

Authenticity in the process of learning about Instructional Design

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Abstract: Authentic learning is touted as a powerful learning approach, particularly in the context of problem-based learning (Savery, 2006). Teaching and learning in the area of instructional design appears to offer a strong fit between the tenets of authentic learning and the practice of instructional design. This paper details the efforts to broaden and deepen the understanding of instructional design through a service learning approach to teaching, emphasizing authentic learning and assessment. Students are teamed and assigned to an actual contract with an external client under the supervision of the instructor who acts as project manager for the group. Contracts are negotiated to deliberately offer instructional design services to clients who would not otherwise be able to afford them, such as community-based non-profit groups. The reasons are two fold: first, we want to avoid competing for contracts that would interfere with the business of commercial instructional design groups and contractors; second, we want to impress on our students the idea that instructional design has social importance beyond the profit/loss and cost/effectiveness orientation of many instructional design businesses. In this way, we promote the idea that instructional designers are agents of social change, and their influence crosses interpersonal, professional, institutional and societal dimensions of change (Schwier, Campbell and Kenny, 2007).

Résumé : L'apprentissage authentique est présenté comme une approche efficace en apprentissage, en particulier dans le contexte de l'apprentissage par problèmes (Savery, 2006). Enseigner et apprendre la conception pédagogique semble offrir une correspondance étroite entre les principes de l'apprentissage authentique et la pratique de la conception pédagogique. Cet article présente de manière détaillée les efforts visant à élargir et à approfondir la compréhension qu'ont les étudiants de la conception pédagogique par l'utilisation d'une approche de la formation à l'enseignement basée sur l'apprentissage du service qui met l'accent sur l'apprentissage authentique et l'évaluation. Les étudiants sont regroupés en équipes et se voient attribuer à un véritable mandat auprès d'un client externe sous la supervision de l'instructeur qui agit à titre de gestionnaire de projet pour le groupe. Les mandats sont délibérément négociés de manière à offrir des services de conception de matériel pédagogique à des clients qui autrement ne seraient pas en mesure de s'offrir ces services, comme les groupes communautaires sans but lucratif. Les raisons pour ce faire sont de deux ordres : d'une part, lors de l'obtention de mandats, nous voulons éviter d'entrer en concurrence et d'interférer avec les activités de groupes commerciaux et d'entrepreneurs en conception pédagogique; d'autre part, nous voulons transmettre à nos étudiants l'idée que la conception pédagogique revêt une importance sociale qui s'étend bien au-delà des orientations axées sur les couples profits/pertes et

coûts/efficacité que de nombreuses entreprises de conception pédagogique adoptent. Ainsi, nous véhiculons l'idée que les concepteurs de matériel pédagogique sont des agents de changement social et que leur influence touche aux facettes interpersonnelle, professionnelle, institutionnelle et sociétale du changement.

Introduction

In this paper we explore the use of an authentic learning approach to teaching and learning in instructional design, and illustrate the ideas with a case description of the approach we use to teach instructional design at the University of Saskatchewan. Our approach to authentic learning is supported by five constructs, each of which contributes in specific ways to the authentic learning model we employ. The five constructs that comprise the pillars of our authentic learning environment are: problem-based learning, authentic assessment, project management, scaffolding and social agency. These have evolved over time, as we experimented with the design of the course, and attempted to fine-tune the precision and relevance of the course for our students. These five constructs combine to give the experience a rich instructional foundation, and inform our design of student experiences in ways that we broadly label "authentic learning". By definition, authentic learning must be personally relevant and connected to the real world (Stein, Isaacs, & Andrews, 2004), emphasizing something Brown, Collins and Duguid (1989) refer to as 'the ordinary practices of the culture'. Hiebert et. al. (1996) believe that connecting learning to previous experiences as learners make sense of new concepts is what makes learning authentic. Tochon (2000) combines these ideas and states, "Authentic classroom practice ... reflects, for the students, a combination of personal meaning and purposefulness within an appropriate social and disciplinary framework" (p. 332). To create a successful authentic learning experience there is a need to find a proper mix between the students' world and the world of work they are about to enter, a sensitive balance that requires flexibility and sensitivity by all participants to create a successful learning environment.

The five features of our authentic learning environment are described below.

Problem-based, situated learning.

Problem-based learning (PBL) is an "instructional learner-centered approach that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a problem" (Savery, 2006). Students are given real-world questions related to their area of study (DiMartino and Castaneda, 2007). In problem-based learning, students learn through collaborative problem solving and reflection on their experiences (Hmelo-Silver & Barrows, 2008), and the collective knowledge of a group is increased through social discourse. For knowledge building to occur in the classroom, the teacher needs to create opportunities for constructive discourse to support student learning and collective knowledge construction. The main components of PBL are learner collaboration, ill-structured problems, self and peer assessment, and self-directed and self-regulated learners (Savery, 2006).

Related to problem-based learning, another critical design feature of an authentic learning is situating it in an authentic context. Situated learning has been roundly examined in the literature, including theory and models for designing classroom interventions (e.g., Brown, Collins, & Duguid, 1989; Harley, 1993; Tripp, 1993). In an attempt to build a framework for designing situated learning environments, Herrington and Oliver (2000) proposed that situated learning environments should:

1. Provide *authentic contexts* that reflect the way the knowledge will be used in real life
2. Provide *authentic activities*

3. Provide access to *expert performances* and the modeling of processes
4. Provide *multiple roles and perspectives*
5. Support *collaborative construction of knowledge*
6. Promote *reflection* to enable abstractions to be formed
7. Promote *articulation* to enable tacit knowledge to be made explicit
8. Provide *coaching* and *scaffolding* by the teacher at critical times
9. Provide for *authentic assessment* of learning within the tasks. (pp. 25-26)

Authentic Assessment.

An important component of problem-based learning is authentic assessment. Authentic assessment requires students to use and demonstrate the same kind of competencies or combinations of knowledge, skills, and attitudes that are applied in professional life (Gulikers, Bastiaens, & Kirschner, 2004). Students are "required to use prior knowledge, recent learning, and relevant skills to solve realistic complex problems" (DiMartino & Castaneda, 2007, p. 2). A learner-centred curriculum shifts the focus from teacher to student (Candela, Dullely & Benzell-Lindley, 2006), and learners need to develop abilities to acquire and process information. The learning environment emphasizes what students need to learn rather than what instructors believe they should teach. Self-assessment, as one component of authentic assessment, is a critical way to gauge success for learners, but is part of a wider range of assessment strategies that also involve peers and instructors. Herrington and Herrington (2008) synthesized research in the area and derived four key considerations in implementing a program of authentic assessment: context, student factors, task factors, indicators, but they see university policy as being one roadblock to implementing authentic assessment.

Project Management.

In our model of authentic learning in instructional design, the instructor acts as project manager- a guide to the process, project oversight, team motivation, and in this role the project manager criticizes the work of the team, but does not directly create solutions to problems encountered by the design team. The instructor interrogates both the project decisions and the team's growing insights about instructional design. Even with our approach the students must learn to work in an environment where the instructor does not make most of the decisions (Kloppenborg & Baucus, 2004). Project management is not confined to the role of the instructor; the students also develop project management skills. Typically, students have not had the opportunity to consult with clients, or manage budgets, consult time lines or personnel in such a complex design environment, so they are assigned tasks that involve carrying out management challenges.

Scaffolding.

PBL's emphasis on student independence and learner ownership of problems does not preclude the use of scaffolding to help students learn quickly. Authentic learning places the responsibility and ultimately the control of the learning process on the student; however, abandonment is not part of the process (Greening, 1998). Students are introduced to the theoretical concepts in a pre-requisite class where they are exposed to case studies and real world accounts of instructional design. Later they are given the opportunity to develop their understanding and skills under the guidance of an instructor who provides significant control and structure over the process in the early stages of the project. Prompts and questioning play an important role in student understanding of ill-defined problems in an authentic learning process (Ge & Land, 2004), and open dialogue and reflection with the other learners and the instructor helps to reveal the hidden aspects of the instructional design process (van Rooij, 2009). As the

project proceeds and learners develop confidence, the instructor fades and more of the learning process is handed over directly to the students. Wenger's (1998) peripheral learning model is used to introduce the learner to the real community, to experience activities and to use real language without pressure to participate fully at first.

Social Agency.

A pedagogy that considers social agency attends to what Freire (1998) argues is one of the "most important tasks of critical educational practice" (p. 45). Freire was speaking about the teacher's work in creating the conditions necessary for "the learners, in their interactions with one another and with their teachers," to authentically and democratically "engage in the experience of assuming themselves as social, historical, thinking, communicating, transformative, creative persons" (p. 45). Understanding the life of the greater community and how one can assist in that community is important, and a feature we have come to believe is central to the education of novice instructional designers. The term social justice is being used more and more in education but it is not easily defined (North, 2008), and we do not intend to make dramatic use of it here; our concerns are more pragmatic than revolutionary. Appreciating the social implications of our work as instructional designers is, at its core, practical. While we concern ourselves with exposing new instructional designers with the idea that they have social responsibilities and influences, and that their work has social consequences, we are also aware that organizations that sponsor socially relevant projects, and who cannot afford the expense of professional instructional design, also provide a welcoming and fertile environment for learning. The relationship between our instructional design teams and their clients is symbiotic (Sensoy & DiAngelo, 2009). It is important that the social agency not create a burden for the organization being served. According to Tryon, Stoecker, Martin, Seblonka, Hilgendorf and Nellis (2008) the best way to provide a benefit is to have a well-organized discrete project that does not draw on the already limited resources of the volunteering agency. Working on an independent, discrete project that the agency does not have the resources or expertise to carry out can provide maximum benefits with minimal disruption.

The Case: A Tapestry of Two Courses in Instructional Design

The five theoretical constructs were woven into the design of two courses on instructional design, including a basic course that teaches ID fundamentals and an advanced course that immerses students in an authentic learning environment. In the design of these courses, we think of them as being seamless, and their separation is treated as an administrative convenience rather than a conceptual or pedagogical necessity. In order to understand how we approach teaching basic instructional design, it is helpful to think of it as two discrete courses, but essentially they comprise one larger experience. Most of our students who arrive in our program are educators but they have no background in instructional design. In our program it is not unusual to have courses that run for a full academic year over the course of two semesters, so essentially one course running over two semesters. So we think of the two courses in the ID stream as one seamless experience with a break between the prerequisite experience and the advanced practice. The reason for the division is to allow students who are sampling ID to decide whether or not they're cut out to continue instructional design before they undergo the intense experience in second term, and offer them a graceful exit point.

Learners take the prerequisite course to learn the concepts and language of instructional design and then, in a second course, become members of a team working under the guidance of the instructor who adopts the role of Project Manager. The instructor seeks a contract with an external client before the class begins, a memorandum of agreement is signed, and the team is charged with the responsibility of completing the contract on time, on budget, and beyond the expectations of the client. This allows them to combine theory and practice to solve a real design problem. Students deal with many unanticipated aspects of completing the project, and critique the role of the Project Manager. They also prepare

project estimates and track their own time against the estimates. The role of the instructor is strong at the beginning of the course, laying the foundation of the course and turning control over to the students as the project develops. The instructor also plays the important role of providing direction and helping the team maintain its focus and perspective. Metacognitive critique facilitates the transfer of responsibility. The rest is left to the students, under the guidance of the instructor, and they are treated like fully franchised instructional designers—accountable in every way for the successful completion of the project.

Each group is required to create a complete working product that will benefit the client and the organization. The product is refined through usability and formative evaluation processes. Formal reports are provided to the client at three checkpoints: front-end analysis, prototype, and final product. At each stage, the client reviews submissions and signs off on that stage of the project. Team members also provide peer assessments. Clients are chosen based on need and the impact that the student projects will have on the client’s organization and its ability to fulfill its mission. The client reciprocates by agreeing to provide a fertile learning environment for the student team. Deeper meaning and a deeper connection to the local community is one of the benefits of stressing social involvement. We looked for real-life experience for students with a high degree of social impact. Students are given ample opportunities to reflect on the process. Students are made to feel safe in this learning environment and encouraged to try a variety of tasks. Everyone has a chance to participate in a variety of roles and exploring different jobs outside of the student’s comfort zone is promoted.

Course 1: ID Basics

Our first course addresses the fundamentals of instructional design—language, theory and practice of ID—in a safe setting where the consequences of failure or mistakes are minimal (see figure 1). The idea is to introduce students to the basic concepts of ID, and to allow them to apply what they learn to a project of their own design – usually something for themselves. This course is offered in an online format that features weekly video lectures, readings and activities, coupled with weekly group meetings in videoconferencing sessions. For a few years, we tried offering the course without any synchronous communication beyond one group orientation meeting. The asynchronous-communication-only course was successful in that students were able to learn and implement rudimentary ID ideas. But the learning seemed narrow, and there was little affection for the course, beyond the occasional evangelistic conversion. We felt there was a need for more spontaneity, and time to unpack and play with the ideas. Students also needed to share their learning experiences, as these formed a small repository of precedent on which they could draw when they encountered novel design challenges.

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| Unit 1: Introduction to instructional design: Careers, philosophy, processes, and models | This unit encourages you to articulate a personal model of instructional design by specifying and defending the significant components in the process. |
| Unit 2: Front-end analysis: Needs assessment | In this unit you will have the opportunity to think about which problems respond to instruction, learn two approaches to needs assessment, design a strategy for analyzing the need and discriminating wants from needs. |
| Unit 3: Front-end analysis: Learner analysis | This unit outlines the process of assessing learner characteristics that influence design. It considers cognitive, |

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| | <p>psychosocial and physiological characteristics. Other topics include specific prior knowledge, and data gathering techniques.</p> |
| <p>Unit 4: Front-end analysis: Context analysis</p> | <p>This unit provides an opportunity to conduct an analysis of the learning environment and the context in which learning will be applied.</p> |
| <p>Unit 5: Front-end analysis: Task /content analysis</p> | <p>This unit provides procedures and practical experience in conducting information processing analyses of the learning goal and a prerequisite analysis of the information processing analysis.</p> |
| <p>Unit 6: Writing learning outcomes</p> | <p>This unit describes the process of recognizing and writing appropriate learning goals and objectives.</p> |
| <p>Unit 7: Criterion based evaluation</p> | <p>This unit details the method used to write an appropriate assessment instrument blueprint that includes objectives, related content and assessment items or strategies that are congruent.</p> |
| <p>Unit 8: Overview of instructional strategies</p> | <p>This unit describes instructional strategies that are appropriate for a specified learning problem. It also describes how to assess that learning problem and prescribe generative or supplantive learning strategies where appropriate.</p> |
| <p>Unit 9: Instructional strategies for specific types of learning</p> | <p>This unit summarizes how to select and apply appropriate instructional strategies in the design of your selected case study.</p> |
| <p>Unit 10: Visual design: Form and Function</p> | <p>This unit discusses the difference between formal and functional decision-making in visual design, and emphasizes the importance of having function precede form in the design of instructional materials.</p> |
| <p>Unit 11: Visual design: Text and Multimedia</p> | <p>This unit describes appropriate design of various multimedia for instructional purposes, including text.</p> |
| <p>Unit 12: Evaluation: Usability testing</p> | <p>This unit details the process of designing and conducting low, medium and high fidelity usability tests.</p> |

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| Unit 13: Evaluation: Formative and summative | This unit compares formative and summative evaluation procedures. It describes how to plan a comprehensive formative evaluation for the major project. |
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Figure 1. Outline of content for foundational course in instructional design.

Videoconferencing sessions were limited to approximately one hour each week, as the course was already considered demanding by the students, and we were concerned that this would be seen as yet another demand placed on them. The feedback from students suggested that instead of being an additional demand, the sessions were considered to be pressure valves – places where insecurities and pent-up anxieties could be released. The weekly sessions became places where the course “load” for students was lightened, much to our surprise and delight.

Course 2: Field-based ID

The second half of the ID stream is a service-learning course. The instructor negotiates contracts with local not-for-profit organizations, and groups of five or more students carry out each instructional design project under the supervision of the instructor, who acts as the project manager. So early on, students are assigned to teams, and then they are assigned to an actual contract, with an actual client, and they are expected to deliver a professional quality product that meets or exceeds the expectations of the contract. Our principal motivation for adopting a service learning approach was that we wanted our students to have an authentic experience, one in which they would experience the actual demands, responsibilities, challenges, and satisfactions of carrying out instructional design that has real consequences. We also wanted to avoid the trappings of the regular classroom—examinations, lecture/discussions, regularized curricula—that sometimes interfere with the kind of authentic experience we wanted our students to have.

For one thing, that authentic experience, following the foundational exposure to theory, language and models of ID, allowed budding instructional designers to rethink what it actually means to be an instructional designer on a very personal level. Also, this kind of experience went far beyond the models of instructional design, and encouraged students to not merely follow a model of design, but rather, to reinvent design models that are appropriate to the specific project underway. It gives them a rich professional understanding of how to address messy, murky, ill defined problems—a circumstance they will encounter nearly every day of their professional lives as instructional designers in the field.

In a larger sense, we also want our students to experience and create solutions for problems that really matter. In order to magnify this, we deliberately added a social sensitivity or social justice criterion to the selection of our projects. We intentionally identified potential clients who could not otherwise afford professional instructional design services, an idea that others are also exploring (personal communication, Farrah D Yusop, Iowa State University, January 15, 2009). These are typically community-based nonprofit agencies and organizations. We hope our students gain an understanding through this that instructional design has social importance that reaches beyond the cost-effectiveness corporate metrics so often emphasized in instructional design businesses. In this way, we promote the idea that instructional designers are agents of social change, and their influence crosses interpersonal, professional, institutional and societal dimensions of change (Schwier et al., 2007). But there is another reason for choosing these clients that is practical. We want to avoid competing for contracts with the private sector, and avoid potential interference with the business community in our own locale. There are persistent and sometimes legitimate concerns that we might be able to leverage university resources and public funding to gain an unfair competitive advantage over the private sector—especially businesses that offer instructional design services in our community. We have developed a positive and

collaborative relationship with local businesses as a result, businesses that often hire our students after they graduate.

In addition, we created and live by the mantra: “on time, on budget, and beyond expectations”, again, to focus on the authenticity of the experience. Instructional designers everywhere live within time and budget constraints, and so these are essentially elements of survival. But we also want new instructional designers to understand that their success depends on exceeding minimal expectations; the best instructional designers consistently deliver products that are better than contracts require.

As an integral part of the class, the students locate and critique ID references that inform their work on the project or enrich their understanding of the process of ID. This emphasis on linking current literature to work goes beyond what most instructional designers actually do when they work on projects (Kenny, Zhang, Schwier & Campbell, 2005), but it encourages behaviour we think should be more common than it currently is in the practice of instructional design. This presumes that the practice of instructional design will grow stronger if it is clearly situated in current thought and research in the field, but it also serves the need to emphasize new content as part of this course in our graduate program. A feature we have not yet fully implemented, but intend to employ in coming years, is to include meetings with practicing instructional designers to test ID team ideas and get advice on the projects. These meetings will be held either face-to-face or through videoconferencing, and the goal is to inject another level of authenticity to the work our students do—to allow established instructional designers to critique their work and provide advice on projects.

The Process

In preparation for the course, typically several weeks or even months before the class begins, the instructor negotiates a contract or agreement with a local agency. The instructor and the responsible officer of the non-profit organization sign a memorandum of understanding (MOU). This part of the process is carried out by the instructor, who takes on the role of project manager for the ID group. In addition to the social criteria mentioned above, the instructor looks for projects that can be completed within a fourteen-week period. In early meetings with potential clients, the instructor emphasizes that the primary purpose of the class is to provide a rich learning environment for the students, and the client must fulfill their obligations to the project. The MOU is used to articulate the terms of the agreement and also provide a clear understanding of what is expected of both groups (see figure 2).

Memorandum of Understanding

The purpose of this MOU is to describe the nature of the project to be undertaken by an instructional design team in “Advanced Practice of Instructional Design,” and the [client name], and identify the essential contributions to the project made by the [client name] and the instructional design team. [name of instructor] met with representatives of [client name] to discuss the parameters of the project, and this document includes items drawn from that discussion, as well as additions made after consulting with [client name]. Throughout the project the design team and [client name] will also consult closely with representatives of [client name] throughout the project.

The content: The [client name] has produced a number of fact sheets about how to deal with various issues/challenges with infants, children, teens and adults who have [a disability]. These are aimed primarily at parents, and some of them also have [a disability].

The principal challenge/need: Northern groups sometimes find the fact sheets difficult to use. The materials are written at an inappropriate literacy level for some target audiences, and there is also a need to make the materials more culturally appropriate for that group.

The proposed product: Print materials in sheet, brochure or booklet form that adapt “[client name] Tips” to a northern and aboriginal audience—in this case, people within the [client name] area. The end users would primarily be parents of infants, youngsters, and teens who have [a disability]. The materials would be made available through physicians, public health nurses, trainers who work with front-line workers, instructors of parenting classes, social workers, the [client name] staff.

The instructional design team will develop products that will meet the immediate needs, and also act as a template for later development. The ID team will use three of the “[client name] Tips” pages from the [client name] Website to design print versions that satisfy the needs identified by the client.

The clients and SFASN contacts:

Client representative, Past President of [client name], will act as project coordinator for [client name] (signing authority for deliverables, and Subject Matter Expert)

[name], President of [client name], will provide advice and support (Subject Matter Expert)

[name], a student pursuing a Masters of Social Work is doing an internship with [client name]. She will consult with the team.

[name] (or appointee to be named), [client name], will provide liaison with the participants from northern communities. (Subject Matter Expert)

Contributions from the client:

[client name] will:

- provide timely consultation on the content and structure of the project;
- arrange for contact with a subject matter expert from [client name];
- arrange, with [client name], for participants to evaluate prototypes of materials in February and March.
- attend three meetings with the design team to receive the front-end analysis report, the prototype and design report, and the final product and evaluation report.
- provide necessary resources and pay expenses beyond routine development costs (materials, postage, telephone).

The [client name] will:

- provide timely consultation on the content and structure of the project;
- attend three meetings with the design team to receive the front-end analysis report, the prototype and design report, and the final product and evaluation report.
- identify participants to evaluate prototypes of materials in February and March.

- make arrangements for meetings that are held in [city].

Contributions from the instructional design team:

- complete phases of the project in a timely manner;
- conduct usability tests of materials with participants;
- communicate with the client professionally and regularly;
- provide three deliverables on or about the following dates:
 - front-end analysis report (date)
 - prototype and design report (date)
 - final product and evaluation report (date)
- supply equipment and absorb routine expenses, and pay travel expenses for two trips by the team to [city], if required.

Figure 2. Example of a memorandum of understanding between the design team and a client.

At the first class meeting, and sometimes even before the class officially begins, the design team meets with the client(s). The purpose of the meeting is to introduce all of the participants, and to share and clarify all of the decisions that have taken place previously (see figure 3).

| Design Team and Client Meeting Agenda |
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| 1. Introductions |
| 2. Discuss the nature of the project – Why important? Client expectations? |
| 3. Review points in the Memorandum of Understanding (note dates and meetings) |
| 4. Protocol for approving deliverables (FEA, Prototype & Design, Project & Evaluation) |
| 5. Procedures for contact & consultation |
| 6. Other issues/concerns? |

Figure 3. Sample agenda from initial meeting between the instructional design team and the client(s).

Immediately following the meeting, the instructional design team revises the plan and timeline based on the meeting with the client. The members of the team decide individual roles, and the team makes recommendations subject to the approval of the project manager (instructor). This oversight is

important, and not inconsistent with what typically happens in larger projects. The project manager reviews the decisions to determine whether there is a good match between the skills of the team members and their responsibilities, and also checks for equity of workload.

For the duration of the project, the group meets with the project manager weekly for team meetings, and the project manager meets regularly with individuals as they work on their parts of the larger project. The team meetings include a review of readings that design team members found that inform their work, roundtable reports where each team member reports on her/his progress since the last meeting and lays out plans for the coming week, the identification of resources and support required by individuals and the team, and an open discussion of difficulties and opportunities.

Client meetings and deliverables

There are three additional formal meetings with the client. At these meetings, the principal client and any other members of the organization are invited to receive a report by the instructional design team. The three reports delivered include:

1. Front-end analysis report (including a needs assessment, context analysis, content analysis, and user/learner analysis)
2. Prototype (a high fidelity draft of the product)
3. Evaluation report and final project (usability and formative evaluation results, revisions and delivery of the final product)

At each meeting, business attire and a professional attitude are required, and the instructor emphasizes how important it is to act professionally, yet personably. Each deliverable is signed off by the project manager and the client. Following each meeting, the team's performance is reviewed, and the group discusses what was learned about the project, and also what was learned about the process of instructional design.

Assessment

Performance assessment is variable, depending on the demands of the project, but at minimum includes peer evaluations following each deliverable, reviews of the product and the performance of the team by clients, and weekly instructor feedback and evaluation of the team and individuals. Each week, team members file a peer evaluation that identifies their own contributions and the contributions of other team members to the process. These are formative assessments. Disagreements among team members about relative contributions are surfaced, and discrepancies invite a meeting with the project manager to sort out problems. We have found that this monitoring function is critical to the success of the project, and the process serves to identify problems before they become unmanageable. The final assessment is performed by the client, who provides a report that comments on the performance of the team and the quality of the product. The instructor provides a similar report, written independently, and both comprise the major portion of the mark that students receive in the course. Students are also required to maintain a professional journal, in which they record and consider their challenges, learning and growth as instructional designers.

Each of these evaluation instruments is available for students to include in their professional portfolios, and they serve as the basis for a group debriefing on what was learned from the process.

Practical considerations

Offering a practical authentic learning opportunity during the educational process of instructional design makes sense, in that it recognizes the interdependence of cognition and context. When these elements are treated separately, "knowledge itself is seen by learners as the final product of education

rather than a tool to be used dynamically to solve problems” (Herrington & Oliver, 2000, p. 23). We contend that an effectively implemented authentic experience will realize benefits for both the students and agencies involved. While there are a host of smaller considerations, we suggest that an authentic learning project should attempt to include the following elements:

1. Select a project that can be easily completed within the time available. We have found that smaller projects are beneficial as they allow for sufficient time to reflect, review, discard and revise the process and products of learning.
2. Choose a client who is flexible, and who accepts that the primary goal of the experience is the students’ learning, not the product being designed.
3. Communicate a clear understanding of what is expected of the students and of the client.
4. Be prepared to deal with unexpected events and have contingency plans in place before beginning the project.
5. Establish and maintain clear and regular communication among the instructor, client and students.
6. Ensure the deliverables are delivered, and that they meet the expectations of the client and the demands of the learning context.
7. Promote and regularly reinforce metacognitive learning activities focused on the academic intentions of the course.

Authenticity and Instructional Design – Conclusions

We have realized over time that there are a number of significant advantages to adopting an authentic learning approach. One of the largest advantages is the enthusiasm and the sense of being an instructional designer that students take with them when they have finished their course. They enjoy the work and the challenge, but beyond that, there is no gap between learning about doing instructional design and being an instructional designer. They live the part, and through their experience they gain explicit and tacit understanding of the roles played by instructional designers and the instructional design process. They also learn that instructional design is more than adopting and following a model of ID; it involves inventing a model and process that fits the needs of a particular project. This is a transition that we have seldom seen in other instructional settings. Following conventional instruction, students seem to be too reverential about existing models of instructional designs, almost as if the models are sacred and the process of instructional design is a context-free ritual that must be followed precisely. That myth is shattered when student designers realize that their responsibility is to deliver an outstanding product, not to follow a diagram slavishly.

Because we were working with a real client, the relevance of what we learned was always readily apparent. We applied what we were learning immediately, and did so in a high stakes environment, which means I've retained a lot of the course material and intrinsic motivation to learn it.

The project helped me to prepare. I learned loads about project management in addition to stuff like usability testing, finding out what a client really wants, and other good ID stuff.

The learning “stuck” like it didn’t in other courses because I used it later in my work. It stands out for me most vividly of all my master’s courses because I was engaged in work that was significant.

We have also noticed that our student-designers develop an understanding that the practice of ID goes beyond the traditional notions of training and education. The lines between “instructional design”,

“information design”, and “product design” become blurred, and students pay much closer attention to what it means to design through a collective narrative among the team, manager and clients. They also become sensitive to the social implications of design and understand that they have a very real influence on an actual need and context. As a result, their respect for the process of design, and their identities as instructional designers, grow and become ingrained.

When you don't sit in the negotiating, wrangling and excitement as a project develops it appears to be very easy from the outside. The groups would explain their reasoning for decisions or their struggles and it all seemed so "of course". Yet, you knew there was so much work/thought behind the scenes.

A pleasant serendipitous benefit we have realized is that students often receive follow-up contracts with clients they have worked with in the course. The clients also share their experiences with other organizations in similar resources-challenged situations. Through this word of mouth promotion, networks of clients develop, and the reputation of our students for doing good work becomes a natural draw for external contracts.

But there are drawbacks to this course, and very real trade-offs that must be considered before adopting the approach we present in this paper. From an instructional perspective, the biggest disadvantage is that each offering of the course is unique. We cannot determine with a high degree of confidence whether a particular experience will be reasonable, successful, pleasurable, or even instructive. To date, we have been very successful with clients and projects, but there have been two projects that were less satisfactory than others. The key problem seemed to be related to the client's expectations, and the design team's reluctance to confront them directly. The project manager can deflect these kinds of problems, but it means that the project manager must be tuned to clues that the process is slipping. Clients sometimes do not realize what they are asking of a design team, and students are often reluctant at first to reveal their concerns. After encouraging the design team to disclose uncertainties and insecurities openly, we have found that these issues provide excellent opportunities for learning; but if kept private, problems can interfere with the work of the team and ultimately put the product and the students' learning at risk.

I think the process of 874 was stressful for many members of the class because we had to be competent while we were first learning and we had to work in a team. However, this meant learning extended beyond the instructional design process and into working with clients, working with co-workers and being able to assess your own learning. All of these elements made for deeper and more relevant learning in the long run.

One other key difficulty is the workload for students and the instructor associated with this kind of work. Students devote considerably more time and effort to this course than to their typical graduate courses, and the amount of personal investment is very difficult to predict or control. Similarly, the instructor must invest heavily in the course and take responsibility for managing student learning in a unique and unpredictable way. Instructors who are comfortable exercising a great deal of control over the content and process of learning will likely find an authentic learning environment challenging and chaotic in comparison to typical classes. Teaching in this environment requires energy, patience, and flexibility, and a large amount of tolerance for ambiguity.

We affectionately nick-named 874 "The Widow Maker" as the work load to time ratio was significantly greater than other courses. Having said this, the project really challenged us to work as a group as in a real world setting. As far as we were concerned, it was real. We were working as an ID team for a client. With that came all of the challenges in organizing and delegating responsibilities for the process.

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