have worked with your potential committee members.
- Establish what kind of role each person on the committee will play. Some committee members may want to see every chapter throughout the thesis process, while others only want to see a completed draft.
- Take special care when choosing the Chair of your committee. Some chairs will set regular deadlines for you while others will encourage you to work independently. Additionally, some chairs will serve as the "final word" when committee members offer conflicting comments. Others expect the writer to deal with these differences.
- 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 all 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; other committee members, 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.***

c. Developing an Experimental Question

An experimental research question, also known sometimes as a Statement of the Problem, represents a refinement of your research topic. It may also be considered and called the Purpose of the Study.

A Statement of the Problem, or Purpose of the Study, specifies the research question that you will attempt to answer by conducting an experimental analysis. The problem may be construed as being your "exact" topic. You may also consider it to be your "hypothesis," though you should know that in behavior analysis we rarely form or test hypotheses *per se* (i.e., using inferential statistics).

The Statement/Purpose should reference the one main study that you are replicating and extending, replete with a reference citation to it. The Statement/Purpose is generally one paragraph long, put at the very end of your introduction section. Sometimes there is more than one research question to be answered. Usually for a thesis you will have only one research question that you will seek to answer.

A well-crafted Statement of the Problem, or Purpose of the Study, will help you to decide on critical elements of your methods that you will employ when you design and carry out an experimental analysis. This is because

your research methodology needs to be designed to answer the question you have posed in your Statement of the Problem. Certain methodological strategies and their tactics work better than other strategies and tactics for answering your research question.

The Statement/Purpose, additionally, should have a research question that can be answered in a reasonable amount of time (no more than a year's worth of scholarly and scientific research and data collection), and otherwise be feasible to accomplish. Moreover, the research question should not be too broad. Nor should it necessarily entail development of original research--that is the criterion for a doctoral dissertation. To guard against the question being too original, it is best to limit a thesis to a replication and extension of a previous study or in some cases to replicating and extending various aspects of several prior studies.

A Note on Comparison Studies. In general, you should refrain from comparison studies, because these are difficult to execute without bias. For example, if your objective is to test some new behavioral procedure against some "traditional" procedure, the opportunity for experimenter bias, observer bias, and other biases in favor of the new procedure may become too great and thus may unduly influence either the execution of the methodology, its data, or the interpretation of the data.

A Note on Group Designs. Most ABA studies involve the use of single-subject research designs, also known as within-subject research. Occasionally, there are reasons to conduct group research designs where statistical tests of significance are conducted. Be aware that group designs have issues that extend beyond most behavior-analytic questions and practices. For example, were you to conduct a group design, you would need a sufficient number of participants -- the N -- in order to properly conduct a statistical test. N might run as high as 50 to 100 participants or more. A typical Master's thesis in ABA includes four participants who complete the study.

d. Developing Your Thesis Proposal

The thesis proposal begins in the summer term (AB560), but typically culminates in the fall semester (AB561).

There are two basic parts of a thesis proposal: (1) the thesis proposal itself, consisting of title page, Introduction, and Method, that you submit to your thesis committee and (2) the proposal and application forms submitted to the Institutional Review Board (IRB). In order to conduct empirical research with human participants, the student is **required** to submit a formal IRB application to his or her Thesis Chair (committee chairperson) prior to submitting it to the IRB committee. This means that thesis students must first create the thesis proposal. Having a formal thesis proposal is necessary in order to proceed through the thesis process and is necessary toward organizing the research plan, data collection and analysis, and in providing a simple and straightforward means by which students can familiarize faculty or other students to their project. The thesis proposal will also provide the framework for the future, complete thesis document, which eventually describes the results of the study and can be distributed at the thesis defense, presented at a conference, or revised and submitted for publication in a peer-reviewed journal. Note: The research proposal written in Research Methods class can serve as the basis of the thesis proposal.

Developing Your Proposal—This process includes

- Choosing a topic
- Researching the literature to learn more about your potential topics
- Outlining the key literature in the topic area
- Narrowing and focusing your topic

- Formulating research objectives or questions and ideas for analysis
- Developing a Statement of the Problem, or Purpose of the Study
- Deciding on research methodology, research design, and methods
- Planning or prototyping materials
- Proposing an approach to data analysis
- Developing a timeline
- Outlining the resources that you will need
- Developing a reference section

Reasons for Writing a Thesis Proposal

- Gives you an opportunity to think through your project carefully and to clarify and define what you want to research
- Provides you with an outline and helps guide you through the research process
- Lets your Thesis Chair and Second Reader know what you would like to research and how you plan to go about it
- Gives you an opportunity to receive feedback from your Chair and others
- Serves as a contract between you and your committee and TCSPP
- Does double duty: Elements of the proposal are incorporated into the proposal to the IRB, including both information from the introduction and from the methods
- Can be submitted to a scholarship committee or other funding agency
- Is expanded into chapters for your thesis; for example, the Introduction and Method are revised as needed and serve as the Introduction and Method sections of the final thesis document.

Writing the Proposal

The proposal serves as a strategy and set of tactics for the thesis. Therefore, you should be as detailed and specific as possible. In other words, be “technological” (Baer, Wolf, & Risley, 1968). Remember to:

- Identify gaps in the literature (i.e., significant problems worth addressing).
- State your topic and rationale clearly.
- Formulate the Statement of the Problem, or Purpose of the Study, that you plan to address.
- Define key terms and state the limitations of previous studies.
- Establish a strong research design and theoretical framework for your study.
- Note any potential limitations of your study and how you will address them.
- Speculate upon potential results of your study.
- Discuss the importance of your study to the field (e.g., both its scientific significance and its likely social significance).

e. Sections of the Thesis Proposal

Your thesis proposal document must be completed and submitted to your thesis committee during the fall semester while you are enrolled in Advanced Research Project II (AB561). For complete formatting guidelines, please also refer to *APA Publication Manual* (6th Edition). See also Rubric for Thesis Proposal (Appendix F) at the end of this document. You should include the following components.

Title page

Follow the specifications regarding title pages that are detailed in the *APA Publication Manual*. Remember that your title page must contain a Running Head located at the top left corner and a page number at the top right corner even with the running head.

Your title itself must adhere to *APA Publication Manual* guidelines including the word limit. See Appendix E for an example title page for the thesis. Some chairs may want you to include the date and a draft # (or version #) on your title page as well.

Chapter 1 – Introduction

At the top of the first page of your introduction you will need to repeat the same title that you have on your title page. You do not put the word “Introduction” at the beginning of the introduction section. The only heading at the beginning of your introduction section will be your thesis title.

A good way to begin your introduction is to place your topic into some broader context. This may be a social context that identifies the social significance of your research. For example, if your thesis will use persons with autism as participants, you could begin by broadly discussing the size and scope of the problem with autism in society, including its rapid growth. If your thesis will test out some instructional design procedure, you could likewise begin with the discussion of the state of education and training in current society and the implications and ramifications of the relatively ineffective methods of education and training that presently exist. This initial paragraph or more will place your thesis into a general context.

From there you should have a transition paragraph that relates your thesis topic and idea back to that general context and which then calls attention to the reason and rationale for your thesis research. You can mention the background to your thesis topic, its scientific or theoretical framework, and the major lines or threads of research that have been made with respect to that topic. You will then expand on each of these, in turn.

You should discuss the behavior-analytic background to your thesis. Because a thesis is typically a replication and extension of previous behavioral research on the same topic, others have covered this same ground ahead of you. Research on your topic began at some point. Therefore, you should give recognition to the beginning of behavioral research on your topic. For example, if your research was about some application of schedules of reinforcement, then a good starting point for citing the background would be Ferster and Skinner’s (1957) book *Schedules of Reinforcement*.

Your introduction may need to cover multiple areas of research input. If your thesis dealt with, for example, application of precision teaching to one of Skinner’s classes of verbal operants, then your introduction would need to cover both the relevant precision teaching literature and the relevant verbal behavior literature. Similarly, to cite another example, if your thesis dealt with reinforcer magnitude in a discrete-trial training situation, then you likewise would need to cover the pertinent literature on reinforcer magnitude and the literature on discrete-trial training.

As a general strategy, your thesis should move forward both chronologically and in terms of specificity with respect to a review of the relevant literature. Thus, there likely will have been more than one research study pertaining to your specific topic and your specific research question. Where there are several or numerous research studies, then we refer to those studies as being either lines of research or threads of research. Lines of research systematically and programmatically follow one another and develop a body of research in a

metaphorical linear manner. A research thread branches out into various directions. In either or both cases, you should proceed from the earlier research to the later research, in the direction that successively approximates your research topic and question.

In other words, your introduction progresses from the general (i.e., broad context of the topic) to the specific (your specific research question).

The final piece of research that you need to review will be the specific study, or in some cases set of studies, that you propose to replicate and extend. You need to state and be direct that this is, in fact, the study that you propose to replicate and extend. Discussion of this specific study should be more extensive in its coverage of relevant details. Because your research question likely will address a limitation of the cited study, or pursue a suggestion for future research listed in that study's discussion, you should be explicit about how this relates to your proposed research.

Statement of the Problem (or Purpose of the Study). The final paragraph of your introduction should be your formal statement of the problem. The statement of the problem paragraph states directly and explicitly the specific research question. The statement of the problem must be a question that can be put to an empirical, experimental test and which, as a result of experimentation, can be answered. You will need to design a methodology that will enable you to answer your research question.

Throughout your introduction you should include reference citations to (a) previous studies, (b) published papers or books that have specific definitions or conceptual formulations that you are using, (c) quotations from previous works, and (d) paraphrased points made in published works. All citations should be in APA format, and each citation must have a corresponding reference listed in the References section of your thesis document. Quotations should be directly relevant and kept to a minimum. Do not forget to use double quotation marks and do not forget to use a closing quotation mark (technically, failing to use quotation marks is plagiarism), followed by a citation including page numbers(s). Keep quotations to a minimum. In most cases, you should either paraphrase (and cite) previous work, or write prose "in your own words." While you should make sure that you do include reference citations, also refrain from overusing citations. If it is clear from the text that you are continuing to refer to an article that you have just cited, you do not need to cite it again within the same paragraph, unless you have meanwhile cited something else, or if it becomes unclear that you are still discussing the cited work.

Be sure to define technical terms in your introduction. Do not assume that a reader will know what a term means. Be direct and specific. Cite the source of the definition as necessary. Likewise, before you first use an acronym, please spell it out as complete words, followed by the acronym in parentheses, as per APA format.

Your introduction will "flow" better when you use transition paragraphs, transition sentences, and transitional words, often adverbs. You may want, therefore, to outline your introduction first before writing its prose.

Always run spell-check, and also please proof-read your introduction before submitting it. Pay attention to paragraph topic sentences, subject-verb agreement, antecedent-pronoun agreement, correct use of verb tense, correct punctuation, and avoidance of common grammar mistakes. Be sure to have a reference for any pronoun that you use, especially when you use the pronoun "it." Ask "it what?" If you cannot answer to what or to whom "it" refers, consider rewriting the sentence. Always avoid vagueness. Moreover, write in the active voice. The *APA Publication Manual* extensively addresses these writing issues. Please consult the *APA Publication Manual* on a regular basis.

You should expect your introduction to undergo several revisions between your initial first and likely very rough draft to your finished completed product at the end of the thesis process. Your Thesis Chair and/or Second Reader may continue to suggest revisions and additions, including citation of additional literature, to your introduction throughout the entire process.

Chapter 2 – Method

In this section you will identify the methodology that underpins your research. You should have a sound rationale for your approach based on your review of the literature and your research question.

- 1. Participants:** Appropriate description of potential research participants is critical to the science and practice of applied behavior analysis, particularly for assessing the results (making comparisons across groups; generalizing the findings; and making comparisons in replication, literature reviews, or secondary data analyses). The criteria for participation should be adequately described, including demographic characteristics such as sex, age, and race/ethnicity, and, where possible and appropriate, characteristics such as socioeconomic status, disability status, and sexual orientation.
- 2. Setting:** Describe where sessions occurred.
- 3. Materials/Apparatus:** Describes the apparatus or materials used and their function in the experiment. Standard laboratory equipment, such as furniture, stopwatches, or screens, can usually be mentioned without detail. Identify specialized equipment obtained from a commercial supplier by the model number of the equipment and the supplier's name and location. Complex or custom-made equipment may be illustrated by a drawing or photograph. Sometimes a diagram or schematic may be used. A detailed description of complex equipment may be included in an appendix.
- 4. Procedures:** This section outlines how you are going to collect your data, including experimental design and all methods. By reading widely you will be familiar with methodologies followed by previous researchers, and you will have explored possible research methods. You will be aware of problems others have encountered and be able to design your research and adapt methods for your research. Outline the methods you will use and problems you anticipate. Outline which design you will use. For example, if you are comparing the effects of two different interventions (e.g., NCR and DRO) you may use an alternating-treatments (also called multielement) design. If you are assessing the effects of your independent variable on several behaviors, you may use a multiple baseline across behaviors design. For thesis topics that are direct or systematic replications, the article that you are extending may offer a starting point for some research design ideas. It is important to remember that your research question drives your research design, and your research design should allow you to demonstrate experimental control.

References

You should have a complete, correctly-formatted References section that includes all articles cited in your Thesis Proposal.

This section should begin on a separate page and include all citations in the manuscript. Put a title labeled References at the top of this section. The reference list should be succinct, not exhaustive; simply provide sufficient references to support your research. Choose references judiciously and cite them accurately. All references must be in APA format. Please proof-read your references to correct errors in them (e.g., author names, book or journal article titles, etc.).

Note: Every reference in your References section must have been cited in the text of your thesis proposal at least once. Likewise, every reference citation in the document must have a corresponding reference in the References section.

The Thesis Proposal described here must be approved by your committee before you may submit the IRB application (described next) for approval. You can consult your Second Reader during the IRB application process, but this is optional and depends on what you and your Thesis Chair decide.

IMPORTANT: Use the attached Thesis Proposal Rubric (Appendix F) 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.

V. Obtaining Approval for the Research from the Institutional Review Board (IRB)

This section of the Thesis Manual describes the process of obtaining approval from the Institutional Review Board (IRB) to conduct the research. Please note that the IRB may change their policies and procedures at any time during the school year. Although they try to announce this change to faculty and students, please be sure to check the IRB website occasionally and review the procedures and requirements for IRB submission and approval thoroughly.

a. Ethics Training

As part of your application to the Institutional Review Board (IRB), you are required to take and pass an online course on the ethical use of human subjects in research. This requirement is a TCSPP policy and is also ABA Department policy.

You will find information on how to access the online course at the IRB's webpage for TCSPP.

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.

When you take and pass the online course, please (a) make and keep an electronic copy of your certificate, and (b) print out and/or send a copy of your certificate to your Thesis Chair.

To access the course, on your computer navigate to the IRB webpage for TCSPP and follow the links. When you arrive at the site for the online course, then follow the instructions there.

Please note that you will need to first register for the course by creating a username and password. Registration is free. You must use your actual name when registering. That will be the name printed on your certificate. Certificates without your actual name will not be accepted.

The online course system checks off that you have officially completed a section and presents a quiz after various units. The online site states that if you do not pass a quiz, you may reread a unit and retake a quiz again as often as necessary. The course may take a few hours to complete.

As noted, the online course system issues a certificate to you upon your successfully passing the course. If you forgot to save or print out the certificate, or did not know how to save a copy of it before logging out, you may always log back in at some later time to retrieve a copy of your certificate.

b. Preparing and Submitting your IRB Application

The general purpose of the IRB at TCSPP is to make sure that all research conducted using human participants is carried out in an ethical manner. This makes it your job as the applicant to give the IRB committee as much information as you can about what you are specifically asking participants to do in your study.

The IRB proposal consists of several forms that you fill out, as well as supporting documentation as needed or required. These items are created and saved as computer files, and are named according to the instructions supplied by the IRB. Then, they are bundled together as a package and submitted as a package to the IRB for its review of them.

TCSPP's IRB maintains a website that includes all relevant information for obtaining IRB approval to conduct research with human participants. All of the instructions, forms, templates, and portal for submitting documents are located on this site. The site includes documents with various tips and policies. The first step in submitting to IRB is to familiarize yourself with the website and with the requirements and tips for submission and approval.

To get to the IRB website, go to the main TCSPP home page, and do a search for "IRB" or "Institutional Review Board." Then bookmark this page as one of your favorites.

c. Types of IRB Review

The IRB conducts several types of research proposal reviews. The type of review you select should be informed by the research questions you are asking. Please consult with your Thesis Chair to decide on what type of review your thesis should take. Historically, most of our reviews have fallen into the "Expedited" category (but please note that "expedited" refers to how the proposal is reviewed and does not mean that it will necessarily be reviewed more quickly!). Go to the IRB website for more information on IRB review types.

Studies that do not meet the requirements for Expedited or Exempt review will be considered for full review by the IRB Committee.

d. 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 talklines, 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.

VI. Conducting Your Thesis Research

You may begin working with human participants and begin data collection only upon (1) formal approval by the IRB, and (2) approval by your Thesis Chair and Second Reader (your committee) to start data collection.

Recruiting Participants

Once you have secured such approval, it is in your best interest to begin right away. Therefore, during the time that you are waiting on approval, you may begin developing and/or procuring the materials that you intend to use for your research. For example, if your research will include using flashcards or other materials, then this would be the time to make them. You should also practice conducting sessions with mock participants and your observers to hammer out procedures before conducting a real session.

Once you have been approved, then you may begin recruiting participants. That is when you may begin distributing advertisements, for example. As you recruit participants, you will need to make sure that they meet your inclusion criteria. That is also when you may need to screen them for actual participation.

Also, as you recruit potential participants, you must get their Informed Consent. This is when you both (a) describe verbally the research study, explaining the role of the participant, the nature and purpose of the study, the risks and benefits, and other required information, and (b) let them read and review the Informed Consent form. If they agree to the terms and conditions stated on the Informed Consent form, then they need to sign and date it, and you likewise need to sign and date it. Have the participant sign two copies; give one to the participant, and keep the other in a secured location (e.g., file box or cabinet that can be locked).

Because you likely will use a single-subject research design (SSD) you may be able to begin working with participants as soon as you recruit them. That is, you probably do not have to recruit them all at once before beginning data collection.

As you obtain research participants, one of your first tasks, will be to assign a pseudonym, and/or code name or number, to each participant. You should keep a confidential key so that you know which pseudonym, code, or number represents which actual person. However, on data recording forms, charts, graphs, tables, and in prose descriptions, and in powerpoint presentations, you should use only the pseudonym, code, or number of the participant, never actual names.

You should also contact your research assistants at this time, and make arrangements for them to be present at approximately 30% of your sessions or more in order for them to help conduct Interobserver Agreement (IOA) and Treatment Integrity (TI) checks.

Arrange a schedule with your participants and with your research assistants. Keep to the schedule as closely as possible, or revise it as necessary.

Collecting Data

In many SSD's data collection begins with various assessments, tests, pre-tests, and baselines. Often, researchers conduct a preference assessment at the beginning in order to identify and select potential reinforcers.

In many SSD's the first phase of data collection is called a "baseline." You should run a baseline according to the principles and practices taught in Research Methods. Generally, a baseline should be carried out sufficiently long enough across a number of days in order for you to determine operant levels, whether there are any trends or cycles in the data, and to find out how much variability there is in the behavior. Optimally, you will want to find stable baselines, or permit enough research sessions to elapse to let baselines stabilize. Otherwise, a good rule of thumb for baselines is to get 7 to 10 days' worth of data. If you do not conduct sessions over a weekend, a 10-day baseline actually would extend across two weeks.

You should include dependent variables that are measurable according to some or any of the eight types of behavior-analytic data covered in the Observation & Measurement course. Historically, a prominent dependent measure in behavior analysis has been rate of response, but your thesis research may include any of the other acceptable data types. Make sure that your dependent measure actually measures your dependent variable.

Your data recording form should include fields or columns for actual calendar dates and days of the week, as well as the start and stop time of the session, even if later on you present your data ordinally as "sessions." You will likely want to retain some capacity to rechart your data in real calendar time as needed or as requested. If you conduct multiple sessions per day, there are reasonable methods of charting these in real calendar time (e.g., a "stacked dots" chart).

The events of a single session should have been stated in your Method section under a Procedures sub-heading. As you begin running actual sessions, you may find that you will need to adjust the procedures. Small changes to a procedure are acceptable and may not require further IRB permission. Significant or substantial changes to a procedure likely will require further IRB permission, however. Consult with your Thesis Chair and/or committee regarding whether a change to methods will require further IRB approval. If a change does require IRB approval, then you will need to request permission from the IRB to make the change, and cannot make the change until the IRB has granted its permission. If a change in method warrants or necessitates a change in the consent form, then IRB approval must be obtained before the change is made.

As you conduct sessions, please record what you actually did, not what you planned to do. The Method section of your final thesis document must reflect your actual methodology that you carried out, not what your proposed methodology intended. Therefore, keep careful notes, date these, and also take note of any other relevant factors that may possibly have influenced a data point. If a session manifests an "outlier" datum, then please also try to note what events of significance happened before or during that session that could have resulted in that "outlier." Record any "events of significance" whether or not they resulted in an outlier, in order to document the effect or lack of effect of extraneous variables.

Early on in a baseline phase you should conduct an IOA session or set of sessions with your research assistant(s). Right away you should compute an IOA value. If it is relatively low (lower than 90%, for instance), you should immediately take steps to calibrate you and your assistant's observations. This calibration may include refining the definition of the target behavior. If you do have to recalibrate observations, then doing so may result in your having to run additional baseline data collection sessions. Failure to obtain appropriate IOA may delay the completion of your thesis.

At some point your research design will call for you to manipulate an independent variable. Please make sure that your Treatment Integrity (TI) checklist is ready, and that your assistant(s) are informed that they are performing TI checks. In some research, you may need to measure the levels or other states of your independent variables.

Before making a phase change, you should consult with your Thesis Chair. Please bring or show a copy of your data in all such consultations. Your Chair may instruct you to keep a participant in a certain phase for a longer period of time, or may agree that the participant may be moved to the next phase. In your Advanced Research Project classes, you should bring a chart or updated graph of your data, present these data to the class, and seek input at that point regarding phase changes as needed.

Phase changes should entail data-based, empirical decisions. You should look at a chart or graph before making a phase change, and use the data on the chart or graph as a tool for helping to decide when to make a change and what change to make. Phase changes should not be made capriciously or on whim, nor should they be made in an effort to conform artificially to some planned timeline. Nor should there be any “rush to judgment.” The research you are conducting has to be real, and should be something that is publication-worthy. If you collect and show stable data on Friday, you may want to conduct another session on Monday before changing phases, in case there is a “Monday effect.”

As you collect data, you should concurrently write notes that you can later rework into the prose for your Results section. You should write down levels, trends, and variability for each experimental phase for each participant. This might include stating the frequency/rate, the celeration, and the bounce/variability. Measure these variables, and write them down.

You should also chart and graph your observations and measurements as you make them. A good practice is to chart a data point or set of data points immediately after the conclusion of a session. You may want to chart data using both a Standard Celeration Chart and a chart or graph that you create in Excel or another graphing program. A good practice is to look at the same data in several different ways so that you can make the best decisions about making phase changes and make the best interpretations of the data.

As you proceed through the sessions of your experimental design, you should also make notes regarding limitations to the research as you either observe them or as you think of them. You may also think of ideas for future research as you gather data and note limitations. These notes can later on be incorporated into the Discussion section of your thesis.

When you have concluded your research, you should debrief your participants. This entails telling them the purpose of the study and answering their questions. At that time you may also give them a social validity questionnaire and ask them to complete it and to return it to you.

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 IOA levels. The same goes for TI 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 are not expected to 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 re-run. 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.
- Your data display conceals levels, trends, or variability or artificially magnifies or reduces levels, trends, or variability. Consider using a standard chart or display (e.g., a cumulative record calibrated for humans).

Doing a “Three-View” of your data on several different data displays may help guard against poor interpretations.

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

VII. The Thesis Document

The final thesis document includes above sections from your proposal (the Introduction and Method), plus the sections outlined below. Please note that the Purpose of the Study/Statement of the Problem section of the Introduction will need to be revised to be in past tense, as will the Method section. The Method section must also be updated to describe specifically exactly what you did with each participant (not what you planned to do).

Abstract

The abstract includes a brief description of your experimental question, a brief summary of your methods, and an overview of your major results. A conclusion statement may also be included. Please adhere to APA *Publication Manual* guidelines regarding the length of the abstract.

Chapter 3 –Results

The Results section will be written during and after data collection. This section summarizes the data collected and the statistical or data-analytic treatment used. Report the data in sufficient detail to justify the conclusions. Mention all relevant results, including those that run counter to your predictions.

A Results section typically begins with an orientation to your first figure, followed by a description of the results shown in the figure, from left to right. Level, trend, and variability of the data are typically described. Each subsequent figure is then described, and if necessary, summary paragraphs of data may be included to more clearly articulate the major results for the reader. An example of a description of a figure is:

“Figure 1 shows the response rate (i.e., number of correct responses per min) across sessions for Participant 1. During baseline, Participant 1 emitted zero correct responses during all three sessions. When the intervention was implemented, correct responses occurred at 3 responses per min in the first session and showed an increasing trend across the next ten sessions, stabilizing at an average of 24 correct responses per min during the last five sessions. When the intervention was terminated, correct responding remained much higher than baseline but slightly lower than during intervention, ranging between 18 and 21 correct responses per min in the last 5 sessions.”

Discussing the implications of the results is not appropriate here; simply describe what your participants did in each condition. Sometimes it is useful to read the description of your results to a peer or colleague and have him/her attempt to draw your graphs simply by listening to your description. If the graphs drawn are similar to your actual findings, it is more likely that your results section is complete. Your results section should include a description of levels, trends, and variability across phases, and it may also include descriptions of outliers, anomalies, and anecdotes.

Please be sure to write your Results section in the past tense.

Chapter 4 – Discussion

The Discussion section begins with a brief summary of the major results of your study. Then each result is discussed in turn and related to the literature, and implications of the results are described. Because the discussion section depends on the results, it is typically not written until after data collection and analysis is completed, although an outline, limitations, and other notes can be written before all the results are in.

In this section you evaluate and interpret your results, especially with respect to your original hypothesis. You are free to examine, interpret, and qualify the results, as well as to draw inferences from them, although you should not go beyond the data in terms of speculating about larger issues. Emphasize any theoretical consequences of the results, and discuss the validity of the results. Note the limitations of your research. Write up any future research questions or ideas suggested by your research. Keep this information as brief and straightforward as possible. Remember to link this section back to your introduction and explain how your research replicates or extends previous research in your topic area and how the results answer the experimental question.

A good practice is to conclude your Discussion with a summary paragraph, or a paragraph where you state the conclusions of your research.

References

This section should be updated to reflect what is actually cited in the final thesis document. For more information on the References section, see “References” under “Sections of the Thesis Proposal” in Section IVe of this document.

Additional Sections

It is important to include any additional sections necessary for your thesis. Additional possible sections include: appendices, an author note, as well as, in some cases, tables and figures.

Appendices may include necessary data sheets including those needed for IOA or Treatment Integrity, samples of teaching or assessment materials such as preference assessments, skills assessments, etc.

Tables and figures may be useful to illustrate the sequence of teaching, to highlight differences between independent variables, etc. Please note that the current practice is to integrate these items into the text of the document itself, as closely as possible to where the information contained on them is discussed.

Appendices -- The appendices likely will contain the following items. Use uppercase letters to identify each appendix.

- Informed Consent Form -- a blank copy, often Appendix A.
- Screening assessments or questionnaires
- Data Recording Form
- Treatment Integrity Checklist
- Social Validity Questionnaire
- Any assessments, tests, pre-tests, post-tests
- Complete sets or examples of research materials (e.g., all of the cards in a set of SAFMEDS).
- Complete sets or examples of stimuli or stimulus items

IMPORTANT: Be sure to score your thesis document using the Final Thesis Document Rubric (Appendix G) before submitting it to your Thesis Chair.

VIII. The Oral Defense

In your graduate career, your goal ought to be to complete and defend your thesis on the scheduled defense date at the end of Spring semester of your second year. There is also a thesis defense scheduled at the end of Summer semester and one at the end of Fall semester.

As per policy, you may present an oral defense only upon approval and recommendation of your thesis committee (your Thesis Chair and Second Reader). If the committee decides that your presentation is not yet ready, then you will have to wait until the next available opportunity to defend your thesis. If the committee does approve you for defense, then your name and the title of your thesis will be put onto a schedule by the Department Manager listing all of the persons defending and which time of day has been assigned. Approval to defend does not signify passing a defense.

A defense has several segments. Your defense first consists of a presentation that you make to an audience. The audience consists of ABA Departmental faculty present, other presenters, other students, and other TCSPP persons, all of whom are welcome to attend. Your presentation is prepared as a Powerpoint (or Keynote) presentation. You should bring your Powerpoint on a flashdrive, and also upload it to the web, such as to your email, as a backup. Your presentation should last 10 to 15 minutes, depending on what has been decided for that particular defense date, and typically a 5-minute question-and-answer period will follow. See Oral Defense Rubric (Appendix H).

Following your presentation, the ABA faculty will ask you questions about your research, about your thesis, and about what you just said or about your powerpoint. You need to answer any question posed to you. You may ask for the question to be repeated or for it to be clarified, and then answer it. Other members of the audience are also entitled to ask questions of you regarding your thesis and your research, and you need to respond likewise.

After the presentation has been made and questions answered, the ABA faculty will retire to another room to discuss and judge the student's defense, and then vote on whether the defense has been passed, according to the policies described in the Thesis Policies section of this manual. This may occur after each presentation, but typically occurs after all presentations have been done for that day. After evaluation and voting has been completed, each student will be brought in to the room, one at a time, and will be informed of the decision made.

Decision types include Pass, Conditional Pass, and Failure (or Not Passed). Pass indicates that the student is finished with thesis and defense, and no further action is required. Conditional Pass means that the student must fulfill subsequent requirements before the faculty can sign the thesis completion and thesis defense form; for example, the student may need to make further revisions to the document. Failure (or Not Passed) means that the student must repeat the thesis defense and may or may not need to complete another thesis project.

When preparing for your presentation please keep the following in mind

- Practice is key—it is helpful to rehearse your presentation in front of friends or family members who can give you positive and negative feedback.
- Time your presentation. There is nothing worse than not being able to present the results of your study because you ran out of time discussing the introduction and methods.
- You will want to do a trial run of any Powerpoint or slide presentations in our smart classrooms so that you will be familiar with the technology.

- Have a Powerpoint that is written in APA format, and is grammatically correct (Use the *Publication Manual of the American Psychological Association* as needed).
- Your presentation should contain all necessary sections for a professional, formal presentation: Title, Name, Affiliation, Introduction, Research Question, Method, Results, Discussion, and References. It is customary to include Acknowledgements, where you acknowledge the help provided by your thesis committee and other persons.
- Your Powerpoint slides should be prepared in 20-point font (minimum; with larger fonts for titles and section headers), have legible text, not too many words per slide (except for the slides containing the References), but use an appropriate number of slides.
- This is a professional presentation so dress accordingly.
- Be sure to make time to eat on the day of the presentation. Food-deprived people run out of energy, and you'll want to be energetic for the presentation.

IMPORTANT: Be sure to score your presentation using the Oral Defense Rubric (Appendix H) before you solicit feedback from your Thesis Chair and before you start practicing.

IX. Helpful Tips to Consider Throughout the Thesis Process

Find a model thesis - this can help you gauge how much (or how little) you have to do. A good model can also serve as an inspiration for your project. Ask your Thesis Chair if you may look at theses or dissertations that the ABA Department has accepted.

Maintaining your focus is the key to completing your thesis. Try the following strategies:

- Make a To Do list that details the steps toward thesis completion. As you complete each step, mark it off the list. Set up a reinforcement system if necessary. A contingency contract made with another individual may help in this regard.
- Work “within” your proposal, adding key words and concepts and then expanding upon them. Starting with an outline can set the occasion for subsequent writing that expands on each idea.
- Write your first chapter early in order to make sure that subsequent chapters fulfill promises made in the introduction. This strategy helps some writers to focus their writing; for others, however, writing the first chapter proves difficult. See what works for you.
- Know your thesis and let it dictate what you include; refrain from writing everything you know. Remember that the final product should adhere to the requirements of a scholarly journal article.
- If you experience “writer’s block,” you can still work on some elements of the thesis (e.g., reading articles, creating charts, graphs, forms, materials, outlines, checking references, organizing files, etc.). Doing something may help you overcome such inertia.
- Charting your progress, using a chart that has a real-time x-axis, such as a Daily per Day Standard Celeration Chart, may help maintain your focus. You will see how often you have been working on your thesis. Chart some accomplishment variable such as “pages written” or “pages completed” (which might include pages edited). Be consistent regarding the dependent variable.
- When you make small methodological changes, note these. If you notice an anomaly in your data (e.g., an “outlier”) make a note of that. When you observe or recognize limitations to your research, note these as well. If you think of an idea for future research, note that, too. Collect these notes. They will greatly help you when it comes time to write drafts of your method, results, and discussion.

Maintain your time - Finding time to write is often difficult for students with jobs, families, and other commitments. The following techniques should help you manage your time effectively:

- **Make the completion of your thesis your top priority.** Do not waste time on points or questions outside the scope of your research.
- Spend time on your thesis at least five days a week. Even if you only have one hour on some days, consistent work will help you to keep ideas and source material fresh in your mind. If you let the project sit for a prolonged period of time you will begin to forget where you were going and what you have uncovered in your research. Again, as noted above, chart your progress.
- If you get stuck writing one section, then switch to another section (e.g., if you cannot write more literature review, then switch tasks to edit what you have written, or check references and work on your references section, create data sheets or figures, etc.).

- Know your behavior patterns and choose a working style that goes with them. For example, if you are a social person, you may want to work in a computer lab instead of at home.
- Know your distractions and schedule your work time when distractions are at a low level.
- Give yourself time to think; you often will need more time to think than you do to write.
- Set aside time for yourself, your partner, and your children (negotiate the time together so that you will be available at the same time). It is important to communicate with those around you regarding your needs and goals and necessary commitment.
- Try out different schedules, for example, shifting from morning to evening hours. Sometimes taking a break from particular work habits is helpful.

Organize both your workspace and your ideas; this will help the research and writing process proceed smoothly. You may want to:

- Purchase a file cabinet, thumb drive (flash drive), or three-ring binders just for the thesis only. Designate a place to contain drafts and research notes for each chapter. Write explanations of the contents on each file folder, binder, or file drawer. Likewise, use computer filenames that are self-explanatory. Include your name on all filenames.
- Always keep a backup copy of your thesis (an extra flash drive, an extra paper copy, etc.). This advice cannot be stressed enough.
- Date drafts to remember the order in which you worked on chapters. You should include dates and possibly version numbers on all drafts you create and submit.
- Set deadlines for submitting drafts of each chapter, and strive to meet them. Revise deadlines as needed, getting your Thesis Chair or others involved if necessary.
- List what each chapter or section should cover, including both general ideas and specific examples.
- Refer to the APA Manual frequently, especially the figure that shows the format of a completed paper. Refer also to your model thesis for guidance.
- Use outlining software or the outline tool on your word processor.
- Post your schedule and your timeline in places that you will see it regularly (e.g., on the inside of your front door, on a refrigerator door, etc.). You may want to post any progress charts there as well.
- Use “to-do” lists to help manage your progress. To-do lists should break the thesis process into components of its basic parts. For example, when starting on your literature review it is helpful to develop a list that involves identifying a topic, selecting relevant research, summarizing articles, organizing article summaries, developing transitions between sections, completing draft of the literature review. Check off items completed.

Obtain feedback from advisors and colleagues. This will help you to refine your ideas as you write. Try the following strategies:

- Meet regularly with committee members, especially your Thesis Chair, to get feedback on your work-in-progress.
- Get advice on your work throughout the writing process (while developing and organizing ideas, during the drafting phase, and as you revise).
- Form a thesis group that focuses on presenting and critiquing works-in-progress and for offering mutual support.
- Bring your thesis to a writing center consultant at the Center for Academic Excellence for feedback. Sometimes your Thesis Chair may require this at various times.

Revise - this is essential to the thesis/dissertation writing process. Often, you will discover new ideas as you write, or your ideas will change as you research your topic and receive feedback on your work.

- Your thesis will undergo a series of drafts, everything from initial very rough draft to a finalized completed product. Expect that. This is normal.
- Your write up of your methods section must reflect the actual methods and procedures that you carried out. Accordingly, there may be some differences between the methods you proposed and the methods actually implemented. Your final thesis product must reflect the latter and must be written in past tense. Thus, the Method that was part of your thesis proposal will be substantially revised.
- In the results, the written part of the section should include prose descriptions of levels, trends, and variability, as well as notes regarding anomalies and outliers in the data. You should note these descriptions as you complete an experimental phase with a participant.
- While the results and discussion sections reasonably can be written only after you have some results, during data collection you should make notes of your observations about the data, notes about limitations to your study as these become clarified, and notes for ideas for future research based on your present research as these ideas come up.
- Even though you will have written an introduction early on, your Thesis Chair and/or Second Reader may suggest changes and additions for you to incorporate, including citation of additional literature. So, the introduction section remains subject to some revision through the final completed thesis product.

X. 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 student to graduate, provided that all other program requirements (coursework, practicum, etc.) have been met and completed. A student who has not completed a thesis cannot graduate. 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 summer semester 2013. 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-semester 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 semester, generally at the end of the semester.

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 powerpoint, 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 Spring semester of their second year are required to enroll in a 1-credit course named Thesis Maintenance. You may need to enroll in Thesis Maintenance more than one semester. 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.

XI. Definitions of Terms Used in This Manual

Advanced Research Project. A series of three courses (AB560, AB561, and AB562) that you begin taking during your first summer semester at the end of your first year. These courses may be known informally as Thesis, or as your thesis course.

APA format. The specific style guide used when writing and formatting your thesis and all of its component parts. APA format is detailed in the *APA Publication Manual*.

APA Publication Manual. Informal reference for the *Publication Manual of the American Psychological Association*, 6th Edition.

BACB. Behavior Analyst Certification Board, which issues the Board-Certified Behavior Analyst (BCBA) certification.

Chapter. A formal, usually titled section of your thesis. The chapters include your Introduction, Method, Results, and Discussion sections. The latter three have those specific terms as their titles. For the introduction, you use and repeat the thesis title itself as the primary heading.

Committee Chairperson. This is the ABA Department faculty member who also serves as, and is known as, your Thesis Chair. Your chairperson is also your “first reader.”

Experimenter. Another name for the Principal Investigator or Researcher (see below).

First Reader. Your Thesis Chair and committee chairperson.

IRB. Acronym that stands for Institutional Review Board. All research using human subjects is required to have IRB approval before any data collection or participant recruitment may begin.

Oral Defense. The formal presentation that you make of your thesis, including the subsequent question-and-answer period. The oral defense is not a mere formality. You must pass the oral defense in order to earn the degree. The ABA Department faculty who attend your oral defense vote on your presentation and performance and determine not only whether you pass or not but also decide on what additional, remaining changes to your thesis may be necessary before signing off on final approval.

Principal Investigator. A formal, legal designation for the person who heads up, conducts, and is responsible for the research being carried out. In the case of your thesis research, you are considered to be the Principal Investigator. You may need to use this designation on your IRB application materials.

Researcher. Another name generally given to the Principal Investigator. In the case of your thesis and its research, you are the researcher.

Second Reader. A member of the ABA Department program faculty who has agreed to serve as a reader on your thesis committee (not your Thesis Chair).

Thesis. A formal, defended, and approved document produced as a final product of thesis development. This document is also known as a Master’s Thesis.

Thesis Chair. This person is a program faculty member in the ABA Department who serves as your committee chairperson and as your “first reader.” Your Thesis Chair teaches the sections of Advanced Research Project courses (AB560, AB561, and AB562) that you take over three semesters.

Thesis Course. Informal name for any of the three Advanced Research Project courses.

XII. Appendices

The following pages include forms that need to be filled out at various times during the thesis process (Appendices A-D, I). Also included are a sample title page (Appendix E) and rubrics for the thesis proposal (Appendix F), complete and final thesis document (Appendix G), and thesis oral defense (Appendix H). These forms can be obtained from your Department Manager or from the Advanced Research Project course website.

Appendix A



Applied Behavior Analysis Thesis Manual Form

Please complete this form, and submit the completed form to your Thesis Chair by the deadline arranged during AB560 Advanced Research Project I.

Please verify that the statements are true by checking the boxes next to each statement.

- I have received the ABA Department's Thesis Manual.
- I have read the ABA Department's Thesis Manual.
- I am aware of and know about the policies, procedures, requirements, and objectives stated in the ABA Department's Thesis Manual.
- I agree to abide by the policies stated in the ABA Department's Thesis Manual.

By signing this form, I certify that the above checked statements are true.

Student's Signature

Date

Student's Name Printed

Student's Thesis Chair Signature

Date

Thesis Chair Name Printed

Appendix B



Applied Behavior Analysis Thesis Committee Membership & Topic Proposal Form

Please complete this form and obtain all the necessary signatures. Submit the completed form to your Thesis Chair during AB560 Advanced Research Project I.

Provide a brief description (1-2 sentences) of the topic you are proposing for your thesis project. Note that if you change your topic, you should submit another Thesis Topic Proposal Form.

Student Name: _____

Brief Description of Topic:

<i>Thesis Committee Members</i>				
	Printed Name:	Signature:	Contact Information (email address, phone #):	Date:
Thesis Chair				
Second Reader				
Committee Member #3 (Optional)				
Committee Member #4 (Optional)				

Note: Your Chair and one other committee member must be a Program Faculty Member in the TCSPP Applied Behavior Analysis Department. Also, you must have at least two and no more than four members on your committee.

Student's Signature

Date

Appendix C



Notification of Thesis Document Completion

(TITLE OF THESIS)

(STUDENT'S NAME)

(DATE)

**A Thesis Submitted to the Applied Behavior Analysis Faculty of
The Chicago School of Professional Psychology
In Partial Fulfillment of the Requirements
For the Degree of Master of Science in Applied Behavior Analysis**

Signature
(NAME OF THESIS CHAIR), Thesis Chair
(TITLE OF CHAIR), The Chicago School of Professional Psychology

Date

Signature
(COMMITTEE MEMBER'S NAME), Committee Member
(TITLE OF COMMITTEE MEMBER), The Chicago School of Professional Psychology

Date

Signature
(COMMITTEE MEMBER'S NAME), Committee Member
(TITLE OF COMMITTEE MEMBER), The Chicago School of Professional Psychology

Date

Appendix D



Thesis Defense Completion Form

TITLE:

NAME:

DATE:

**An Oral Defense Presented to the Applied Behavior Analysis Faculty of
The Chicago School of Professional Psychology, and Accepted
In Partial Fulfillment of the Requirements
For the Degree of Master of Science in Applied Behavior Analysis**

Signature **Date**
John Eshleman, Ed.D., BCBA-D

Signature **Date**
Fawna Stockwell, Ph.D., BCBA-D

Signature **Date**
Scott Herbst, Ph.D.

Signature **Date**
Diana Walker, Ph.D., BCBA-D
ABA Department Chair

Signature **Date**
Jennifer Klapatch, Ph.D., BCBA

Appendix E Sample Title Page

Running head: ALL CAPITAL LETTERS

Header should include a brief descriptor, and page number is on the far right

THESIS TITLE SHOULD BE ALL CAPS, SINGLE SPACED, AND CENTERED

Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Science in Applied Behavior Analysis

Student name and credentials
The Chicago School of Professional Psychology

Year of completion

Address Correspondence to:

Student/Thesis Chair
Department of Applied Behavior Analysis
The Chicago School of Professional Psychology
325 North Wells Street
Chicago, IL 60654
Phone number

Appendix F

THESIS RUBRIC I: THESIS PROPOSAL

Students: Complete this rubric before submitting to your Chair.

Chairs: Complete this rubric before approving document for Second Reader.

Second Readers: Complete this rubric and submit to Chair and Student with review.

The following items must be present and adequate or better before the document is reviewed by Second Reader.

Use the following guide to rate each section:

n/a=not applicable/needed

0=needed but absent

1=inadequate--missing a lot, requires substantial revisions or additions

2=getting there--needs moderate amount of revisions or additions

3=adequate--some or no revision needed

4=excellent—complete and outstanding

Requirement:	Score/Rating
Margins, font, APA format (headings, page numbers, abbreviations, citations, etc.)	_____

1. Title page (follow APA format, including word limit)

Running head _____

Title _____

Author _____

Affiliation _____

Version date _____

Statement: “Proposal Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Applied Behavior Analysis”

Comments: _____

2. Table of Contents

This is not necessary for proposal, but be prepared to add it for Final Thesis Document ____ n/a ____

Comments: _____

3. Acknowledgments

Grammatically correct and reasonable _____

(Optional: You may also include a separate dedication page.)

Comments:

4. Abstract (follow APA format, including word limit)

No more than 1-2 sentences of rationale _____

Potential participants briefly described _____

Planned methods briefly but technologically and conceptually systematically described _____

List of key words right after _____

Comments:

5. Introduction

Thoroughness of literature review

(# citations acceptable? citing when necessary? previous studies well described) _____

Relevance of literature described to proposed study _____

Discussion moves from general to specific and is organized in a way that makes sense _____

Rationale for study is reasonable and logical; reader should get to proposed method on his/her own after reading literature review/rationale _____

All technical terms are defined with citations _____

Purpose of the study/Statement of the problem clearly described and follows from intro _____

Methods are summarized briefly in last paragraph (*future tense*) _____

Comments:

6. Method

Method should be written in future tense _____

Participants

Describe criteria for participation in detail _____

Setting and Materials

Describe setting or potential setting _____

Describe materials _____

Apparatus (if applicable)

Describe apparatus, including trademark or website if necessary _____

Comments:

Experimental Design

Is design of experiment described adequately and correctly? _____

Are conditions of the design clearly stated? _____

Is arrangement of conditions clearly described? _____

Is design of experiment adequate/logical for answering exp'tal question? _____

Comments:

Dependent Variables, Response Measurement, and Interobserver Agreement

Are dependent variables clearly defined? _____

Are observers and training of observers described if applicable? _____

Is measurement of dependent variables clearly described? _____

Is IOA for dependent variables described if applicable? (include
how often assessed, formulas for calculations, etc.) _____

Is IOA for dependent variables acceptable? (i.e., how often
assessed, IOA criteria) _____

Comments:

Procedures

Informed consent/assent procedures described _____

Screening procedures are described if applicable _____

Orientation session described if applicable _____

Are baseline and intervention condition(s) described in detail? _____

*(Note that not all experiments have baseline [e.g., changing-criterion,
some alternating-treatments designs])* _____

Are sessions of each condition described in detail? _____

--What happens in first session and start of all
sessions? _____

--Instructions and prompts given [type of
prompts and when they will be delivered, such as after
incorrect response and after a specified time since prompt
with no response] _____

--Length of sessions [max and min length, if
applicable; how will sessions end?] _____

Are criteria for ending phases/conditions described in detail? _____

--Min and max # sessions, stability of data as determined by ... _____
Are maintenance and/or generalization phases described in detail? _____
Is social validity assessment described adequately if applicable? _____
Is debriefing described? _____

Comments:

Treatment Integrity

Are experimenters (those conducting the treatment) and training
of experimenters/observers described if applicable? _____
Is measurement of independent variables described if applicable? (e.g.,
experimenter will use a checklist of steps to follow while conducting
sessions; observer will use the checklist to record correct and incorrect
steps done by experimenter) _____
Is calculation of treatment integrity clearly described? (include how often
assessed, formulas for calculation, etc.) _____
Is IOA for treatment integrity described if applicable/necessary? (include
how often assessed, formulas for calculations, etc.) _____
Is treatment integrity acceptable (i.e., how often assessed, TI criteria)? _____

Comments:

Is Method section technological? (could someone else do the study based on this paper?) _____

7. References

Section is formatted correctly _____
Individual references formatted correctly _____
All citations in References section _____
No references present that were not cited in text _____

Comments:

8. Appendices

Required appendices are present _____
Appendices are relevant and not redundant to text _____

Appendices appear in the order in which they are cited in text; named correctly _____
Appendices are formatted correctly _____

Appendices include:

Consent forms (participant, guardian) _____

Assent forms/scripts _____

Data sheets _____

Treatment integrity sheets _____

Social validity questionnaires _____

Screening questionnaires _____

Debriefing script _____

Any other questionnaires that are not standardized _____

Advertisement(s) to recruit participants _____

Comments:

Rubric Completed by (circle one): **STUDENT** **THESIS CHAIR** **SECOND READER**

Name of person completing form: _____

Date: _____ **Thesis Chair:** _____

Appendix G

THESIS RUBRIC II: THESIS DOCUMENT

Students: Complete this rubric before submitting to your Chair.

Chairs: Complete this rubric before approving document for Second Reader.

Second Readers: Complete this rubric and submit to Chair and Student with review.

The following items must be present and adequate or better before the document is reviewed by Second Reader.

Use the following guide to rate each section:

n/a=not applicable/needed

0=needed but absent

1=inadequate--missing a lot, requires substantial revisions or additions

2=getting there--needs moderate amount of revisions or additions

3=adequate--some or no revision needed

4=excellent—complete and outstanding

Requirement:	Score/Rating
Margins, font, APA format (headings, page numbers, abbreviations, citations, etc.)	_____

1. Title page (follow APA format, including word limit)

Running head _____

Title _____

Author _____

Affiliation _____

Version date or Defense date (Include defense date for final version) _____

Statement: “Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Science in Applied Behavior Analysis”

Comments: _____

2. Table of Contents

Includes all sections, including List of Figures and Tables (if applicable) _____

Is correct _____

Comments:

3. Acknowledgments

Grammatically correct and reasonable _____

(Optional: You may also include a separate dedication page.)

Comments:

4. Abstract (follow APA format, including word limit)

No more than 1-2 sentences of rationale

Participants briefly described

Methods briefly but technologically and conceptually systematically described

Brief overview of major results

No more than 1-2 sentences of major implications of results

List of key words right after

Comments:

5. Introduction

Thoroughness of literature review

(# citations acceptable? citing when necessary? previous studies well described)

Relevance of literature described to proposed study

Discussion moves from general to specific and is organized in a way that makes sense

Rationale for study is reasonable and logical; reader should get to proposed method on his/her own after reading literature review/rationale

All technical terms are defined with citations

Purpose of the study/Statement of the problem clearly described and follows from intro

Methods are summarized briefly in last paragraph (*past tense, since study is done*)

Comments:

6. Method

Method should be written in past tense, since the study is done.

Participants

Describe criteria for participation in detail

Describe relevant characteristics of participants

Setting and Materials

Describe setting

Describe materials

Apparatus (if applicable)

Describe apparatus, including trademark or website if necessary

Comments:

Experimental Design

Is design of experiment described adequately and correctly?

Are conditions of the design clearly stated?

Is arrangement of conditions clearly described?

Is design of experiment adequate/logical for answering exp'tal question?

Comments:

Dependent Variables, Response Measurement, and Interobserver Agreement

Are dependent variables clearly defined?

Are observers and training of observers described if applicable?

Is measurement of dependent variables clearly described?

Is IOA for dependent variables described if applicable? (include how often assessed, formulas for calculations, etc.)

Is IOA for dependent variables acceptable? (i.e., how often assessed, IOA criteria)

Comments:

Procedures

Informed consent/assent procedures described

Screening procedures are described if applicable

Orientation session described if applicable

Are baseline and intervention condition(s) described in detail?

(Note that not all experiments have baseline [e.g., changing-criterion, some alternating-treatments designs])

Are sessions of each condition described in detail?

--What happens in first session and start of all sessions?

--Instructions and prompts given [type of prompts and when they will be delivered, such as after incorrect response and after a specified time since prompt

with no response]

--Length of sessions [max and min length, if applicable; how will sessions end?]

Are criteria for ending phases/conditions described in detail? _____

--Min and max # sessions, stability of data as determined by ... _____

Are maintenance and/or generalization phases described in detail? _____

Is social validity assessment described adequately if applicable? _____

Is debriefing described? _____

Comments:

Treatment Integrity

Are experimenters (those conducting the treatment) and training of experimenters/observers described if applicable? _____

Is measurement of independent variables described if applicable? (e.g., experimenter used a checklist of steps to follow while conducting sessions; observer used the checklist to record correct and incorrect steps done by experimenter) _____

Is calculation of treatment integrity clearly described? (include how often assessed, formulas for calculation, etc.) _____

Is IOA for treatment integrity described if applicable/necessary? (include how often assessed, formulas for calculations, etc.) _____

Is treatment integrity acceptable (i.e., how often assessed, TI criteria)? _____

Comments:

Is Method section technological? (could someone else do the study based on this paper?) _____

7. Results

Data presentation (graphs, charts, tables) is adequate to convey results _____

Graphs, charts, and tables are attractive, clear, and APA-formatted _____

(see Sections 10-11 below; figures can be presented in text or after References) _____

Description of results: _____

Refer to figure/table and state what is depicted in the figure/table _____

Describe results shown in the figure from left to right—patterns across time or conditions, trends; not just presenting numbers shown in figures _____

Include all results—baseline, intervention, follow-up, social validity, etc. _____

Results are described clearly and accurately _____

Major results are presented in a logical manner—most to least relevant or _____

chronologically; figures are ordered accordingly
Only results are presented—no method or discussion

Comments:

8. Discussion

Brief overview of major results

Re-present each major result and relate it back to the literature and to the experimental question

Other implications of neat results, if applicable

Other explanations of results (e.g., uncontrolled variables specific to the study)

Limitations

Future research

Conclusion paragraph

Comments:

9. References

Section is formatted correctly

Individual references formatted correctly

All citations in References section

No references present that were not cited in text

Comments:

10. Appendices

Required appendices are present

Appendices are relevant and not redundant to text

Appendices appear in the order in which they are cited in text; named correctly

Appendices are formatted correctly

Appendices include:

Consent forms (participant, guardian)

Assent forms/scripts

Data sheets

Treatment integrity sheets

Social validity questionnaires

Screening questionnaires

Debriefing script

Any other questionnaires that are not standardized

Advertisement(s) to recruit participants

Comments:

Rubric Completed by (circle one): STUDENT THESIS CHAIR SECOND READER

Name of person completing form: _____

Date: _____ **Thesis Chair:** _____

Appendix H

THESIS RUBRIC III: ORAL DEFENSE

Students: Complete this rubric before submitting to your Chair.

Chairs: Complete this rubric before approving presentation for defense.

All faculty: Complete this rubric for students' oral defense.

The following items must be present and adequate or better for the student to pass the oral defense.

Use the following guide to rate each section:

n/a=not applicable/needed

0=needed but absent

1=inadequate--missing a lot, requires substantial revisions or additions

2=getting there--needs moderate amount of revisions or additions

3=adequate--some or no revision needed

4=excellent—complete and outstanding

Requirement: Score/Rating
Slides, font, APA format (headings, page numbers, abbreviations, citations, etc.)

1. Title slide (follow APA format, including word limit)

Title
Author
Affiliation

Comments:

2. Introduction

Brief overview of significance
Brief literature review
Clear rationale
Purpose of the study/Statement of the problem with brief summary of methods

Comments:

3. Method

Participants

Describe criteria for participation in detail (if needed)

Describe relevant characteristics of participants

Setting and Materials

Apparatus (if applicable)

Comments:

Experimental Design

Description

Adequacy

Comments:

Dependent Variables, Response Measurement, and Interobserver Agreement

Are dependent variables clearly defined?

Is measurement of dependent variables clearly described?

Is IOA for dependent variables described and acceptable?

Comments:

Procedures

Brief summary of major procedures

Comments:

Treatment Integrity

Comments:

4. Results

Data presentation (graphs, charts, tables)

Description of results

Comments:

5. Discussion

Brief overview of major results

Relate results back to the literature

Limitations

Future research

Conclusion

Comments:

6. References

Section is formatted correctly _____

Individual references formatted correctly _____

Comments:

7. Question & Answer Period

Section is formatted correctly _____

Individual references formatted correctly _____

Comments:

Overall Comments/Issues to Address :

Rubric Completed by (circle one): THESIS CHAIR SECOND READER OTHER FACULTY MBR

Name of person completing form: _____

Date: _____ **Thesis Chair:** _____

Appendix I



Applied Behavior Analysis Thesis Sharing Form

Please complete this form at or before your Oral Defense, indicating whether you would like your Thesis document to be shared with future ABA Thesis Students at The Chicago School of Professional Psychology who may want to read/cite your thesis and/or replicate your study. The ABA Department Manager will make your thesis document available to ABA Thesis Students as indicated by your choice below.

Please indicate your preference regarding sharing your thesis document with future students by checking the box next to the appropriate statement.

- I would like the ABA Department Manager to provide a copy of my thesis document to any and all future ABA thesis students upon their request.
- I would like the ABA Department Manager to ask my permission each time before sharing my thesis document with other students.
- I do not want my thesis document to be shared with any students.

By signing this form, I certify that the above checked statement is my preference.

Student's Signature

Date

Student's Name Printed

Student's Thesis Chair Signature

Date

Thesis Chair Name Printed