

HUMAN PERFORMANCE TECHNOLOGY IN THE TRAINING AND DEVELOPMENT CONCENTRATION AT UNC CHARLOTTE'S INSTRUCTIONAL SYSTEM TECHNOLOGY PROGRAM

Florence Martin, PhD

The Instructional Systems Technology (IST) program at UNC Charlotte develops instructional technologists who are grounded in instructional technology foundations, principles, theories, applications, and current trends. The program also provides opportunities for students to integrate different forms of technology to enhance teaching and learning. In this article, we introduce the IST program, its real-world HPT course, and its learning leaders forum that brings industry leaders and the IST program together to discuss the trends in the field.

UNIVERSITY HISTORY

UNC Charlotte (UNCC) is one of a generation of universities founded in metropolitan areas of the United States immediately after World War II in response to rising educational demands generated by the war and its technology. To serve returning veterans, North Carolina opened 14 evening college centers in communities across the state. The Charlotte Center opened Sept. 23, 1946, offering evening classes to 278 freshman and sophomore students in the facilities of Charlotte's Central High School. After three years, the state closed the centers, declaring that on-campus facilities were sufficient to meet the needs of returning veterans and recent high school graduates.

Charlotte's education and business leaders, long aware of the area's unmet needs for higher education, moved to have the Charlotte Center taken over by the city school district and operated as Charlotte College, offering the first two years of college courses. Later the same leaders asked Charlotte voters to approve a two-cent tax to support that college. Charlotte College drew students

from the city, from Mecklenburg County, and from a dozen surrounding counties. The two-cent tax was later extended to all of Mecklenburg County. Ultimately financial support for the college became a responsibility of the State of North Carolina.

As soon as Charlotte College was firmly established, efforts were launched to give it a campus of its own. With the backing of Charlotte business leaders and legislators from Mecklenburg and surrounding counties, land was acquired on the northern fringe of the city, and bond issues were passed to finance new facilities. In 1961, Charlotte College moved its growing student body into two new buildings on what was to become a 1,000-acre campus 10 miles from downtown Charlotte.

Three years later, the North Carolina legislature approved bills making Charlotte College a four-year, state-supported college. The next year, 1965, the legislature approved bills creating the University of North Carolina at Charlotte, the fourth campus of the statewide university system. In 1969, UNC Charlotte began offering



FIGURE 1. THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

programs leading to master's degrees. In 1992, it was authorized to offer programs leading to doctoral degrees.

Now a research-intensive university, UNCC is the fourth largest of the 17 institutions within the University of North Carolina system and the largest public institution in the Charlotte region (see Figure 1). The University comprises seven professional colleges and offers a range of degree programs at the doctoral, master's, and bachelor's degree levels. More than 1,000 full-time faculty make up the University's academic departments, and the 2015 fall enrollment exceeded 28,700 students. UNC Charlotte boasts more than 120,000 living alumni and adds roughly 5,000 new alumni each year (University of North Carolina Charlotte, 2016).

CATO COLLEGE OF EDUCATION

The vision of the Cato College of Education (see Figure 2) is to be a national leader in educational equity, excellence, and engagement. The college is committed to preparing teachers, counselors, and school leaders who will provide all youth with access to the highest quality education possible and to meet the needs of all students, regardless of their backgrounds. Our graduates have shown the



FIGURE 2. CATO COLLEGE OF EDUCATION

ability to be successful in all varieties of school and community environments, even the most challenging. Indeed, many seek out high-need contexts where they can make the biggest difference.

The college prepares highly effective and ethical professionals who have a positive impact on children, youth, families, communities, and schools, and who are successful in urban and other diverse settings. We enroll approximately 3,000 undergraduate and graduate students annually. Our programs are nationally accredited and approved by the North Carolina Department of Public Instruction.

The Cato College of Education does much more than provide academic programs. Our faculty members are also involved in cutting-edge research related to autism, students with disabilities, struggling readers, why students succeed and fail in college, the teacher shortage, culturally relevant instruction, helping youth with severe disabilities transition into the workplace, and much more. Our faculty and staff also directly and consistently serve the community. Many work in schools and community agencies serving youth and families with academic and counseling services. Other faculty work through professional organizations leading committee work and serving as editors or reviewers for journals. Many faculty members in the College of Education serve on national-level committees to develop standards for our profession and practice, and several have work that is making a global impact (Cato College of Education, 2016).

The Cato College of Education includes five departments (see Figure 3):

- Department of Counseling
- Department of Educational Leadership
- Department of Middle, Secondary, and K-12 Education

The program develops professionals who are grounded in instructional technology foundations, principles, theories, applications, and current trends, and provides opportunities for students to integrate different forms of technology to enhance teaching and learning.

- Department of Reading and Elementary Education
- Department of Special Education and Child Development

DEPARTMENT OF EDUCATIONAL LEADERSHIP

The Department of Educational Leadership is dedicated to developing leaders who make a difference in education. The Instructional Systems Technology (IST) program is housed in the Department of Educational Leadership, which, along with the IST programs, also offers an Ed.D. degree in educational leadership, a master’s degree in school administration, and a PhD degree in research measurement and evaluation (Department of Educational Leadership, 2016).

Instructional Systems Technology (IST): Overview of the IST Program

The IST program at UNCC is designed for those who wish to hold instructional design and technology

positions in the areas of K-12, higher education, corporations, government, military training, and human performance improvement. The program develops professionals who are grounded in instructional technology foundations, principles, theories, applications, and current trends, and it also provides opportunities for students to integrate different forms of technology to enhance teaching and learning. The IST program is mapped onto the standards from the Association for Educational Communications and Technology (AECT), the International Society for Technology in Education (ISTE), the International Society for Performance Improvement (ISPI), and the North Carolina Department of Public Instruction. The program offers three concentrations: school specialist, training and development, and online learning and teaching. This article focuses on the training and development concentration of the IST program (Instructional Systems Technology, 2016).

IST PROGRAM’S DEFINITION OF INSTRUCTIONAL TECHNOLOGY

The IST program uses AECT’s definition of educational technology (Robinson, Molenda, & Rezabek, 2008), “the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources,” (p. 15), as its definition of instructional systems technology. AECT has been the oldest professional and academic body of educational technologists in the world, and it has maintained a definitions and terminology committee through the decades. This broad definition includes four components: (1) the focus as a study and practice, (2) the purpose, (3) how we do this, and (4) what we work with. We chose this definition to guide the program because it includes the various conceptual issues and encompasses all aspects of the educational technology field.

Program Goals

The goals of UNCC’s IST program focus on the following four areas:

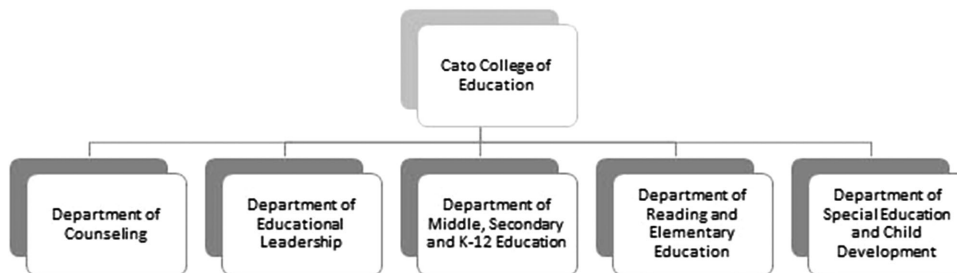


FIGURE 3. DEPARTMENTAL STRUCTURE OF THE CATO COLLEGE OF EDUCATION

TABLE 1 ACADEMIC PROGRAM AND CREDIT REQUIREMENTS

DEGREE AND CERTIFICATE PROGRAMS	CONCENTRATIONS	DELIVERY	REQUIRED NUMBER OF CREDITS
Master of Education, Instructional Systems Technology	School Specialist Training and Development Online Learning and Teaching	100% Online	36
Graduate Certificate, Instructional Systems Technology	School Specialist Training and Development Online Learning and Teaching	100% Online	18

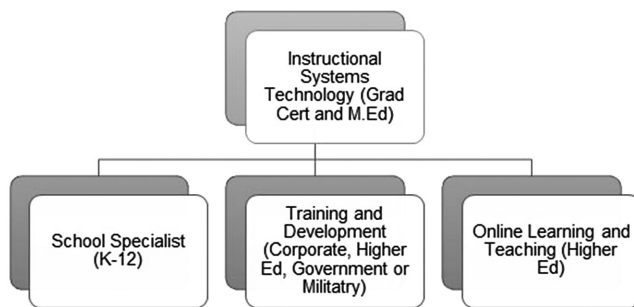


FIGURE 4. IST PROGRAM CONCENTRATIONS

1. Providing leadership in the field of instructional technology and facilitating technology integration for learning and performance improvement within supportive communities of practice.
2. Creating, using, evaluating, and managing effective learning environments and processes, utilizing new technologies and research-based practices.
3. Analyzing, integrating, and implementing technology-rich learning solutions based on the needs of learners and instructional context.
4. Modeling and promoting reflective practice, digital citizenship, and the ethical use of instructional design and technology with diverse learners in 21st-century learning environments.

PROGRAMS AND CONCENTRATIONS OFFERED

The IST program was established in 1998, and classes were offered in a face-to-face format. In 2005, the program was approved to offer courses 100% online. The IST program currently offers an M.Ed. (36 hours) and a Graduate Certificate (18 hours) in Instructional Systems Technology (see Table 1 and Figure 4).

M.Ed. Program

The M.Ed. program in instructional systems technology requires a total of 36 credit hours consisting of foundations courses (18 hours), internship and capstone project (6 hours), and electives (12 hours). The M.Ed. program prepares instructional design professionals to create, analyze, use, integrate, implement, assess, evaluate, and manage instructional and performance solutions.

TRAINING AND DEVELOPMENT CONCENTRATION

Foundation Courses (18 Hours)

The foundation courses offered include the following:

- EIST 6100 Foundations in Instructional Systems Technology
- EIST 6101 Learning Principles in Instructional Systems Technology
- EIST 6110 Instructional Design
- EIST 6130 Instructional Multimedia Development
- EIST 6170 Human Performance Technology
- RSCH 6101 Research Methods

Electives (12 hours)

The elective courses offered include the following:

- EIST 6000 Topics in Instructional Systems Technology
- EIST 6121 Advanced Instructional Design
- EIST 6120 Current Trends in Instructional Systems Technology
- EIST 6135 Learning, Resources, and Technology
- EIST 6140 Instructional Video Development
- EIST 6150 Design, Development, and Evaluation of Online Learning Systems

- EIST 6160 Designing Learning Systems with Simulation and Game Technology
- RSCH 7196 Program Evaluation Methods

Internship and IST Capstone Project (6 hours)

The Internship and Capstone Project offers the following courses:

- EIST 6491 Internship in Instructional Systems Technology
- EIST 6492 Capstone Project in Instructional Systems Technology

Students are given an opportunity to apply their knowledge and skills in the 135-hours internship with a real-world client and in a capstone project where they systematically analyze a learning or performance problem and design, develop, and evaluate solutions.

Graduate Certificate

The 18-credit hour graduate certificate program prepares instructional design professionals to create, analyze, use, integrate, implement, assess, evaluate, and manage instructional and performance solutions. The courses associated with the certificate program include:

- EIST 6100 Foundations of Instructional Systems Technology
- EIST 6110 Instructional Design
- EIST 6120 Current Trends in Instructional System Technology
- EIST 6130 Instructional Multimedia Development
- EIST 6160 Designing Learning Systems with Simulation and Game Technology
- EIST 6170 Human Performance Technology

When students graduate with the training and development concentration, the IST program expects them to hold instructional design and technology positions or performance improvement specialist positions in corporate, government, or military organizations.

FEATURES OF THE PROGRAM

Endorsement from AECT

The graduate certificate program in instructional systems technology has received endorsement from AECT for its alignment with the AECT standards, program goals, objectives and target proficiencies, procedures for evaluating learning outcomes, instructional methods and materials,



FIGURE 5. AECT ENDORSEMENT



FIGURE 6. IST PROGRAM'S QUALITY MATTERS CERTIFICATION

course requirements, program purpose, and prerequisites (see Figure 5).

Quality Matters Certified Courses

Courses in the IST program also undergo certification by Quality Matters (QM), which is an international, inter-institutional program. QM's quality-assurance processes are designed to certify the design of online and blended courses (see Figure 6).

IST Program Advisory Board

The IST program has an advisory board consisting of instructional technology leaders from K-12, higher education, and industry. The purpose of the advisory board is to advise the program faculty on curriculum and current practices in the field and to provide guidance on various issues of the program.

HUMAN PERFORMANCE TECHNOLOGY COURSE AND COMMUNITY ENGAGEMENT

Students in the human performance technology (HPT) course (EIST 6170) have worked on several HPT projects across the Charlotte community. This is a mandatory course for the students in the training and development concentration. This course has been beneficial to the students because of the opportunity students are provided to work on a performance problem with a real-world client. This course introduces students to the field of HPT and uses the ISPI HPT framework as the guiding framework for these performance improvement projects. It examines basic concepts and principles of human performance technology, human performance system models, and various approaches to solving human performance problems. In-depth analysis of performance improvement interventions and their implementation within organizations is emphasized. The following text presents case studies of projects completed by UNCC IST students.

The HPT Model Applied to a Charter School's Professional Development Implementation (Forsythe, Robinson)

This case study is situated within a large K-10 public charter school located in the greater Charlotte, NC, metro area. Although the school has a professional development system in place, an analysis of this charter school's professional development implementation revealed several challenges that teachers face while attending school-wide professional development (PD) workshops. Some of the challenges include too much content and information being delivered at one time, too many face-to-face weekly meetings, and lack of follow-through and feedback of the content covered in PD workshops.

One intervention suggestion was the creation of a formal professional development plan based on the existing offerings. The current facilitators would be tasked with documenting the entire process of the professional development program, including its learning objectives and goals, the activities that learners would perform to attain those objectives and goals, and finally the measurement and assessment of the learners to ensure they have attained those objectives and goals. Another significant intervention that was proposed is the leveraging of the existing Instructure Canvas learning-management system. The school pays for Canvas, and teachers and staff have access to the platform, but adoption of the system is not widespread due to a lack of training along with a lack of a requirement to use it. This intervention seeks to address two major concerns that both sides of the professional

development program cited: (1) efficient use of time during trainings and (2) access to training material after the training session has been completed.

The HPT Model Applied to a Teaching and Learning Center's Resource Allocation (Mattookkaran, Mestre, Shortt)

The purpose of this project was to assist the Center for Teaching and Learning at a higher education institution in performance improvement efforts and resource allocation so they can address faculty technology and pedagogy support needs while having enough time and resources to devote toward strategic responsibilities. The team conducted extensive stakeholder interviews along with organization, environment, workplace, worker, task, and extant data analysis. Through these analyses, the team isolated performance issues and the causes behind them and suggested recommendations. The performance issues included

- Wrongly escalated tickets contributed to increases in ticket volume and time spent.
- Instructional programs team members were spending less time on strategic pedagogy projects due to constant interruptions in workflow from ad hoc support requests.
- Faculty were not self-sufficient and often contacted the Center for Teaching and Learning directly with simple but time-consuming support issues.
- The technical team was overwhelmed and had no time available for software research, which is a Center for Teaching and Learning goal.

Some of the interventions recommended and scheduled for adoption included

- Clear definitions of what constitutes a Tier 2 and a Tier 3 ticket
- Clear process for escalating tickets based on the established definitions
- Establishing a firm policy on drop-ins: either no drop-ins at all or restrict drop-ins to a few hours per day a few days per week
- Establishing a process for handling direct calls: caller provides Service Desk ticket number to ensure Service Desk has had a chance to work on the issue
- Regular meetings with a representative from Service Desk (Tier 1), Tier 2, and Tier 3

- Collaboration with other departments at UNCC to recruit for assistance in resolving Help Desk issues pertaining to specific departments.

The HPT Model Applied to a Community College's E-learning ADA Compliance (McGuire, Smith, Vang)

Several instructors at this community college were identified as having a vision-impaired student in their course. However, only 50% took part in the training necessary to address this need. Although material for some of the courses was revised for Americans with Disabilities Act (ADA) compliance, some instructors who were trained had still not made necessary course revisions after several weeks of instruction. In this project, we analyzed the optimal and actuals as well as the causes for the gap. To achieve the organization's goal of 100% compliance, e-learning must overcome the following challenges:

- Need for greater support from administration
- Lack of adequate instructional design and support personnel
- Lack of oversight of online courses for ADA compliance
- Continuing need to maintain and upgrade learning tools for ADA-compliant online courses
- Lack of incentives for adjuncts to revise courses for ADA compliance
- Lack of scheduling support (listing classes without instructors)

The following interventions were recommended to improve ADA compliance in distance education:

- Obtaining greater support from senior administration



FIGURE 7. LEARNING LEADERS FORUM, MAY 2016

- Developing an ADA compliance certificate program
- Expanding the ADA compliance communication program
- Adding an instructional designer to e-learning

IST PROGRAM COMMUNITY INVOLVEMENT: THE LEARNING LEADERS FORUM

Business leaders from across the Charlotte area in May, 2016 joined UNCC instructional technology faculty on campus to discuss industry trends and the future of corporate training and performance improvement (see Figure 7). The inaugural Learning Leaders Forum, sponsored by Dick Handshaw of Handshaw, Inc., drew executives from companies including Wells Fargo, Duke Energy, Lowe's, and TIAA. The forum was part of a larger effort to foster a mutually beneficial relationship with the business community, and these discussions helped IST leadership shape the program. The forum also helped us stay current on the industry practices and trends in instructional technology, which allows us to better prepare students for the instructional technology job market.

"Competent instructional designers, learning consultants, and learning leaders are integral to our overall HR strategy," said John Huen, a learning manager at TIAA. "The selection and deployment of effective and efficient instructional technologies will enable our workforce to employ new skills and knowledge more rapidly and with greater adherence to enable our mission for the benefit of our institutions and our customers."

Through an introduction to the IST program and a Q&A with participants, the group explored prevailing industry trends, including

- Micro-learning
- Performance support and on-demand resources
- Subscription learning
- Integration and effective use of data analytics
- Social learning
- Machine learning
- Global design

Industry representatives noted that they seek instructional technologists who have strong critical thinking and interpersonal skills and who are also curious and innovative. Huen, the manager at TIAA, said he appreciated that UNCC consults the business community in deploying its programs. Forum organizers said they plan to host the event on at least a biannual basis in the future.

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COMMITMENT TO SUPPORT THE ISPI CHARLOTTE CHAPTER

ISPI's Charlotte chapter is an award-winning ISPI chapter. The focus of the chapter, formed in the summer of 2009, is to offer affordable professional development with the top names in human performance technology. The Charlotte chapter provides an excellent way for IST students to learn about HPT and share their applications of HPT within this community of practice. The chapter may also provide a gateway to committee membership and leadership roles and further enhance the professional networking experience.

The chapter hosts bi-monthly evening programs at the UNCC's main campus. Several of the IST faculty and stu-

dents not only attend the chapter events but also serve on the board of the ISPI Charlotte chapter.

2016 ISPI Charlotte Chapter Board Members

The following persons served as ISPI Charlotte Chapter board members:

- VP Marketing and Communications: Florence Martin, PhD, IST Program Faculty
- AVP Marketing and Communications: Kiran Budhrani, UNCC Ed.D. Student
- AVP Membership: Terri Mestre, IST Program Alumna
- VP Online Services: Frazier Smith, IST Program Student

FACULTY PROFILE

The IST program faculty has expertise in all facets of instructional design, online instruction, and HPT. Table 2 summarizes their skills and the courses they teach.

STUDENTS AND GRADUATES

Students and graduates of UNCC's IST program work in a wide range of positions in various sectors including K-12, corporate training, government, health care, higher education, and so on. While some of our students and graduates are technology facilitators in the neighboring school

TABLE 2 FACULTY PROFILE, EXPERTISE, AND TEACHING FOCUS

NAME	ACADEMIC APPOINTMENT	EXPERTISE AREAS	TEACHING FOCUS
Florence Martin, PhD (Arizona State University)	Associate Professor and Program Director	Asynchronous and synchronous online learning Human performance technology Educational technology competencies	EIST 6130 Instructional Multimedia Development EIST 6150 Design, Development, and Evaluation of Online Learning EIST 6170 Human Performance Technology
Ayesha Sadaf, PhD (Purdue University)	Assistant Professor	Instructional strategies and emerging technologies on higher-level learning and engagement in online learning environments Preparing teachers to integrate new technologies	EIST 6100 Foundations in Instructional Systems Technology EIST 6110 Instructional Design EIST 6121 Advanced Instructional Design
Susan Beth Oyarzun, PhD (Old Dominion University)	Clinical Assistant Professor	Online course design, online instructional strategies and interaction	EIST 5100 Technology Integration in Education EIST 6135 Learning, Media, Resources, and Technology

districts of the Charlotte area, several of them work as instructional designers in Charlotte-based industry such as TIAA, Piedmont Natural Gas, and Wells Fargo, as well as in higher education institutions such as Central Piedmont Community College, UNCC, and in the health care industry such as the Carolina Healthcare system.

DIRECTIONS AND PLANS

The UNCC IST program will continue to add value to the field and society, and the program will keep up with the changing nature of the field and stay current in preparing skilled graduates for the workforce. The courses taught include both theoretical knowledge and practical skills, and faculty bridge research and practice to keep the students grounded in research and theory. The program wishes to have all of its courses Quality Matters certified. It also wishes to recruit and graduate students in all the three concentrations: (1) school specialists, (2) training and development, and (3) online learning and teaching. Each year we see an increase in the number of job placements and internship opportunities for our students and graduates. The need for instructional designers continues to increase.

For more information about the Instructional Systems Technology program at University of North Carolina Charlotte, contact the program director:

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