Learning, Design, and Technology

Doctoral Program

Student Handbook

PennState
College of Education

2016 Edition

For students starting their Ph.D.
On or after July 1, 2016

Preface

The Learning, Design, and Technology faculty congratulate you on your admittance into our prominent doctoral program. The faculty is committed to working with you to foster learning experiences that will enable you to achieve your professional goals.

The Learning, Design, and Technology faculty believe that the program should afford flexibility for each student, while adhering to high standards of quality. We aim for the development of core disciplinary knowledge, research-oriented practices, and individual professionalism. As a result, this doctoral handbook is an overview of the exciting, yet challenging, steps in completing your Ph.D. in Learning, Design, and Technology. This handbook should be viewed as general information to guide you through the process as opposed to the final word in developing your program of study. Your advisor, your doctoral committee, and ultimately, the faculty as a whole are the final arbiters of the details of each student's individualized program of study. Do know that this document is an evolving document. We believe that when uncertainties or inconsistencies occur, when improvements can be made in the process, or when the program needs to be updated to be reflective of the dynamic world outside the University, it is important to make revisions. Therefore, it is especially important that you work closely with your advisor and committee as you develop your program of study.

We recommend that you review this handbook in detail to help you prepare for your program-planning meeting with your advisor. Then, use it to ask questions, and as a point of discussion with your advisor and committee as you proceed through each step of the process.

We wish you the most rewarding experience during your work at Penn State. Remember that we are here to challenge you and help you attain your professional goals.

The Learning, Design, and Technology Faculty

Ph.D. Degree

The Ph.D. in Learning, Design, and Technology (LDT) is a significant and serious undertaking. It is essential for doctoral students to be committed to the development and pursuit of higher knowledge in the field. The Ph.D. degree typically prepares students for the professorate or research posts within universities, labs, schools, corporations, the military, health professions and related educational and training environments. The Ph.D. focuses on research and develops students to become capable of adding new knowledge to the field.

Objectives for Doctor of Philosophy Graduates

Upon completion of the Doctor of Philosophy program, LDT Ph.D. graduates will be able to:

- Design, develop, and evaluate technology-based learning environments for diverse learning tasks and students
- Discuss learning practices and processes as well as their implications for design
- Design and conduct research with statistical and qualitative interpretations
- Demonstrate strong written and oral communication skills
- Provide leadership that extends the professional and theoretical knowledge base of the field

The Ph.D. in LDT is intended for advanced professionals who have a master's degree and wish to strengthen their abilities to conduct scholarly work and research in the field. They study an area to advance core knowledge of the field—not necessarily with an eye toward the practical applications of their discoveries. [Note: A Master's degree is not required for admission into doctoral programs. However, students should estimate that the doctoral program is approximately 90 credits beyond the undergraduate degree including master-level courses, doctoral course work, and dissertation credits.]

Because the Ph.D. prepares graduates to contribute to and extend their field and because contribution to the field involves engagement in formal research, requirements for the Ph.D. include significant preparation in the areas of communications, statistics, and research methodology. The Ph.D. degree is competency-based and has no minimum credit requirement by the Graduate School. That is, your program requirements will be designed to fulfill a set of competencies, rather than a set number of credits. Normally, an LDT doctoral degree typically includes approximately 60 credits of doctoral-level coursework beyond 30 credits of master's coursework.

The doctoral committee is charged with translating general guidelines into a specific program for each doctoral student. Committee members must mesh the diverse backgrounds and career goals of doctoral degree candidates with program requirements established by the Graduate School and the Learning, Design, and Technology program area.

The LDT doctoral program includes two sets of exams:

- A qualifying exam (typically taken after approximately 18 credits of doctoral coursework have been completed) and
- A comprehensive exam (taken when coursework has been completed, or is near completion, but before the candidate prepares a final dissertation study).

The doctoral candidacy committee consists of two LDT faculty members. Both comprehensive-exam and dissertation committees typically include four members of the Graduate Faculty. The committee must comprise at least two LDT faculty members (including the thesis adviser), one outside field member, and one outside unit member. In cases where the outside field member and outside unit member are the same person, the fourth member may be either a minor adviser or a third LDT faculty member. Additional information about doctoral committees is available in the Graduate Bulletin (http://bulletins.psu.edu/graduate/degreerequirements/degreeReq1).

Ph.D. Program Requirements

The Ph.D. degree in Learning, Design, and Technology is a research degree. The Ph.D. prepares you to be a leader with advanced knowledge in the Learning, Design, and Technology field.

1. Prerequisites

Introductory Courses

STAT 800 Intro to Statistics, EDPSY 406 Applied Statistical Inference for the Behavioral Sciences, or equivalent

2. Courses

LDT Design Core (6 credits)

LDT 415	Systematic Instructional Development (LDT 415, 415a, or 415b)
LDT 527	Designing Constructivist Learning Environments

LDT Elective Courses (9 credits)

Choose 3 from the following:

LDT 467	Emerging Web Technologies and Learning *****
LDT 505	Integrating Mobile Technologies into Learning Environments *****
LDT 549	Current Topics in Emerging Technologies
LDT 550	Learning Design Studio **~**
LDT 597	Special Topics Courses (various topics)
LDT 832	Designing e-learning Within Course Management Systems *****
LDT 897	Special Topics

** offered online through Penn State's World Campus*

~ offered both residentially and online through Penn State's World Campus; residentially is preferred for doctoral students

Learning, Design, & Technology Doctoral Core (9 credits)

Select from the following in consultation with your Program Committee:

LDT 581	Theoretical Foundations of Learning, Design, and Technology *****
LDT 583	Survey of Research in Learning Sciences and Technology **#**
LDT 586	Diffusion and Adoption of Innovations and Change **%**

** offered online through Penn State's World Campus*

 # offered biennially: even years spring

% course not currently offered as of July 2016; work with your advisor to select another appropriate course

Research Design Requirements (12 credit minimum)

ADTED 550	Qualitative Research in Adult Education (or equivalent)
LDT 574	Applied Qualitative Research for Work Practice, Innovation, and Systems Design
LDT 575	Designing Experimental Research in Learning, Design, and Technology # (EDPSY 475 can be substituted for 575)
LDT 576	Design-Based Research Methods

 # offered biennially: odd years spring

3. Supporting Field (9 credits) or Minor (credits vary by program)

Nine (9) credits taken outside of LDT in a supporting field in an applied area of relevant study. Most often these credits are selected with input from the with member from minor or supporting field program on committee. The courses are selected in consultation with your Program Committee, and when applicable, a faculty member from the minor or supporting field.

Note: The differentiation between minor and supporting field is primarily in the specific courses taken. A minor must be approved by the department/program granting the minor and constitutes a group of 12-15 credits of courses they consider to build proficiency in their area. A supporting field is a more loosely aggregated set of courses agreed upon with your program committee and may come from different departments or programs.

4. Statistics/Communication Requirement (6 credits)

- □ One applied statistical analysis course (preferably a course that includes Analysis of Variance). Examples: STAT 500; EDPSY 505
- □ AND EITHER
  - If quantitative emphasis: One course in advanced statistics, multivariate preferred. Examples: STAT 501/502; EDPSY 506; EDPSY 502; EDPSY 550
    OR
  - If qualitative emphasis: One course in advanced qualitative methods. Examples: ADTED 551, LDT 544, or other.

- *Note:* For students interested in quantitative methods for their dissertation, the sequence of courses of EDPSY 406, 505, 506, and 507 are the basis for the advanced measurement courses such as HLM, IRT, and SEM.
- *Note:* For students interested in qualitative methods for their dissertation, the sequence of courses of ADTED 550, LDT 576, and ADTED 551 or LDT 544 is suggested with an additional analysis course as needed from C&I, anthropology, linguistics, and other fields.

5. Residency Requirement

6. Qualifying exam

THE PENNSYLVANIA STATE UNIVERSITY

Learning, Design, and Technology Program
Candidacy Evaluation

Student Name: _____

PSU ID #: _____

Email Address: _____

Minor Field: _____

Area of Focus in LDT: _____

Date of Evaluation: _____

Core professional competencies

A. **Research potential.** The student can articulate:

- ☐ An area of interest within the scope of LDT
- ☐ A research question that is appropriate and justifiable for their area of interest
- ☐ An understanding of different research approaches
- ☐ Their strengths and weaknesses within their area of interest
- ☐ A plan for how they will develop expertise through courses, research experiences, or other Penn State resources

_____ (High) Demonstrates competence in most of these areas and should be able to develop additional competence without guidance.

_____ (Average) Demonstrates competence in at least two areas, but requires guidance to develop competence in other areas.

_____ (Below Average) Needs significant guidance to develop competence in most or all of these areas.

Supporting Evidence:

B. **Discipline Expertise.** The student demonstrates a high level of knowledge of and can provide concrete examples, a rational for, and problems or issues related to each of the following:

- ☐ Key theoretical LDT concepts relevant to their area (e.g. scaffolding, design, assessment, constructing knowledge, group cognition, etc.)
- ☐ Common methodological approaches or techniques associated with their area of expertise (design-based research, video analysis, phenomenology, etc.)
- ☐ How these key theoretical concepts and/or methodological techniques inform their plan of study

_____ (High) Demonstrates competence in most of these areas and should be able to develop additional competence without guidance.

_____ (Average) Demonstrates competence in at least two areas, but requires guidance to develop competence in other areas.

_____ (Below Average) Needs significant guidance to develop competence in most or all of these areas.

Supporting Evidence:

C. **Fluency with Written Expression.** The student can present ideas, through writing, in a way that demonstrates the type of competence necessary to complete dissertation work by meeting each of the following objectives:
   - ☐ Constructs an argument that addresses the questions posed by the committee.
   - ☐ Generates a coherent paper, by breaking down the main argument into a series of smaller arguments, allowing the reader to follow the author's logic
   - ☐ Demonstrates some level of synthesis and original thought.
   - ☐ Articulates ideas clearly and concisely.
   - ☐ Applies proper APA format

_____ (High) Demonstrates competence in most of these areas and should be able to develop additional competence without guidance.

_____ (Average) Demonstrates competence in at least two areas, but requires guidance to develop competence in other areas.

_____ (Below Average) Needs significant guidance to develop competence in most or all of these areas.

Supporting Evidence:

D. **Fluency with Oral Expression.** The student can present ideas, verbally, in a way that demonstrates the type of professional competence necessary to perform well at professional conferences and meetings by demonstrating the following:
   - ☐ Confidence when speaking and answering questions
   - ☐ An ability to create a well-structured talk
   - ☐ An ability to use visual representations to explain complex ideas.
   - ☐ The ability to address questions in a professional manner even when they do not know the answer
   - ☐ The ability to use their verbal skills to elaborate or explain concepts in their writing.

_____ (High) Demonstrates competence in most of these areas and should be able to develop additional competence without guidance.

_____ (Average) Demonstrates competence in at least two areas, but requires guidance to develop competence in other areas.

_____ (Below Average) Needs significant guidance to develop competence in most or all of these areas.

Supporting Evidence:

E. Appraisal of student's prospects as a doctoral candidate.
The student demonstrates the following:

_____ High level of competence in all core areas. (Accept) HHHH

_____ High level of competence in two or more core areas and with no more than one area below average (Accept) HHHA, HHHB, HHAA; HHAB

_____ High level of competence in one core area, with average competence in most other areas; likely requiring some guidance from faculty to develop in weaker areas. (Accept with revision) HAAA; HAAB

_____ Average competence in three or more core areas and no areas demonstrating high levels of competence; requiring substantial remediation and guidance from faculty to develop overall competence. (Accept with remediation plan and retake) AAAA; AAAB

_____ Below average competence in in two or more areas and no areas demonstrating high levels of competence No with levels of guidance that may not be feasible at the graduate level. (Reject) BBAA, BBBA, BBBB

The applicant was:

_____Accepted as a doctoral candidate
_____ Accepted as a doctoral candidate with the following remediation:
_____
_____Granted a deferred decision and will be reexamined within three semesters with a third committee member
_____Rejected as a doctoral candidate

Signed:_____Signed:_____Signed:_____(Advisor)

7. Comprehensive Examination

Written and oral exams, primarily consisting of a dissertation research proposal and minor field exam (if applicable).

8. Research Apprenticeship LDT 594 (continual enrollment* with advisor section until graduation, with a minimum of 9 or more credits of LDT 594; 6 credits minimum prior to candidacy).

As a Ph.D. student you will work directly with a faculty member on their specific line of ongoing research. We intend for this experience to help you refine your own research agenda leading to your dissertation and to learn the various facets of conducting educational research in LDT. Typical outcomes of this apprenticeship are journal articles, conference presentations and completed research projects. Apprenticeship credits must be taken with your advisor. Exceptions to this requirement can only be obtained in consultation with your advisor.

**Advisors may not be able to offer LDT 594 every semester; in those cases, the advisor decides the placement, apprenticeship activity, and enrollment requirement for advisees that semester.*

9. Dissertation (enroll after comprehensive exams concurrently with 1-credit minimum of LDT 594)

The Ph.D. dissertation challenges or substantiates important theories related to teaching, learning and instructional design. It is firmly grounded in existing or original theory, is based on data collected by the investigator, and is analyzed using appropriate experimental or advanced qualitative methods. (The study must employ robust research methodologies: surveys, formative evaluations, or replication studies are not allowed as the primary data collection tools.) The dissertation must create new knowledge and contribute to the theoretical base of our field. Continuous enrollment in LDT 594, 601, or 611 is required after the comprehensive exam is passed.

Doctoral Degree Overview in LDT

Your doctoral degree program consists of three major phases.

These three phases include:

1. Admission through your Qualifying Exam
2. Candidacy through your Comprehensive Exam
3. Dissertation study: data collection, analysis, interpretation, writing and defense

Admission through Qualifying Exam phase (~ 3 full-time semesters),

Your first phase in the LDT doctoral begins with admission to the program, after you are admitted, you will receive a letter where you are assigned a faculty advisor. Questions can be addressed to this person or to the Graduate Program Coordinator before you start your coursework. If you were hired as a Graduate Assistant (GA), your employment begins the week before classes start and you are expected to come to campus for training on your position at that point.

Upon arrival to University Park campus, the week before classes start, you will attend a day long orientation for newly admitted students in our Department as well as a LDT program specific orientation. After attending orientation, carefully review the program requirements in this Student Guide. Sketch out a preliminary plan for your studies based on your personal and professional goals and time constraints. Next, you should contact your advisor by email to make an appointment to develop your program of study for your first year of study. He or she will review the Graduate School and LDT requirements to help you plan appropriate coursework to help you attain your career goals.

During your second semester, you and your advisor select one other graduate faculty member for your Program Candidacy Committee. This person will be the second reader of your qualifying exams and is typically a member of your doctoral committee. He or she should be familiar with your work an in alignment to your emerging perspectives. These two faculty members will guide you through this first major phase of your coursework.

During this time of your doctoral program, you will be primarily taking courses within the LDT program. These courses will provide you with current theories, methods, and skills used in our field as well as a chance to engage in real-world projects to apply what you are learning to real learning environments. In addition, you will engage in mentored research with your Advisor throughout this time period through your LDT 594 experiences. You will gain exposure to the various aspects of research as you engage in research on your Advisor's projects.

During this early phase of your program, you should identify an area of research you will pursue as your primary area through the remainder of your Ph.D. program. During classes and your 594 experiences you should read and write about your topic, gaining an understanding of the work that has been done and the work that you could add to this field.

You are ready to take your qualifying exams when you have accomplished all of the following:

- □ identified an area of specialization within the LDT fields,
- □ completed 18 LDT credits,
- □ enrolled for and completed at least 6 credits of 594,
- □ selected your program committee member, and
- □ applied to take your qualifying exam the first month of the semester, and the LDT faculty vote in favor of your readiness.

The 2-week qualifying examination period with follow-up defense is described in depth later in this handbook.

Candidacy through Comprehensive Exam phase (~ 3 full-time semesters),

Once you have passed your qualifying exam, you become a doctoral candidate. At this point in your graduate career you can refer to yourself as a "Doctoral Candidate" instead of a doctoral student in correspondence and introductions.

During this phase, you complete your coursework in accordance with the plan approved at the candidacy meeting. You must make progress on your residency plan requirements and continue your involvement in the three important aspects of academic life: research, teaching and scholarship. During this time, you will still stay active in research with your advisor in 594. You will begin to further specialize in your own area of research, and faculty will look to you to take increasing leadership within the LDT program.

Faculty members will have an increased expectation of your performance in the doctoral program. They will expect to see you as a supportive discussion participant in each class you take, mentoring students into the rigor of academic community. They will turn to you to share your developing expertise in class presentations, participation in scholarly works, leading classroom discussion (online and residentially), and participating in professional development activities on and off-campus. Becoming a doctoral candidate is an important benchmark in any graduate program – and in LDT, we see our doctoral candidates taking on more and more collegial roles, as they become active members of our field.

During this phase, you will form your dissertation committee. This committee will ultimately guide your dissertation research study as well as serve as professional references for your future employment. Work with your advisor to choose your dissertation committee carefully.

Your comprehensive exam is a written and oral examination of your dissertation proposal, minor/supporting field expertise, and general LDT knowledge and competencies. Once you have passed these exams, you move into the formal dissertation phase of the program.

The Dissertation study phase (~2-4 full-time semesters but can be more depending on the study that you conceptualize and your pace of work completion)

The dissertation study phase is the most challenging phase of any graduate program. You are finished with your classes and have conceptualized your study. You now need to work through the Office of Research Protection to gain permission to run a study. You will independently conceptualize your research and you will be responsible for data collection, analysis, and interpretation, and you will write up the results of your research. You advisor and committee are there to support you through this process as you take the lead to show you are capable of adding to our field.

Qualifying Examination

The purpose of the Qualifying Exam is summative as well as diagnostic. It provides data for the faculty to use to predict your ability to successfully complete the LDT Ph.D. program and to make significant contributions to the program and to the field.

At this time, the faculty will use all of the available evidence to predict your potential for:

- Completing coursework
- Completing the comprehensive examination
- Completing residency
- Completing the dissertation, and
- Synthesizing and generating knowledge to allow for graduation with a Ph.D.

Because it is summative, the outcomes of the qualifying exam can range from pass, revise and resubmit, or fail. In support of its diagnostic purpose, after the Qualifying Examination you will receive recommendations for actions necessary to support your program. These actions may include new courses to take based on your emerging interests, spending more time on writing, taking writing classes, taking additional research classes, completing new readings, and other scholarly supports. In some cases, there may be also required remediation to take courses again or even the qualifying exam again. Finally, the Qualifying Examination exists as a forum for Ph.D. students to negotiate the requirements for completing the program, including residency, and courses with their advisor and Candidacy Committee member.

Eligibility and Administration of the Exam

Graduate school policies dictate that the qualifying exam be taken early in a student's program. The student must have completed at least six (6) credits of LDT 594, and have had broad exposure to the field of LDT. The examination may be given after at least 18 LDT credits have been earned, and should ideally be taken within three full-time semesters of study (or the part-time equivalent, not including summers) after entry into the doctoral program. In order to complete the Qualifying Exam, you must be registered either full or part time during the semester in which it is completed.

In consultation with the student's academic advisor, the student will form a Candidacy Committee consisting of two LDT faculty members in total. Then, the candidacy committee will develop an examination question based on the student's interests, and the student will write a scholarly paper to address the question. The qualifying exam consists of a written paper as well as an oral defense. The oral defense of the qualifying exam is scheduled a minimum of two weeks after submission of the written paper and is conducted with the Candidacy Committee and the student.

It is your responsibility to arrange with all parties an acceptable meeting time for the exam. It is your responsibility to arrange for a room and work with the graduate program staff assistant to ensure the examination documents from the graduate school are ordered.

Student protocols during the examination period

A qualifying exam is open book, open notes, and open bibliography. Although the exam is open, you may not use, copy, or paste previously composed text materials. In making citations, follow APA style (5th or 6th). You must cite and synthesize the relevant literature to support your response. We encourage you to be thoughtful and thorough in your response. You are to write the answer on your own, without any collaboration, assistance, or other input from friends, peers, professional or informal editors, or other faculty. Your response may be externally evaluated for evidence of plagiarism. As with all work conducted during the LDT program, students are expected to abide by any and all Academic integrity policies of the program, College and University during the examination. Please refer to https://www.ed.psu.edu/current-students/academic-integrity for Penn State and the College of Education's policies on academic integrity.

The instructions for the qualifying exam will direct you to:

- Answer your question below with 15-20 double-spaced pages (excluding references), 12-point font (Times or Times New Roman) with 1" margins all around. This exam period is two weeks and must take place during the regular academic semester during fall and spring only (qualifying exams cannot be written between semester breaks or in the summer – for example, exams cannot be taken in the December break between fall and spring semesters, or the May break between spring and summer).
- Turn in your final copy as a word document (.doc or .docx) ***and*** as a .pdf through email to both committee members. Questions or clarifications will only be provided within three (3) days of the receipt of the exam question document—send all questions or comments to both committee members.

Oral Defense
An oral defense of 1.5 hours will be scheduled to defend your qualifying exam response. The following candidacy materials must also be prepared for the exam: (1) course plan; (2) statement of goals; and (3) residency plan.

To Apply for the Examination
Students taking the qualifying exam will first need to complete a form for the appropriate semester (see Appendices B and C) *within the first two weeks of classes* and submit it to the LDT program assistant who will then make copies of the form and your transcripts. At the next faculty meeting, the LDT faculty will review each student's transcript and form, and they will deny or approve each student's readiness for the qualifying exam by a majority vote.

Evidence of a Successful Candidate

During your Qualifying Examination your Candidacy Committee will be looking to see evidence of the following skills, abilities, and understanding, which are important indicators of success in the LDT program:

1. *Scholastic Aptitude/Analytic Ability*: a high level of scholastic aptitude and ability to critically read empirical and theoretical literature, analyze problems, identify issues, and find patterns, trends, and problems in the literature. Synthesize across multiple studies and articles to develop conceptual models, preliminary design suggestions, and codify the studies into themes and/or a framework.

2. *Theoretical Understanding*: ability to understand and use theories in the field in general, with significant understanding in your emerging area of expertise.

3. *Intellectual Courage*: ability to generate and defend original thoughts and take a variety of positions

4. *Communication Ability*: ability to develop an academic paper that is readable, coherent, on-topic, and well-organized and that advances an argument, as well as the ability to speak clearly, respectfully, and logically

5. *Professional Commitment*: commitment to the field of LDT as a whole.

All program committee decisions and advice will be based upon a consideration of the following information:

- The quality of your *candidacy written paper* as defined by the five items above.
- The quality of your *candidacy oral examination* as defined by the five items above.
- *Coursework*: performance in LDT and required methodological courses, including maintaining a 3.0 grade point average (minimum), with the expectation of higher performance. No Fs, Ds, or DFs.
- *Statement of Goals*: a short paper reflecting on your professional goals, and the research, technology and design skills necessary to attain those professional goals.
- *Residency plan:* that includes plans for engaging in research and practice scholarship within the immediate and broader LDT community (details on p. 20)
- *Research Engagement*: your participation in 594 and other activities related to theoretical, qualitative, quantitative, and design-based research.
- *Class Participation*: willingness and ability to state and defend your thoughts and positions during classes.
- *Professional Involvement*: commitment that you bring to the program and the field. The following activities are indicators of your professional commitment:
    - Professional Roles/Job Performance (experience in the field and/or in internships)
    - Residency Plan
- *Course Plan*: An organized presentation of how you plan to meet all of the requirements of the program, including how any transfer courses substitute for required coursework. You may use the doctoral program planning sheet (Appendix A) to assist with your planning.

Outcomes of the Examination

The outcomes of the Qualifying Examination include:

- Pass (Excellent, Good, Average, Poor)
- Revise-and-resubmit without a second oral exam
- Revise-and-resubmit with another oral exam

- Fail with the student put on academic probation
- Fail with the student put on academic probation and with recommendation for termination from the program

In addition, each student will receive feedback and suggestion on next steps for their career.

Doctoral Research Skills

The College of Education Task Force on Research Methods recommends that all Ph.D. degree recipients in the College of Education should be able to:

1. Pose a research question/problem.

1.1. define the research problem, questions, and/or hypothesis.
1.2. differentiate between research problems, questions, and hypotheses.
1.3. define the general body of literature that is relevant to the research.
1.4. critically review the literature with regard to design, analysis, and interpretation.
1.5. use the literature to define the conceptual framework and to delineate the problem.
1.6. use the library, including electronic means such as ERIC, JSTOR, Psych Info, Social Sciences Citation Index, Education Index, NTIS and others to locate important documents or leads to articles, papers, conference proceedings, etc.
1.7 understand how to use citation management applications (e.g., EndNote, Mendeley, Zotero) to source and curate electronic documents.

2. Examine the range of available modes of inquiry.

3. Identify the appropriate research mode(s) and procedure(s) complementary to the research question/problem.

3.1. describe both internal and external sources of invalidity in research strategies and ways to control for these threats to validity.

4. Define a sample/population.

4.1. describe the context, site, participants, population and/or events on which the study is focused.
4.2. describe an appropriate sampling plan for various modes of inquiry.

5. Identify a data collection strategy (or strategies).

5.1. describe ethical issues related to research, including topics like the Buckley Amendment, human subjects procedures, and researcher obligations.
5.2. propose an appropriate data collection technique.
5.3. specify/describe the instrumentation that is required for research investigation (e.g., tests, surveys, interview guides, participant observer).
5.4. when appropriate, describe procedures for constructing, piloting, and modifying methods/instruments to be used for investigations.
5.5. identify issues related to quality of data (e.g., bias, missing data, non-response, attrition).
5.6. describe different methods for establishing the quality of information gained from instruments and procedures (e.g., reliability, validity, efficacy triangulation).

6. Analyze and interpret data.

6.1. differentiate between primary and secondary analyses.
6.2. describe various methods of data analysis appropriate for the study.
6.3. identify relevant use of the computer for data analyses.
6.4. describe the limitations and assumptions required when doing different types of analyses.
6.5. discuss the concept and limitations of statistical significance.

7. Draw conclusions from the data.

7.1. discuss the meaningfulness/importance of the research findings.
7.2. draw defensible conclusions/assertions relative to the data, theoretical framework, research background, etc.
7.3. identify and describe the limitations of the research.

8. Write research reports.

8.1. write in a coherent way so that the research process (e.g., method used), results (e.g., data presentation) and conclusions are clearly communicated.
8.2 clearly differentiate between presentation of findings/results of analysis and a discussion or interpretation of findings/results in the context of the basis upon which the study was launched
8.3 clearly state any theoretical considerations on which the hypothesis, research question(s) or problems are based
8.4 clearly state the contribution to the field the study intends to make
8.5 establish a clear connection between results/findings and literature reviewed

Doctoral (Ph.D) Communication Requirements

The Graduate School has established the Communication and Foreign Language Competence requirement for the fulfillment of the Ph.D. degree. These competencies are considered tools for the scholar to employ in conducting research. A candidate for the degree of Doctor of Philosophy is required to demonstrate high-level competence in the use of the English language, including reading, writing, and speaking as part of the language and communication requirements. Completion of this requirement is a prerequisite to completing the comprehensive examination. The adviser must file with the Graduate Office of the Program a statement describing how the student fulfilled this requirement.

Methods of meeting the communication requirement:

To complete this requirement, the candidate must demonstrate a competency in research data analysis languages, including an understanding of advanced, multivariate statistical analysis procedures and/or advanced qualitative data analysis.
The student will, as a minimum, satisfactorily

- complete one applied statistical analysis course (with mastery of Analysis of Variance such as STAT 500 Applied Statistics; or equivalent, e.g., EDPSY 505, Applied Statistical Inference For The Behavioral Sciences)
- EITHER
    - one advanced statistics course (Multivariate preferred such as EDPSY 506, Advanced Techniques for Analyzing Educational Experiments; or equivalent, e.g., STAT 501/ STAT 502)

      OR
    - one course in advanced qualitative methods (such as ADTED 551 Qualitative Data Analysis, LDT 544 Video for Instruction, Training, and Research, or other).

Residency Requirement

Graduate School Requirements

To meet residency requirements, the Ph.D. candidate, over some twelve-month period during the interval between admission and completion of the Ph.D. program, must spend at least two consecutive semesters (summer sessions are not included) as a registered full-time student engaged in academic work at the University Park campus. A graduate student who is "in residence" at the University is expected to be properly registered. In residence means that the student is pursuing graduate credits and/or an advanced degree by:

(a) attending classes or seminars for credit (601 may not be used for residency);
(b) doing a thesis, term project, independent study, or similar research or scholarly work in a University laboratory or other research facility;
(c) consulting in person or by other means of communication with one or more faculty members on scholarly matters, research projects, and/or dissertation;
(d) using the library, computer center or other University information resources; or
(e) using other University facilities provided for graduate study.

For doctoral students who are not working, 9 or more credits per semester are required to fulfill the residency requirement.

Doctoral students who are self-supporting or using other academic awards must show evidence of *reduction in full-time work* while in residence, and must register for 6 credit hours at University Park to fulfill the residency requirement.

Similarly, full-time Penn State University employees must register for the full number of credits allowed by the University while in residence (e.g., 6 credits per semester) and must be certified by the department as devoting half-time or more to graduate studies and/or thesis research to meet the degree requirements.

The Intent of Residency

The intent of residency is to provide you with professional immersion to foster the acquisition of appropriate professional norms and values through an extended opportunity to reflect on your work and develop a coherent point of view about the major issues and problems in your field. This residency, therefore, is seen as an opportunity to:

- perform concentrated, uninterrupted work on your academic preparation through intense attention to coursework, projects, research, and active participation in academic life
- become socialized in the values and norms of the profession
- develop increasing levels of professional independence and responsibility
- foster the transition from student to colleague
- engage in frequent, meaningful, out-of-class interaction with faculty, especially on substantive issues
- become involved in considerable out-of-class interaction with fellow students on substantive issues

- become involved in professional activities of various kinds, and
- develop familiarity with professional resources and develop knowledge of how to access and use them.

The Residency Plan

A residency plan will be submitted to your program committee during the qualifying exam. This plan should be divided into the following categories: Research/Scholarship, Teaching, Professional Service, and General Professional Participation. In some cases, if your goals and career plans include significant focus on managing and advancing design knowledge, you may also choose to pursue activities listed under Development, Consultation, and Course Management. The plan should also indicate the status of the activities as one of the following: completed, in progress, or to be completed during your residency. You should be as specific as possible when you describe your plan and should include a timeline/schedule for completing these activities. Your program committee will evaluate the residency plan using the following criteria:

- relevance to your professional goals
- quality of participation
- quantity of participation
- variety of participation and activities
- demonstration of initiative
- demonstration of collaboration
- demonstration of independence
- opportunity for written, oral, and electronic communication
- evidence of reduction in full-timework load.

The status and completion of your planned residency activities will be reviewed at two points in the process – first, at the comprehensive exam during the review of your dossier for the Ph.D., and then at your final oral defense.

Sample Residency Activities

The following items are provided as sample residency activities - however, you should feel free to be creative in your proposed plan. You do not need to list every item suggested below – pick those activities that are most appropriate for your career goals and be specific in outlining your plans (e.g., don't just indicate that you will co-author a research article, specify whether you will be first or second author and some possible outlets that you will seek for publication).

- *Research and Scholarship*
  - author/co-author book review
  - contribute to a professional newsletter
  - conduct collaborative research with fellow students
  - conduct collaborative research with a faculty member
  - work as a research assistant
  - critique a colleague's research article draft
  - develop a grant proposal
  - produce a working paper for discussion
  - author/co-author a research article

- author/co-author a professional article
- present a paper at a state, regional, national, or International conference

- *Teaching*
  - work as a Teaching Assistant
  - teach a course
  - serve as a guest lecturer in a course
  - tutor fellow students
  - develop course instructional materials
  - develop instructional evaluation materials
  - proctor an exam
  - prepare instructional aids
  - serve as a mentor for junior students

- *Professional Service*
  - edit a professional newsletter
  - serve in a graduate student organization
  - serve on department, college, or university committees
  - serve on a professional committee
  - review text for publishers
  - review manuscripts for publications
  - serve in a professional elected or appointed office
  - organize a professional conference
  - serve as chair/discussant at a professional meeting
  - serve as a journal field reviewer
  - organize an invited speaker session
  - organize study groups, seminars, forums, lecture series
  - develop Web-based knowledge base

- General Professional Participation
  - serve as a research subject
  - attend and preferably participate in professional colloquia and seminars
  - attend and preferably participate in state professional meetings
  - attend and preferably participate in regional professional meetings
  - attend and preferably participate in national professional meetings
  - attend and preferably participate in relevant professional presentations on campus
  - host visitors to campus
  - participate in a professional seminar
  - observe colleagues in an innovative or exemplary program
  - participate in a study group or professional network
  - initiate and lead a seminar with faculty participation

- Development, Consultation, and Project Management
  - serve as a director or associate director of a project
  - participate in a consultation activity
  - prepare a consultation report for an actual client
  - develop specifications and products for instructional applications (including course materials)
  - participate as a planner or instructional designer on a project
  - participate as an evaluator on a project
  - serve as a field test subject for the formative evaluation of an instructional project

Comprehensive Examination

The comprehensive examination consists of a written and oral examination of a completed dissertation research proposal. You also need to obtain a Human Subject Institutional Review Board (HSIRB) clearance for your proposal prior to taking this exam. You should discuss this exam and your readiness to take all its parts with your advisor prior to scheduling it.

The Comprehensive Exam Process

The exam process consists of these steps:

- completing the proposal and
- completing the oral exam.

The Committee

Prior to taking the comprehensive exam, you must formulate your full dissertation committee and complete the appropriate Graduate School paperwork, providing the names and signatures of your dissertation committee, and filing a completed (signed and dated) doctoral committee form with the LDT program support staff. *You are responsible for gathering committee signatures and filing this signed doctoral committee form with the LDT program staff at least three (3) weeks before your comprehensive exam date.*

The doctoral committee form is on the LDT website or see Staff member in the Department Office.

Completing the Oral Exam

The oral exam is the final step in the comprehensive exam process. This exam functions as the final assessment of all components of the comprehensive exam process. Therefore, the members of the Learning, Design, and Technology faculty and your supporting field or minor advisor will have an opportunity to ask you any questions they deem appropriate to judge your capability. They may cover any or all of the following:

1) any part of the written component of your comprehensive examination (e.g., proposal),
2) any part of your residency preparation,
3) your experience and professional growth as a result of graduate work to date,
4) any questions about the LDT or minor area that arise via discussion.

In order to orally defend your exam, you should note that the graduate school requires that prior to taking this exam, you have:

- removed all outstanding incompletes or missing grades
- completed your communication requirement

- maintained a 3.00 GPA
- substantially completed your coursework (your advisor is to verify this prior to your filing your intention).

Criteria for Evaluation

During the oral examination, the members of your doctoral program committee and the faculty representing your supporting field will evaluate your performance during the oral examination using the following criteria:

- integration and synthesis of themes in the field
- independent and original thought
- clarity of the position taken, and
- logic, cogency, and coherence of the reasoning and arguments.

The Dissertation Process

Our faculty encourages you to become involved in research and data gathering early and consistently in your program. Research may be a part of your coursework, collaboration with faculty, or may be done independently. Early research can help you explore a dissertation topic, serve as a pilot study or become part of your dissertation proposal. However, formal approval of a dissertation proposal by your committee must precede the serious pursuit of your study or data collection for the dissertation study. There are several formal steps in conducting your study:

- forming your dissertation committee
- presenting your prospectus
- writing and obtaining approval of your dissertation proposal
- applying to use human subjects
- continuously registering for dissertation credit
- orally defending your study, and
- meeting graduate school publication requirements and deadlines.

Forming your Dissertation Committee

The dissertation committee can be separate from your Doctoral Program Committee (candidacy). Following the completion of the qualifying examination, the responsibility of the Program Committee is complete. At this time, you need to form a Dissertation Committee to direct your dissertation. This committee may, but does not have to, consist of the same members as your Program Committee. You are encouraged to include faculty who can support your line of research. During your academic program, your interests may change. Those changes should be taken into consideration during the formation of the Dissertation Committee.

This Dissertation Committee must consist of a minimum of four active members of the Graduate Faculty, two of whom must be Learning, Design, and Technology faculty. A faculty member or practitioner from outside of Penn State who has expertise in your research may be added as a special (fifth) member of the committee with the approval of the program. *At least one of the committee members must be from a department other Learning and Performance Systems.* This person is typically a representative from your Minor or Supporting Field. If your minor or supporting field is Adult Education or Workforce Education, you will need two LDT faculty, one from your minor/supporting field, and one from outside the department.

When you form your dissertation committee, you must designate one member as the supervisor of your thesis who will usually, but not necessarily, serve as your chair. You may select a different member of the committee to serve as your Chair. The Chair insures that the dissertation process is followed according to the Graduate School requirements. The Thesis Advisor supervises the dissertation. The Graduate School requires that all members of your committee be

members of the Graduate Faculty. It is your responsibility to ask each potential committee member about their status as a Graduate Faculty Member.

Writing and Obtaining Approval of your Dissertation Proposal

Before you proceed to write a dissertation, your committee must accept your detailed proposal for that dissertation. This phase takes place at your comprehensive examination. The proposal should contain:
(a) a detailed rationale for the study,
(b) the context of the study in related literature, and
(c) the proposed means to gather and analyze the data.

This is typically considered the first three chapters of the dissertation (problem statement, literature review, and method).

When the committee has accepted your proposal, there is, in a sense, a contract between you and the faculty of the LDT program, which the committee represents. This contract would hold that if you complete the study according to the proposed outline and to the standards necessary for quality work, the faculty would accept the dissertation. An approved copy of the proposal must be signed by your committee and retained in your file as a record of that contract. In general, you should always get approval of your thesis chair on any draft of a prospectus, proposal, or dissertation prior to circulating it to the entire committee. You must allow 2 weeks for committee review and in general, it is a good idea to allow about that long for your advisor to review your work as well as an additional week for incorporating revisions based on advisor feedback.

Applying to Use Human Subjects

If your dissertation research will involve the use of human subjects (e.g. students in a university class or public school), the procedures you propose to use to protect the rights of those human subjects must be reviewed by the University Compliance Office for the Protection of Human Subjects in the Graduate School. Approval must be obtained prior to involving any subjects in your study and before defending your proposal. This process requires the completion of an online application form. It is best to allow at least three weeks for this review and to plan for another week for minor revisions and a subsequent review.

Continuously Registering for Dissertation Credit (Ph.D. only)

Ph.D. candidates must be continuously registered for LDT 594, LDT 601 (full-time students), or 611 (part-time students) during all semesters (except summers) after the completion of the comprehensive examination until the completion of the dissertation. Details of this requirement can be found in the Graduate School Bulletin and the Thesis Information Bulletin issued by the Graduate School.

Orally Defending your Study

After you have completed the dissertation to the satisfaction of your thesis advisor, you will schedule your oral defense with your committee and inform the Program Staff Assistant who will notify the Graduate School of the time and location of the defense.

During your defense, you may be asked questions on any aspect of the Learning, Design, and Technology field; however, it is customary to focus the inquiry on your research.

Often the committee will have suggestions concerning the final form for the dissertation and will pass you on the examination but not accept the dissertation. When the dissertation has been changed to meet the committee's suggestions, the paper is accepted and each member of the committee will sign the signatory page of the dissertation. The thesis advisor is encouraged not to bring you before the committee prematurely. Be sure to heed his/her advice. In order for a thesis to be acceptable, there should be no more than minor editing, a condition that you can remedy within a few days following the examination. A thesis that would require major editing to be considered acceptable should be reported as a failure with the condition that the candidate would be granted a second examination when the advisor considers the thesis acceptably revised.

The committee member from outside of the Learning and Performance Systems department is required by the Graduate School to write an evaluation of that paper which is submitted to the Graduate School. A copy of the evaluation is sent to the Graduate officer who shares its contents with the thesis advisor.

Meeting Graduate School Publication Requirements and Deadlines

Because of the intricate nature of the rules and calendar requirements of the Graduate School for publication of the dissertation, you are urged to strictly follow the guidelines established in the Thesis Information Bulletin. You should know that the Graduate School has very stringent deadlines for submitting a draft of your thesis, scheduling your defense, obtaining signatory page approval, and submission of the final copy of your thesis. You should also be aware that these deadlines come very early each semester. We emphasize that meeting these deadlines is your responsibility as is attaining the degree of accuracy required by the Graduate School. These dates and all the details of typing and reproduction may be obtained from the Office of Publications of the Graduate School. Get them and keep them handy. Again, we emphasize that this is *your responsibility.*

Additional Policies and Procedures to be Aware of

Deadlines for submitting signatory pages to the Professor-in-Charge
In order to reduce problems of getting signatures and approvals on final papers for Masters theses and Dissertations (which are submitted to the graduate school), it is now necessary for all approved papers (theses and dissertations) to be submitted to the LDT Program Staff Assistant, ONE WEEK prior to the graduate school deadline. That will ensure sufficient time for

administrative review and signoff. This policy is NOT for dissertation "defense" dates as those do not require administrative review and approval.

Guidelines for Acceptable Written Quality of Dissertation Drafts

The role of the thesis chair is to interact with the candidate with regard to the ***content*** of the thesis, not to edit it or discuss formatting issues. All drafts submitted to the thesis chair should be in nearly final form, and should meet acceptable standards for written English in published journals. If you are not certain that your document is ready for review, you may hire an editor to make the needed corrections. If a thesis chair deems that a draft is not of sufficient quality, the advisor will stop the review and return the draft to the candidate, even if doing so may cause the student to miss graduate school or thesis defense deadlines. The responsibility to produce a quality draft is yours. If you need assistance in locating an editor, check the list posted on the LDT website. It may be wise to set aside sufficient funds to plan to hire an editor regardless of your facility with spoken or written English. Your dissertation is to be your finest work to date and we encourage you to make it a completely finished and professional presentation.

Ethical Behavior

It is important for you to know about the ethical behavior policies of the Graduate School. The Pennsylvania State University recognizes the basic rights and responsibilities of the members of the University and accepts its obligation to preserve and protect those rights and responsibilities. Further, the University must provide for its members the opportunities and protections that best serve the nature of the educational process.

The Code of Conduct governing the behavior of members of the University must ensure the basic rights of individuals as well as reflect the practical necessities of the community. The code also must prohibit or limit acts that interfere with the basic purposes, necessities, or processes of the University or with the rights of its members. Finally, the code must reconcile the principles of maximum freedom and necessary order.

Violations of the Code of Conduct shall be adjudicated by appropriate University mechanisms, established in consultation with faculty, students, and staff. The mechanism for adjudicating cases of alleged misconduct on the part of student members of the University is the discipline system described in the following section of this document. Student members of the University are those who have been accepted for admission to the University or who are registered or enrolled in any credit or noncredit course or program offered by the University. There shall be clearly defined channels and procedures for such adjudication and the right of appeal. Sanctions shall be commensurate with the seriousness of the offense and may include separation (suspension, dismissal, and expulsion) from the University. Repeated violations justify increasingly severe sanctions.

Code of Conduct -Misconduct that may result in disciplinary action consists of the following offenses:

1. Violation of written University policy or regulations contained i n any official publication or administrative announcement of The Pennsylvania State University.

2. Academic dishonesty, including, but not limited to, cheating and plagiarism.
3. Disruption of operations of the University as defined in the "Open Expression and Disruption" statement.

LDT faculty and all other Graduate Faculty are required to uphold high standards and ethical behavior, and are required to report any suspected cases of academic dishonesty. There are extremely serious and grave consequences for infringement and you are responsible for understanding your rights to due process, if charged. Further information is available from judicial affairs, the graduate school, and the College of Education Academic Integrity Committee.

In addition, no student shall pay for advising, review, or supervising of services beyond set time and fee costs. No student will pay any individual faculty member for committee service including any travel costs for attending a defense.

This section is subject to ongoing changes. For the most up-to-date changes in policies, please go to http://www.gradsch.psu.edu/about/policies.html

Teaching Experience for Doctoral Students

In recognition of the importance of gaining teaching experience in the preparation of doctoral students, the LDT program offers teaching apprenticeships in undergraduate courses. Students who participate in a teaching apprenticeship should register for LDT 602: Supervised experience in college teaching.

Rationale

Our program has a history of preparing professors to teach at higher education institutions. About half of our doctoral graduates work initially as assistant professors. In order to ensure their teaching success, PhD students are encouraged to seek out opportunities as teaching apprentices at the graduate level.

Teaching Apprenticeship

We describe what we mean by a "teaching apprenticeship" to guide you, and to communicate to the graduate school the purposes and intensions of the apprenticeship. A teaching apprenticeship is a supervised teaching experience in which a candidate teaches or co-teaches with a faculty member. In this spirit we offer the following guidelines:

- □ Teaching apprentices will conduct up to 35% of the course contact hours
- □ Teaching apprentices will be supervised by a full-time member of the LDT faculty who is an active member of the graduate faculty at the University Park campus
- □ The instructor/professor of record will attend all class sessions, except in extenuating circumstances
- □ The syllabus will be developed either by the instructor of record or jointly with the teaching apprentice, but not by the student alone
- □ Final grades will be assigned by the instructor of record, but he/she may involve the teaching apprentice in the assessment and evaluation processes
- □ Course materials and student mentoring will be accomplished primarily by the instructor of record, but may include the assistance of the apprentice
- □ Any session that is taught primarily by the apprentice will be reviewed either verbally or in writing by the Instructor of record and a review of teaching effectiveness will be held orally at least once during the semester in which the apprenticeship takes place

Teaching apprentices may assist with group facilitation in and out of class, but will not be assigned as a primary facilitator. The Graduate School at Penn State has established rigorous guidelines for students who will assist in teaching graduate level courses (500 or 800 level). Please refer to this page for specific policies that apply to teaching apprenticeships within 500 or 800 level courses. (http://www.gradschool.psu.edu/current-students/student/policy-for-student-instructional-assistants-in-graduate-500-and-800-level-courses/). You will also need to sign a Conflict of Interest form (http://www.gradschool.psu.edu/current-students/student/graduate-student-instructional-assistant-gsia-conflict-of-interest-coi-disclosure-form/) if your teaching apprenticeship is within a 500 or 800 level course.

LDT Graduate Employment

The Learning, Design, and Technology Program provides a Listserv for students enrolled in the program. One of the services provided by the Listserv is the posting of job announcements directed to various members of the program who forward them to the Listserv. Members of the faculty often receive job announcements from employers seeking LDT graduates.

Types of positions posted on the Listserv include University positions (both teaching positions and Instructional Design positions within various departments - often as support for University professors), and corporate/industry positions. While the Learning, Design, and Technology Listserv is not the only source of information on job possibilities, it is a very useful tool for students to see what types of opportunities are available, as well as to learn that Instructional Designers are currently in demand.

The Listserv and job announcements posted also provide a good indication of what types of skills and competencies companies and Universities are looking for when hiring designers and you can make some of your course selections based on that information. In a recent brief analysis of LDT graduates from 1997-2002, we found 50% of our graduates are working in contexts that call for research skills and where they are conducting research activities — usually in university settings.

One of the best things you can do to help to prepare yourself for future employment is to study appropriate job listings from L-LDT and *The Chronicle of Higher Education* as well as job boards at conferences such as AECT, AERA, ISTE, and ICLS. This will help you identify currently needed skills and desirable qualifications.

Among the specific vita building tasks you can take on are:

- □ Writing and publishing research in refereed (peer-reviewed) journals
- □ Presenting research at national research conferences
- □ Writing and publishing in non-refereed journals or book chapters
- □ Teaching at the university level even guest lectures or 602 credits
- □ Serving the University and/or Profession on committees

Learning, Design, and Technology Faculty

The following members of our faculty have been admitted to the Graduate School Faculty and are able to serve on either your Program Committee or your Dissertation Committee. The description below provides evidence of the faculty's academic interests in order to help you select an appropriate committee member. It is your responsibility to ascertain the willingness of any faculty member to serve on your committee.

Marcela Borge

Assistant Professor of Learning, Design, and Technology, University Park

Education

Post doctoral work, 2007, Human Computer Interaction
Ph.D. University of California, Berkeley 2007 Cognition and Development
M.A. University of California, Berkeley 2004 Education
B.A. University of California, Berkeley 2001 Psychology

Research and Teaching Interests

- □ Computer supported collaborative learning
- □ Collective cognition
- □ Co-regulated collaborative learning
- □ Design and assessment of technologies to support collective cognition

Roy Clariana

Professor of Learning, Design, and Technology, University Park

Education

Ed.D.	Memphis State University	1990	Curriculum & Instruction – Instructional Design and Technology
MS.Ed	University of Central Arkansas	1979	Biology Education
BS	University of Central Arkansas	1975	Biology Research and Teaching Interests

Research and Teaching Interests

- □ Feedback, especially in computer-mediated learning
- □ Individual differences in learning and instruction
- □ Psychological and learning impact of electronically mediated culture
- □ Applying complexity theory to learning

Ty Hollett

Assistant Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	Vanderbilt University	2015	Learning, Teaching and Diversity: Language, Literacy, and Culture
MEdT	University of Hawaii	2010	
M.A.	The Pennsylvania State University	2008	English
B.A.	DePauw University	2005	English Literature

Research and Teaching Interests

- □ Digital media and learning (e.g. gaming, youth affinity spaces, virtual worlds, participatory culture)
- □ Learning across settings (including formal settings, like schools, and informal settings, like libraries and museums)
- □ Learning and mobility (including the movement of things, ideas, people)
- □ Qualitative research methods, especially those that move with and follow learners

Simon Hooper

Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	Penn State University	1989	Instructional Systems
M.Ed.	Penn State University	1985	Mathematics
B.S.	Penn State University	1983	Secondary Education
Cert. Ed.	Durham University, UK	1978	Mathematics Education

Research and Teaching Interests

- □ eAssessment
- □ Information Visualization
- □ Learning Analytics
- □ Design

Joshua Kirby

Assistant Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	Penn State University	2010	Instructional Systems
M.S.	Penn State University	2007	Educational Psychology
B.A.	SUNY College at Brockport	2001	Communication Studies

Research and Teaching Interests

- □ Nonformal and informal learning design
- □ Volunteer training in community and youth organizations
- □ Educational program design and administration

Susan Land

Associate Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	Florida State University	1995	Instructional Systems
M.A.	Florida State University	1990	Instructional Systems
B.S.	Florida State University	1989	Psychology

Research and Teaching Interests

- Psychological foundations of open-ended learning environments
- Learner cognitive engagement during learning with student-centered environments
- Use of technology to scaffold student during learning in everyday contexts

Gabriela Richard

Assistant Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	New York University	2014	Educational Communication and Technology
M.P.S.	New York University	2005	Interactive Telecommunication
B.S.	New York University	2001	Media, Culture and Communcatio

Research and Teaching Interests

- Computer supported collaborative learning, particularly in communities of practices and affinity spaces (formal and informal learning in gaming, gaming communities, maker spaces, hackathons, competition and e-sports)
- Digital media and emerging technology design for learning (game design, tangible design, wearable design and electronic textiles)
- Sociocultural leaning and socioculturally responsive design (historically marginalized groups, gender, identity and equitable/inclusive design)
- Mixed Methods and Interdisciplinary Methods

Priya Sharma

Associate Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	The University of Georgia	2001 Instructional Technology
M.S.	Bloomsburg University	1996 Instructional Technology
B.S.	Mt. Carmel College	1989 Chemistry, Botany, & Zoology

Research and Teaching Interests

- Knowledge building and learning in online social networks
- Design and evaluation of ubiquitous computing technology in formal and informal learning settings
- Research and evaluation of technology use in learning

Heather Toomey Zimmerman

Associate Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	University of Washington	2008 Learning Sciences
M.A.	University of Washington	1996 Museology (Museum Studies)
B.S.	Cornell University	1993 Science Communication

Research and Teaching Interests

- Learning across contexts (including museums, parks, homes, libraries, and schools)
- Young people´s uses of emergent digital technologies
- Video-based ethnography and design-based research
- Design of science learning experiences within and across formal and informal settings
- Mobile computing and augmented reality

Affiliate and Adjunct Faculty

Catherine Augustine

Affiliate Assistant Professor of Learning, Design, and Technology, University Park

Ph.D.	The Pennsylvania State University	1992	Instructional Systems

Wei-Fan Chen

Assistant Professor, Information Sciences and Technology, Penn State-Wilkes Barre Campus

Ph.D.	The Pennsylvania State University	2002	Instructional Systems
M.Ed	The Pennsylvania State University	1999	Instructional Systems
B.S.	Information/Computer Engineering	1993	Chung Yuan Christian University, Taiwan

Research and Teaching Interests

- Cognitive and information sciences as related to learning and human-computer interaction
- Teaching interests include web programming, database design, human-computer interaction, project management, and experimental research design.

Pam Loughner

President, Loughner and Associates, Huntington Valley, PA

Ph.D.	The Pennsylvania State University	2002	Instructional Systems
M.Ed	The Pennsylvania State University	1997	Instructional Systems
M.S.	The Pennsylvania State University	1978	Education

Research and Teaching Interests

- Curriculum Development
- Needs Assessment
- Instructional Design and Development
- Program Evaluation

Jennifer Sparrow

Senior Director, Teaching and Learning with Technology, Penn State University

Ed.D.	University of Central Florida	2002	Curriculum and Instruction
M.Ed	Florida Gulf Coast University	1998	Curriculum and Instruction
A.B.	Smith College	1993	Government

Research and Teaching Interests

- The convergence of pedagogy, learning spaces and technology in the design and evaluation of learning.
- The implications on teaching and learning of large-scale technology implementations.
- Emerging technologies for active and engaged learning.

- The development and delivery of new learning ecosystems.
- The changing role of instructional technologists in higher education.
- Leveraging learning analytics to measure attainment of learning outcomes.

Emeritus Faculty

Frank Dwyer

Emeritus Professor of Learning, Design, and Technology, University Park

Education

D.Ed.	The Pennsylvania State University	1965	Educational Administration/ Psychology & Statistics
M.S.	Massachusetts State College	1962	Instructional Technology/ Educational Psychology
B.S.	North Adams State	1960	Secondary Education

Research and Teaching Interests

- Corporate instructional systems
- Instructional design/strategies
- Visual learning systems

Barbara Grabowski

Professor of Learning, Design, and Technology, University Park

Education

Ph.D.	The Pennsylvania State University	1979	Curriculum & Instruction/ Instructional Systems Minor: Educational Psychology
M.Ed.	Towson State University	1974	Education
B.S.	Villa Maria College	1970	Elementary Education

Research and Teaching Interests

- Instructional design for interactive instruction, including e-learning
- Generative learning
- Learner engagement in large lectures
- Use of expert systems and computer tools in teaching and learning

Course Listings

The most current course lists for LDT can be found at:

http://bulletins.psu.edu/bulletins/whitebook/university_course_descriptions.cfm?letter=I&dept=INSYS

http://bulletins.psu.edu/bulletins/whitebook/university_course_descriptions.cfm?letter=E&dept=EDTEC

http://bulletins.psu.edu/graduate/courses/L/LDT/

Forms and Links for Graduate Study

The most current forms and URLs for LDT students can be found at:
https://ed.psu.edu/lps/ldt