

Relationship Between the Timing of Instructional Design Competencies Checklist and  
Graduate Student Proficiency of Skills

A Research Proposal  
By  
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### Abstract

The purpose of this study is to find out if the students who received the requirements for the standards in Educational Communications and Instructional Technology in the middle of their Masters program will be more proficient with instructional design skills than the students who received it at the end of their Masters program. The intended population is the part-time Masters students in the Instructional Design and Development program at George Mason University. The sample is the students in EDIT 601 Portfolio I, from the Spring 2006 semester and the Fall 2006 semester. These students will be tracked throughout their Masters program until they take EDIT 701 Portfolio II in their final semester of the degree. Students will be asked to fill in one of two Instructional Design Competency charts based on their experience in the program. Are students who receive the checklist earlier in the program likely to become more proficient in the skills necessary to become and Instructional Designer?

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Student Proficiency

Introduction

*Purpose*

Standards for Training, Performance and Instruction in the Design and Development of Instructional Technology help improve performance by promoting the integrity of professional practice through research, development, education and definition of competencies.

“Instructional Design is the branch of knowledge concerned with research and theory about instructional strategies and the process for developing and implementing those strategies.”(McNeil, 2006) In today’s world, more and more people are calling themselves Instructional Designers. It is important for a professional field to have a standard which is adhered to by all individuals. The industry needs to find out if it is true that these Instructional Designers are accomplishing the same basic goals as expected for the field. The purpose of this study is to find out if the students who received the requirements for the standards in Educational Communications and Instructional Technology in the middle of their Masters program will be more proficient with instructional design skills than the students who received it at the end of their Masters program.

*Statement of Problem*

The students graduating from George Mason University in the Instructional Design and Development program in 2006 received the competencies checklist in their last semester of their masters program. This is due to a change in the curriculum which incorporated a portfolio class where the students had to evaluate the skills learned compared to the standards competencies list

created by the International Board of Standards for Training, Performance and Instruction (IBSTPI). Students new to the program in the Fall of 2006 will begin receiving this checklist midway through the program. Does receiving this checklist earlier in the program affect the choices students' make to pick courses that will meet more of the requirements?

### *Research Hypothesis*

Why are Instructional Design Competencies necessary? Does the timing of when students receive the checklist of Instructional Design Competencies influence the proficiency of skills they will learn through out their Masters program?

### *Significance of Research*

The intent of this study is to review various studies using the International Board of Standards for Training, Performance and Instruction (IBSTPI) list of competencies and how they improve various training programs. There is little research available on the effects of when a student is informed of the competencies and if that improves their proficiency in the skills. There is a study regarding teachers without instructional design training versus those who do have instructional design training and the outcome was that there is a beneficial impact on their students learning. This study will provide the answers to when competencies should be provided to students to help their proficiency in the skills that will be learned throughout their Masters program. This study is beneficial to the industry as more Universities modify their programs to match the Instructional Design Competencies to ensure students are proficient in a standard of skills before graduating.

### Literature Review

I reviewed the various studies using the International Board of Standards for Training, Performance and Instruction (IBSTPI) list of competencies and how they improve various training programs. The literature revealed the importance of the IBSTPI competency model and the importance of the evaluation of competencies for employment. It also provided a study that proved that teachers with instructional design training have a positive impact on students learning versus a teacher who does not have instructional design training. Information literacy was also identified as important so that students are able to recall the competencies when needed.

#### *Importance of IBSTPI Competency Model*

“Some authors have indicated that the goal of our field has shifted from facilitating learning to improving performance; and contemporary definitions of instructional design and technology (IDT) incorporate human performance technology concepts.” (Klein and Fox 2002) Combining several processes – performance analysis, cause analysis, intervention selection and design, intervention implementation and change and evaluation is Human Performance Technology (HPT). Most faculty think it is important for their students to obtain competency in the area of performance improvement even though most HPT courses in IDT programs are offered as an elective.

“The purpose of Klein and Fox’s study is to report the results of a survey conducted to determine performance improvement competencies for graduates of IDT programs. Evidence from this study suggests that graduates from IDT programs should have knowledge and skills related to the performance improvement process.” (Klein and Fox, 2002) The International

Board of Standards for Training, Performance, & Instruction (IBSTPI, [www.ibstpi.org](http://www.ibstpi.org)) has identified and validated competencies for instructional designers.

Who is the IBSTPI? “The IBSTPI grew out of a certification task force established in 1977 by the National Society for Performance and Instruction (now ISPI) and the Association for Educational Communications and Technology (AECT). This task force was composed of more than 30 practitioners and academics with expertise in training, performance, and instruction, all actively involved in the field.” (Klein & Richey, 2005) In 1984 IBSTPI became a not-for-profit and independent organization that developed competency-based standards to increase the capability of individuals and organizations in training, instruction and performance improvement professions.

The mission of IBSTPI is to develop, validate, and promote the implementation of international standards to advance: training, instruction, learning, and performance improvement for individuals and organizations (see <http://www.ibstpi.org>). IBSTPI has developed and validated competencies for professional practitioners in the areas of instruction, instructional design, and training management. These sets of competencies have been adopted by professionals and professional organizations as well as by academic institutions and used to improve training and practice in areas related to instructional design and technology. (Spector et al. 2006)

Spector et al. defines competence as a state of being adequately or sufficiently qualified to perform a task that is reasonably well defined. The IBSTPI defines a competency as an integrated set of skills, knowledge, and attitudes that enables one to effectively perform the activities of a given occupation or functional to the standards expected. (Spector et al. 2006)

“The IBSTPI competency model consists of three important components: domains, competencies, and performance statements. A domain is a cluster of related competencies. Each domain categorizes a group of competencies into an area of activity and identifies a theme for that cluster. Competency statements are a short, general description of a complex effort. Performance statements are the additional detail required to fully explain what is involved in demonstrating effective questioning skills.” (Klein & Richey, 2005)

The IBSTPI competencies are based on research by topic. Once a base list of competencies is developed, it serves as a starting point for the new development process. Once the list is established with full board approval, the formal content validation process begins. A survey is usually used for the research effort to establish the extent to which each competency and performance statement is needed. The final competency list is then modified to reflect the input of a validation group. Finally the board approves a final set of competency standards.

#### *Competencies for Instructional Designers*

The original set of IBSTPI Instructional Design (ID) competences was developed in 1986 and was the result of more than a year of research, discussion and validation by a group of ID practitioners and academics. Since that time, there have been several developments in the major theories that underpin the instructional design field. Due to the developments, IBSTPI revised the ID competencies and released an updated set in 2000. (Klein & Richey, 2005)

“The updated version still retains the essential elements of the 1986 set, but also (1) reflects in influence of advanced technologies, team-based design, and business management skills; (2) addresses the professional foundations of design, as well as planning and analysis,

design and development, and implementation and management skills; and (3) categorizes competencies as essential or advanced.” (Klein & Richey, 2005)

The intent of IBSTPI is to improve individual and organizational learning and performance and in doing so to promote the quality and integrity of professional practice. The ID competencies represent more than the knowledge, skills and attitudes expected of professionals. It also provides definitions that can be used by employers to define job requirements and use as performance indicators.

Instructional designers are expected to be at a minimum aware of the competency standards in order to be able to collaborate and communicate effectively with professionals who have mastered these standards. The competencies and standards are a basis for certification of individuals, they also can become the basis for the accreditation of programs intended to prepare and train individuals. “The graduate program in Instructional Design, Development & Evaluation at Syracuse University was recently redesigned using the IBSTPI instructional design competencies as a critical point of reference. The curriculum is being reviewed so as to insure students are provided with instruction and practical experiences that will enable them to acquire and demonstrate attainment of the skills described in the IBSTPI standards.” (Spector et al. 2006)

Similarly to IBSTPI other individuals have provided research to validate the top competency skills necessary to be and Instructional Designer. Thach and Murphy’s study was to identify the roles and competencies of distance education professionals within the United States and Canada. A competency model for distance education is the results of the study. The study’s top ten competency results show the dual importance of both communication and technical skills in distance education.

“The top ten competencies are: (1) Interpersonal Communication, (2) Planning Skills, (3) Collaboration/Teamwork Skills, (4) English Proficiency, (5) Writing Skills, (6) Organizational Skills, (7) Feedback Skills, (8) Knowledge of Distance Education Field, (9) Basic Technology Knowledge, and (10) Technology Access Knowledge.” (Thach and Murphy, 1995)

Teamwork skills have been documented as a new competency area and the need to know how to conduct a learner needs assessment is also critical for distance education professionals.

#### *Competencies Evaluation for Employment*

Moallem conducted a study to analyze current job announcements in the field of instructional design and technology and to produce descriptive information that portrays the required skills and areas of knowledge for instructional technology graduates. The intent of the study was to develop a list of competencies for instructional design professionals that present the employer’s perspective in terms of job responsibilities. For this study Moallem defined competency as an area of knowledge or skill which is critical in performing in specific field or profession.

Core courses in instructional design and development are the focus of instructional technology programs; but studies show that electives and internships maybe needed for students who have different career goals. In this study survey results of graduate students indicated the need for competencies in multimedia and computer-based instruction in their program.

As advances in learning theories, new technologies and communication tools expand, new skills and competencies by instructional technologists are expected by employers. Instructional Design programs use competency studies to provide the conceptual framework for program development.

“Further analysis showed that knowledge and skills of design development and implementation was presented into three different categories of job requirements (knowledge of instructional design, development and implementation, ability to teach courses in instructional technology, ability to teach instructional computing) for faculty positions while they reported as one skill (knowledge and experience in design, development and implementation) for master’s-level jobs.” (Moallem, 1995)

The study results showed that the most frequent skill or area of knowledge required for Instructional Designers is the knowledge and experience in design, development, and implementation of training programs. The second and third requirements were knowledge or experience in training and conducting workshops and experience or skills in project management and consulting. (Moallem, 1995)

”The results suggest that although core courses in instructional design and development (design, development/production, evaluation), multimedia production and knowledge in computers appear to be the foci of instructional technology programs, different electives and internship courses may need to be offered for students who have different career goals.”

Part of the new Masters of Instructional Design and Development program at George Mason University incorporated a mid-program and end of program portfolio classes. Using portfolios is an effective way to get students to save their work and have them review it so they can make improvements to their future work. These days more often portfolios are published on the Internet forming electronic portfolios (e-portfolios).

“Hewett describes the use of e-portfolios in a teacher preparation class to enhance the level of knowledge in the use of technology, to promote reflection and subsequent growth of instructional practices and to develop a communication strategy for teacher candidates to introduce themselves to potential employers, students and/or parents.” (Hewett, 2002) Students become active learners as they set their own goals for learning, engage in self-reflections, review goals throughout the course of their work and assume responsibility for their own learning when using e-portfolios. These goals and reflections are also a requirement of the GMU portfolio classes.

Teachers not only need to understand the technology for professional competency but they have a responsibility to teach the students in order to prepare them for future work. This study showed that students’ evaluations of classes improved for the courses that incorporated an electronic portfolio. Teachers found that using the electronic portfolio was a successful tool for motivating and encouraging student to learn. Being able to provide the portfolio’s over the internet makes it easily accessible for future employers to see the students’ accomplishments.

#### *Instructional Design Training Positive Impact on Students Learning*

Darwazeh investigated the effect of 18 hours of training in Instructional Design Competencies (IDC) on teachers’ planning routine, and their students’ academic achievement. They used a class of 37 in-service government school teachers at Nablus district for the study. A questionnaire was used to measure the IDC in five domains: analysis, design, implementation, management and evaluation. This questionnaire was given to the teachers once before the 18 hours of training and once afterwards. Before the IDC training the teachers were asked to teach

two of the subject-matter they teach in their schools in one week, and to test their students the following week. The same lessons were taught to the students after the IDC training and they were tested the following week.

“Instructional designers have hypothesized that the potential for learner achievement is enhanced when teachers practice Instructional Designer Competencies (IDC) during the planning of their instruction.” (Darwazeh, 1995) Darwazeh defines the systematic design of instruction, as a discipline concerned with decision making and developing instruction through processes of selection, analysis, sequencing, implementation, management, and evaluation. Darwazeh chose to measure all five domains of instructional design because teachers are expected to plan for the whole instructional process while they teach.

Darwazeh had found other research study results that showed teachers who have a previous knowledge or received training in instructional design competencies would plan their instruction more systematically and accurately than those who did not have previous knowledge or training. This then improved the quality of their teaching performance. The question remained “Do teachers’ who have knowledge in instructional design, positively influence the level of their students’ academic achievement?” (Darwazeh, 1995)

The most interesting finding of this study was prior to training there was a zero correlation between teachers who received training on IDC and their students’ academic achievements. After the training the correlation increased anywhere from moderately to significantly. “This finding showed the importance and effectiveness of acquiring IDC skills not just for enhancing teachers’ planning routine, but also to improve their students’ academic achievement.” (Darwazeh, 1995)

### *Information Literacy*

“Information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” (Unknown, 2000)

Information literacy forms the basis for lifelong learning which is common to all disciplines, to all learning environments, and to all levels of education. It allows learners to become more self-directed and assume greater control over their own learning.

“An information literate individual is able to:

- Determine the extend of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one’s knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally” (Unknown, 2000)

Colleges and Universities provide the foundation for continued growth throughout one’s careers by ensuring the individual has the ability to reason and critical think. “Because information literacy augments students’ competency with evaluating, managing and using information, it is now considered by several regional and discipline-based accreditation associations as a key outcome for college students.” (Unknown, 2000)

Students find competencies useful, because they provide students with a framework for their own learning environment. To implement the standards, institutions should review its mission and educational goals to determine how information literacy would improve learning. “In implementing these standards, institutions need to recognize that different levels of thinking skills are associated with various learning outcomes – and therefore different instruments or methods are essential to assess those outcomes.” (Unknown, 2000)

### Method

#### *Population*

The intended population is the part-time Masters students in the Instructional Design and Development program at George Mason University.

#### *Sample*

The sample is the students in EDIT 601 Portfolio I, from the Spring semester 2006 and the Fall semester 2006. These students will be tracked throughout their Masters program until they take EDIT 701 Portfolio II in their final semester of the degree.

#### *Description of Instruments*

The instruments are two Instructional Design Charts. One is the Standards for the Accreditation of Programs in Educational Communications and Instructional Technology Chart from the International Board of Standards for Training, Performance and Instruction. The other instrument is the Student Instructional Design Competencies Chart from Association for Educational Communications and Technology (AECT). See attached. Students will be asked to fill in one of the charts based on their experience in the program. The charts contain the same information but are organized differently. The students are to list what courses are relevant to

each competency and then list if they are proficient, somewhat proficient, not proficient and not addressed.

### *Design Procedure*

The research design will be Quasi-Experimental.

Group 1:  $O_1 \rightarrow X \rightarrow O_2$

Group 2:  $O_3 \rightarrow O_4$

Group 1 is the Fall 2006 EDIT 601 class and will receive the Instructional Design Competencies checklist mid-way through their Masters program. They will then be guided by their advisors as to which classes to take to meet the competencies as well as each class will be geared towards specific competencies. Then they will receive the competency checklist at the end of their program in EDIT 701 in their final semester. This will allow them to fill out the checklist again and they may change their answers based on what they have learned from the additional coursework and mentoring from their advisor.

Group 2 is the Spring 2006 EDIT 601 class. They received the Instructional Design Competencies checklist in the beginning of their final semester of the Masters program. Immediately following this course they will take EDIT 701 in the second half of their final semester where they will fill out the competency checklist again.

The independent variable is the timing of when students receive the checklist of Instructional Design Competencies. The dependent variable is the proficiency of skills the students will learn through out their Masters program. In order to receive this information the students will fill out the competency checklist and rate themselves as to whether they think they are proficient, somewhat proficient, not proficient or not addressed. This data will be compiled

per competency and can be compared between the two groups of students to see if the proficiency is better in one group or the other. Both groups then complete the competency checklist at the end of the masters program in course EDIT 701 Portfolio II.

There are several potential problems that may appear during this study. History, if a teacher alters their lesson plan to follow the competencies this could impact the study. To prevent this, a letter to the teachers will be sent asking the teachers to continue teaching the way they previously have been so that it will not impact the study. Maturation, Students gain on the job experience or attend conferences that teach them the same competencies outside the classroom. To plan for this, it would be taken into consideration that most graduate students will bring some level of expertise into the classroom. The goal is to find out if classes are enhancing this knowledge and teaching these competencies to a level that they will be proficient. Mortality, some students will take a semester off or drop out of the program and will not continue from EDIT 601 to EDIT 701 with their peers. To avoid this, the entire class will be used and only a sample of the results will be used for the final data that exclude the students who did not continue through the program. Instrumentation, the competencies checklists are professional lists that has been created by the IBSTPI and AECT. They are long but because this is a requirement within a class for a grade each student will have to fill it out. Testing, the students are given a “pretest” or fill out the competency checklist once and then have the opportunity to fill it out again and change answers based on what has been taught through the remainder of the program.

#### *Data Analysis*

Two different competencies lists are provided for the portfolio students to fill out. One is from IBSTPI and the other is from AECT. Each checklist will be compiled with its own

results. The courses they felt are relevant to each standard are compiled into a list. Then the number of students who felt they are proficient, somewhat proficient, not proficient or not addressed for each competency will be added up.

All students in the mid-program portfolio class will be compiled together. The students who enroll in the end of the program portfolio class will be compiled together to be able to track the students progress. This will be done for each experimental group. In the end this data should provide the answer as to whether the timing of when the competency list is provided will affect the proficiency of skills for each competency.

#### Recommendations

To continue this research I would recommend as a new group of students join the Masters of Instructional Design and Development program they should be given the Instructional Design Competencies checklist at the entrance of the program. By doing this the students can then be tracked to see if the knowledge of what should be gained will influence their decisions to choose courses throughout the program and if their proficiency of skills is higher than those who received the competency list at the middle or end of the program. Each student will be tracked filling out the instrument surveys in the middle of the program EDIT 601 Portfolio I course as well as the end of the program EDIT 701 Portfolio II course.

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Appendix 1

Student Instructional Design Competencies Chart

Appendix 2

Standards for the Accreditation of Programs in Educational Communications and Instructional  
Technology Chart