

Indiana University
Request for a New Credit Certificate Program

Campus: Indiana University - Bloomington

Proposed Title of Certificate Program: Learning Sciences, Media, and Technology

Projected Date of Implementation: January 2011

TYPE OF CERTIFICATE: (check one)

☐ UNDERGRADUATE CERTIFICATES – These programs generally require 12-29 credits of undergraduate-level academic work.

☒ GRADUATE CERTIFICATES – These programs generally require 12-29 credits of graduate-level academic work or undergraduate academic work carrying graduate credit.

☐ POST-BACCALAUREATE CERTIFICATES – These programs generally require 12-29 credits of undergraduate-level academic work, although students enrolling in these programs must have completed their baccalaureate degrees.

I. Why is this certificate needed? (Rationale)

At the start of the 21st Century, there is an ongoing and increasing interest in how to support learning across ages and disciplines within new networked and online environments. The faculty of the Learning Sciences (LS) Program in the Department of Counseling and Educational Psychology therefore propose to develop and offer a certificate program where students will rigorously conceptualize and examine learning in new digitally networked environments with an emphasis in how new media is shaping learning. This program will leverage the LS program faculty's existing expertise in conceptualizing and teaching about the intersection of learning, cognition, and technology in order to develop a program aimed at teaching the foundational conceptual and theoretical tools that participants will need to learn about in order to teach and design effective learning environments with new technologies. In particular, the program will help students critically evaluate, join, and lead digital social networks that leverage participatory culture in order to support learning in a variety of contexts.

In addition, this program will be distinguished from other ostensibly similar courses and programs by a resolute focus on the participatory practices and learning cultures fostered by new media technologies, rather than the technologies themselves so that students develop the skills necessary to engage in supporting learning regardless of what technological innovations are next to come. As John Seely Brown described in his recent presentation at IU's Scholarship of Teaching and Learning lecture series, newer "participatory" views of knowing and learning are necessary to fully appreciate and maximize learning with new media practices: "Mastering a field of knowledge involves not only 'learning about' the subject matter but also 'learning to be' a full participant in the field. This involves acquiring the practices and the norms of established practitioners in that field or acculturating into a community of practice" (Brown & Adler, 2008, p. 4).

The Learning Sciences as a discipline (and IULS in particular) embraces these newer views of learning, and the corresponding focus on the social and technological contexts where learning occurs. Rather than simply earning a certificate that documents students have been exposed to content about digital technologies, our students will "learn to be" productive participants in a range of new and emerging digitally networked communities of educators and designers who are passionate and knowledgeable about new media and new technology. New media technologies and the educational practices they support are complex and rapidly evolving. Consequently, 21st century educators need to learn to be members and leaders of communities of practice where this knowledge is created and shared. Rather than mastering a static set of concepts, skills, and instructional routines, 21st century

educators need to borrow, refine, and share what one LS faculty member recently characterized as "spreadable educational practices."

II. List the major topics and curriculum of the certificate.

The proposed certificate program will consist of taking four courses that will be offered on-line starting Summer 2010. The certificate requires both P540 *Learning and Cognition in Education* and P507 *Assessment in Schools*, so that all of the students in the certificate program will develop core expertise regarding learning and assessment that can then be applied to digital environments. In order to more closely pursue topics of interest and apply these ideas to new digital technologies, students will choose two of the following P574 advanced seminar courses: (1) *Games and Learning*, (2) *Learning in New Media*, and (3) *Learning with Computational Technology*. At the discretion of the faculty advisor, one P574 seminar can be substituted by another approved School of Education Distance Course.

Learning and Cognition in Education (P540 - 3 credits). In this already established online course, students learn to apply established theory about cognition, learning, memory, and motivation. Students work in teams organized around the primary content areas (literacy, comprehension, writing, science, and mathematics).

Assessment in Schools (P507 - 3 credits). Introductory assessment course for teachers and school administrators. Topics include principles of assessment, formal and informal classroom assessment instruments and methods, formative and summative assessment, interpretation and use of standardized test results, social and political issues in assessment, use of student data bases in schools.

Games and Learning (P574 - 3 credits). In this course, students will explore the power of games for education. Students will play games, read about games, theorize about games, and even modify existing games. This course will be both practical and theoretical, pushing students to critically examine game play, claims and theories related to game play, and then exploring the implications for game and education design. Consistent with Barab's other graduate seminars, class activities will include a mixture of group work, online discussions, Socratic dialogues, lectures, readings, essays, and hands-on activities. Readings will range from philosopher Hans Gadamer to games scholar Henry Jenkins to game designer Richard Bartle. And, yes, students will be required to play games, ranging from Zelda on a Nintendo DS to Rock Band on a platform to World of Warcraft on a PC or other games to which they have access.

Learning in New Media (P574 - 3 credits). This course uses a hands-on studio art approach to explore how current literacy theory and research in arts education, media education, and computer science applies to learning in new media. As part of this course, students develop an e-portfolio of digital artwork, which engages students in the practice of using new media for communication and creative expression. Students in the course create digital artwork using Scratch or other multimedia software, learn about current research in the arts, aesthetics and new media, theorize about digital learning, and even showcase artwork in online social networking spaces designed for the course to elicit critique and feedback. This course is both practical and theoretical, pushing students to critically examine new media, claims and theories related to 21st Century learning, and then will explore the implications for the arts, learning and education. The course has five units: (1) Theory of New Media; (2) Learning in the Arts; (3) Media Education; (4) Learning with New Technologies; and (5) Informal and Online Learning. Readings will range from educational philosopher John Dewey to media culture scholar Henry Jenkins.

Computational Technology in Education (P574 - 3 credits). This is a survey course designed to help participants think about how different technological designs fit effectively into a variety of learning contexts where context refers to the location (in or out of school), local culture, learning goals, and organization of activity. The course consists of 3 parts. In part 1, we will examine several theoretical frameworks designed to conceptualize the role of technology in learning. Students will begin to develop their own approach to thinking about how to evaluate the fit between a proposed technology and a learning context of their choosing. In part 2 we will review the current state of the field in terms of the larger social and political issues, the digital divide, gender differences in technology use, and other factors that effect technology adoption in America today. In part 3, the largest section of the course, we will examine original academic papers that report upon experiments in which learning technologies were implemented in a variety of classroom contexts. Learning technologies examined will include but are not limited to cognitive tutors, programming languages, computer simulations, drill and practice software, participatory

simulations, and augmented reality. Theories developed in the first unit of the course will be used to examine the goals of each learning technology, and the way that it fit (or not) with the context in which it was implemented. Finally, students will conduct individual and group inquiry projects into conceptualizing the best ways to evaluate or introduce learning technologies into a context of interest to them.

III. What are the admission requirements?

The admission requirements are as follows:

- Undergraduate degree from an accredited institution with a minimum GPA of 3.0
- Completed online application that includes transcripts, personal goal statement, and letters of recommendation
- TOEFL for international or non-native English speakers: minimum 600 for paper test, 250 for computer test
- GRE is not required

IV. List the major student outcomes (or set of performance based standards) for the proposed certificate.

Our proposed program will build directly on the way that new digital social networks foster what the media scholar Henry Jenkins characterized as the *participatory culture*. By stressing online participation, we will be teaching students how to participate successfully in online communities rather than lurking at the edges of the learning culture (e.g., contributing to Wikipedia rather than solely visiting the site). This participatory approach will be accomplished in part with newly available social networking tools in IU's *Oncourse* system (wikis, blogs, and e-portfolios), and the embrace of the "open education" methods and ethos embodied by the open-source *Oncourse* code. The courses will also foster what the linguist James Paul Gee (2004) called "affinity groups" to promote learning among students with similar interests. Affinity groups will be encourage to emerge within the courses and will connect the otherwise isolated online course takers and prepare them to join other affinity groups associated with each students' particular topic or educational context. The courses and program will be designed to foster a vibrant digitally networked community that is structured enough to provide adequate mentoring and sharing for all students.

At the end of the proposed LSMT Certificate, all students should be able to do the following:

- Name and describe several theories of learning, ranging from behaviorism, cognitive information processing theory, constructivism, constructionism, sociocultural theory, situated learning, and cultural-historical activity theory, among others
- Understand how to teach and learn effectively with new and emerging technologies
- Apply theories of learning to real-world problems
- Describe theories of assessment and apply them to physical and virtual learning environments
- Participate effectively in online social media environments
- Analyze the effectiveness of new tools for learning and make suggestions for improvement based on theory
- Be familiar with a range of publications from leading theorists in the fields of learning sciences, media education, new technologies, and assessment

V. Explain how student learning outcomes will be assessed (student portfolios, graduate follow up, employer survey, standardized test, etc.) and describe the structure/process for reviewing assessment findings for the purpose of ensuring continuous improvement of the certificate.

Student learning assessments will utilize the same course assignments and products as their existing face-to-face course counterparts, including the grading of papers, portfolios, reflections, blogs, and wiki entries among other assignments. Program assessment efforts will be driven by the Project Director and aided by the course development faculty. Assessment will utilize Oncourse offerings for pre- and post-testing of course content as well as periodic assessments of student participation in the online communities, looking for ways to align the program goals with its assessment practices. Finally, because the same instructors in our residential program will have previously offered all of the online courses, we will have the opportunity to compare learning outcomes and ensure that the online participants appear to be gaining at least as much from the experience as those who had previously attended these courses.

VI. Describe student population to be served.

The LSMT program will be designed to help transform student's perspective on how learning occurs in the rich, complex contexts and will count toward existing degrees, including a M.S. or Ph.D. in Learning Sciences. However, there are new target audiences that we seek to address with the additions of our new online course. We propose to target in-service teachers seeking to continue their education to learn more specifically about learning theory and specifically about using new media to further learning in applied contexts. In Indiana, for example, teachers must take a 3 credit hour course on occasion to renew their teaching license. We also suspect that this certificate will appeal to students seeking to take courses before committing to an on-campus Masters or Doctoral Program in the Learning Sciences. Lastly, the program seeks to offer electives and/or a minor for students pursuing other online or residential programs, including those pursuing an online Masters or Doctorate in Curriculum and Instruction (C&I) and Instructional Systems Technology (IST).

VII. How does this certificate complement the campus or departmental mission?

Learning Sciences and the LSMT Certificate proposal will explore the relationship between learning in context and the design of learning environments. Both the existing program and the proposed certificate program will explore the rich history of thinking about learning, acquiring a deep understanding of how the study of learning has evolved over time that is a core commitment of both the University at large and the School of Education in particular. Further, the proposed certificate will expand the School of Education's commitment to continuing education for pre-service and in-service teachers. We also believe that the certificate program will highlight the role that Indiana University is playing in continuing to shape learning and teaching in the 21st Century.

VIII. Describe any relationship to existing programs on the campus or within the university.

The proposed certificate will be aligned with the Learning Sciences Program in the School of Education.

IX. List and indicate the resources required to implement the proposed program. Indicate sources (e.g., reallocations or any new resources such as personnel, library holdings, equipment, etc.).

There are no additional resources being requested to implement the proposed program. The proposal has received prior support from the Dean of the School of Education, Gerardo Gonzalez, but no further funding is requested. The following is a summary of how we propose to leverage existing resources on the Bloomington campus:

a. Admissions

We propose to follow the existing School of Education Graduate Admissions Policies and Procedures. Students currently admitted to a program here at IU will email deregstr@indiana.edu to request authorization to register (as stated in the class notes in the individual course listings in the schedule of classes). They will then register using OneStart. Students who are not currently in a IU residential or other online program and registering as non-degree special students will register through the distance education website – <http://education.indiana.edu/disted>. Once the course requirements have been fulfilled for the LSMT Certificate, students will approach a faculty member to serve as their official advisor of record to complete the paperwork needed to receive a

"Certificate in Learning Sciences, Media, and Technology".

b. Financial Aid

Students enrolled in single online courses or in the LSMT certificate program are not eligible for financial aid.

c. Academic Advising

Faculty have online access to their advisees' records and are able to monitor their academic progress. Each student in the Certificate program will be assigned an advisor who will track the student's progress and be in contact directly with the student for a minimum of one asynchronous academic advising session per semester. Other synchronous and asynchronous communications will occur as needed.

d. Course Materials (including delivery mechanism)

All of our online courses have a website and/or an Oncourse site. Some course materials are provided through the Library's Course Reserves service. Various mechanisms are utilized in delivering course materials and in facilitating online discussion, interaction, and collaboration. These mechanisms include video/audio/podcasts, documents with text and graphics, e-mail, chat, discussion forums, blogs, wikis, and other current and emerging technologies.

e. Library Materials (including delivery mechanism)

The IU Bloomington Library offers state-of-the-art online services including access to more than 500 databases, 30,000 electronic journal titles, and 630,000 electronic books. In addition to the standard services (electronic materials delivery, interlibrary loan, course e-reserves, etc.), the Library offers a Distance Education Document and Book Delivery service specifically for distance students.

f. Placement and Counseling

The Certificate Program is designed for individuals to learn more while staying active in their current workspace. As such, a certificate does not prepare someone for a new job as much as it provides them information for how to do their current jobs better (e.g., a teacher that wants to learn more about how their students learn as well as to incorporate new technologies into the learning experience would benefit from our certificate program courses).

g. Technical support (e.g. on-line help desk)

The University Information Technology Services website is the primary portal for technical support. Many technical problems can be solved by consulting the online Knowledge Base. When remote assistance is required, ITHelpLive provides live chat with a Support Center consultant daily from 8:00am to midnight. With the student's permission, the consultant can connect to the student's computer to diagnose problems and assist with solutions.

X. Describe any innovative features of the program (e.g., involvement with local or regional agencies, or offices, cooperative efforts with other institutions, etc.).

At this time, there is nothing to report.