Six ways to get a grip on leveraging the expertise of Instructional Design and Technology professionals
Six façons de mettre à profit l'expertise des professionnels en technopédagogie

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Abstract

We underutilize the knowledge and skills of Instructional Design and Technology (IDT) professionals, despite the frequent challenges in implementing learning technologies in medical education. This is largely due to a lack of understanding among stakeholders regarding the expertise of IDT professionals and their role in technology implementation processes. We seek to improve technology implementation outcomes by explaining the IDT field's foundational tenets of a systems perspective and disciplined approach, clarifying the role that IDT professionals can play in educational technology initiatives, and providing guidance on how to foster productive collaborations in pursuit of effective technology-enhanced learning.

Résumé

Bien que souvent confrontés aux défis de la mise en oeuvre des technologies éducatives en éducation médicale, nous sous-utilisons les connaissances et les compétences technopédagogues. Cela est largement dû à un manque de compréhension, chez les parties prenantes, de l'expertise de ces professionnels et de leur rôle dans les processus de mise en œuvre des technologies. Dans le but d'améliorer les impacts de la mise en œuvre des technologies, nous expliquons les principes fondamentaux de la technopédagogie, à savoir une perspective systémique et une approche rigoureuse, tout en clarifiant le rôle que les technopédagogues peuvent jouer dans les initiatives technologiques éducatives. Nous proposons également des conseils sur la manière de favoriser des collaborations productives en vue d'un apprentissage efficace optimisé par les technologies.

The tremendous growth of learning technologies in medical education has led to a steady increase in the number of Instructional Design and Technology (IDT) professionals.[1] Learning technologies encompass a wide variety of "information and communication technologies that are used to support and enable forms of teaching and learning."[2,(p.24)] While IDT professionals work under various job titles (e.g., instructional designer, educational technologist) and typically engage in instructional design and curriculum development activities, they also provide substantial support to faculty and administration in the implementation of learning technologies across face-to-face, hybrid, and fully online modalities.[3] However, despite the challenges in implementing learning technologies, the full skillset of IDT professionals is often underutilized, an issue that has been highlighted in four recent national surveys.[4-8]

Throughout our careers as IDT professionals, we have been approached by enthusiastic faculty interested in flipping

their classroom, teaching online, or making their instructional activities more "high tech." These conversations often belie a subtle tension; while our colleagues eagerly seek technical assistance for implementation and arrive ready to produce digital content, we must first seek to understand their intentions, ensure the alignment of the technological solution with other pieces of the pedagogical puzzle, such as the impetus for change, shifting learning objectives, and assessment of outcomes, and consider possible alternative solutions. This sly tug of war reflects the lack of shared understanding of the role that IDT professionals can play in implementing learning technologies. In addition to their technical knowledge, IDT professionals possess a multitude of skills critical to the success of educational endeavors, including pedagogical expertise and instructional design. Many times, however, IDT professionals are relegated to IT support roles. They are often introduced to an initiative long after it has been determined that digital technologies will be utilized, and they are only asked to assist in the production and distribution of electronic resources. This confusion among stakeholders regarding IDT professionals' expertise and possible contributions has been highlighted as the major barrier impeding the effective integration of IDT professionals.[5-8] Because stakeholders do not clearly understand what the effective implementation of learning technologies actually entails,[2,9] they also tend to undervalue the necessity of seeking guidance from IDT professionals.[7] Herein, based on both research and personal experience, we offer the following guidance to help avoid the black ice of underutilizing the expertise of IDT professionals in implementing learning technologies.

1. Familiarize yourself with the field of instructional design and technology

Recent surveys reveal a myriad of functions that IDT professionals often fulfill, including:[3,8,10,11] 1) design and development of instructional materials; 2) management of IDT projects and personnel; 3) faculty training in pedagogy and use of learning technologies; 4) faculty consultation on instructional or technical challenges; and 5) educational research and scholarship. Additionally, medical schools often vary widely in their IDT professionals' job titles and responsibilities, and where in the organizational structure these professionals are placed.[1,6] These differences, along with the diversity of IDT professionals' backgrounds and experiences, all contribute to the ambiguity that often surrounds the role of IDT professionals in learning technology initiatives.

Fundamentally, the field of IDT "involves the disciplined application of knowledge for the purpose of improving learning, instruction, and/or performance."[12,(p.10)] In achieving these important goals, IDT professionals distinguish themselves by their expertise in not only the utilization of digital technologies but also the adoption of a *systems perspective* and *disciplined approach*.[12,13] IDT is more than the creation of electronic instructional materials, despite this being the most publicly-visible feature of the field. At its core, IDT practice and scholarship are centered around constructing educational interventions, such as curriculum or learning environments, to tackle pedagogical challenges. To maximize learning outcomes, IDT professionals adopt a systems perspective and disciplined approach.[12] Unfortunately, despite being the hallmarks of the IDT field, these processes are often lost in translation within medical education and other instructional fields. Full incorporation of IDT professionals' expertise in educational endeavors necessitates understanding these key processes.

2. Appreciate complexity by embracing a systems perspective

Educational institutions are highly complex ecological systems, and novel educational interventions must evolve through a series of complex interactions with other system components.[14] To grapple with this complexity, it is necessary to adopt a systems perspective, which will provide a broad and holistic view of the interconnected parts of a whole. In an educational system, this perspective addresses the likely and unanticipated impact(s) that a change to one area of the system will have on other components, and it emphasizes the long-term vision of an intervention, including the dynamic and iterative process through which it will evolve.[12]

Specifically, learning technology implementation outcomes are affected by:[2]

- the new technology's perceived advantage(s) when compared with existing tools and its usability, availability, and compatibility within existing infrastructure;

- faculty's view of the change, existing instructional practices and beliefs, ability to utilize the technology, and autonomy;

- institutional administration, politics, priorities, culture, and other contextual factors.

These system factors interact with one another, and many are constantly changing, leading to complexity and uncertainty. When one embraces a systems perspective to implement learning technologies, one collaborates closely with other stakeholders to assess the situation holistically, identify crucial system factors, orchestrate existing resources, and navigate various constraints. A systems perspective also implies flexibility and open-mindedness about dynamic changes. The effect of introducing a novel technology might be delayed. Learners might need time to become competent with the technology. Faculty development might be necessary. Infrastructure, as well as administrative and IT support, will need to be deployed. Hence, timely and creative adaptation is often required.[2,9,12,13]

3. Adopt a disciplined approach

IDT professionals also assume a disciplined approach. The term "disciplined" emphasizes that "principles based on theory, past experience, and empirical evidence guide" IDT professional's practice and scholarship.[12,(p.10)] Advancements in educational theories, practice, technology, and research over the past century have yielded tremendous progress in the IDT field.[13] Empirically-verified knowledge and tools provide a solid foundation for improving technology implementation outcomes.[12,13] For example, instructional design models (e.g., ADDIE, Rapid Prototyping, Backward Design) provide structure and rigor to the iterative development and implementation of an intervention.[13] Educational theories offer strategies to improve and leverage the learning environment.[15] Design-Based Research addresses pedagogical challenges directly while also generating impactful scholarship.[16]

4. Collaborate early

Faculty can kick off a strong collaboration with IDT professionals by embracing a systems perspective and disciplined approach early on, before ideas crystalized and plans become inflexible. This process should begin with a needs assessment to explore questions such as:[12,16]

- What is the nature of the pedagogical challenge (e.g., difficult skills to learn, motivation problems, misaligned objectives and assessments)?

- Which resources, constraints, and stakeholders might impact the success of an intervention?

- Is the introduction of digital technology both feasible and appropriate?

Based on the results of the needs assessment, faculty and IDT professionals can then collaboratively develop and evaluate solutions by considering:[12,13,16]

- How will the identified intervention address the problem?

- What other curricular modifications and institutional support are needed?

- How can continuous evaluation be embedded into the implementation process?

- How will evaluation data be used to iteratively improve the intervention?

- How can research activities be integrated into the initiative to provide meaningful theoretical outcomes?

5. Solicit administrative support

Three major roadblocks often hinder productive collaboration between IDT professionals and faculty, and consequently, impede effective implementation of technology: insufficient faculty buy-in, hesitancy to involve IDT professionals, and inadequate time and resources.[5,7,8] Administration plays a crucial role in eliminating these obstacles, and the following strategies are recommended:[4,6-8,17-19]

- Market IDT professionals to faculty. Circulate information about IDT professionals' expertise and include their advanced degree(s) and/or relevant educational credentials. Explain the specific role they can play.

- Demonstrate the benefits of integrating IDT professionals by celebrating successful collaborations between IDT professionals and faculty. Recognize the contributions of IDT professionals to the institution's educational mission.

- Ensure that both faculty and IDT professionals have sufficient time, funding, resources, and personnel to adopt a systems perspective and apply a disciplined approach to technology implementation.

- Support the professional development of IDT professionals, including conference attendance, continuing education and training, and teaching opportunities.

- Empower faculty and IDT professionals to participate in the shaping of learning technology initiatives. Encourage them to identify and communicate any system issues that might affect the implementation and outcomes of the intervention when they first arise.

6. Cultivate a collegial interdisciplinary partnership

Fostering a collegial partnership between faculty and IDT professionals requires effort on both sides. Strategies that can enhance the success of such interdisciplinary collaborations include: establishing a shared vision, reducing the use of jargon, and providing prompts and allowing time for clarification.[18] In addition to these, we offer recommendations for each role specifically.

For faculty: Challenges occur, in particular, when IDT professionals are relegated to support staff rather than partners of equal status. Faculty should aim to foster a collaborative partnership that conveys respect for IDT as a professional field and create a space that encourages productive dialogue. [7,17-19]

- Engage IDT professionals in the design of students' learning experience. Communicate the holistic picture rather than rigid project specifications, so that they can apply their expertise and provide evidence-based suggestions.

- Remain open-minded to IDT professionals' creative solutions. Reflect on a proposal's potential impact on both teaching and learning.

- Encourage a free exchange of ideas that transcend the boundaries of specific projects, which will create additional opportunities to understand the IDT professionals' knowledge and expertise and to foster positive long-term working relationships.

- Help spread the word about the IDT professionals' contributions to colleagues.

For IDT professionals: For most faculty, inviting someone to take a critical look at their teaching is a "very personal process."[7,(p.25)] Some faculty might even resist if they are asked by administrators to work with IDT professionals, since many are still unfamiliar with IDT professionals' expertise. To address these potential challenges, IDT professionals should strategically engage in self-advocacy, proactively cultivating faculty's understanding of the IDT field without undermining faculty's expertise and autonomy.[7,17,18]

- Engage in faculty development efforts to demonstrates not only technological knowledge, but also other areas of professional expertise. Teach alongside with faculty from prior collaborations who can speak to the process.

- Create a portfolio of assets and examples from successful IDT projects to illustrate skills for new faculty collaborators.

- Avoid prescribing instructional approaches to faculty. Instead, actively listen to understand their full perspective and, based on their needs, coach faculty to co-develop creative, evidence-based solutions.

- Be comfortable with bringing up different opinions. However, instead of simply telling faculty that their request is not possible, explain the disciplined approach undertaken and the evidence that supports the new ideas.

As medical educators embark on journeys of technology-enhanced teaching and learning with IDT professionals, a clearer understanding of the IDT field's foundational tenets can pave the way for more productive collaboration. Administrators, faculty, and IDT professionals all play crucial roles in shaping fruitful partnerships between faculty and IDT professionals, and each can take proactive measures to cultivate strong collaboration for the benefit of our learners and, ultimately, their future patients.

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