Essays on Teaching Excellence
Toward the Best in the Academy
Volume 13, Number 7, 2001-02

Teachers and Scholars as Designers: The Art and Practice of Instructional Design

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Helping people learn is central to our faculty work. Instructional design theory and practice can help us create optimal learning environments. Perhaps no other area of our faculty work, however, is at once so inextricably linked to what we are all about as educators and so confused as instructional design (ID). Too often ID is misunderstood and mischaracterized.

Based upon sound cognitive research, instructional design is a purposeful process that helps us focus on learners, learning, and human development. It is worth another look and a more current understanding.

Most of us have not had experience and training in the purposeful design of instruction, but ID benefits us by helping us ask important questions. ID helps to address issues such as our operating assumptions; decisions about our students and our subject; learning results; and the organization, structure, strategies, management, and evaluation of our courses and curricula.

ID becomes a necessity when we embrace current and emerging learning technologies or form collaborative design and development teams. The associated costs, time, and complexity make a systematic and systemic approach imperative.

What is instructional design? Learning is a natural process that involves analyzing, synthesizing, and evaluating information and building skills and knowledge. Fundamentally, ID is a set of systematic perspectives and procedures for creating optimal learning environments. With it we can systematically apply what we know about the learning process to the process of developing human potential. It is an "iterative process of analysis and design whereby the appropriate content is selected and sequenced, appropriate instructional strategies are selected and sequenced, and appropriate media are selected and utilized" (Leshin, Pollock, & Reigeluth, 1992 p 8).

We can compare instructional design to other professional and design fields such as architecture. In planning a building the architect considers the conditions under which the building will function and methods to optimize its use. Similarly, faculty and others who design instructional materials and programs consider the instructional conditions and select methods to best support the intended learning outcomes.

ID helps us to make explicit what may otherwise be implicit. By so doing, we increase the potential that our decisions will be informed by research and best practice, that expectations will be focused and efforts can be measured against these expectations, and that efforts to improve will follow.

How can instructional design help us? The new view of instructional design focuses on needs assessment, outcomes, learner control, and experiential learning (Rossett and Barnett, p. 36, 1996).

Needs assessment. An underlying tenet of ID is a commitment to determining learners' current and desired knowledge, ability, and motivations. This includes the ability to learn independently, the use of technology to support learning, and the level of intrapersonal and interpersonal skills. This information then serves to meet learner needs and avoid overloading our courses and our students. It also helps us decide what to include in our courses and curricula. Emerging technology-based approaches such as CD ROM and Web-based courses, however, require far greater "front end" analysis and planning.

Outcomes. Another principle tenet is the simple question "why". ID processes encourage us to articulate and communicate intended behavioral, cognitive, affective, and interpersonal outcomes. Thus it relates well to our current focus on assessment. Knowing and seeing what graduates can do that they could not previously do serves accountability, focuses faculty and student attention, informs instructional planning and strategy selection, and facilitates evaluation. ID is simply part and parcel of sound educational practice.

Learner control. By and large we still assume that we have control over our courses and curricula. However, new approaches combined with new technologies allow students to have far greater control over and responsibility for their learning experiences. It is not essential for us as faculty (or the instructional system) to entirely pre-prescribe learning outcomes or means and methods. Learner centered and controlled outcomes and methods are not only desirable in many situations but necessary and highly appropriate. Learner control can extend from the intended outcomes (results) to the approaches used to achieve them (means). This can include, for example, student choices about learning goals, the kind and amount of examples and practice, pace, sequence, length of time on task, and assessment. Purposeful instructional design helps faculty to rationally identify and select, consistent with research, from a burgeoning repertoire of traditional and technology-enhanced strategies and approaches. In addition, web-based course management systems allow us to track, monitor, and support learner progress.

Experiential Learning. Simulated environments provide immersion in realistic learning experiences, and they should be at the core of our instructional design tool box. They provide a bridge between theory, practice, and application that entails the perception of and response to often subtle relationships and consequences. The key is to help students bring together their individual skills and understand how all elements of the task fit together.

Instructional Design and Technology? The potential of today's instructional technologies is a compelling reason to embrace a more formal approach to instructional design. The possibility of transforming our teaching has never been greater, and potential

results include an unprecedented emphasis on planning and facilitating learning rather than merely presenting information (Gillespie, pp. 39-40, 1998).

Harnessing this potential, however, requires significant time and energy. Moreover, our efforts should no longer focus on the "transfer, acquisition, and retention of knowledge." Rather, to be most effective, "the focus in using the new technologies should instead be on helping learners become skilled at finding and accessing appropriate information, evaluating it critically, using it to solve problems, and presenting the result of the learning experience" (Gillespie, p. 47, 1998).

Start Where You Are! Assuming that our common goal is to design the best learning environments possible, where do we go from here?

- First, consider the value of instruction that enables learners to build meaning for themselves as compared to instruction in which knowledge and skills are allegedly transferred from one person to another like packages being delivered. This change in approach can help us to transform a system that places high value on memorization and information consumption to one that puts these abilities in their appropriate place and emphasizes higher-order cognition and creative problem solving skills.
- Embrace your multiple roles. We often become faculty because of our passion about our disciplines, and teaching may be a secondary consideration. Nevertheless, we have multiple responsibilities for our scholarship, our service, and our teaching. Embracing these roles encourages the equal attainment of perspective and expertise equal for all areas of professional practice and inquiry.
- Use the instructional design process as a basis for dialogue to elevate the quality of your expertise and practice. Working individually and together, we can improve the teaching and learning environments.
- Identify a unit or part of a course and begin. Conduct an assessment based on your instructional goals, student performance and satisfaction with their learning. Compare this

information with your intended outcomes. Decide whether or not to rebuild, but don't try to redo everything at once. Renovate your course, curriculum, or program one room at a time.

- Engage the teaching support center on your campus. Attend functions that will allow you to interact with other faculty members and with instructional consultants.
- Enlist the help and support of one or more colleagues and engage in collaborative peer review of course materials, instructional design, and implementation. Include student assessments and surveys.
- Seek and develop a teaching mentor, someone secure in their own career and motivated enough to put their personal agendas and opinions aside so that they may focus on developing your strengths and interests as a teacher and designer.
- Read, reflect on, and discuss with colleagues professional publications Use search engines to seek out organizations and publications on, for example, engineering education, economic education, and assessment in higher education.
- Become familiar with instructional design models. A good model serves as a guidance system and facilitates a collaborative, learner-focused approach. ID invites you to challenge assumptions, brainstorm alternatives, and generate a rich mix of ideas before selecting an appropriate starting place. Other considerations as you select and adapt an instructional design model include flexibility and continuous improvement. Think of your course as a work in progress rather than a completed product.
- Remember that ID, at its best, is a collaborative process. Seek out and consider the perspective of students (past, present, and future), faculty colleagues, instructional consultants, multimedia development experts, and relevant literature.

ID offers a way of coping with the tremendously increased demands on faculty. We are experiencing increasing sophistication and diversity in our students, heightened expectations to demonstrate outcomes, advances in knowledge about learning; and we have available to us new and emerging learning technologies. Whether we take an artistic-intuitive or more formal/explicit approach, our assumptions, values, and approach to design are readily apparent in

the way our courses and related learning experiences are planned, conducted, and managed. It will help to consider instructional design as a subset not only of teaching, but of the practice of design itself; to examine our assumptions and the meaning we assign to instruction; and to consider our roles not only as teachers and scholars, but as instructional designers.

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