
DEPARTMENT OF INSTRUCTIONAL
TECHNOLOGY & LEARNING
SCIENCES
DOCTORAL PROGRAM PLANNING GUIDE



LOGAN, UT

LAST REVISED: February 5, 2014



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DEPARTMENT OF INSTRUCTIONAL TECHNOLOGY & LEARNING SCIENCES

DOCTORAL PROGRAM PLANNING GUIDE

A LETTER TO DOCTORAL STUDENTS

To the Doctoral Student:

Welcome to the Department of Instructional Technology & Learning Sciences, one of eight departments in the Emma Eccles Jones College of Education and Human Services. We are pleased that you applied to the program and that you were selected to be part of an exciting field of study. We sincerely hope this will be a mutually rewarding experience.

It is our belief that graduate study is a time during which real intellectual development should occur. This experience will call for immersion in the learning process in order to take advantage of the rich resources found here. We encourage your enthusiastic involvement in your classes and collaborative activities with your professors and peers. We hope you will take advantage of the ISTA chapter, brown bag series, field trips, socials, which all add to your education. The Doctorate of Philosophy (Ph.D.) degree program is intended for students who wish to be better prepared to (a) fulfill roles as college and university researchers and teachers in education and corporate training fields; (b) conduct and direct research and development activities in public or private educational agencies or in the corporate sector.

The Ph.D. requires **60** or more semester credits beyond the master's degree. Doctoral programs must be completed within eight years of matriculation. A Ph.D. student holding a master's degree in a field other than Instructional Technology & Learning Sciences will be required to complete at least **9** credits of the master's core courses, resulting in a **69** credit program. On some occasions, students with a relevant MS will be asked to complete all or part of the MS core. This determination will be made by the temporary chair and department head. A PhD student who does not have a master's degree will be required to complete a **90** credit PhD including the master core classes.

The Ph.D. requires a minimum of 33 USU semester credits from an approved program of study. At least three semesters must be full-time registration, two of which need to be consecutive for residence at USU. To increase the probability of successful completion, we urge students, whenever possible, to spend a minimum of two years on campus. For Utah Residency please see <http://www.usu.edu/admissions/information/residency.cfm>

We look forward to getting to know you. If we can be of service, if you have questions or concerns, please do not hesitate to talk with your advisor or Department Head. Enjoy your studies.

Department Mission Statement:

The mission of the Department of Instructional Technology & Learning Sciences is to provide environments in which graduate students and faculty explore, develop, and disseminate technologies of instruction and information impacting education, business, industry, and government.

University Catalog

Please read and study the University General Catalog so you understand the regulations related to completing your program. Things such as the eight year time limit on courses, when and how to form your Graduate Committee, 12 credit maximum of non-matriculated course work transfer credit, deadline for submitting your "Program of Study," and "Application for Candidacy." The Graduate School section of the Catalog contains valuable information that can save you headaches, heartaches, and many hours of frustration. The Catalog is available online.

This Guidebook

This guidebook is designed to help you through the doctoral program. Read it carefully and refer to it as you complete various degree requirements; use it to anticipate various requirements and deadlines. The 9 steps to your degree will be particularly helpful. If you have questions, check with your faculty advisor or your chairperson

Doctoral Courses and Research Core

The program focuses on research and theory building in instructional design and development. It is comprised of the PhD core, research methods core, practicum, dissertation, and elective courses described below. It is to the advantage of students to work with a faculty advisor/chair to determine a program of studies.

A Research Methods Core (12 credit hours) is required of all doctoral students. While substitutions for required courses may be approved in some instances by the student's committee and with approval of the Department Head, this approval must occur before a substitute class is taken or accepted by the committee.

Information regarding EDUC research courses, sequences and prerequisites can be found at: <http://www.cehs.usu.edu/ors/researchcourses.html>

EDUC 6600 requires students to pass a pretest before the first day of the semester, please see information found at: <http://cehsresearch.usu.edu/ors/6600.html>

The following is a list of the doctoral curriculum, and provides some detail on the EDUC Research courses. Each student's doctoral supervisory committee decides whether course work taken prior to admission will be approved, contingent upon the Graduate School policy that only 12 semester credits of non-matriculated credit can be accepted. It is important to note that the eight-year limit on doctoral course work applies to all credits (8 years at time of graduation).

PhD Curriculum

60 credits minimum required for PhD with masters degree in instructional technology & learning sciences.

A Ph. D. student holding a master's degree in a field not related to Instructional Technology & Learning Sciences will be required to complete the Master's degree core (a total of 9 credits) in addition to the normal 60 credits. This will result in a 69-credit program. On some occasions, students with a relevant MS will be asked to complete all or part of the MS core. This determination will be made by the temporary chair and department head. Students who do not have a master's degree will be required to complete a 90 credit PhD including master core classes.

PhD Core (7 credits required)

Course	Description	Credits	Prerequisites
ITLS 6300	ITLS Orientation	1	
ITLS 7000	Proseminar/fall	3	Admittance to ITLS PhD Completion of MS Core or related MS degree
ITLS 7300	Research in Instructional Technology & Learning Sciences. Review and critique studies in instructional technology. Formulate dissertation prospectus.	3	EDUC 6570 1 research methods course 1 proseminar.

Research Methods Core (12 credits required)

Required courses (9 credits)

Course	Description	Credits	Prerequisites ¹
EDUC 6570	Research methods	3	PSY 3210
EDUC 6600	Measurement, Design & Analysis I	3	EDUC 6570 ³
EDUC 6770	Qualitative methods I	3	EDUC 6570

Optional courses – Pick at least one 3 credits

Course	Description	Credits	Prerequisites
EDUC 7610	Measurement, Design & Analysis II	3	EDUC 6600
EDUC 6780	Qualitative methods II	3	EDUC 6770
EDUC 6010	Introduction to program evaluation	3	
EDUC 7670	Literature Review	2	
	Other methodology courses e.g., computer science, English, Sociology, etc. (with advisor approval)		

¹Information regarding EDUC research courses, sequences and prerequisites can be found at: <http://www.cehs.usu.edu/ors/researchcourses.html>

²EDUC6570 requires completing an undergraduate statistics course (e.g., PSY3210). Students should take such a course prior to beginning doctoral studies.

³EDUC6600 requires completing EDUC6570 (or an approved alternative) and passing an online, 1-hour, multiple-choice pretest.

Electives (12 credits minimum required)

Course	Description	Credits	Prerequisites
ITLS 7870	Current issues seminar. Repeatable for credit.	3	Admittance to ITLS PhD
ITLS 7150	Advanced seminar. Repeatable for credit.	3	Admittance to ITLS PhD
ITLS 7900	Independent study	1-6	
ITLS 7910	Independent research	1-6	
	Other elective courses, e.g., computer science, English, BISE, etc. (with advisor approval). Examples include (ENGL7000, 7420, 7440, 7480, 7890, 7860)	1-6	

ITLS 7820- Practicum (8 credits minimum required)

Four practica are required from the following:	Additional practicum experience:
Funding Proposal 2 Literature Review 2 Design/Development 2 Empirical Research 2	Teaching

Students are required to take four practica from the left column above. It is also strongly recommended that practica be completed in the same area, building towards a dissertation, as outlined below.

Funding Proposal

Students should identify their dissertation topic prior to beginning the funding proposal. The student then works together with the faculty supervisor to identify a Request for Proposals that matches the student's dissertation topic as closely as possible. The funding proposal writing and submission process serves four purposes: (1) it encourages students to think critically about their dissertations much earlier in their experience than they have traditionally, (2) it encourages students to think more broadly about their dissertations, including time and budgetary estimates, (3) it hopefully provides funding for the student's dissertation work, and (4) it familiarizes students with the vagaries of actually submitting proposals (e.g., submission systems like NSF's Fastlane). The funding proposal has the same basic anatomy as the dissertation proposal – problem statement, brief literature review, methodology, and budget. Ideally, every student in the Department would carry out their dissertation research and writing with external support specific to their area of interest.

Literature Review

This literature review is expanded into a full length, dissertation-quality research review during this practicum.

For a comprehensive discussion on the importance of the dissertation literature review, consult

http://aera.net/uploadedFiles/Publications/Journals/Educational_Researcher/3406/Boote.pdf

Boote, D.N. & Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational Researcher*. 34(6), 3-15.

Design/Development

Dissertations require the development of new products. Sometimes the products are instructional materials whose effectiveness will be tested against “traditional” teaching methods, sometimes the products are surveys or questionnaires which will be used to gather data, sometimes the products are rubrics according to which qualitative data will be classified and categorized by multiple raters, sometimes the products are theoretical frameworks which will support the study, etc. The product development practicum should be used to develop the dissertation study’s core products or materials. In consultation with the faculty advisor the product should be developed to a level of quality sufficient for use in the dissertation itself.

Empirical Research

In the final required practicum, students will carry out a full-fledged but small-scale pilot of their dissertation study. This pilot study will provide valuable formative feedback regarding the functionality of the dissertation’s core supporting product as well as the methodology. (Results of the pilot study may or may not be publishable; publication should be encouraged where applicable.) Lessons learned in the pilot study should be integrated into the Dissertation Proposal that the student eventually defends.

Teaching Practicum

Students may teach a course for this optional practicum, working closely with a faculty member on the development of course objectives and materials. The practicum report would include all course documentation (syllabus, grading rubrics, etc.), a report of student evaluations including representative student comments, and a reflective piece of writing in which the student describes what they’ve learned from the process of preparing for, teaching, and marking a course.

Dissertation (12 credits minimum required)

Course	Description	Credits	Prerequisites
ITLS 7970	Dissertation	12-18	

The required courses described above are the minimum. Students are strongly encouraged to take additional research methods, electives, or independent study courses depending on their research interests.

Recommended sequence:

	Fall	Spring
Year 1	ITLS 7000 EDUC 6570 Elective	ITLS 7010 Elective Research Methods course
Year 2	ITLS 7300 Research Methods course Elective and/or Practicum and/or Independent Research	Research Methods course Elective and/or Practicum and/or Independent Research

Responsible Conduct Research Training

Ethical and responsible conduct of research (RCR) is critical to public trust in science, technology and engineering --- and education in the responsible and ethical conduct of research is now considered a best practice in the professional development of future scientists and engineers.

RCR training is mandatory for all new doctoral students

To make the training as accessible as possible we will move our Research Scholar Certification program to an extensive online approach that will require all incoming doctoral students to:

1. Attend Research Scholars Orientation – a 2.5-hour session that includes forum type lectures from faculty.
2. Attend nine online modules, each about 15-20 minutes, provided by the collaborative institutional training initiative (3-4 hours).
3. Attend two (1 hour long) Research Scholars Forums. The forums are taught by faculty and will be offered twice a year, once in the fall and once in the spring.

Completion of the above three components will satisfy a noncredit course (USU 6900) that will appear on the student’s transcript. All new USU doctoral students will be required to register for this zero credit course during the spring semester. This will provide the student, their faculty, and the university, with documentation that RCR training has been completed. This approach will also allow us to ensure compliance under auditable conditions with the requirements of federal funding agencies. It remains the responsibility of the faculty principal investigator to ensure that all students (graduate, undergraduates and postdocs) working and associated with these grants have taken and passed USU 6900.

DOCTORATE INFORMATION

This section is meant as a partner to, and in compliance with, all college and School of Graduate Studies requirements relating to those steps for a student to earn a Ph.D.

Committee Composition

At the time of their approved course of study, students should have five committee members who have agreed to serve on the Ph.D. committee. At least three members must be from the Department, including the committee chair. The signatures of all five committee members are required on a student's approved course of study, normally formed at the close of the student's first year of study.

All members of the committee are required to attend and participate in the student's comprehensive exams. Signatures from each committee member are required to show successful completion of the exams. Similar participation and signatures are required to show acceptance of the dissertation proposal, and progression to doctoral candidacy.

After a student has reached candidacy, the student and chair may choose to form a three-person sub-committee designated as the **dissertation reading committee**. These three people are chosen from the original five members and must include the committee chair. The reading committee may be responsible for mentoring different aspects of the dissertation as decided upon by the student and chairperson.

All reading committee members must agree that the dissertation document has reached a defensible state prior to scheduling a dissertation defense; all committee members' signatures are required on the Appointment for Exam form. This form is required to be at the Graduate School 15 days prior to the defense date. Note that approval of defense date by the reading committee does not have any bearing on whether or not the defense will be successful. All members of the committee are to receive the approved dissertation document at least 4 weeks prior to the defense date.

A typical progression for a Ph.D. student in the Department is as follows:

Initially, new Ph.D. students will be assigned a temporary advisor. They should speak with him/her to help set an initial schedule and course of study related to the student's interests.

After 12 credits, the student contacts individual faculty members to discuss areas of mutual interests. The student with his/her Committee Chair should consider which committee members would be appropriate to participate on the committee, taking into consideration recommendations from the individual faculty members. At this time the student will fill out a Committee Form.

As a student participates in the professional seminars, he or she will meet the faculty and learn about their various research interests. After 24 credits, the student can look to complete his/her Program of Study form as required by the Graduate School. Typically this is will be required by the beginning of the third semester—confirm the Graduate school requirements with each student's individual progress. The form requires signatures from all committee members.

During the research methods courses, the student should ensure the committee feels the students' chosen sequence is appropriate for their particular area of interest or specialization. If the research course is deemed to be inappropriate for the student's specialization, then other research courses may be substituted after committee approval.

Comprehensive Exams- Matriculated before Fall 2014

Students who have matriculated prior to Fall 2014 may opt to follow either comprehensive exam process described below, with advisor and committee approval.

In preparing for comprehensive exams, students must have their five-member committee in-place and completed their coursework, excluding credits for dissertation, internship, and fieldwork. This means that the earliest students can take their comprehensive exams is in the semester in which they will have completed the required coursework. They must sign-up one month in advance and be enrolled as a student the semester they wish to take their comprehensive exams. Students can, of course, work on their dissertation proposal during this time if they wish, however their committee will not consider it until after they have successfully passed their comprehensive exams.

In preparing for the comprehensive exam, students should designate areas of specialization (approximately three to five) related to their dissertation research. For each area, they should develop a list of seminal references. In consultation with the chair and relevant committee members, the lists are revised, and ultimately form the basis for the comprehensive exam questions.

Comprehensive exams will take on a format suggested by the student and chair in cooperation, and approved by all committee members. A typical comprehensive exam might include a single question proposed by each committee member in relation to his/her areas of interests and the student's specialization. The student will have seven days to complete the exam, followed by a two-week period in which the committee

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considers the student's responses. A follow-up meeting takes the form of an oral defense of the written comprehensive exam portion, attended by the student and

Comprehensive Exams- Matriculated Fall 2014 or later

For students who matriculated Fall 2014 or later:

The comprehensive exam serves as preparation for and demonstration of one's ability to conduct independent scholarly research. The exam must be successfully completed, as determined by a three-person comprehensive exam subcommittee, prior to defense of a dissertation proposal. The comprehensive exam subcommittee consists of members of the student's dissertation committee and must include the committee chair and at least one other member of the ITLS faculty. The third committee member can be an ITLS faculty member or an approved member from an outside department.

The expectation is for the exam to consist of two written papers (an empirical paper and a major area paper), a closed oral defense of the two papers with an exam sub-committee, and a public departmental presentation of the empirical paper. However, the exam will ultimately take on a format that has been decided upon in advance of the exam and must be unanimously approved by the student and a 3-person comprehensive exam committee.

The empirical paper must present a well-structured argument based on original empirical research led by the student, comparable in structure to what would be prepared for a journal article or published conference proceedings. The student may choose to use data that is part of an existing research project. The student may also choose to design a study that requires the collection and analysis of new data unaffiliated with an existing project. Regardless of what data are used, the appropriate authorizations and approvals from the research participants, the institutional review board, and (when applicable) the principal investigators, must be obtained.

The major area paper must present a well-structured argument regarding the current state of knowledge in the major area. It should review and synthesize theory and research in an ITLS relevant topic area, as agreed upon by the comprehensive exam subcommittee.

Both papers should conform to a length and style comparable to what would be typically acceptable in a competitive and peer-reviewed journal article or conference with published proceedings.

In order to continue in the PhD program in good standing, the exam must be successfully defended, as determined by the exam sub-committee, by the end of the student's third year in the PhD program (as determined by completed credits, see table below). The exam can be completed earlier with approval from the exam subcommittee.

Highest degree completed by time of matriculation:	Comprehensive exam must be successfully defended before:
Bachelor's degree	72 Credits Completed
Masters in a non-related field	63 Credits Completed
Masters in ITLS or directly related field	54 Credits Completed

Following successful defense of the comprehensive examination, students are also required to deliver a public oral presentation of their empirical paper and respond to questions and comments from attendees at a predetermined time during the Spring Semester following their successful exam defense. The oral presentation may occur after completion of the third year of enrollment, but should be done as soon after successful exam completion as possible. The oral presentation is required but does not comprise a required part of the successful completion of the comprehensive exam. In other words, students may schedule their dissertation proposal defense after passing the paper and closed oral defense exam.

Dissertation Proposal

The candidate submits a dissertation proposal for review by the committee chair. After his/her approval, the proposal is given to the committee members. Committee members must receive a copy of the dissertation proposal a minimum of two weeks prior to the proposal defense. After all recommendations from committee members have been adequately addressed, the student's chair may schedule a meeting of the student and committee for the oral defense of the proposal. If successful, the committee approves the proposal and signs the appropriate form. At this time, the committee may also sign the Application for Candidacy for Doctoral Degree form. Note that in order for the student to achieve candidacy, all course requirements must be completed, comprehensive exams must be passed, and the student's dissertation proposal must be approved by all committee members.

During this time, the student continues to complete related coursework including dissertation, internship or fieldwork credits.

As part of the requirements for graduation, doctoral candidates must have made a professional presentation and submitted an approved manuscript for publication to a refereed journal. The submission is to be related to the dissertation. Verification of this requirement is required before the oral defense of the dissertation.

Changes in Committee

No committee revisions (changes in committee membership) can be made in the six

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weeks prior to dissertation defense. Substitutions for committee members unable to attend defenses must be approved by the Department Head and the Graduate Dean.

Reading Committee and Dissertation Defense

After a student has reached candidacy, the student and chair may choose to form a three-person dissertation reading committee. Once all reading committee members agree that the dissertation has reached a defensible state the chair may initiate the scheduling of a dissertation defense. Note that approval of defense date by the reading committee does not have any bearing on whether or not the defense will be successful. All members of the committee are to receive the approved dissertation document at least four weeks prior to the defense date.

The student must register for at least three credits during the semester of defense and for at least one credit the semester of completion (if different from the semester of defense).

The defense cannot be scheduled between academic terms. To schedule the final oral defense, you must obtain an "Appointment for Examination" form at the Graduate

School or the Department. This form, indicating your committee's approval of the proposed time and place for the examination, must be in the School of Graduate Studies Office, no less than ten working days before the defense. As part of the scheduling process, you must have filed your forms on "Thesis/Dissertation Data and Copyright," and "Plans for Publication," as well as an Application for Candidacy Form in the Graduate School office three months before the dissertation defense. The final oral exam must be scheduled at least eight weeks prior to commencement if you wish to participate in the activities. Deadlines are published annually by the Graduate School.

The dissertation defense is a public meeting and must be attended by all members of the committee and conform to the guidelines outlined by the college and university. It is the responsibility of the student to ensure that the dissertation defense is advertised with a minimum of 1 week prior to the defense date, through a variety of venues. As with the comprehensive exams, the result of the dissertation defense may take many forms including requiring additional work by the student or outright failure. Signatures of all committee members are required for a successful dissertation defense. When a committee member does not concur, the matter is taken to the Graduate Dean who may request an outside review.

You must complete all doctoral degree requirements within one year of your successful dissertation defense; otherwise, you must re-defend. After the defense, the dissertation must be approved by the Thesis Coordinator in the School of Graduate Studies and the Graduate Dean must approve the dissertation. The Graduate Dean may send randomly selected dissertations to external reviewers to solicit additional evaluations. Be aware that a student may require to be registered for credits if completing doctoral degree requirements beyond the semester of the defense—refer to the Graduate School for those requirements.

Preparation and Approval of Dissertation

Preparation of a dissertation is the culminating learning experience for a graduate student. The quality of the product, which should represent the student's own best work, is the responsibility of the student. Monitoring the quality of the dissertation and mentoring the student in writing are responsibilities of the student's chairperson with the assistance of the student's doctoral supervisory committee members. Editing by anyone other than the chairperson and committee members should be limited to mechanics, such as spelling and grammar. When presented to the committee, the dissertation should be in final format as approved by the American Psychological Association (APA format).

The School of Graduate Studies requires your dissertation to be reviewed by an editor for style and formatting issues before it is reviewed by Graduate School. The front office staff will have a list of approved reviewers on campus. An off campus reviewer may be used as well. The student is in charge of paying for the editor. Once edits have been made the staff assistant will sign the "Style and Format" cover page to be turned in with your dissertation. A publication guide can be found on the graduate school website. http://www.usu.edu/graduateschool/training/doc/Publication_Guide.pdf

Dissertation Formats

Students should be aware that at least two different ways of doing doctoral dissertations are acceptable: a traditionally formatted dissertation and a multiple-paper format. Our Department affirms its commitment to the Graduate School policy on the multiple-paper dissertation option. In accordance with the committee's approval, a student pursuing this option may submit article manuscript(s) in lieu of a traditional dissertation. The guidelines for this course of action are provided on p. 4 of the Graduate School publication manual.

It is often the practice for graduating Ph.D. students to offer bound copies of the dissertation to members of their committee.

SAMPLE PROPOSAL TITLE PAGE

DOMAIN KNOWLEDGE REPRESENTATION MODEL FOR INSTRUCTIONAL ANALYSIS AND DESIGN

by

Name

A proposal for a project submitted
in partial fulfillment of the
requirements for the
degree
of
DOCTOR OF PHILOSOPHY

in

Instructional Technology & Learning Sciences

Approved:

Major Professor
(Type name here)

Committee Member
(Type name here)

A title page should be included with both the dissertation proposal and the final dissertation. Please note that the name of all committee members should be typed beneath the signature lines.

UTAH STATE UNIVERSITY

Logan Utah

2010

SAMPLE DISSERTATION TITLE PAGE

A DOMAIN KNOWLEDGE REPRESENTATION MODEL FOR

INSTRUCTIONAL ANALYSIS AND DESIGN

by

Name

A proposal for a project submitted
in partial fulfillment of the
requirements for the
degree
of
DOCTOR OF PHILOSOPHY

in

Instructional Technology & Learning Sciences

Approved:

Major Professor
(Type name here)

Committee Member
(Type name here)

Dean of Graduate School
(Type name here)

UTAH STATE UNIVERSITY

Logan Utah

2010

D

DISSERTATION REQUIREMENTS

Doctoral Degree Completion Requirement

The Graduate Council has approved the following graduate degree completion requirements (see the Degree Completion Compass at www.usu.edu/graduateschool/degree_completion/pdf/Forms_Guide.pdf):

1. Graduate students using University facilities or faculty time must be registered for a minimum of three graduate credits every semester until completion of all degree requirements, except, in some cases, the semester of final thesis or dissertation approval (see below). The semester a student defends (or re-defends) a thesis, Plan B paper, or dissertation or takes final oral examinations, he or she must be registered for at least three credits. Doctoral and master's Plan A and Plan B students will be given until the last day of the next semester following the defense to finish degree requirements. Plan C students will be given until the last day of the next semester after coursework completion to finish degree requirements. If a student has not completed all degree requirements by the end of the grace semester, the student must register for at least one credit the semester of completion and pay the Continuous Registration Fee for any intervening semesters for which he or she did not register. If working with faculty involves more than routine submission of the thesis or dissertation to the thesis coordinator, registration for three or more credits is required. During any interim semesters, students who are not on campus (as confirmed by a letter from the student's department) may pay a \$15 continuing registration fee without registering for credit hours.
2. Graduate students failing to complete all degree requirements within one year of successful defense shall be required to re-defend.
3. To ensure that students are able to submit a final copy of the thesis to the Graduate School within the time limit, the defense should not be scheduled until each committee member has read the dissertation. The student must submit copies of the dissertation to committee members at least four weeks prior to the anticipated date of defense. Moreover, it is incumbent on the committee members to return their criticisms and the drafts of the dissertation to the student within four weeks. Failure to do so would be grounds for postponing the defense. If extensive changes are requested of the student at the defense, the completion of the defense and the signing of the title page by the committee should be postponed and a new defense form submitted to the Graduate School.

The oral examination is a defense of a final document. Minor, usually editorial, changes may be made following the defense. If major changes are needed, another defense will be scheduled for the new document.

The Graduate School has asked each department to specify a person to check papers for format prior to defense. That person should be a resource for students with questions concerning format and should work closely with the thesis coordinator (see the Department's Staff Assistant). The Graduate School requires verification of format approval by the Department and major professor on the attached form, which must be submitted with the dissertation before it is reviewed by the thesis coordinator.

It is essential that the student use the Department approved publication style early in the process of thesis or dissertation preparation. The style described in the American Psychological Association's Publication Manual is the style followed in the Department. Care in following the approved style will save time after the defense and committee approval by reducing the number of format changes required by the thesis coordinator.

GRADUATE POLICIES AND NOTES ON FINANCIAL AID

This section contains important information on Graduate School policies and financial aid. However, you should obtain a current copy of the University Catalog to learn more fully about general policies that relate to graduate study. The Graduate School is located in Old Main, Room 164, UMC 0900 (797-1189)

Classification of Students

A matriculated graduate student has been accepted by a department, with the concurrence of the Dean of the School of Graduate Studies, to an approved graduate degree program.

A full-time matriculated graduate student must do one of the following each semester of the academic year (fall and spring semesters):

1. Register for 9 or more graduate credits;
2. Register for 6 or more credits if a graduate assistant is employed for 15 to 20 hours per week.
3. Register for 3 credits if:
 - (a) All required coursework is completed.
 - (b) It is the semester of the student's thesis/dissertation oral defense
 - (c) A matriculated-probationary graduate student has been put on warned status because of inadequate progress in his or her degree program.

Graduate assistants and fellowship recipients must be full-time matriculated students with G.P.A. of 3.0 or above. A part-time student will register for fewer credits than shown above. A continuing registration student will register for three credits of InsT 7990 (Continuing Graduate Advisement).

GRADUATE CREDIT

Time Limit

Work for a doctoral degree must be completed within an eight year program of study window. Coursework older than eight years must be repeated. Out-of-date courses will not be re-validated. Class substitutions are permitted as long as the final program of study meets all relevant requirements and is approved by the dissertation committee.

Transfer Credit

Your doctoral supervisory committee may recommend transfer of a maximum of 12 semester credits earned at another accredited graduate institution before matriculation at USU, provided that courses with "B" grades or better were taken within the past eight years and were not used for previous degree (specialist degrees may be an exception). Transfer credit cannot replace residency credit. Such credits are subject to committee approval, with final approval by the Graduate Dean.

Credit Limitations

Upon admission to the doctoral program, you can, as noted above, transfer only 12 semester credits earned when non-matriculated to the doctoral program. Generally, workshops are not counted as part of graduate degrees; exceptions must be approved in writing by the supervisory committee prior to enrollment. Life Span Learning Independent Study (correspondence) courses cannot be used as part of the degree program.

REGISTRATION

Continuous Registration

After admission, you must be continuously registered for a minimum of 3 credits, unless approved for a leave of absence or pay a Continuing Registration Fee, until you complete the degree requirements. If you do not maintain continuous registration, your file will be put on inactive status, and you must pay back registration and any Continuing Registration fees to regain active status.

Summer Semester

No student is allowed to enroll for more than 15 hours during the eight-week summer term or for more than 21 hours for the total summer session, including pre- and post-session courses, without the signed approval of the student's advisor, Department Head, and the Graduate Dean.

GRADING SYSTEM

G.P.A. Requirements

If your cumulative G.P.A. falls below 3.0 for two consecutive terms, you will be reduced to probationary status or your participation in the program may be terminated.

Incomplete Grades

Unless a shorter period is stipulated by the instructor, you have 12 months to remove incomplete grades. An exception is provided for research and thesis credits.

"P" Grades

A "P" grade is accepted only for seminars, independent study, special problems, interdisciplinary workshops, dissertation research, and continuing graduate advisement. Transfer credits cannot have P grades.

TUITION AND FEES

Summer Tuition

During summer semester, nonresident and resident students are assessed the same tuition per credit as that assessed resident students during the regular academic year, except for Intensive English students who pay the usual international student fees.

Active Students

If you are using faculty time or USU facilities, you must be enrolled for a minimum of three credits per semester (excluding summer semester, unless you are a graduate assistant that semester). To meet this requirement, you may register for regular courses or for 7990 (Continuous Graduate Advisement).

Inactive Students

If you are not using University facilities or faculty time, you may, with the permission of the Department and the Graduate Dean, meet the continuous registration requirement by paying \$100 per semester.

Student Activity Card

To obtain a student activity card, graduate students must either register for 7 or more credits or pay a fee to be eligible for other services, i.e., Health Center, etc.

FINANCIAL ASSISTANCE

Inquiries

You should contact the Department Head for all inquiries regarding assistantships and tuition waivers. Applications for university assistantships, fellowships, and all financial aid go through department offices. For a listing of fellowships and scholarships, consult a current University Catalog, your committee chair and Department Head.

Expectations

Teaching assistantships and research assistantships may be available in the Department or in other centers on campus. The maximum credit load for students on an assistantship is 12 credits. With an assistantship, you are expected to carry work responsibilities ranging from one-fourth (10 hours per week) to one-half time (20 hours per week). Every teaching assistant, unless exempted from teaching assistant training because of your prior experience, must participate in a teaching workshop program sponsored by the Graduate School generally offered before and during fall semester. Even if you do not have a teaching position, you are encouraged to participate.

Additional Credit

If you have a research assistantship and are conducting research resulting in a thesis or dissertation, you may register for an additional 4 credits (beyond the 12-hour limit) of research and thesis.

Waivers

Tuition remission is available for doctoral students. The following is a summary of the requirements:

Instate Tuition Remission

- A minimum GPA of 3.0 is required
- The student must be employed as a GA on an Employment Action Form for the entire semester, earning at least \$675.00 per month with a half-time position.
- A maximum of 12 graduate credits may be waived per semester (a total of 70 for the entire program of studies).
- The minimum registration requirement must be met.
- The tuition waiver should be requested by the student's degree department, regardless of source of employment (it is the student's responsibility to make certain this happens).
- An original department head's signature is required; no fax or stamped copies will be accepted. If an acting department head is signing, it should be indicated.
- Tuition remission requests are due in the School of Graduate Studies Office no later than the first day of classes.
- Courses added after the University deadline for approval of waivers or remissions

are not eligible for tuition waivers or tuition remissions.

- The forms are available at:
<http://www.usu.edu/gradsch/financial/tuitionwaiverpolicy.cfm>

Nonresident tuition waiver criteria

- A minimum GPA of 3.0 is required
- The student must be employed as a GA on an Employment Action Form for the entire semester, earning at least \$670 per month with a half-time position. A maximum of 12 graduate credits may be waived per semester (a total of 70 for the entire program of studies).
- The minimum registration requirement must be met.
- The tuition waiver should be requested by the student's degree department, regardless of source of employment (it is the student's responsibility to make certain this happens).
- An original department head's signature is required; no fax or stamped copies will be accepted. If an acting department head is signing, it should be indicated.
- Tuition remission requests are due in the School of Graduate Studies Office no later than the first day of classes.
- Courses added after the University deadline for approval of waivers or remissions are not eligible for tuition waivers or tuition remissions.
- The forms are available at:
<http://www.usu.edu/gradsch/financial/tuitionwaiverpolicy.cfm>

PUBLICATION AND DISSEMINATION OF DISSERTATIONS

The rights to data are especially of concern if your thesis/dissertation research is carried out as part of a project with a principal investigator (PI) or in a laboratory using supplies and equipment furnished for you. Under certain circumstances, data gathered for use as part of a research project are the property of a federal, state, or private agency, Utah State University, or the principal investigator(s). Students using such data may be required to waive the right of ownership and/or the privilege of copyrighting the thesis/dissertation. Early in your program, you should discuss the ownership and right to the data to be utilized in your thesis/dissertation with your committee chairperson and, if your thesis/dissertation involves work on a project or in a lab, with the PI or lab director.

A form from the Graduate School specifies plans for publication. You must discuss your plans for publication with your chairperson and your committee members to avoid misunderstandings about co-authorship or other acknowledgment as you publish parts or all of your thesis/dissertation. Your signature and those of your committee members indicate that you have discussed the plans and all are in agreement.

Theses and dissertations should be contributions to knowledge in the student's field of study. A dissertation in particular should be publishable, in whole or in part, in one or more quality academic or professional journals. As with any publication, articles (or

books) based on a thesis or dissertation should include acknowledgment of significant contributor(s) to the work. Sometimes the appropriate acknowledgment is a footnote identifying person(s) by name and the nature of the contribution(s). It is not unusual for publications based on a thesis or dissertation to be co-authored by the graduate student, his or her major professor, and on occasion, other committee members.

The involvement of the major professor in the conceptualization and execution of the project is typically sufficient to warrant joint authorship. It would, however, be unusual and, in fact, contrary to the instructional purpose of a thesis or dissertation, if a faculty member contributed more than the student to the thesis or dissertation and so was listed as the senior author on a resulting publication. There may, however, be occasions when that is justified, such as when a faculty member takes the initiative to prepare a manuscript for publication in the absence of the student's willingness or desire to do so. Such an arrangement should be negotiated and agreed upon prior to submission for publication. Under no circumstance should a professor publish from a student's thesis or dissertation without appropriate acknowledgment. In most cases, acknowledgment of the student's work will be, as noted above, first authorship on the article. If a portion of the thesis or dissertation is incorporated within a larger work, with the student's agreement the work may be acknowledged by authorship of a chapter, a footnote acknowledging that a particular section was drawn from the thesis or dissertation, or citation of the thesis or dissertation. The appropriate acknowledgment should be agreed upon before publication.

On occasion, a student may believe that he or she has been exploited because material that the student wrote has been used without permission or the student's work has not been adequately acknowledged in a faculty publication. In such a case, the student should follow the procedure for academic grievances, as presented in Article VII of The Code of Policies and Procedures for Students at Utah State University (<http://personnel.usu.edu/policies/policies.html>). The first step is to discuss the concern with the faculty member(s) involved. If such a discussion is not feasible or if the outcome of the discussion is not satisfactory to the student, he or she should discuss the issue with the faculty member's department head. If the student's concerns are not resolved at that level, he or she should appeal to the Dean of the School of Graduate Studies who will investigate the complaint in cooperation with the dean of the academic college involved and, if necessary, appoint a University Hearing Panel.

NINE STEPS TO YOUR PH.D.**1. Meet with Temporary Advisor**

After admission and before registering for courses, meet with your temporary advisor to discuss a proposed program of study and what you see as your timetable for the degree. The temporary advisor does not have to be the Chairperson of your graduate committee. This meeting will probably involve some general discussion of your research interests. In planning your timetable, be aware that most students underestimate the time required to complete a doctorate. Do yourself a favor...set realistic goals.

Date Completed_____

2. Form your Five Person Graduate Committee

The Graduate Committee for Ph.D. students consists of five individuals (one from outside the Department). When you have completed one semester and have an idea of the research you intend to do, find a Department faculty member to chair your Graduate Committee who has expertise related to your interests. Set up a meeting with your chairperson to decide who the other four faculty members will be (your committee must be established after your first year in order to obtain a tuition remission). Once you have decided on the five members please fill out the Committee Selection Form. This can be found at the Graduate School website

Meet with each of the five faculty members individually to get their signature on the form before turning it into the Department Staff Assistant for the Department Head's approval.

Date Completed_____

3. Submit a "Program of Study"

As you near the end of your second semester use the Program of Studies Form to plan your classes semester by semester through the completion of your degree, then meet with Graduate Committee to review and have approved what you have planned. On this form you will list the proposed courses for your degree as well as your research topic (if known). At this same meeting you should come prepared to share your ideas for a potential dissertation topic. After your members have signed this form, take it to the Department Staff Assistant for Department Head approval. The Staff Assistant will then send it to the School of Graduate Studies. Make certain you receive a copy stamped "APPROVED" in the mail from the School of Graduate Studies for your files.

As you take the PhD core, research methods core, and the other elective courses, continue to meet with your committee chairperson to discuss your proposed area of research.

Date Completed_____

4. Take your Comprehensive Exams

Although you may work on your dissertation proposal during the sequence of research courses, your doctoral committee cannot consider the proposal for approval until after you have passed the examination. You must be enrolled during the semester you take the comprehensive exam. (See Written Comprehensive Examination Policy in this document)

If a follow-up meeting of your full graduate committee is needed to discuss the exam it should be arranged by you and your chairperson.

Date Completed_____

Develop Your Dissertation Proposal and have it Reviewed

After passing the exam work with your chairperson to complete your research proposal, which should not exceed 30 pages doubled spaced with 12 point type (excluding bibliography and appendices). Your proposal is an agreement between you and your doctoral supervisory committee. Procedures outlined in your proposal constitute the minimum acceptable work for your dissertation; you may, of course, add areas of inquiry as your research develops. Please note that all changes should be discussed with your chairperson and that all major changes must be approved by your entire committee.

For format, consult the Publication Guide for the Graduate Student at Utah State University, August, 1992 and the Publication Manual of the American Psychological Association,; these documents are available from the USU Bookstore. Also, be certain to consult the Guidelines or M.S. Plan A Thesis and Doctoral Dissertation Research Proposals. Your chairperson will want you to send a draft copy of your proposal to each member of your committee for their input.

Date Completed_____

5. Defend your Proposal and Submit the "Application for Candidacy" Form

When the proposal is ready to defend, you should arrange a meeting of the full committee where you will present your proposal and if accepted obtain the signatures of all five committee members on the cover sheet. At the same meeting you should have a copy of the Application for candidacy for Doctoral Degree form, which lists your completion of the Comprehensive Exams and that you are now qualified as a candidate for the Ph.D. All committee members must sign this form. Turn the form in for Department Head approval and submission to the School of Graduate Studies. This form must be approved 3 months before you defend.

Please note that if your dissertation research requires IRB (Institutional Review Board) approval you can apply online at <http://irb.usu.edu/>. Note that IRB certification is also required.

Date Completed _____

- 6. Meet the Professional Presentation and Publication Requirements** Doctoral candidates must have made or be making plans for a professional presentation and to also submit for publication an approved manuscript or other scholarly work. Submissions must be to refereed journals, professional journals, or reputable publishers as approved by the supervisory committee; such submissions may occur before the dissertation is finished. The student must be the first (or senior) author or producer, but the manuscript may be a joint publication. The content of the manuscript must be related to the dissertation or to the field of Instructional Technology & Learning Sciences. Verification of the presentation and publication are required before the final oral defense. Turn the Thesis/Dissertation and Copyright Form, plus the Plans for Publication Form, in to the School of Graduate Studies at the same time as your Application for Candidacy Form.

Date Completed _____

7. Complete Your Research and Write the Dissertation

After the proposal is approved, conduct the research staying in close contact with your chairperson and other members of your committee as needed. A sheet with critical completion deadlines for those students wanting to graduate and participate in the May commencement program is available at the School of Graduate Studies and should be followed. It is your responsibility to meet all deadlines throughout the process. Follow copyright laws! Before writing your dissertation, familiarize yourself with the format guidelines in the Publications Guide for the Graduate Student at Utah State University, 1995 (USU Bookstore) and the Copyright Policy, plus the Sample Copyright Letter. The Graduate Student Senate and the Graduate Council at Utah State University believe that research fraud is a very serious matter that can undermine graduate education at USU. A policy has been adopted and is contained in the University Catalog. Please review this policy.

In writing your paper, follow accepted reporting guidelines (APA style). Make sure you attend a workshop on dissertation format conducted by the Thesis Coordinator at the School of Graduate Studies. Work closely with your committee chairperson as you prepare various drafts of your dissertation. Please note also that before you defend your dissertation, it must meet APA style. It is advisable that your dissertation be checked for format by the Graduate School Thesis Coordinator. This person will give you a Checklist for Format Approval if changes are necessary.

Date Completed _____

8. Schedule your Final Defense for the doctoral degree

After you have written your dissertation, again staying in close contact with your

chairperson, you may schedule a defense of your work. In planning your defense date, be aware that the School of Graduate Studies publishes doctoral deadlines each year for May commencement exercises; these deadlines are generally in late February. A copy of the dissertation should be given to each member of the committee at least four weeks before the defense. It is Graduate School policy that the oral examination is to be a defense of the dissertation, not an opportunity to suggest substantive revisions in it, and that a committee member who thinks a dissertation is not ready for defense, should so notify the candidate and his/her advisor as soon as possible before the scheduled defense.

A form titled Appointment for Examination, must be sent to the School of Graduate Studies at least ten working days before the exam bearing your committee members' signatures. Please remind the members of your committee of the date, time, and place of the exam. Coordinate this through the staff assistant in the Department office. Defenses may not be scheduled between semesters. Post and email an Announcement of Defense around the Department so visitors can attend the first part of the defense to learn of your findings. The defense must be held at least 7 weeks before the end of the semester if you want to graduate the same semester you defend.

On the day of the defense you should be prepared to defend the dissertation as written and submitted to the committee. Your committee may suggest editorial changes; however, if the oral examination indicates weaknesses that require major revisions, your defense may be rescheduled. A range of options is available to committees, including: 1) clear pass 2) re-examination 3) failure. For your defense to be considered satisfactory, all five committee members must concur.

9. Complete revisions and file required documents

Needed revisions in your dissertation may result from the examination, work with your chair to make the changes immediately after the defense. The other committee members may decide not to sign the dissertation until after a revised copy is available. On the day of your defense, complete all Graduation Forms, pay the graduation fee and turn all forms in at the School of Graduate Studies, Old Main Room 164. (The Graduation Forms will be given to you at your defense by the chair of the exam). As a courtesy to members of your committee you should ask which of them would like to receive a bound copy of the revised dissertation. You should obtain and distribute copies to them after the dissertation is bound.

After the defense, use the "Checklist for Graduation" to ensure nothing related to completing your degree has been forgotten. Double check with the staff assistant in the Department to be certain all items are in order for your graduation. It may be wise to visit or call the Graduate School to be certain everything is in order. Take your dissertation and signed Thesis/Dissertation Format and Style Form to the Thesis Coordinator in the School of Graduate Studies. Once you have the final signatures of your committee and approval by the Thesis Coordinator and the Graduate Dean, provide the School of Graduate Studies with three copies of your

dissertation and one additional copy of the title page and the abstract for binding and microfilming. You must also provide an electronic version to the Library. Make sure to follow the various steps for printing, binding, and microfilming outlined by the School of Graduate Studies; otherwise, your graduation could be delayed.

While it is not required that you attend graduation, it is opportunity for celebration. After all this is a chance for the University to celebrate your success. If you are attending and need to buy or rent a cap and gown, be certain to meet the deadline. The "hooding" ceremony is held the day before graduation and is as important as the actual graduation since that's where you are hooded by the Dean and your Chairperson and receive your diploma from the President and Provost.

Date Completed_____

PH.D. PROGRAM POLICIES AND FORMS

Required by

The Department of Instructional Technology &
Learning Sciences
and the
School of Graduate Studies

Most of the required forms are available at:

http://www.usu.edu/graduateschool/degree_completion/forms.cfm

GUIDELINES FOR M.S. PLAN A THESIS AND DOCTORAL DISSERTATION RESEARCH PROPOSALS

The purpose of a proposal for master's thesis or doctoral dissertation research is to provide the student's supervisory committee with sufficient information to decide on the significance of the proposed research and whether the project is likely to be fruitful. To accomplish that goal, the proposal should: (1) present the logical need for the proposed piece of research; (2) provide an analysis of the most important past research as a context for the proposed study; (3) specify the objectives and/or the hypotheses or research questions; and, (4) outline the basic procedures to be followed. The approved proposal is a statement of agreement between the student and the committee as to the minimum expected for the thesis or dissertation research. If you are planning to do a qualitative study, there may be additional considerations. (See Qualitative Procedures.)

Preparation of a research proposal is an important writing experience. In order to realistically approximate common funding agency requirements and to expedite review, the narrative portion of the proposal (exclusive of references and appendices) is not to exceed 30 pages. The proposal should not be the first three chapters of the dissertation or thesis. The purpose of the proposal is to present a rationale for a proposed study and establish its basic outline, not to serve as a definitive scholarly report, as is the thesis or dissertation. The explanation of the problem, the review of past research, and the proposed plans need not, therefore, be as comprehensive as in the thesis or dissertation. Sufficient detail should be provided in the proposal so that the committee can (1) determine that the student is aware of the relevant prior research, (2) judge the adequacy of the conceptualization of the research area, and (3) identify any potential difficulties in the proposed study. The student will, of course--in consultation with his/her advisor--fill in details, often expanding on the anticipated procedures, as he or she conducts the research. Major changes or accumulations of changes should be approved by the student's supervisory committee.

Sections in the Proposal

The following sequence of suggested sections for Plan A thesis and doctoral dissertation proposals reflects a basic logic of investigation, from intellectual uncertainty to plan of action. The sections are those essential to an adequate proposal, although some advisors may prefer a different order (e.g., placing the Objectives prior to the Review of Literature). Also, the general structure may be modified depending upon the particular type of research problem being addressed. For example, the Procedures section may be quite different from the one suggested here if the student's dissertation is to be philosophical and will not involve the gathering of data in the conventional sense. Even for students who will gather data, the subsections may be treated somewhat differently depending upon whether the problem calls, for example, for single subject, experimental, correlational, survey, historical, ethnographic, or content analysis research.

For all thesis and dissertation proposals, however there should be Statement of the Problem, Review of Related Literature, and Purpose and Objectives sections, as well as a Procedures section appropriate to the type of research to be conducted. Without these, it is difficult for the committee to determine what the student plans to do, to point out potential errors or inappropriate approaches, and to judge when the student has completed the agreed upon project.

The Problem (suggested length: 1-3 pages)

The statement of the problem (that is, the intellectual quandary, dissonance, or perplexity) that underlies the proposed research is typically the introduction to a research proposal. That is, the introduction logically culminates in a problem statement. The problem statement provides the logical foundation upon which the rest of the proposal is built.

In applied research, the problem statement usually begins with a statement of need, which may be based on a public policy to be fulfilled or examined and/or on data indicating some shortcoming in educational or psychological services. The need is not, however, the problem. Any one need may be the basis for a number of different research problems, depending upon the research evidence that is available and judgments about how to best address the need. For example, the need to avoid the erroneous placement of bilingual minority students in special education classes might lead to research on the sensitivity of school personnel to cultural influences on their decisions about students, on the evidence for the validity of the instruments used to classify bilingual students, or on the extent and nature of parental involvement in classification decisions. In basic research, the assumed need is for adequate knowledge, and reference to public policy or needs data is usually not necessary. It is sufficient to note the intellectual quandary, which may be a theoretical formulation that merits testing, the lack of research on an important phenomenon, conflicting past findings, and/or the lack of evidence for the reliability or generalizability of past findings.

Toward the end of the Problem section, it is often helpful to include a one-sentence synopsis of the research problem. The problem should not be confused with the purpose of the study. For example, the following are statements of problem and purpose:

(a) Problem Statement -- "There have been no reports of studies investigating whether English-or Spanish-language tests yield more valid test scores for bilingual Hispanic students"; or "Research about whether English- or Spanish-language tests yield more valid test scores for bilingual Hispanic students has not been methodologically sound. "

(b) Purpose Statement -- "To determine the extent to which the use of English- or Spanish-language tests affects the test performance of bilingual Hispanic students."

Review of Literature (suggested length: 5-15 pages)

The Review of Literature should place the proposed study in context through a critical analysis of selected research reports. This section of the proposal should:

- (1) provide a synthesis of findings in a "state-of-knowledge" summary in regard to the problem area, including additional evidence as to the nature and/or the importance of the problem;
- (2) make clear how further research should extend, differ from, or replicate past studies, including the identification of the critical variables in the problem area and important hypotheses to be tested;
- (3) indicate shortcomings in the design of prior research that should be avoided, as well as strengths to be repeated in conducting another study;
- (4) provide a critique of the literature as a basis for any controversial methodological decisions to be presented in the proposal.

The Review of Literature in the proposal is not intended to be a complete presentation of the comprehensive review of related research that should have preceded writing the proposal. Only those studies that are directly pertinent to structuring the proposed research should be discussed briefly, in order that the student's committee can determine that major studies and/or issues have not been overlooked. A comprehensive, detailed review of related literature is presented in the dissertation as a "published" demonstration of knowledge about the field.

Purpose and Objectives (suggested length: 2-3 pages)

A one- or two-sentence statement of the general purpose of the research often is the opening for this section, followed by a list of specific objectives to be accomplished. The objectives should be stated as outcomes, not as procedures. For example, "To determine whether bilingual Hispanic students will obtain different mathematics readiness scores depending upon whether the test is in English or Spanish", is an objective. "To administer Spanish and English math readiness tests to bilingual Hispanic fourth graders", is a procedure.

Following the objectives, the hypotheses or research questions that are to guide the study are listed. Typically, the hypotheses state the researcher's expectations based on theory or past research, as discussed in the Review of Literature section. Directional or null hypotheses may be stated, depending on expectations.

Hypotheses should be stated in testable form, avoiding value terms that are not empirically measurable, and including operational statements of independent and dependent variables. For example, "Fourth-grade bilingual Hispanic students who take a Spanish-language mathematics readiness test will do better than similar students who take an English version of the test", is not directly testable. In contrast, "Fourth-grade bilingual Hispanic students who take a Spanish-language, experimenter-developed

mathematics readiness test will have a higher mean score than fourth grade bilingual Hispanic students who take the English version of the test", is testable.

Research questions may be used rather than hypotheses. They are especially appropriate in studies not aimed at knowledge-building, such as R&D projects or descriptive surveys, or when a theoretical base for deducing expectations is not available.

Sometimes the objective of a study is taken to be the testing of one or more hypotheses or the seeking of answers to one or more questions. In such cases, objectives need not be stated prior to the hypotheses or questions.

Methods (suggested length: 5-10 pages)

The Methods section of the proposal is an explanation of the specific steps to be followed in meeting the objectives, testing the hypotheses, and/or answering the questions posed in the prior section. The presentation of procedures should take into account the appraisal of prior research in the Review of Literature. A chronological listing of major procedural steps in the proposed study is often useful. The following subsections will usually be included in the Procedures section. (Procedures may be different for proposals concerning some qualitative research -- see Proposal Procedures for Qualitative Research).

Population and sample. The target population for the research--the group to which it is hoped the findings will be applicable--should be defined, consistent with the Statement of Problem and the Purpose and Objectives. In addition, the accessible population--the population from which the sample will actually be drawn--should be specified, and evidence, available or to be gathered, as to population validity should be discussed briefly. Procedures for selecting the sample should be outlined, including justification for the sampling method. The implications for the generalizability of findings from the sample to the accessible population and then to the target population should be addressed. If an entire population is to be studied, it should be carefully identified in this section.

Design. The approach to conducting the research--whether, e.g., experimental, quasi-experimental, survey, historical, or ethnographic--should be specified in this subsection, along with the procedures to be followed. For example, for an experimental or quasi-experimental study, the proposal should indicate how subjects will be assigned to treatments and how the research will be conducted to ensure internal and external validity. If an evaluation or R&D project is proposed, the model to be followed should be specified. If test development is the primary purpose of the project, the specific steps should be indicated. If test development is a minor part of the study, it should be treated in the Data and Instrumentation section.

Data and instrumentation. Specific information should be provided on the assessment of each variable. For experimental and quasi-experimental studies, the assessment of both dependent and independent variables should be addressed. The reliability and

validity of scores and other data should be discussed, including evidence from past studies and information to be collected in the proposed study. How and when data will be gathered should be indicated and the procedures justified.

Analysis. Procedures, whether statistical or conceptual, for analyzing the data should be discussed specifically for each hypothesis or question. General statements such as, "Analysis of variance will be used to analyze the data", are not acceptable. Careful identification of analyses prior to conducting the research is crucial; otherwise the student may use analyses that are inappropriate for the hypotheses, or may find himself/herself with data for which the adequate analytic tools are not available. Analyses other than those needed to test the stated hypotheses or answer the research questions may also be indicated here. In conducting the research, the student may conduct analyses other than those stated in the proposal.

In group design studies, the analysis of data has, traditionally, involved testing null hypotheses and arriving at statements of statistical significance. It is also important to consider measures of the magnitude of results (effect sizes) that are not relative to sample size to be used in evaluating the educational, practical, or theoretical importance of the results.

Style

Unless an alternative has been approved by the student's department and supervisory committee, the accepted style guide for research proposals, as well as for theses and dissertations, is the Publication Manual of the American Psychological Association.