Master of Science in Education in Educational Technology

Self Study Document in advance of
Program Review

College of Education
Dakota State University
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PART 1: INSTITUTIONAL HISTORY

Heritage: 1881-1982

Dakota State University was established in 1881 as the first teacher education institution in the Dakota Territory. Teacher education remained the primary mission of the institution through the 1950s. However, in response to the changing needs of South Dakota in the 1960s, the university began to expand its role to include degree programs in the liberal arts and business.

In 1980, South Dakota welcomed a major new industry into the state: the banking and credit card industry. The success and growth of this new industry, as well as the success of other information-oriented, computer-based industries in the state, prompted the state's leadership to carefully examine the degree programs being offered at the public institutions of higher education within the state. After lengthy discussions, leaders in state government, the banking and information services industries, and the Board of Regents agreed to develop new degree programs at one institution and then to use the experience and knowledge from this development to expand programs throughout the state's public higher education system.

Mission change: 1983-84

In 1984, the Legislature of the State of South Dakota (South Dakota Codified Law 13-59-2.2) turned to Dakota State University to address the challenges of transitioning to the information age. DSU responded by developing technology-based degree programs in information systems, business, teacher education, and allied health care services at both the undergraduate and graduate levels. The transformation was comprehensive as traditional academic areas added coursework specific to the computer and information systems areas. Existing faculty were retrained, and new faculty were hired.

Realizing that the innovative programs being developed at DSU were expensive, private industry and state government provided the university with additional financial resources. Consultants from state agencies and from national corporations also provided assistance and guidance that contributed greatly to the success of the mission change.

This thrust has led to the development of unique degree programs in biology, education, English, mathematics, and physical science. In recognition of its pioneering academic programs and outreach efforts, DSU was selected as one of the ten finalists for the 1987 G. Theodore Mitau Award. The Mitau Award is peer recognition by the nation's largest association of higher education institutions, the American Association of State Colleges and Universities, of the nation's top state colleges and universities for innovation and change. Also, for two consecutive years, 2007 and again in 2008, Dakota State University in Madison is the best public baccalaureate college in the Midwest according to U.S. News & World Report magazine's annual analysis of "America's Best Colleges 2008." Dakota State is ranked first in the category of Top Public Baccalaureate Colleges in the Midwest region.

Since the mission change: 1984-present

Today, the institution remains focused on the mission adopted in 1984. The curriculum in established degree programs is carefully scrutinized each year to ensure that it remains on the cutting edge relative to technology to enhance and support instruction and learner/teacher productivity. When new degree programs are proposed by the colleges, they must clearly satisfy the "Is it compatible with our mission?" question before any additional planning is done.

Technologically, Dakota State University initially provided both mainframe and desktop computing opportunities for faculty and students. Since its mission change, the institution maintained computer labs in virtually every campus building, including the student union and library. In recent years, the emphasis switched to desktop computing and personal computing.

Students at DSU now enjoy unique access to technology. Students, faculty and many support staff are enabled with computer "Tablets" that have all the portable computing features of conventional laptops in addition to digital inking capabilities and voice to text translation all on a campus wide wireless network overlay. Dakota State University is in its 4th year of wireless, mobile computing, which builds on a long tradition of supporting data communication and networking innovations. For degree programs emphasizing information assurance and security issues as well as digital design, additional lab facilities featuring computers with high-end functions have been added to the campus technology infrastructure.

Prior to the mission change, most DSU students lived within a 50-mile radius of the campus. Most were traditional students coming to the institution directly from high school. Since the mission change, the DSU audience and student population has changed markedly. Immediately after the mission change, enrollments plunged from 1,246 to 867 in two years – a frightening 27.6 percent decline the first year, followed by another 12.6 percent decline the second year. But the new curriculum changes, combined with new institutional vigor, provided the institution with unprecedented enrollment growth and stability. Since that rather rocky start, the institution's enrollments have climbed, reaching 2,780 in Fall 2008.

In 1999, the Higher Learning Commission of the North Central Association of Colleges and Schools (NCA) approved DSU's request to add its first graduate program, a Master of Science degree program in Information Systems, to the curriculum. In 2000, a Master of Science in Education degree program in Computer Education and Technology was also approved by the Higher Learning Commission. (The program name for the Master of Science in Education degree program has since been changed to Educational Technology.) Of the 2,780 students enrolled at DSU in Fall 2008, some 2,371 students were enrolled at the undergraduate level; another 409 students were enrolled at the graduate level. This number reflects both degree-seeking students and special (non-degree seeking) students.

Throughout its 120 years, Dakota State University has had a proud heritage of preparing graduates to meet the needs of a changing society. Since 1881, the university has provided challenging academic programs in one of the best educational environments in

the state. The continuation of this tradition of service is of prime importance to the faculty, students, staff, and administration of Dakota State University.

Accreditation history

Dakota State University was granted accreditation by the Higher Learning Commission for a period of ten years in 1961 and accreditation has been continued after each comprehensive visit. The institution's most recent comprehensive visit, in October 2000, also resulted in accreditation for 10 years with no interim reports or visits required. Currently, DSU is participating in the Higher Learning Commissions' Academic Quality Improvement Program (AQIP). Nine AQIP Categories provide a framework for examination. The nine AQIP Categories are Helping Students Learn, Accomplishing Other Distinctive Objectives, Understanding Students' and Other Stakeholders' Needs, Valuing People, Leading and Communicating, Supporting Institutional Operations, Measuring Effectiveness, Planning Continuous Improvement, and Building Collaborative Relationships. Each AQIP Category deals with a related group of key processes and encourages an organization to analyze, understand, and explore opportunities for improving these processes and the interrelationships among them.

In addition to accreditation by the Higher Learning Commission, the College of Education has been accredited by a number of other specialized accreditation agencies. Teacher education programs are accredited by the National Council for Accreditation of Teacher Education (NCATE). The most recent accreditation visit took place in April, 2009. Concurrent to NCATE review, all teacher education programs certified by the South Dakota Department of Education (SDDOE) were also reviewed.

The Master of Science in Education in Educational Technology degree Initial Programmatic Review

Dakota State University received South Dakota Board of Regent approval in Sept. 1998, to develop and offer a Master of Science in Educational Technology (MSET). Early in the year of 1999 the South Dakota Board of Regents commissioned special consultant, Dr. David Moursund of the University of Oregon to review the proposal and make recommendations for its delivery.[1]

Dr. Moursund made several significant suggestions that shaped the then infant MSET program. Initially, the program was comprised of 28 required credits and 8 elective credits. The consultant suggested a decrease in the number of specifically required courses and an increase in electives and/or in required choices. The faculty at DSU contemplated the risks that reducing required credits may have. A balance was struck at 25 required credits which improved course selection flexibility for students, but preserved

[1] Moursand, D (1999). *Review and Evaluation of Three Proposed Programs: Dakota State University MSEd. In Computer Education and Technology, University of South Dakota MS in Technology for Education and Training, and University of South Dakota Educational Specialization in Technology for Education and Training,* (p. 18).

the strength of unifying educational technology concepts and avoided the perception that an increase in the number of electives would tend to make the degree a collection of courses rather than a program.

Among those 25 required credits was a high tech oriented leadership course. Initially, "leadership" was a transdisciplinary concept that was intended to be addressed within the context of each course. However, a stand-alone course designed to develop an understanding in students of how to create and support technological change through a systems approach was regarded a wise inclusion. The course CET 765 Leadership in Technological Change (2 credits), was added to the list of required courses.

In reaction to what Dr. Moursund anticipated would be heavy demands on faculty in course development, he recommended lightening the teaching load and/or providing summer support to aid the faculty members developing and teaching new courses. Dakota State University's response in the first year of program delivery was to provide both faculty release time and summer grants to faculty members to support course development. Faculty course loads are also carefully monitored to meet the DSU and the NCATE guidelines for faculty teaching load.

Finally, though Dakota State had been delivering technology-enabled distance education since the late 1980's, Dr. Moursund recommended that careful attention be paid to the technology support needs of distance learning students. And that additional technology support staff and/or additional training of this staff might be required. At that time, and continuing through the present term, Dakota State University funds on-line student assistants to support faculty and distance education students. The University also provides technology support through the Office of Extended Services where a team consisting of technical and training personnel is available to assist faculty with the design, development, and delivery of distance education courses. The Office of Extended Services also provides regular training sessions on a variety of technical and educational issues for faculty and staff. The University's Computing Services staff provides hardware and network support.

Final approval for the Master of Science in Educational Technology program came from the North Central Accreditation Association (NCA) on April 26, 2000. Beginning in the 2000-2001 school year, students were formally accepted as MSET degree-seeking students.

Regental Collaboration

Contingent to the South Dakota Board of Regents approval for delivery of the DSU program was the stipulation that Dakota State University collaborate with the University of South Dakota Technology for Training and Development (now called Technology for Education and Training, TET) program. DSU's MSET program has as its client focus educators, administrators, instructional support and technology support personnel in the K-12 and Higher Education environments. The University of South Dakota's TET program had as its client focus those with responsibilities for employee training in business and industry. In recent years, USD's TET focus has shifted to supported professionals in education. To satisfy the Regents call for collaboration, a plan was devised to share in the delivery of core courses. That delivery plan is illustrated in Table 1.

Table 1. DSU/USD Shared Core Course Schedule

Course	Cr.	Title	Delivery
LT 712	3	Principles of Learning for Instructional Technology	USD
LT 716	3	Systematic Design of Instruction	USD
LT 731	3	Multimedia Production	DSU/USD
LT 741	3	Introduction to Distance Learning	DSU
LT 785	3	Research Methods in Educational Technology	DSU

All graduate students in either program will take at least two courses from USD (LT 712 and LT 716) and at least two courses (LT 741 and LT 785) from DSU. The DSU Office of Graduate Studies and Research has also developed credit transfer policies to accommodate the transfer of USD courses, and the enrollment of students in the USD courses. A joint DSU/USD master's program collaboration council was organized to include program faculty, external partners and students.

PART 2: TRENDS IN THE DISCIPLINE

Technology for Improved Learning

The increase of information and communication technologies, including desktop and laptop computers, handheld devices, cell phones, portable video players, and the Internet, have created inestimable opportunities for interaction and communication in our world. In just a decade or two, the ways in which people shop, bank, work, and communicate has changed sufficiently to suggest that children growing up today will require new and more demanding skills to manage adulthood than their parents had. As a result, many experts recommend that students' educational experiences be reformed to better prepare students for their future. This means educators must be prepared to engage learners at a level that entails a complex kind of mindfulness, intrinsic motivation, cognitive effort, and attention.[2] A key to obtaining these outcomes is the ability of teachers to use technology.

After nearly two decades worth of serious investments by federal, state, and local in information technology, a majority of teachers in public schools consider particular technologies essential to their teaching. But the research continues to indicate that the investments in professional development have not been commensurate with investments

[2] Lim, P. Nonis, D., and Hedberg, J. (2006). Gaming in a 3D multiuser virtual environment: engaging students in Science lessons. British Journal of Educational *Technology*.

in technology.[3] Formal experiences for the technology teacher and/or facilitator are needed that are accessible and have a proven track record of demonstrating how technology can be deployed to enrich learning environments and enhance students' conceptual understanding of their world.

There is an increasing trend toward state technology standards. Currently, 42 states have technology standards, many of which are embedded in disciplinary content standards. Five states have reported that they use statewide assessments of students' proficiency with technology. Other states are following suit. Where teachers' use of technology is concerned, many states have put in place minimum standards for teachers' and several states report using statewide assessments of teachers' technology proficiency.

In student assessment, the effort to improve on traditional paper and pencil objective assessments has encouraged schools and states to offer Internet or computer-based assessments of student achievement. Efforts are also underway to broaden conceptions of assessment to include more technology enabled performance based and authentic assessment. This includes the use of more formative than summative assessments.

Distance Education

While many universities have offered technology supported distance education for some time, many others are just now beginning to experiment with them in large part to capture part of a growing market for higher education services. Virtual universities use the Internet and satellites to deliver their courses and provide resources, libraries and even laboratories to be shared by students in widely scattered places. Like universities, states are also investing in distance education for technical and high school students to serve a population unable or uninterested in participating in traditional classroom experiences. A growing number of companies are using distance education as a cost-effective way to provide professional training for their employees. Teacher upgrades in content expertise, instructional theory and strategy, and other facets of teaching and learning is also a major application of distance education.

With a broad and still growing demand for distance education, there is an increasing need to create materials that can be easily adapted for audiences at a variety of knowledge and skill levels, and which instructors can adapt to a variety of media and learning environments. One trend is the growing interest in "on-demand" or self-paced learning which combine self-paced elements and synchronous teletraining events. These blended courses allow increased interactions between instructors and students, as well as creating the opportunity for interactions with fellow students. Both of these can enrich learning and help clarify and make relevant what is learned.

The distance learning environment is also realizing a need for non-professional (web development) personnel to publish information and educational material. These

[3] Empowering Teachers: A Professional and Collaborative Approach. A report commissioned by the State Technology Directors Association, November, 2008. Available at: http://www.setda.org/c/document_library/get_file?folderId=270&name=DLFE-265.pdf

additional sources of online information are valuable for increasing knowledge sharing among a community of practitioners. These materials, developed by teachers, instructors and other educators, will ground the web content providing more relevant and contextual content. Creating effective active-learning materials that impact learning requires multiple skill sets beyond just content knowledge.

One of the more talked about innovations in instructional technology is the application of object-oriented design strategies in creating education content.[4] The concept of "learning objects" describes strategies for designing online learning content and activities as discrete, adaptable units. Object-oriented tactics include dividing instructional content and activities into discrete, coherent units; embedding descriptive information that accurately describes the content for easy retrieval; and using a flexible design so that the content can fit in multiple contexts (visually, conceptually, and functionally).

Communities of practice are groups of professionals who share knowledge and expertise by interacting on an ongoing basis. This highly discussed concept recognizes that expertise grows not only from formal training and education, but also through the informal interactions that take place within a community of professionals.[5] It assumes that knowledge derives from experience, is distributed throughout the community, and can't easily be expressed in concrete terms. The only way to fully develop expertise is through the shared stories of practitioners. Web-based communication tools such as community Web sites, threaded discussions, and listservs, and newer innovations like dynamic intranet sites and Weblogs, can help such workforce interactions to take place. Educators can support their own communities of practice by creating opportunities for this informal discussion within virtual forums and by creating and monitoring Web sites for the purpose of information sharing.[6]

Curriculum implications

Continued investments in technology single a need for a teaching workforce that is not only well-prepared to integrate technology into the classroom, but for educators who are agents of that development for their peers. MSET's focus to prepare educators who can create learning environments that integrate computers into the teaching and learning process seems to fill that important need.

The importance of professional learning is often an enterprise where peers rely on the expertise and support of one another to adopt innovative practices. The tools, designs, and expertise required to enable these interactions for various professional groups is a challenge the MSET curriculum attempts to address. Promoting a collaborative

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[4] Weisfield, M. (2008). The object-oriented thought process 2nd ed. Addison Wesley.

[5] Kimble, C. & Hildreth, P. (2008), *Communities of Practice: Creating Learning Environments for Educators*, Information Age Publishing. Available at: http://www.chris-kimble.com/CLEE/ToC.html

[6] Hodgkinson-Williams, D., Slay, H., & Siebörger, T. (2008). Developing communities of practice within and outside higher education institutions. *British Journal of Educational Technology*. *39*(3), 433 – 442.

interaction model encouraging peer-teachers to serve as modelers and coaches of strategies and ideas aimed at improving instruction will require ability both in the face-to-face and distributed learning environments. This is a challenge that educators all over the globe face, and where MSET can focus its programmatic efforts.

PART 3: ACADEMIC PROGRAM AND CURRICULUM

Mission and objectives

The Master of Science in Educational Technology (MSET) is an instructional technology program designed to meet the rapidly increasing demand for educators who are trained to integrate computer technologies into the curriculum and instruction. As computers and technology have become a significant part of the teaching and learning process, addressing the information needs of teachers has become the key to integrating technology into the classroom and increasing student learning. The primary emphasis of the master's program is to prepare educators who can create learning environments that integrate computers into the teaching and learning process.

The table below (Table 2) outlines the goals and objectives of the MSET program along with disciplinary and content standards promoted in the education field.

Table 2. MSET program goals to Standards correlation

Student Goals and Objectives	Dimensions of Professional Competency in Educational Technology Application (Milken)[7]	National Education Technology Standards and Performance Indicators[8]
Goal 1. Students will be leaders in educational technology. • Students will manage instructional, computer technology systems. • Students will be active in professional organizations in the field of computer education and technology and have an impact on the field of education. • Students will demonstrate proficiency in teaching and assessing others in the use of computers and related technologies in a variety of educational settings.	**Core Technology Skill**: The educator is familiar with technologies specific to the discipline she teaches and is able to use these technologies successfully to support student learning. **Curriculum, Learning and Assessment:** The educator is skilled in the design and implementation of a variety of assessment strategies, including performance and product based assessments that are often more relevant the technology rich classroom. **Classroom and Instructional Management:** The educator is skilled in the use of technology to track student progress through the curriculum and manage curricular resources.	**II.D.** Plan for the management of technology resources within the context of learning activities. **II.E.** Plan strategies to manage student learning in a technology-enhanced environment. **IV.A.** Apply technology in assessing student learning of subject matter using a variety of assessment techniques. **IV.B.** Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.

[7] Dimensions of Professional Competency in Educational Technology Application (Milken Foundation) located at: http://www.mff.org/pubs/ME159.pdf

[8] International Society for Technology in Education, National Education Technology Standards and Performance Indicators for Teachers and Administrators Located at: http://cnets.iste.org/

	Leadership Competencies: The educator is competent at leading and managing systemic change processes at the classroom, school and/or district levels.	
Goal 2. Students will be current in teaching and learning processes and practices. • Students will be aware of current trends and issues in computer education, distance education, electronic communications, computer hardware and software. • Students will apply learning theory and the principles of instruction design in curricular and instructional decision-making.	**Curriculum, Learning and Assessment:** The educator is skilled at identifying opportunities within the curriculum for improved student learning through technology and is capable of designing technology enriched learning activities that support the curriculum. **Curriculum, Learning and Assessment:** The educator has a variety of instructional strategies for teaching and learning with technology and is able to match specific strategies with the learning needs of individual students.	**II.A.** Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners. **III.A.** Facilitate technology-enhanced experiences that address content standards and student technology standards.
Goal 3. Students will be current in research technologies and designs. • Students will be proficient in finding, evaluating, and using current educational research to support continuous improvement in their profession. • Students will understand the capabilities of the computer, its impact on education, business, industry and government and will be able to adapt to, understand, and evaluate and make use of new and emerging innovations in computer and information technology.	**Core Technology Skill**: The educator has a firm understanding of the principals of operation of the computer system and peripherals. This understanding has translated into the ability to adapt quickly to new technologies as they become available. **Professional Practice:** The educator is skilled in the use of technology to access a wide variety of professional resources. **Professional Practice:** The educator is sufficiently knowledgeable to play a significant role in the identification and acquisition of technology resources in support of learning. **Leadership Competencies:** The educator is able to initiate and support professional development processes that reflect attention to principals of adult learning.	**I.A.** Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies. **I.B.** Apply current research on teaching and learning with technology when planning learning environments and experiences. **II.C.** Identify and locate technology resources and evaluate them for accuracy and suitability. **V.A.** Use technology resources to engage in ongoing professional development and lifelong learning. **V.B.** Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning. **V.C.** Apply technology to increase productivity. **V.D.** Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

Goal 4. Students will be knowledgeable of technologies and programming skills. • Students will be proficient in the use and application of computer software. • Students will be proficient with a programming language. • Students will develop the skills needed to maintain computer programs, computer systems and networks.	**Core Technology Skill**: The educator has mastered the use of basic software applications and is able to generalize these skills quickly to learn new applications.	**I. A.** Demonstrate introductory knowledge, skills, and understanding of concepts related to technology
Goal 5. Students will be knowledgeable of current, technology-based educational tools and products. • Students will use telecommunications-based tools to integrate information into the classroom and the curriculum. • Students will integrate computer software, authoring tools, programming languages, the Internet, and multimedia into curriculum design and instruction. • Students will demonstrate proficiency using computers and related technologies in instruction. • Students will use systematic problem solving and research-based human/computer interaction practices in the development of computer-assisted instructional programs.	**Core Technology Skill**: The educator has sufficient skill and experience to make efficient and effective use of complex electronic information systems. **Core Technology Skill**: The educator is familiar with multimedia and presentation technologies and is able to guide students in the application of these technologies. **Professional Practice:** The educator is able to use technology to participate in increased levels of professional collaboration. **Professional Practice:** The educator is able to use technology to communicate with students, parents and educators and the wider community more effectively. **Classroom and Instructional Management:** The educator is skilled in the organization of classroom technology resources and orchestration of activity within that environment. **Classroom and Instructional Management:** The educator is aware of how to locate and access technology resources that will support instructional strategies.	**III.B.** Use technology to support learner-centered strategies that address the diverse needs of students. **III.C.** Apply technology to develop students' higher order skills and creativity. **IV.C.** Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

Program description and requirements

The program requires a total of 36 credit hours beyond the baccalaureate degree. All students must take the following:

1. 15 hours of required common course (shared between DSU and USD);
2. 10 hours of required DSU courses, and
3. 11 hours of elective courses. It is possible to specialize in either Distance Education or Technology Systems by selecting the designated electives for that

specialization. Students can also get a K12 Technology Endorsement. It is also possible to select the thesis option from among these electives.

Table 3. A list of courses in the MSET program

Course Prefix	Course #	Course Title	Cr. Hrs
Common Core Courses (15)			
LT	712	Principles of Learning for Instructional Tech	3
LT	716	Systematic Design of Instruction	3
LT	731	Multimedia Production	3
LT	741	Introduction to Distance Learning	3
LT	785	Research Methods in Educational Technology	3
Required Courses (10)			
CET	720	Evaluating Technology Outcomes	3
CET	751	Computer Hardware and Networking Essentials	3
CET	756	Intro to Instructional Programming	2
CET	765	Leadership in Technological Change	2
Electives: General			
CET	657	Network & Operating Systems	2
CET	659	Teaching in the 1 to 1 Computing Environment	2
CET	721	Web Authoring	1
CET	726	Technology in the Curriculum	3
CET	727	Social Studies in the Mobile Comp. Environ.	3
CET	747	Web & ITV Based Applications of Dist Ed	3
CET	749	Policy and Management of Distance Education	3
CET	750	Multimedia II	2
CET	753	Network Management in Educational Institutions	3
CET	758	Advanced Instructional Programming	2
CET	759	1 to 1 Computing Implementation	4
CET	769	Adult Learning for Distance Education	3
CET	788	Educational Computing Research Project	2
CET	792	Topics (to be determined by request)	1-3
CET	795	Practicum	3
CET	798	Thesis	4
MSET Elective Specializations			
Distance Education (9)			
CET	747	Web and ITV Based Applications of Dist Ed	3
CET	749	Policy and Management for Distance Education	3
CET	769	Adult Learning for Distance Education	3
Technical Systems (10)			
CET	747	Web and ITV Based Applications of Dist Ed	3
CET	750	Multimedia II	2

CET	753	Network Management in Educational Institutions	3
CET	758	Advanced Instructional Programming	2

To ensure students complete their program in a timely manner, and to provide as much flexibility as possible, all core courses are offered twice a year while specialization and other elective courses are offered once a year. Individual/faculty directed courses (CET 792, 795, 798) are offered all terms including summer. Full time students can complete the program in one year. Most students who are also working full or part-time take between 2 to 2.5 years to complete the program. The self-study web site includes links to course rotation and a plan of study form.

Program delivery

Courses in the MSET program are offered using a variety of instructional delivery methods:

- Face-to-face on site in Madison, SD in a traditional classroom setting;
- Using interactive video-conferencing via the Dakota Digital Network offered at multiple sites in South Dakota (sites arranged to meet student need);
- At a distance via Internet, using a combination of both live and/or encoded streaming videos of classes, interactive course web boards, course web sites, and e-mail.

All courses are web-enhanced. Certain courses require a lab-intensive concentrated time on campus of usually one-week (CET 657, 659, 751, 753). Students can petition to take these courses via distance if appropriate technology is available. Two other courses have elective lab options available (LT 731, CET 750).

Curriculum management

Since its inception, the MSET program has experienced several changes to its curriculum. The changes are primarily driven by the desire to remain current in the educational technology field in a way that best prepares students to meet program goals and objectives. Table 4 summarizes the significant changes to the curriculum and the justifications for these changes.

Table 4. Summary of significant changes to the MSET curriculum

Date	Curriculum change	Justification

November 2001	Distance Education and Technology Systems specializations designated. The following courses were moved to inactive status: 1. CET 755 *Management of Technology* 2. CET 775 *Trends in Computers & Technology* The following course was moved to inactive status, CET 745 *Analysis of Educational Computers & Software*	Specializations help students plan their course work to build competencies in professional areas. Also anticipated that non-degree seeking students will be interested in specializations. Trends and management concepts to be addressed in each class as relevant to the content. The revision of CET 751 to include hardware maintenance and upgrade, and the revision of CET 720 to include systems evaluation renders this class disposable.
December 2001	LT 726 *Technology in the Curriculum* is moved from common core to DSU elective group, CET 785 is changed to LT 785 *Research Methods in Educational Technology*	The change enables DSU to offer LT 731 *Multimedia Production* to its own students while keeping five core courses two of which USD indicated ability to teach.
October 2002	Program name change from Masters of Science of Education in Computing and Education Technology to Master of Science in Education in Educational Technology	Change helps program to avoid association as a degree for computer educators only, and it's easier to say.
August 2005	Added CET 721 *Web Authoring* (1) to program electives	Objective is to use this as an elective to assist students in gaining the skills necessary for web development, as some have struggles in portfolio development and use of web design tools.
February 2006	Added CET 659 *Teaching in the 1 to 1 Computing Environment* and CET 759 *1 to 1 Computing Implementation* to program electives.	Growing state and national interest in ubiquitous computing, and response to state Department of Education to provide direct access to training in the area.
August 2004	The following courses were approved as special topics courses: 1. CET 792: Active Directory 2. CET 792: Server 2003	Courses offered as part of the Digital Dakota Network Information Technology (DDN-IT) state supported development for technology coordinators. Courses Modified in April 2005 and made a regular part of the course rotation as CET 657 *Network & Operating Systems.*

PART 4: PROGRAM ENROLLMENTS AND STUDENT PLACEMENT

Program enrollments

Table 5 summarizes the admission standards for the MSET program relative to the other Master of Science programs at DSU. Overall, while MSIA focuses on students with computer science and IT related background, the MSIS and MSET tend to attract students with diverse backgrounds. In particular, the MSET program at DSU attracted students from K-12 and post-secondary education. Since its inception in 2000, the MSET program experienced initial growth followed recently by fluctuations in enrollment while still able to maintain a steady corps of students (Figure 1).

Figure 1. Year to year MSET program enrollment.

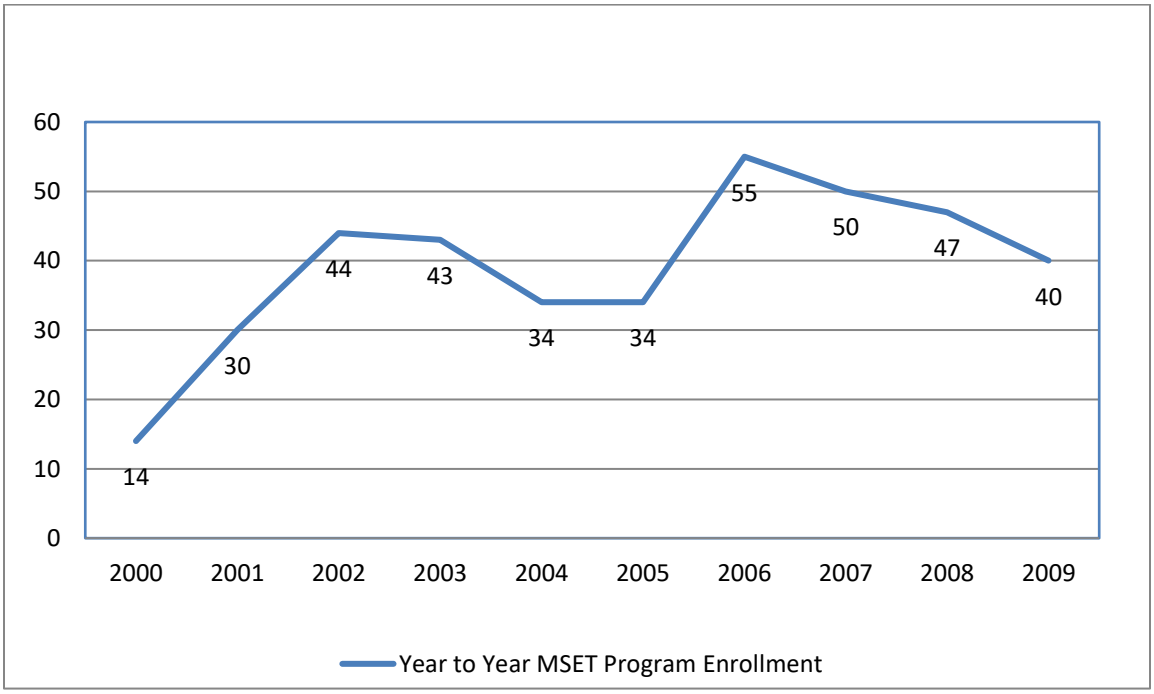

Figure 1: Year to Year MSET Program Enrollment

As of May, 2009, there are 172 students admitted in the program, from which, 40 (23.3%) are still enrolled in the program, 127 (73.8%) graduated, 4 (2.3%) withdrew, and 1 (.05%) is currently on academic suspension.

Table 5. MSET admission standards relative to other programs at DSU

Master of Science in Information Systems (MSIS)	Master of Science in Information Assurance (MSIA)	Master of Science in Educational Technology (MSET)

Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.	Baccalaureate degree in computer science, computer engineering or software engineering from an institution of higher education with full regional accreditation for that degree.	Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.
Minimum undergraduate grade point average of 2.75 on a 4.0 scale.	Minimum undergraduate grade point average of 3.25 on a 4.0 scale.	Minimum undergraduate grade point average of 2.7 on a 4.0 scale.
Satisfactory verbal and quantitative scores on the Graduate Record Examination.	Satisfactory verbal and quantitative scores on the Graduate Record Examination.	Satisfactory verbal and quantitative scores on the Graduate Record Examination.
GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 12 credits successfully earned in another graduate program.	GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 12 credits successfully earned in another graduate program.	GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 12 credits successfully earned in another graduate program.
Essential knowledge in both business fundamentals and information systems. Demonstrated by: BS in Information Systems; BS in Business Administration with information systems work experience; combination of degree and work experience.	Essay on security problem scenario. Students who do not have an undergraduate degree in computer science, computer engineering or software engineering will be required to take specified computer science courses as a condition of admission	Demonstrated basic knowledge of computers and their application for educational purposes. Demonstrated by: Technology endorsement from an accredited university; in-service position as technology coordinator in school; personal statement of technological competency.

The MSET program generally serves educators, technology coordinators, technology facilitators and instructional trainers in South Dakota, western Minnesota, and northwestern Iowa. A number of other students have come from other states including but not limited to California, Colorado, Washington, Pennsylvania and Vermont. A very small number are international students and have generally come to campus to study. These students come from China (3.5%) and Japan (1.2%).

With respect to diversity by ethnic composition, 90.8% of current students are white, 5.7% are Asian, 1.2% are African, 2.3% American Indian. By gender, 62% of the current students are female. While computing fields have traditionally attracted more males than females, the opposite is true in the MSET program.

Actions taken to grow enrollments

Very modest and local efforts have been made to promote the program. Efforts to market the program are generally isolated and not part of an overall plan. At the present time, we are involved in the following recruitment activities:

- State Technology conference—perhaps our most intensive effort, recruitment at the Technology Innovations in Education (TIE) conference in April of each year include discussion with potential students and the distribution of a number of program promotional and informational materials. This conference alternates locations from Sioux Falls, SD to Rapid City, SD every other year.
- Contacts with inquiries—The Office of Graduate Studies and Research creates a database of all inquiries made by internet, phone, or mail. These contacts are periodically contacted to assess their interest, to answer questions, to encourage enrollment.
- DSU undergraduates in the college of education—Every semester a presentation about the MSET program is made by the program coordinator to graduating student teachers.
- Special Student Recruitment—Contact is made of all students who are enrolled in graduate courses but are not admitted into a graduate program. This contact explains to them how they can transform from a non-degree seeking student into a graduate student.
- On campus seminars and workshops-During this academic year, DSU has hosted two activities, the SDSTE conference in October and the Information Assurance Symposium in January. Active recruiting was done at these meetings by members of the department and the Office of Graduate Studies and Research. A booth was on display with materials and we were available to talk and answer questions.
- Up until 2006, approximately 300 to 400 direct mailings were made a year to personnel working in K12 or higher education institution responsible for educational technology instruction, support and development. Names and addresses were culled from the web by a graduate assistant.

Student placement

The MSET students and graduates work in a variety of sectors. Examples from the government include EROS Data Center and the SD State Department of Education. Examples from higher education include: University of Indiana, Oregon State University Extension, Dakota State University, Northern (SD) State University, Ogalala Lakota College, Lake Area Technical School, Mitchell Technical School, Southeast Technical school. Examples from financial services include: Wells Fargo Services Company,

Premier Bank Services and Citibank. In the healthcare industry examples include: Sanford System Hospitals and Avera Health Systems. Other employers include: Daktronics and Gateway computers. The majority of our students work in the K-12 environment as teachers, technology directors or coordinators, or technology integrationists/facilitators.

PART 5: FACULTY CREDENTIALS

A list of the faculty who teach in the MSET program at DSU and their academic credentials is included in Table 6. All but one of the faculty members listed have terminal degrees in a related field. The program values the disciplinary diversity and affiliations of its faculty, as the nature of educational technology is itself, inter-disciplinary. Links to current vitae for the faculty listed in Table 6 are included in the self-study web site.

Table 6: DSU Faculty teaching in the MSET Program

Faculty Member	Discipline	Academic Credentials
Tom Farrell	Information Systems	M.S.
Mark Geary	Instructional Technology	Ed.D
Mark Hawkes	Instructional Technology	Ph.D.
Lynette Molstad-Gorder	Educational Administration	Ed.D.
Vicki Sterling	Curriculum and Instruction	Ed.D.
Haomin Wang	Instructional Technology	Ed.D.
Bob Warren	Science Education	Ph.D.
Don Wiken	Math Education	Ed.D.

Faculty-student research

Faculty also engage students in research, either through their work as graduate assistants or as part of their coursework. The following is a list of faculty-student research:

Book chapters

Articles on peer reviewed periodicals or conference proceedings

Hawkes, M. & Terveen, J. (2004). A Tale of Two States: Models of High School Course Delivery. *Distance Learning 1*(3), 1-6.

Hawkes, M. & Brockmueller, B. (2004). Gender differentials in school technology support roles: An analysis. *Journal of Educational Technology Systems, 32*(1), 31-45.

Hawkes, M., Halverson, P. & Brockmueller, B. (2002). Technology facilitation in the rural school: An analysis of options. *Journal of Research in Rural Education 17*(3), 162-170.

Conference proceedings and presentations

Hawkes, M. & Hategekimana, C. (2006). *Evaluating Ubiquitous Computing Initiatives in Education: Process, Challenges and Impacts.* Paper presented at the American Evaluation Association Annual Conference, Portland, OR. November 3.

Hawkes, M., and Honomichl, R. (2002). *Development and Support of Technology Facilitation Personnel in Rural Schools*. Paper presented at the Twenty-fourth Annual Rural and Small School Conference. Manhattan. KS. November 11.

Hawkes, M., Halverson, P. & Brockmuller, B. (2002). *Rural Schools and the Technology Coordinator: Profile, Preparation and Issues*. Paper presentation at the Technology and Innovations in Education Conference. Sioux Falls, SD. April 15.

Faculty are also involved in the community through volunteering in the public school system and other educational outreach programs. Faculty are also involved in leadership positions in disciplinary affiliations and organizations.

Faculty Workload

The institution's faculty workload policy establishes the equated workload credit earned by faculty who teach graduate-level courses and who supervise graduate research assistants and graduate teaching assistants. That policy is included in the self-study web site. The differential for graduate-level courses is intended to provide the additional time graduate faculty need to effectively develop and offer courses, advise students on their curriculum, projects or theses at the master's degree level.

Faculty Development

During the program development phase, graduate faculty were given an additional course reduction or a summer course development grant to help with course preparation. This is especially important for courses in the specializations, where faculty expertise needs to be more fully developed. MSET program faculty have benefited from such programs and a number of MSET courses have been developed using funds from this development program. The institution also routinely sets aside approximately $54,000 for instructional and professional travel and for faculty training. The institution's current guidelines for distribution of travel and training funds are included in the self-study web site.

PART 6: ACADEMIC AND FINANCIAL SUPPORT

Office of Graduate Studies and Research

The Office of Graduate Studies and Research was established to promote and support graduate education at DSU. The Dean of Graduate Studies and Research collaborates

with and supports the functions and responsibilities of the Graduate Council and the graduate program committees within each college and serves as the advocate for graduate education and graduate student support at DSU.

The day-to-day operations and services provided by the Office of Graduate Studies and Research are client-centered. The Office of Graduate Studies and Research offers guidance and help to students from the first inquiry to graduation. This includes providing accurate and timely program information and maintaining the graduate programs website with current information for degree-seeking students (URL: http://www.dsu.edu/gradoffice/index.aspx). The Office of Graduate Studies and Research also facilitates the application process, provides new student orientation -- on campus for resident students, interactive audio-video for remote sites in South Dakota, and online for distance students. Other services provided by the Office of Graduate Studies and Research include assisting with course scheduling and course rotations; making students aware of changes in schedules, rotations, and graduate policies; assisting with registration; supporting the assistantship committees; monitoring student progress toward graduation; and serving as a liaison among other support staff, faculty, and administrators. Table 7 lists the Office of Graduate Studies and Research staff.

Table 7: Office of Graduate Studies and Research Staff

Name	**Title**
Omar El-Gayar	Dean of Graduate Studies and Research
Jennifer Mees	Program Assistant II
Annette Miller	1/3 time Secretary

Library Resources and Services

The mission of the Karl E. Mundt (KEM) Library is to support the curriculum of Dakota State University. As with any academic library, the first priority of the KEM library staff is to select appropriate materials to support the educational mission of the university and make them available to the campus community. This role is particularly vital as information is digitized and increasingly expensive. Libraries subscribe to electronic resources and then, through their homepages, provide a single port of entry for the campus into the licensed and expensive world of scholarly electronic publishing.

Since Dakota State University received its current focused mission two decades ago, the KEM Library's mission has been to expand its collection of materials on computers, technology, and information systems. To that end, the KEM Library has developed database access and basic collections in information systems. The material collections will continue to be built through faculty recommendations and requests, as well as from

librarian selection based upon their knowledge of the curriculum and its needs. The journal collection is also based on faculty requests and is fine-tuned by means of an annual analysis of journal use. This analysis helps the Library focus its expenditures (and finite budget) on those journals that are regularly needed and used by the institution's students. The collections have been enriched with digital information. The Library has acquired or subscribed to numerous online databases including the Association for Computing Machinery (ACM) Digital Library, ProQuest Computing, ABI-Inform, Infotrac, Lexis-Nexis and others. Much of the material indexed in these aggregated databases includes direct access to the full text of the articles indexed.

The Library holds an extensive collection of electronic books on computer security and information assurance, made available through NetLibrary. The collections also contain laser disks and videos purchased to support the classroom needs of the faculty. All of the Library's materials are cataloged, regardless of format, for ease of access and retrieval by students and faculty alike. The Mundt Online (http://www.departments.dsu.edu/library/) serves as our portal to faculty and staff on campus or off.

The Karl E. Mundt Library provides direct access to an even more extensive collection of materials through its online library catalog that includes over 5 million holdings of more than 70 libraries in the South Dakota Library Network (SDLN). In addition to being an online catalog, the SDLN has been enriched by the addition of a number of external databases, most notably, Academic Index, Business Index. The SDLN has added full text to the IAC databases. Through access to the Internet and to the information services of the South Dakota Library FirstSearch and DIALOG, the Library provides students with access to databases critical to their discipline. Materials held by other libraries are readily available to the DSU community through electronic interlibrary loan systems or full text, so rarely is the Library unable to quickly meet student or faculty information needs. Statewide and regional resource sharing is supported by a courier service so hard-copy document delivery frequently occurs within 24 hours of request. Article delivery is further facilitated by optical scanning and email delivery.

In addition to the collections, systems and services offered, Library staff also provide assistance and instruction to faculty and students through workshops, classroom instruction, and one-to-one. Library faculty collaborates with course faculty to ensure students have the research background necessary to complete course assignments. Library faculty develops tutorials, subject guides, and other instructional materials to support classroom learning on campus and at a distance.

It is also the Library's goal to graduate students who are able to find, evaluate, and use information to solve problems and to make decisions effectively. Graduates should have the knowledge and skills to function successfully as continuous learners in a continuously changing information world. To successfully meet its goals, the Library provides excellent collections, information systems, services, instruction, and staff. The professional library staff is included in Table 8.

Table 8: Professional Library Staff

Name	**Title**

Ethelle Bean	Associate Professor / Library Director
Risë Smith	Professor / Public Services Librarian
Mary Francis	Instructor / Reference Librarian

Technology infrastructure

DSU has an excellent technology infrastructure supporting wired and wireless access to computing resources. A complete description of the institution's current network capabilities and its current computer lab facilities and equipment is included in the self-study web site. Part 7 includes a detailed discussion of facilities and equipment. Computing Services staff provides technology support to faculty, staff, and students (Table 9).

Table 9: Lead Computing Services Support Staff

Name	**Title**
Josh Boldt	Computer Support Specialist
Craig Miller	Communication Network Administrator
David Vickmark	Technology Integration Specialist
David Zolnowsky	Chief Information Officer

Extended Programs

Extended Programs is responsible for program planning, marketing, program implementation and overall management of courses and programs offered by alternative delivery at Dakota State University. Working in partnership with the colleges and the institution's academic support areas, Extended Programs works to design and develop active and collaborative degree programs at a distance.

Extended Programs is staffed with the Director of Extended Programs, the DSU Webmaster, Instructional Technologist, Web Support Technologist, and a senior secretary (Table 10). This team serves the needs of students who are enrolled in the online and videoconferencing courses at DSU. The office is the mainstay of distance services to students, working with the administrative offices of DSU to provide these services. The staff also serves the Web needs of faculty, staff and students at DSU and the needs related to educational technology. The office staff assists faculty in the design and implementation of courses delivered by various forms of technology.

Table 10: Extended Services Support Staff

Name	**Title**
Brent Van Aartsen	Audio/Video, Office of Extended Programs
Susan Eykamp	Secretary, Office of Extended Programs

Peg O'Brien	Director, Office of Extended Programs
MingMing Shao	Web Support Technologist, Extended Programs
Haomin Wang	Web Master, Office of Extended Programs

Administrative Support Staff

Current administrative staff will provide the academic support services to deliver undergraduate and graduate programs at DSU. The administrative support personnel who are particularly critical to the delivery of the graduate programs are included in Table 11.

Table 11: Administrative Support Staff

Name	**Title**
Sandy Anderson	Registrar, Enrollment Services
Carrie Ahern	Director of Assessment and Institutional Effectiveness, , Office of Institutional Effectiveness and Assessment
Steve Bartel	Director Residence Life and Student Union Manager
Keith Bundy	Director, Student Development and ADA Academic Coordinator
Billie Hoekman	Secretary, College of Education
Denise Grayson	Director, Financial Aid
Mickie Kreidler	Director, Office of Sponsored Programs
Marie Lohsandt	Director, Career and Placement Services
Dale Davis	Manager, DSU Bookstore

Academic Advising

Students are required to work with the graduate programs coordinator to complete a Plan of Study within their first semester in the program. Information regarding the program, rules and requirements, and expected milestones will be provided through the online orientation material posted on the Office of Graduate Studies and Research website and in the Graduate Bulletin, and an on-campus orientation for new students is scheduled at the beginning of each fall semester. As part of initiating their project, students select and work with a faculty supervisor. The faculty acts as a mentor and advisor to the student as well as chairs the project committee.

Financial support to the program

The operating budget (including marketing and recruitment effort) for the Office of Graduate Studies and Research (OGSR) is $19,000. The OGSR supports all graduate programs at DSU. This includes four masters programs in addition to the Doctorate of

Science (D.Sc.) in Information Systems. Personnel support is comprised of the Dean of Graduate Studies and Research, Program Assistant II, and 1/3 time secretary. Given the high cost of producing promotional material, and the high cost of travel associated with student recruitment, and other marketing and recruitment efforts in general, the budget is considered as a limiting factor and is considered for increase in the future.

Moreover, the university funds 13 assistantships for the graduate program. In 2008, 3 assistantships were allocated to the graduate program. However, with the recent addition of the Master of Science in Health Informatics and the Master of Science in Information Assurance program, it is expected that some of these assistantships may be allocated on an as needed basis. However, financial aid opportunities are expected to come from other institutional and private sources. DSU has also certified alternative loan eligibility for enrolled graduate students (based on their educational costs) to regional and national lenders.

PART 7: FACILITIES AND EQUIPMENT

Since the MSET program is a distance program, all classes are conducted synchronously and asynchronously via portable, desktop or handheld computers. A primary course management system is used as an interface with the courses for both students and faculty originating with faculty designed web sites and interaction tools, switching to WebCT via Board of Regents Mandate in Spring 2004, and switching again to Desire to Learn in the Summer 2008, again by BOR mandate. A select few courses are delivered from the video conferencing classrooms on campus which are located in the Technology Classroom Building (TCB). These classrooms are equipped with audio and video equipment that allows for live broadcasting via the Dakota Digital Network (DDN) to remote sites across the state of South Dakota. Courses delivered via DDN also accommodate Internet students as classes are recorded, digitized and video-streamed over the Internet. A dedicated video server handles all Internet video.

PART 8: ASSESSMENT AND STRATEGIC PLANS

Assessment

Assessment of the Master's degree in Educational Technology includes five goals and fourteen objectives that center around the following four assessment measures:

1. Portfolio exhibits: samples of written, oral, and online exams, course projects, and the master's project are included in the portfolio – representing the attainment of the program's five goals and fourteen objectives.
2. Graduate survey, conducted by the DSU Office of Institutional Effectiveness and Assessment.
3. Employer survey, conducted by the DSU Office of Institutional Effectiveness and Assessment.
4. Grades in required courses.

Student assessment in the MSET program takes place at three overlapping phases of program progress. Those stages and the assessment activities characterizing them are detailed in Table 12. The assessment plans, data table, and summary / changes for improvement are also on the Academic Program website http://www.dsu.edu/academics/assessment/academic-assessment/major-field-grad-table.aspx

Table 12. Assessment phases and activities.

Assessment Phase	Purpose	Indicators
Entry Level	To assure that all admission criteria are met	GRE, GPA, three letters of recommendation, and demonstrated basic knowledge of computers and their applications for educational purposes
Mid-Level	To monitor progress on coursework and portfolio requirements	Advisor review of • progress on the plan of study • the matrix of courses and associated objectives • electronic portfolio requirements and guidance toward portfolio development (i.e. artifacts from completed courses).
Major Field Assessment	To ensure that graduates are proficient in areas identified by the program objectives	The portfolio review is a culminating program exit experience and will show a relationship between student products and program goals and objectives.

Major Field Assessment

The Exit Portfolio Process involves a panel of three DSU graduate faculty (two from the program, one representing the DSU Graduate Council) and one external reviewer (selected from potential employers or colleagues of program graduates). This panel assesses the portfolio using the MSET Portfolio Evaluation Rubric. In addition, each student will describe the link between their portfolio exhibits and the MSET program goals and objectives during his/her formal presentation. Each reviewer will rate the candidate on a three point scale (1 = unacceptable, 2 = acceptable , 3 = exceptional) on the criteria below. The average score of the student candidate must meet or exceed the "acceptable" criteria.

- Philosophy of technology integration into instruction built on sound concepts of learner development
- Portfolio organizing structure appropriately guides reader through content

- Guiding instructional themes reflect the philosophy statement
- High quality products/projects are profiled
- The portfolio and presentation communicates mastery of relevant skills
- Products/projects directly relate to program objectives
- Products/projects extend from the five guiding goals of the program
- Writing is succinct, focused and descriptive
- The portfolio demonstrates appropriate web design principles

The table below details the student and program assessment activities that are a part of the Masters Degree Program in Educational Technology at Dakota State University. Assessment methodologies and multiple standards of performance are listed for each of the fourteen learning objectives identified under five over-arching program goals. Demonstrated competency drives these assessment activities, which validate graduates of the program can and will perform as capable professionals in the field.

Table 13. Assessments and standards for MSET program Goals and objectives.

Student Goals and Objectives	Assessment Methodology	Standard of Performance
Goal 1. Students will be leaders in educational technology. Objective 1a) Students will be able to manage instructional computer technology systems.	1a(1) Employer Survey	1a(1) 80% of the employers will indicate that the graduates are good or very good in their ability to manage instructional, computer technology systems.
	1a(2) Course Grades	1a(2) 90% of the students will successfully complete LT 712, LT 716, CET 751, CET 765 with a grade of B or higher.
	1a(3) Portfolio Review	1a(3) 90% of students will receive a "satisfactory" rating on the initial submission of their portfolio
Objective 1b) Students will be active in professional organizations in the field of computer education and technology and have an impact on the field of education.	1b(1) Graduate Survey	1b(1) 75% of the graduates will indicate that they are active members of professional organizations.
	1b(2) Course Grades	1b(2) 90% of the students will successfully complete LT 741, CET 751, CET 765 with a grade of B or higher.
Objective 1c) Students will demonstrate proficiency in teaching and assessing others in the use of computers and related technologies in a variety of educational settings.	1c(1) Employer Survey	1c(1) 90% of the employers will indicate that the graduates are good or very good in their ability to teach and assess others in the use of computer technology.
	1c(2) Course Grades	1c(2) 90% of the students will successfully complete, LT 741, CET 720, CET 765 with a grade of B or higher.

	1c(3) Portfolio Review	1c(3) All students will demonstrate the ability to create authentic and performance based assessment activities by successfully completing the program exit portfolio requirements. 90% will receive a passing grade with first submission.
Goal 2. Students will be current in teaching and learning processes and practices. Objective 2a) Students will be aware of current trends and issues in computer education, distance education, electronic communications, computer hardware and software.	2a(1) Graduate Survey	2a(1) 80% of the graduates will be satisfied or very satisfied with their awareness of current trends and issues in computer education, distance education, electronic communications, computer hardware and software.
	2a(2) Course Grades	2a(2) 90% of the students will successfully complete LT 712, LT 741, CET 751 and CET 756 with a grade of B or higher.
Objective 2b) Students will apply learning theory and the principles of instruction design in curricular and instructional decision-making.	2b(1) Employer Survey	2b(1) 80% of the employers will rate the graduates as good or very good in their ability to apply learning theory.
	2b(2) Course Grades	2b(2) 90% will successfully complete LT 712 and LT 716 with a grade of B or higher.
Goal 3. Students will be current in research technologies and designs. Objective 3a) Students will be proficient in finding, evaluating, and using current educational research to support continuous improvement in their profession.	3a(1) Employer Survey	3a(1) 80% of the employers will indicate that the graduates are good or very good in finding, evaluating, and using current educational research.
	3a(2) Course Grades	3a(2) 90% of the students will successfully complete LT 712, LT 785 and CET 720 with a grade of B or higher.
Objective 3b) Students will understand the capabilities of the computer, its impact on education, business, industry and government and will be able to adapt to, understand, and evaluate and make use of new and emerging innovations in computer and information technology.	3b(1) Employer Survey	3b(1) 80% of the employers will indicate that the graduates are good or very good in making use of new and emerging innovations in information technology.
	3b(2) Portfolio Evaluation	3b(2) Through the products and projects displayed on their program exit portfolio, all students will demonstrate their understanding of technological capabilities by passing the review process.
Goal 4. Students will be knowledgeable of technologies and programming skills. Objective 4a) Students will be proficient in the use and application of computer software.	4a(1) Employer Survey	4a(1) 90% of the employers will rate the graduates as good or very good in their use and application of computer software.
	4a(2) Course Grades	4a(2) 90% of the students will successfully complete LT 731 with a grade of B or higher.
Objective 4b) Students will be proficient with a programming language.	4b(1) Employer Survey	4b(1) 75% of the employers will indicate that the graduates are proficient with a programming language.

	4b(2) Course Grades	4b(2) 100% of the students will successfully complete CET 756.
Objective 4c) Students will develop the skills needed to maintain computer programs, computer systems and networks.	4c(1) Employer Survey	4c(1) 75% of the employers will indicate that the graduates are good or very good in their ability to maintain computer programs, systems and networks.
	4c(2) Course Grades	4c(2) 90% of the students will successfully complete LT 741, CET 751 and CET 756.
Goal 5. Students will be knowledgeable of current, technology-based educational tools and products. Objective 5a) Students will use telecommunications-based tools to integrate information into the classroom and the curriculum.	5a(1) Employer Survey	5a(1) 90% of the employers will indicate that the graduates can use telecommunications-based tools to integrate information into the classroom and the curriculum.
	5a(2) Course Grades	5a(2) 90% of the students will successfully complete LT 712, LT 716, LT 731, LT 741, and CET 720 with a grade of B or higher.
Objective 5b) Students will integrate computer software, authoring tools, programming languages, the Internet, and multimedia into curriculum design and instruction.	5b(1) Employer Survey	5b(1) 80% of the employers will indicate that the graduates can integrate computer software, authoring tools, programming languages, the Internet, and multimedia into curriculum design and instruction.
	5b(2) Course Grades	5b(2) 90% of the students will successfully complete LT 712, LT 716, LT 731, LT 741, CET 720.
Objective 5c) Students will demonstrate proficiency using computers and related technologies in instruction.	5c(1) Employer Survey	5c(1) 80% of the employers will indicate that the graduates are proficient or very proficient in using computers and related technologies in instruction.
	5c(2) Course Grades	5c(2) 90% of the students will successfully complete LT 712, LT 731, LT 741, CET 720, CET 756, and CET 751.
Objective 5d) Students will use systematic problem-solving and research-based human/computer interaction practices in the development of computer-assisted instructional programs.	5d(1) Employer Survey	5d(1) 80% of the employers will indicate that the graduates are good or very good in using systematic problem-solving and research-based human/computer interaction practices in the development of computer-assisted instructional programs.
	5d(2) Course Grades	5d(2) 90% of the students will successfully complete LT 712, LT 731, LT 741, CET 720, CET 756, and CET 751.

Results of major field assessment and alumni feedback

The MSET program has been successful in meeting the "90%" assessment benchmarks for course and program completion and portfolio defense.

In October 2008, the MSET Program committee reviewed the results of four recent years of alumni survey data (2003, 2004-07). Over this time, students have consistently rated

the following alumni survey items the highest in satisfaction of the areas reviewed:

> Your level of understanding of technology and its impact (4.50)
> Your proficiency in using technology in instruction (4.70)
> Your ability to use Internet-based tools (4.50)
> *(1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, 5 = Very Satisfied)*

Students perceive the instructional methods and interactions used by faculty to engage them as a strength of the program.

> "The professors were very quick to respond to any questions that I had throughout the program. A wide variety of delivery methods were used which accommodated me as a student and my different learning styles."

Students identify approaches such as technology supported group work, the nature of assignments and activities that effectively address work place needs, the frequency of student-instructor contacts and repetition of important course information as aspects of the program that make participation valuable and enjoyable.

Students indicate that faculty and staff are highly qualified and supportive. These claims come from the open-ended comments provided by students on the alumni survey, as these student remarks exemplify:

> "The professors were extremely helpful during the coursework. They are very well-qualified and were concerned about my best interests as a student."

> "Highly qualified faculty, not only advocating but also showcasing very well how to integrate Internet-based technologies into delivering instructional materials."

Rated low (relatively) in the alumni survey was an item that suggests interactions with or participation in professional organizations affiliated with the nature and type of degree is limited, as the survey item below illustrates:

> Your ability to contribute to professional organizations (3.90)
> *(1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, 5 = Very Satisfied)*

A potential challenge addresses the perception students have of their ability to complete programming tasks. Currently, students take one required course in instructional programming (Java script). An elective course in programming is also offered. Of all the scaled response items on the student alumni survey administered over the past five years (2003, 2004-07), students rated a programming oriented item the lowest:

> Your programming ability as required by your workplace (3.70)
> *(1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, 5 = Very Satisfied)*

Strategic planning

In Summer 2006 University President Knowlton convened the DSU Planning Committee to begin discussions on the 2007-2012 DSU Strategic Plan. The outcomes from those discussions resulted in the formation of the current Strategic Plan (SP) Committee. Through this process DSU has developed seven overarching goals for the University. These goals have been formed to match The Policy Goals established by the South Dakota Board of Regents in their "Opportunities Plan,[9]" and the South Dakota Department of Education 2010 Education Initiative.[10] The goals were also considered in light of the University's participation its Academic Quality Improvement Program, associated with accreditation in the Higher Learning Commission of the North Central Association**.** The goals are:

1. Expand current information technology leadership through cutting-edge programs.
2. Optimize on-campus student enrollment and enhance program quality by attracting high-ability students.
3. Increase student retention and graduation by providing an exceptional student experience.
4. Advance DSU's emphasis on applied research.
5. Extend DSU's educational outreach through online and alternative-location delivery.
6. Promote increased visibility and recognition of the University.
7. Develop new sources of revenue.

The College of Arts and Sciences and the Graduate Office have produced a plan that encompasses the DSU strategic initiatives, but focuses on how the goals and objectives will be addressed at the College level
http://www.dsu.edu/documents/assessment/institutional-effectiveness/sp-iec-table-2008.pdf

Table 14 indicates how the MSET actions will specifically address strategic planning objectives of the university.

Table 14. Alignment of MSET actions with DSU Strategic Goals.

Institutional Strategic Goal	MSET Actionable Items
1. Expand current information technology leadership through cutting-edge programs.	Provide leadership in statewide effort toward ubiquitous computing in high school education.

[9] http://www.sdbor.edu/publications/

[10] (http://www.2010education.com/GoalsAndObjectives.htm

2. Optimize on-campus student enrollment and enhance program quality by attracting high-ability students.	Update major field assessment strategies by participating in AQUIP accreditation process. Create partnerships with BIA and other predominantly Native-American institutions of higher education to support student study.
3. Increase student retention and graduation by providing an exceptional student experience.	Improve graduate advising as measured on graduate student exit survey. Pioneer and integrate media and interactive technologies to engage the distance learner. Offer course alternatives that integrate K-12 disciplinary content (i.e., language arts, social studies) and technology.
4. Advance DSU's emphasis on applied research.	Improve the student participation in faculty research programs. Improve faculty participation in SEED and FRI/SRI research grants.
5. Extend DSU's educational outreach through online and alternative-location delivery.	Identify cohort strategies that will encourage MSET enrollments by disciplinary or geographic affiliations.
6. Promote increased visibility and recognition of the University.	Revise marketing plan to begin focused recruitment of students outside of region. Participate with state department of education officials to deliver professional develop experiences for K-12 educators, technology facilitators and coordinators to support and integrate technology into the classroom.
7. Develop new sources of revenue.	Offer courses and specializations to non-degree seeking student subpopulations.