

A Comprehensive Self-Study Process to Evaluate and Assess Technology Education Programs

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The future of technology rests with the education offered to individuals by universities throughout the world. Their influence on our future technology leaders is immeasurable. The stakes are high. Assessing these academic programs, therefore, is essential.

A comprehensive self-study process successfully utilized at a major university in the United States is described. Practical suggestions, including those relating to the identification of essential evaluative criteria, involving internal and external constituencies and effectively using comparative data, are included.

Overview

Continuous assessment and improvement is essential for a vibrant, relevant and challenging academic program. Although the process may be perceived as unneeded or cumbersome, the status quo is the enemy of quality. Exemplary academic programs uniformly exhibit intensive assessment systems.

While there are numerous approaches to assessment, selected insights gleaned from the process used to evaluate a graduate program to prepare technology leaders at a major U.S. Midwest university follows.

Foundations of Program Assessment

Program assessment must begin with a set of shared goals, objectives or standards. These serve as the optimal condition to compare current practice. Without this foundation established, assessment results will likely be questionable, misleading, unreliable or inaccurate.

Mission and Vision

A program's mission and vision are two of the most obvious and prudent places to begin creating the foundation for program assessment. A well-written mission affirms the program's ambition while the vision further delineates its core values. The following mission and vision statements are taken from the program serving as the basis for this case study.

Program Mission: The Instructional Technology Leadership program will prepare instructional technology professionals to identify and analyze problems and to use technology appropriately to generate instructional solutions in a way that is meaningful and effective in order to improve learning and performance.

Vision: The Instructional Technology Leadership program will produce aspiring leaders with exceptional potential. Successful graduates will be literate in effectively integrating technology

to support meaningful, authentic and engaged learning. Furthermore, graduates will possess the ability to lead, motivate and mentor others.

With these philosophical underpinnings established, performance indicators can be added through measurable standards.

Professionally Adopted Standards

While "home-grown" indicators may be tempting to use, adopting standards officially recognized by national or international professional associations is critical. These external benchmarks identify the agreed upon norms, skills and dispositions for a given profession. They permeate, therefore, exemplary programs.

In this case study, standards adopted by the International Society for Technology in Education (ISTE) and the National Council for Accreditation of Teacher Education (NCATE) were used in this program assessment. "Designed to communicate expectations for the performance of candidates who will serve as educational computing and technology directors, technology coordinators, or technology specialists at the school district, regional, and/or state levels," these standards are ideal.

Because of their importance, the Technology Leadership Standards follow. Please note that most performance indicators were omitted in consideration of maximum paper length. The full document, as well as related assessment rubrics, are available at http://cnets.iste.org/ncate/n_new.html.

Abschnitt 1.01 Technology Leadership Standard I - Technology Operations and Concepts. *Educational technology leaders demonstrate an advanced understanding of technology operations and concepts. Educational technology leaders: I.A. Demonstrate knowledge, skills, and understanding of concepts related to technology; I.B. Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.*

Technology Leadership Standard II - Planning and Designing Learning Environments and Experiences. Educational technology leaders assist by planning, designing, and modeling effective learning environments and experiences supported by technology at the district/state/regional level. Educational technology leaders: II.A. Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners; II.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; 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; II.F. Identify and apply instructional design principles associated with the development of technology resources.

Abschnitt 1.02 Technology Leadership Standard III - Teaching, Learning, and the Curriculum. *Educational technology leaders model, design, and disseminate curriculum plans that include methods and strategies for applying technology to maximize student learning. Educational technology leaders: III.A. Facilitate technology-enhanced experiences that address content standards and student technology standards; 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; III.D. Manage student learning activities in a technology-enhanced environment; III.E. Use current research and*

district/region/state/national content and technology standards to build lessons and units of instruction.

Abschnitt 1.03 Technology Leadership Standard IV - Assessment and Evaluation. *Educational technology leaders communicate research on the use of technology to implement effective assessment and evaluation strategies. Educational technology leaders: 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; IV.C. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.*

Abschnitt 1.04 Technology Leadership Standard V - Productivity and Professional Practice. *Educational technology leaders design, develop, evaluate and model products created using technology resources to improve and enhance their productivity and professional practice. Educational technology leaders: 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.*

Abschnitt 1.05 Technology Leadership Standard VI - Social, Ethical, Legal, and Human Issues. *Educational technology leaders understand the social, ethical, legal, and human issues surrounding the use of technology in P-12 schools and develop programs facilitating application of that understanding in practice throughout their district/region/state. Educational technology leaders: VI.A. Model and teach legal and ethical practice related to technology use; VI.B. Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities; VI.C. Identify and use technology resources that affirm diversity; VI.D. Promote safe and healthy use of technology resources; VI.E. Facilitate equitable access to technology resources for all students.*

Abschnitt 1.06 Technology Leadership Standard VII - Procedures, Policies, Planning, and Budgeting for Technology Environments. *Educational technology leaders coordinate development and direct implementation of technology infrastructure procedures, policies, plans, and budgets for P-12 schools. Educational technology leaders: VII.A. Use the school technology facilities and resources to implement classroom instruction; VII.B. Follow procedures and guidelines used in planning and purchasing technology resources; VII.C. Participate in professional development opportunities related to management of school facilities, technology resources and purchases.*

Abschnitt 1.07 Technology Leadership Standard VIII - Leadership and Vision. *Educational technology leaders will facilitate development of a shared vision for comprehensive integration of technology and foster an environment and culture to conducive to the realization of the vision. Educational technology leaders: VIII.A. Identify and apply educational and technology related research, the psychology of learning, and instructional design principles in guiding the use of computers and technology in education; VIII.B. Apply strategies for and knowledge of issues related to managing the change process in schools; VIII.C. Apply effective group process skills; VIII.D. Lead in the development and evaluation of district technology planning and*

implementation; VIII.E. Engage in supervised field-based experiences with accomplished technology facilitators and/or directors.

Abschnitt 1.08

These standards, coupled with the program's mission and vision, served as the foundation for this program's assessment.

The next phase, data collection, should be started only when consensus surrounding these foundational assessment criteria is reached. Then, assessment of its congruence among these foundational characteristics (mission, vision, and standards) and perceived reality can begin.

Data collection

Collecting data from a broad array of internal and external sources enhance the accuracy of assessment results. In this case, internal information was collected from program faculty, affiliated university administrators, current students, recent graduates (within the past year) and students who graduated from the program 2-5 years ago. Externally, employers of graduates, potential employers, school administrators and technology leaders were solicited for comments. Structured surveys and focus groups were the primary methods for obtaining information. The program's stated mission, vision and adopted standards served as the basis for questions.

Additionally, program artifacts, such as course syllabi, faculty vitae and curricula sequences, were examined. Supply and demand data and projections were also collected.

Furthermore, comparative data was collected from peer institutions, "virtual" institutions with on-line programs, traditional institutions with online programs and universities generally recognized as offering exemplary technology leadership programs. Best practices common to several exemplary programs were noted as well as exceptional, unique curricula innovations.

Data analysis and recommendations

All data collected was analyzed in relation to the program's mission, vision and adopted standards. Discrepancies between what is, and what should be, became evident through a collaborative process with interested stakeholders and selected constituents. This resulted in specific recommendations for improvement.

Due to the success of this process, the program adopted a formal system of continuous program assessment with specific procedural requirements and timelines for the future. Results serve as an invaluable blueprint and guide for continuous improvement.

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