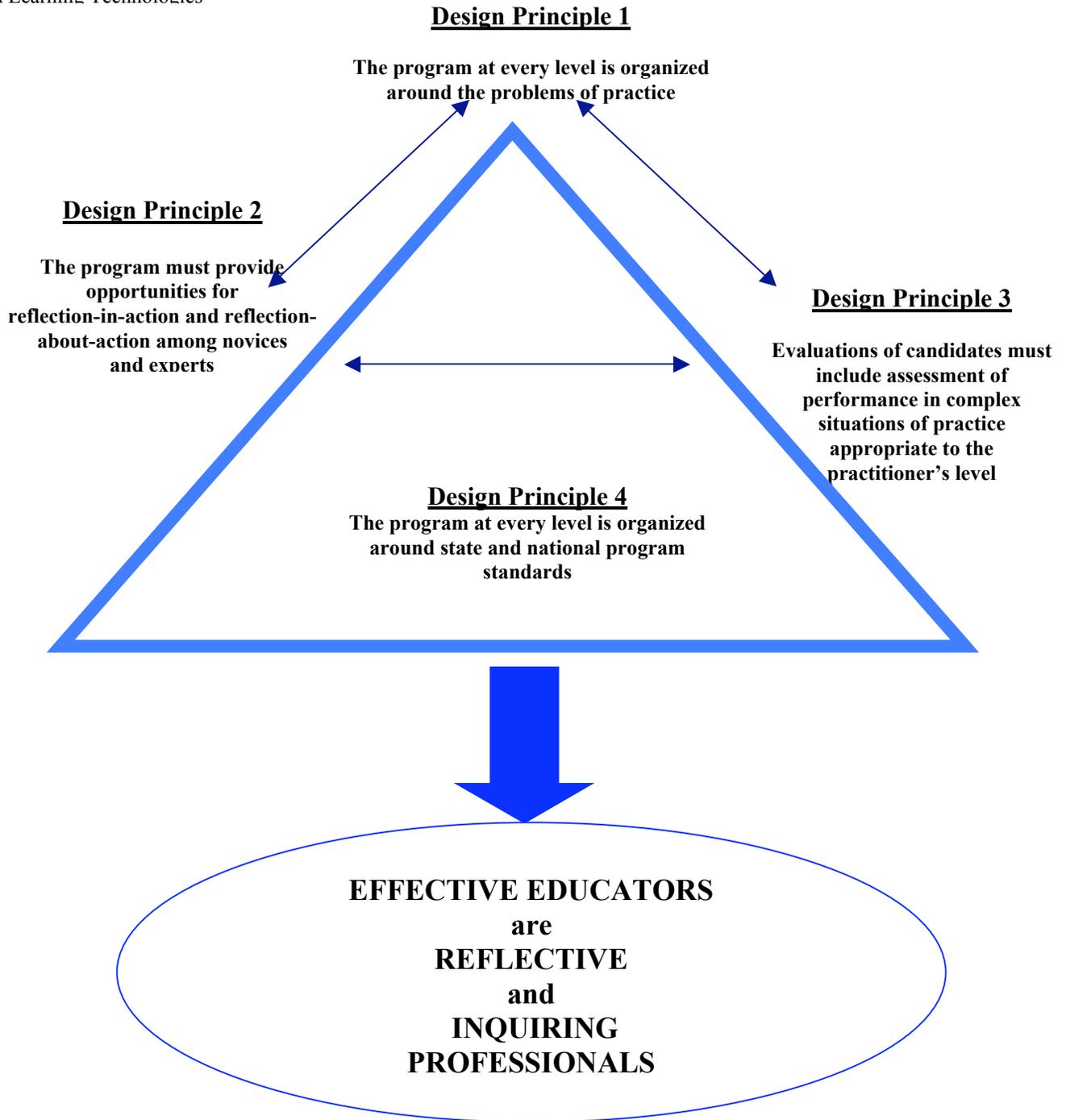


**CONCEPTUAL FRAMEWORK  
DESIGN MODEL**

UMKC School of Education  
Masters Degree in Curriculum and  
Instructional Leadership with an Emphasis  
on Learning Technologies



## **Professional Development for Innovators (subject characteristics-)**

Characteristics of PD for Innovators. (Rogers, Schoen, Shulman, Russell)

### **Reflective**

Educators implementing new technologies need professional development based on the needs of innovators including a reflective proactive philosophical and pedagogical background. Innovators, in order to be successful, require a focused and problem-solving program of professional development.

### **Proactive**

The context of innovation has impact on the ability of educators to implement new technologies. An awareness of these characteristics is an important factor in the success of implementation. Educators need to be able to identify all the important context issues that can facilitate or impede the implementation of new technologies. They also need to be able to communicate these characteristics coherently within that context.

### **Problem-Solving**

Educators implementing new technologies need the ability to design the learning environment and revise the learning environment as problems arise during implementation. Innovation, by its nature, is an attempt to change an embedded system and the process of implementing change in a system requires the ability to problem-solve in order to be effective.

### **Evaluation**

Educators implementing new technologies in order to develop advanced learning processes in students need the ability to assess the effectiveness of the implementation of these tools. In order to do this, educators will understand the assessment of the learning processes and develop self-evaluation processes in order to evaluate the effectiveness of the technology integration process.

### **Summative Goal**

The summative goal for this program is the ability of an educator to successfully design, develop and implement current and emerging learning technologies into a variety of learning environments and assess their effectiveness in developing advanced cognitive abilities in students.

### **Formative Goals of the Professional Development Program**

There are three main concepts and correlating abilities that will be the focus of the program. These learning goals that defined the design of this program are:

1. Constructivist Learning Goals (motive-outcome) (Vygotsky, Dewey, Bereiter, Bruner, Rensnick)

The primary goal of education at all levels is to engage students in meaningful learning. Technology can be used to foster this goal. Technologies can also deter constructivist processes when implementation focuses on low-level skills and responses. Educators implementing new technologies should be aware of research in the learning sciences and its relevance to the process of implementing new technologies.

Educators in this program will develop an understanding of their philosophy of learning and its relevance to current theory in the cognitive sciences.

2. Design of Innovative Learning Environments (object-instructional design issues) (Posner, Short, Ann Brown, Tyler, )

The innovative educator needs to be trained in the design, development and implementation of a learning environment with imbedded technologies. They need an awareness of human development issues, content issues and their relevance to the implementation of new technologies.

The educators in this program will develop the ability to design, develop and implement constructivist-based learning environments integrating advanced learning technologies.

3. Characteristics of emerging Learning Technologies (mediational effects-tool characteristics-) (Pea, Wertsch, Roschelle, Wilson)

New technologies have characteristics, affordances or constraints that can be identified and reviewed in order to increase the effectiveness of their implementation. Educators implementing new technologies need to be trained in new technologies and their potential usage in meeting their learning goals for their students.

The educators in this program will develop an awareness of the characteristics of the learning technologies and their impact on the development of learning responses in students.

#### **Overview of Structure for Courses**

This program is structured around a cohort of teachers who implement the courses based on the three goals stated above and developing through three levels of proficiency- design, development and implementation.

LEARNING TECHNOLOGIES:  
CURRICULUM AND INSTRUCTIONAL LEADERSHIP

<b>COURSE MATRIX</b>			
<b>Phases:</b>	<b>Design</b>	<b>Development</b>	<b>Implementation</b>
<b>Goals</b>	<b>Cog1</b>	<b>Cog2</b>	<b>Cog3</b>
<b>Cognitive Theory Subject-Philosophy-Goals</b>	Advanced Learning Theories- Constructivist Philosophy Sociocultural Theory Background in current cognitive sciences	Cog and Tech- Research on cognition and technologies.	Action Research- Implement a research program on some aspect of the learning processes in a classroom which includes reflective responses and the use of technology for professional development with reflective self-evaluation of effectiveness
	<b>ID1</b>	<b>ID2</b>	<b>ID4</b>
<b>Instructional Design and Technology Object</b>	Design and Assessment of constructivist learning environments	Content and Technology	Special Topic: Independent Project: The implementation of a unit designed to incorporate technology with evaluation of effectiveness
	<b>LT1</b>	<b>LT2</b>	<b>LT3</b>
<b>Learning Technologies Mediation Effects.</b>	Human and Computer Interface: (HCI) affordances and constraints computer mediated learning (CML) computer mediated communications (CMC) interface design	development of LT systems- software: hardware communication/info rmation gathering, presentation, storage- affordances and constraints	Practicum The design and implementation of a new LT program in the school/ classroom with evaluation of effectiveness
		LT3- Emerging technologies-new technologies and systems- potential learning tools	

## Sequencing of Course of Study

### Background Abilities

This program of study is not meant to develop technology abilities as an isolate. This program of study assumes a strong background in general technological ability. This program will develop the educator's ability to design, develop, implement and evaluation the use of learning technologies in educational settings not the ability to use specific technologies.

### Overall Recommendations

- This program is developmentally designed both conceptually and for practice, the best scenario for successful completion is a cadre of teachers who go through program together.
- The student should take emphasis course every semester as they are available.
- It is recommended that in each conceptual area of emphasis- the columns in the course matrix- the student should take the courses beginning with design courses, then development courses, then implementation courses.

### Recommended Sequence

6 credits per semester/ total credits required- 33 6 semesters to completion

#### Year 1 (emphasis area courses are in **bold**)

Summer 04

- **Cognition and Technology (online)**
- **Curriculum and Instructional Technology**

Fall 04

- **Assessing the Role of Technology in Education**
- Philosophy Course- online (humanistic core)

Win 05

- **Development of Learning Technologies Programs: Traditional and Non-Traditional Educational Settings**
- Science Assessment with Technology (curriculum core)

#### Year 2

Summer 05

- **Independent Project: Design new technology program**
- Core area course (behavioral core)

Fall 05

- **Practicum: Implement new technology program**
- Core area course (research core)

Win 06

- **Culminating Event: Action Research: Thesis Paper: Evaluate new technology program**

**Syllabus**  
**Masters of Arts in Curriculum and Instruction**  
**Emphasis Area: Learning Technologies**  
**School of Education**  
**Curriculum and Instructional Leadership**  
**EDCI 571**

**INSTRUCTOR**

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**OFFICE HOURS**

M, T, W, 9-11 and by appointment

**TEXT**

A review of literature on research design and evaluation of learning technology utilization, 3-5 articles, will be recommended according to topic.

**OVERVIEW**

**SOE Mission Statement**

The mission of the School of Education is that of empowering professionals as reflective practitioners committed to a more just and democratic society. This mission is focused on the development of five concepts: academic excellence, inquiry leading to reflective decision-making and problem-solving, skilled and knowledgeable professionals working collaboratively, democracy and social justice and creating caring and safe environments. This course will lend itself to the development of academic excellence, inquiry and reflective problem solving and the creation of caring and safe environments.

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**Conceptual Framework**

The Masters Program in Learning Technologies is designed to develop educators with the capability to design, develop and implement learning technologies into a variety of learning environments. The program is also designed to develop the capabilities of educators to evaluate the effectiveness of the implementation of new technologies into learning environments based on state and national standards and develop professional development programs for educators implementing new technology. The program is also designed to enable educators proactive, reflective, and collaborative professionals capable of innovative responses to new developments in the field of learning technologies.

**Course Description**

The purpose of this course is to respond to current research in cognition and technology and design an evaluative response to a local technology program. Educators will discuss and review 4-5 major studies in the field. They will write an evaluation of a journal article chosen from a list of cog and tech topics published in refereed journals. Finally they will design a small study of a local technology program and write an evaluation of the program effectiveness.

### **Learner Activities**

The students will discuss new research in the correlating fields of cog and tech. They will respond to Bereiter's writing on Web Forum, Jonnassen's writings on Thinking Tools and Pea and Roschelle's article on the potential usage of emerging technologies in educational settings using online forums such as bulletin boards and chat rooms.

They will be given a list of articles to review and the students will then develop their own review and presentation on the article they chose. They will define the major points of the article and critique its validity for conceptual or practical implementation potential.

Finally they will be given a choice of scenarios of technology-based programs to critique and evaluation referring to the resources studies throughout the course in order to justify their response.

### **Computer Mediated Learning**

This course can be modified to be taught totally online. The As individuals participate in a distributed learning system, such as an online-mediated course, they provide input into that activity facilitating the outcome of that collaborative effort. This course uses technology as a way to develop individual understanding through projects that are responses to course readings and dialogs including the online exchanges among all the learners participating in the course. Because of these philosophical groundings, the course design includes collaborative dialogic processes, class discussions and online dialogs and individual reflective essays that build reflective professional responses to the Action Research topics.

### **Assessment**

All the projects created for this course will be scored using scaled rubrics.

1. Bulletin Board Response: responses to discussion board threads-
1. Presentation of Article: the presentation and supporting documents will be assessed based on the students' ability to define the major points in an article and respond critically.
3. Online Scenario: the students will respond to an online scenario by describing the goals of the program discussed and then evaluating the processes described, ie. Instructional processes, assessment processes etc., citing the articles studied in the literature reviews.

### **Development of Learning Technologies Programs: Traditional and Non-Traditional Settings.**

#### **Syllabus**

**Masters of Arts in Curriculum and Instruction**

**Emphasis Area: Learning Technologies**

**School of Education**

**Curriculum and Instructional Leadership**

**EDCI 573**

**INSTRUCTOR**

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**Course Description**

The purpose of this course is to review a variety of technology programs currently implemented in traditional and non-traditional settings. The educators will review current use of a variety of technologies including online technologies that are integrated into traditional settings and non-traditional settings and review their potential to meet standards-based learning outcomes and constructivist-based learning outcomes. Additionally, the course will introduce emerging technologies such as Artificial Intelligences software that can potentially develop into productive learning technologies in education. The educator will develop a new technology program that potentially can be implemented in their local settings.

**Learner Activities**

Students in this course will use and critique a variety of current and potential learning technology formats including

- online learning forums such as WebQuest and Web Forum,
- middleware such as ShadowNetWorkspace and
- presentation programs such as PowerPoint and Dreamweaver,
- productivity programs such as word processing programs and database mining programs and
- variety of learning software such as simulation software.
- Emerging technologies that are not currently implemented in educational settings

The students will work in groups to use and then design a presentation that demonstrates their understanding of the software and describes a potential forum for the program type that they reviewed including

- how the technology can meet standards,
- what are the constraints of the technology
- what are the affordances of the technology
- evaluation and description of a productive learning environment utilizing the technology and focusing on developing the abilities of the learners.

### **Computer Mediated Learning**

This course uses technology as a way to develop individual understanding through projects that are responses to course readings and dialogs including the online exchanges among all the learners participating in the course.

### **Assessment/Assignments**

All the projects created for this course will be scored using scaled rubrics.

1. Participation in technology reviews in class.  
Students will participate in whole class sessions using and reviewing examples of the technology formats listed above. They will produce a limited project using the technology formats including a single web page, a WebQuest, participating in online dialogs in SNS, querying an online data mining program,
2. Group Presentation of Technology Format  
Each format group will present on the characteristics of the technologies reviewed, affordances and constraints, and suggest educational settings and programs that would benefit from the addition of these technologies.

**Assessing the Role of Technology in Education:  
Syllabus  
Masters of Arts in Curriculum and Instruction  
Emphasis Area: Learning Technologies  
School of Education**

**Curriculum and Instructional Leadership**  
**EDCI 572**

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**Course Description**

The purpose of the course is to develop an understanding of trends and issues on the changing role of technology in education by reviewing current and historical articles on the topic. This includes a historical analysis of trends and expectations within educational settings and outside educational settings, including social and cultural expectations, for educational technologies, the relationship between technology integration and cultural expectations and, ultimately, defining,

through a position paper, the educator's new understandings of the role of technology in educational settings, past, present and future.

### **Learner Activities**

Students in this course will review and discuss seminal literature on the historical context of educational technologies. The students will develop a paper identifying the longitudinal trends and the correlating social issues in past integration programs.

Students will review literature that forecast or predicts the future integration processes and the potential of educational technologies to develop learners in those social and cultural settings.

- Write an historical analysis of trends

Create and implement a research tool, questionnaire or survey, that identifies current concepts about technology in varied educational and non-educational settings.

- Structure the data and write a respond to current concepts and trends in educational settings

Students will write a position paper that develops:

- A historical analysis of technology integration programs in educational settings
- A critique of correlating social and cultural issues with the integration programs
- A detailed description of technological programs that meet both the goals of educators and the needs of the society
- Write a philosophy statement describing the potential of learning technologies in future settings

### **Assessment/Assignments**

1. Read and review all literature on trends for integrating technology in educational settings and write a historical analysis identifying trends and issues in past technology integration programs
2. Create, implement a survey or a question that identifies attitudes about technology in education and write a research paper on the results of a survey of educators and non-educators on the current effectiveness, needs, goals of technology programs in education.
3. Write a position paper identifying and justifying the educator's position on past, present and future technological programs.