Teaching Instructional Design:  
An Action Learning Approach

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Introduction

Instructional design is a complex and challenging field of study. Practitioners in this field are called upon to create effective instructional solutions for all types of education and training contexts and content. Theorists and practitioners involved in teaching instructional design have begun to find fault with traditional teaching models, which convey a formal, abstract process often far removed from the exigencies and specificities of real world practice. These leaders are calling instead for more authentically-based experiences that allow students to better integrate the required knowledge and skills of the discipline while simultaneously learning to function successfully within the challenging context of real-world instructional design situations (Tessmer & Wedman, 1995; Winn, 1995). Various teaching approaches have attempted to better communicate the complexity of instructional design practice by including methods such as case studies, authentic project-based experiences, and cognitive apprenticeship models, among others. These approaches, while advancing the study of our discipline, are typically implemented in a traditional college course format, thereby providing only a limited amount of time and experience in the actual process of instructional design.

This paper focuses on the implementation of a new teaching approach for instructional design, a pedagogy based on action learning theory. Complementary to the practice of instructional design, action learning provides a framework for team-based, project focused, learning experiences that capitalize on the divergent skills of a team in a problem solving process. Action learning is viewed as an alternative perspective for teaching content and practice that can specifically address many of the problems in teaching a highly complex, applied, team-based discipline such as instructional design.

The Study and Practice of Instructional Design

The study and practice of instructional design involves the creative application of principles of learning, skilled planning, decision-making and technological expertise. The field is a challenging
Discipline that attempts through a systematic process to provide effective and innovative solutions to instructional problems. This process is useful in various contexts including educational, corporate, academic and military workplaces. Instructional designers implement prescriptive and descriptive theoretical constructs to assist them in the analysis, design, production, implementation and evaluation of instructional materials. Instructional design is viewed a complex intellectual process requiring higher-level thinking skills and involving a myriad of professional skills to systematically problem solve instructional and training situations (Nelson, Macliaro & Sherman, 1988).

Addressing this complexity, theorists in the field have raised concerns over traditional methods of teaching the process of instructional design (Richey, 1997; Winn, 1997). The perspective has emerged that traditional methods of teaching instructional design do not adequately prepare students for professional practice in the field (Cennano & Ertmer, 1994). Most important, there exists a noted incongruency in the content and methods involved in learning the discipline and what constitutes actual practice. Rowland, Fixl & Yung (1992) state that many students who left their courses had difficulty with their first real projects, noting that there existed a wide gap between the complexity of the instructional design case they encountered and the simple processes they had learned in their program of study. In addition, focusing on shallow procedural processes rather than a thorough understanding of underlying theoretical constructs as vital to good design has been an apparent problem in many instructional design programs. Winn (1997) reports that, in many programs, instructional design is being taught as a simple procedure -- often with the focus on media production as an end in and of itself. This approach ignores the complexity of this discipline and the high level of communication, negotiation and other related skills needed for the practitioner to successfully approach instructional problems.

Shifts in the philosophy and theory of learning are also impacting the field. There is an increased emphasis on the practice and teaching of the field in regard to learner experience, learner control and learner interpretation as well as an emphasis on authentic environmental and contextual factors and their impact on teaching and learning (Richey, 1997). Stress has also been placed on the integration of theory with practice and on inducing reflective metacognitive processes in pedagogical approaches to teaching instructional design. Knowledge of theoretical perspectives on learning are at the core of the instructional design process providing the practicing professional with a rich basis for and selection of instructional strategies that can enhance design. William Winn (1997) echoes the importance of theory and reflection in design by stating, “Reflection on problems enabled by knowledge of underlying theory whose greater abstraction gives you more room for thought, is an expedient way to find new and creative solutions” (p.37). In attacking complex and ambiguous instructional situations, design practitioners need an arsenal of strategies and approaches to support their efforts. Knowledge of perceptual and cognitive theory is viewed as one of the key factors in finding effective instructional solutions and promoting good design (Winn, 1997; Reigeluth, 1997).

Various approaches incorporating many of these principles in teaching instructional design have recently surfaced in the literature, including: cognitive apprenticeship (Ertmer & Cennamo, 1995); layers of necessity model compatible with the practice of instructional design (Tessmer & Wedman, 1995); Web-based instructional design case studies (Kinzie, 1997); and authentic instructional design projects in the traditional classroom (Quinn, 1994). These teaching methods, along with many conceptual and research studies examining process of instructional design (Rowland, 1993; Perez & Emery, 1995), have informed the teaching and learning process in the field. However, finding ways to fully incorporate authentic contexts, knowledge of theory, design practice and reflection within the confines of the traditional college classroom setting remains a challenge. Even with the integration of project-based, internship or case studies experiences, the actual practice of
instructional design is limited to the time frame constraints characteristic of a typical three-credit college course. While attempting to combat the problems of complexity and incongruity of teaching methods and practice, many of these approaches remain rooted in and severely limited by traditional teaching contexts.

**Action Learning and Instructional Design**

An alternative model for instruction that provides a strong basis for use in authentic contexts and applied practice settings is action learning theory. Promoted primarily in business settings, action learning has been used in corporate management training programs such as Marriott's Virtual University Career Development in the Workplace as well as in higher education settings such as Harvard's Executive Development program and George Washington University's Executive Leadership program (Marquardt, 1999). However, action learning has not previously been integrated into the formal study of instructional design. The principles of an action learning approach (please see the left-hand column of Table 1 for a summary) provide a framework for re-examining methods of teaching of instructional design. In addition, the suggested components of action learning correlate closely with the specific challenges involved in teaching the ill-structured, complex problem solving processes of the practice of instructional design.

Defined by Marquardt (1999), "... action learning is both a process and a powerful program that involves a small group of people solving real problems while at the same time focusing on what they are learning and how their learning can benefit each group member and the organization" (p.4). Action learning theory attempts to confront the increasing demands of environmental change and job complexity in the corporate workplace through promoting a team-based learning process inducing new perspectives and capitalizing on team resources to solve problems. This approach relies on elements such as real problems, the intellectual resources of team members from various backgrounds unfamiliar with the problem or setting and questioning techniques that encourage new lines of inquiry in the effort to solve a problem (Dilworth, 1998).
<table>
<thead>
<tr>
<th>Principles of Action Learning</th>
<th>Considerations for Teaching Instructional Design</th>
<th>Applications at George Mason University via Immersion Program</th>
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<tbody>
<tr>
<td>• Real problem</td>
<td>Incorporate single-project action learning approach through establishing design group to work on an authentic instructional design prototype project implemented within a full-time Masters level program of study</td>
<td>Solicited corporate, military or grant sponsor organization to fund student work on instructional design project prototypes. Established three Immersion design groups - one military sponsored, two grant sponsored</td>
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<td>• Designated project sponsor intermediary</td>
<td>Establish project intermediary to help ensure access to subject matter experts</td>
<td>Included liaisons from Department of Defense, computer science department and recent graduate of doctoral program in Special Education as subject matter experts and associated members of project teams</td>
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<td>• Diverse team</td>
<td>Recruiting full-time students with varying skills to complement project work with tuition funding</td>
<td>Students selected with various academic backgrounds and experience levels</td>
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<td>• Unfamiliar problem and setting</td>
<td>Selected students have little or no experience with ID problem context or content</td>
<td>All students have content knowledge of ID from basic course but little or no experience in the formal application of ID procedures.</td>
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<td>• Systematic processes</td>
<td>Introduce elements of action learning as a systematic framework for the study of applied instructional design.</td>
<td>Students read and discussed action learning and committed to the using approach.</td>
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<td>• Problem viewed as a significant issue by action learning participants</td>
<td>Point out to students that they have been provided with an opportunity to make a difference on a real project and see implemented results rather than completing an exercise.</td>
<td>Through direct interaction with the project intermediary and subject matter experts, students are made aware of the importance of the problem to their context.</td>
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<td>• Unfamiliar problems/settings induce fresh questions and creative responses from action learning group</td>
<td>Students need to develop skill in adapting to unfamiliar work places, assimilate new content and deal with ambiguity in the practice of ID</td>
<td>Class discussion and group interaction time set aside to facilitate questions about the problem setting and specific contextual issues related to project</td>
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<tr>
<td>Topic</td>
<td>Description</td>
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<td>Balance of programmed knowledge with questions and reflection</td>
<td>Focus placed on reflecting upon and integrating knowledge of design procedures with the many inherent processes involved in the actual practice of design. Value is placed on group and individual process, not just on the final product.</td>
<td>Students required to produce individual Web-based portfolio that includes reflection on individual’s emerging knowledge of design and on individual’s perception of group processes.</td>
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<td>Use questioning to prompt deeper level of analysis, test assumptions, explore possibilities</td>
<td>Support out-of-the-box thinking and obvious questions in gaining new insights into the design situation</td>
<td>Capitalize on student’s struggle with practically implementing ID process, allow questioning of procedures and exploration of additional methods and viewpoints</td>
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<td>Establishing group ground rules and norms, create supportive atmosphere, allow all group members “airtime”</td>
<td>Allocate time for team process activities, control pace to permit sharing of ideas and frustrations, place focus on meeting goal of deliverable project rather than interpersonal issues</td>
<td>Designated class time for team formation and reviewed of stages of team process, set aside time for debriefing of team process after crucial meetings and project deliverables, placed emphasis on problems of group rather than individual interpersonal issues</td>
</tr>
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<td>Commitment to action and implementation of ideas</td>
<td>Require individuals and group to actively implement appropriate stages of the design process</td>
<td>Students used ID process as a guide for attacking problem situation, project management procedures also provided guidance for taking action in directing phases of project</td>
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<td>Commitment to individual group, organizational learning</td>
<td>Find ways to capitalize on team progress for organizational (or program) learning and progress</td>
<td>Implemented Web-based project site to archive design process and progress, drafts, models and final products. Creation of central location for subject matter expert review of products as well as archival review of products by future students. Project site and individual portfolios serve as qualitative data for formative evaluation of program.</td>
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<td>effective facilitator</td>
<td>Provide airspace for every member of the group, focusing on tasks at hand, using a questioning approach, pay attention to listening, give time for reflection, create an emphasis on learning and avoid judgment</td>
<td>Designated class time for students to integrate previous knowledge of ID processes and readings with experience in actual practice of design; support positive group process; intervene when needed to re-direct, clarify group process or re-motivate; attempt to allow any</td>
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Nature of Action Learning Problems and Groups

Several primary components are necessary to create an action learning environment. At the most fundamental level, action learning requires a real problem and a committed group of individuals to solve the problem. Similar to the instructional design process, action learning uses a systematic process to address various types of problems at both the macro (organizational) and micro (individual development) level. However, in contrast to traditional methods of teaching instructional design, action learning principles advocate working on an actual organizational or individual problem that is seen as significant by all participants. Typically, within instructional design courses, students apply the instructional design process to small, well-defined and construed topics. The use of action learning within instructional design coursework has the potential to increase the complexity of teaching in the service of providing an enhanced learning environment for students in dealing with complex problems in this discipline. An action learning approach also has the potential to increase student's motivation in creating the opportunity to make a significant difference on a real project rather than merely completing a class exercise.

The action learning framework promotes involving participants in problems that present unfamiliar content or are situated in unfamiliar settings. This recommendation is based on the assumption that placing participants in a situation that presents one or more unfamiliar factors induces more creative responses and elicits more innovative questions, as opposed to allowing those involved to rely on established, comfortable approaches or typical solutions that might be generated in familiar contexts. Ideally, from an action learning mindset, the best problem context is one where both the problem content and setting are unfamiliar and the participant group represents a wide diversity of viewpoints. These attributes are seen to provide members the greatest opportunity for learning and for breaking out of self-imposed assumptions that can limit creativity and potential approaches to problems (Marquardt, 1999).

These tenets of action learning have much in common with the practice of instructional design. Typically, designers are called upon to analyze unfamiliar settings and contexts as well as to synthesize and develop content that is outside of their expertise. Not only must instructional designers be skilled at adapting to unfamiliar work places and procedures but they must also be able to quickly assimilate new content and to present creative solutions to a variety of instructional problems. Each instructional design situation presents unique challenges that force a designer to rely on questioning and creative responses to deal with ambiguity and situational constraints. In addition, instructional design teams are often comprised of individuals with various backgrounds and expertise including project management, visual design, computer programming, and other areas. In dealing with a development team and subject matter experts, designers must posses the ability to handle diverse viewpoints within a group setting, while also focusing on accomplishing the project at hand.

Balance of Questions, Programmed Knowledge and Reflection

Questioning and reflection are core components of the process of action learning. While proponents
of this approach place value on current knowledge that the team possesses, (such as content knowledge typically learned in academic preparation or knowledge existing in an organization's knowledge management system), a higher value is placed on balancing this type of "programmed knowledge" with innovative questioning and reflective insights. It is believed that programmed knowledge is an important source of learning, but is incremental, narrow in focus and embedded in the past. Therefore in isolation this type of knowledge generally does not lead to significant advances in the today's challenging instructional and business environments (Marquardt, 1999). Similar to recommended problem solving techniques or needs analysis procedures that advocate finding out as much as possible about the problem context prior to presenting potential solutions, the action learning process focuses initially on asking questions rather than depending primarily on programmed knowledge for immediate answers.

**Programmed Knowledge**

Primarily relying on traditional methods of teaching that deliver "programmed knowledge" related to instructional design models and procedures can limit students' perspectives in dealing with complex problems found in the actual practice of instructional design. Design involves more than using standard models and following set procedures -- it requires asking good questions and reflection on selected processes (Rowland, 1992). Although not the core focus of their writing on teaching instructional design, Cennamo & Ertmer (1992) provide an action learning view of the balance of programmed knowledge, questioning and insight within the context of instructional design. Although we need designers who can follow rules when presented with technical and rational problems, we also need designers who can make good sense out of those problems that are not technical or rational: that is, designers who are good problem setters, who are aware of multiple possibilities for solutions, who can make good choices, and who can reflect on the choices they make to determine if learning goals have been met (p. 2).

**Questioning and Reflection**

The action learning framework advocates questioning and reflection to prompt a deeper level of analysis, to test assumptions, and to explore possibilities. In addition, establishing a supportive, egalitarian context that promotes any and all questioning can assist in defusing defensiveness and inducing creative problem solving. This approach highly supports soliciting the most obvious questions from individuals not familiar with the specifics of the context or problem in order to prompt the group to view the situation from a different perspective. Interestingly, it is often the design group participants most unfamiliar with the situation who can prompt out-of-the-box thinking by the group. The needs analysis process included in instructional design procedures often requires this type of skill and thinking in order to accurately assess a problem situation and provide an effective solution. The combination of a supportive atmosphere, an informed knowledge base, an inquiry process and multiple perspectives on a problem has great potential to elicit change and progress especially in the context of practice and teach of instructional design.

Inherent in the design process and an important aspect of becoming an instructional design professional is mastering the process of reflection in action (Schon, 1983; Rowland, 1993). As the designer takes action and then assesses the consequences, he or she needs to determine the next action or consider redirecting efforts. This "reflective conversation" with the materials and specifics of the situation helps to provide guidance for the designer and, helps to relate experience to knowledge and identifies similarities with other design situations previously encountered (Rowland,
Reflection in action guides the designer in viewing the problem and testing various solutions while providing a base of knowledge that becomes expertise.

Similarly, reflection is also at the core of the action learning process. Reg Revans, the founder of action learning, promotes providing time and space in order to "... stand back and reflect, unfreeze thoughts, rise above everyday problems and bring things into a common perspective" (Marquardt, 1999, p. 33). Establishing a common perspective on the problem, design methodology and procedures is very important for communication between the members of an instructional design team and the subject matter experts. Having a broad view of each team member's various roles and responsibilities within a design team is also crucial for communication and progress on a project. Akin to the reflection-in-action process touted in the instructional design literature, the action learning framework promotes group members to explore new areas of expertise, reflect on their attempts, consider the results and attempt to use this new knowledge in other problem contexts. In addition, reflection can help to promote insightful questioning in times of confusion; complexity and chaotic conditions typically found in real world instructional design situations.

Commitment to Action and Learning

As the name indicates, action learning is interpreted quite literally by its advocates to mean there is no learning without first taking action. Learning from the implementation of recommendations by an action learning group is an essential element to the framework. Learning then, according to the action learning perspective, is defined by the combination of all of the following factors: programmed knowledge, questioning, reflection and implementation. Requiring the individual to take responsibility for implementing ideas and recommendations from the group in practice is a fundamental part of the action learning process that cannot be overlooked. Implementation in real world settings induces further reflection and insight so that learning from successes or failures of the results can occur. Further emphasizing learning, proponents of this approach stress setting time aside to converse about individual learning and how to capitalize on the team's insights within the organization. As Marskick (1990) indicates the action learning approach may be perceived as irrelevant to the bottom-line and results-oriented view prominent in the world of business. However, that view is changing in the corporate arena with the advent of new perspectives that focus on building learning organizations (Marquardt, 1996) and on sustaining momentum and adapting to change in the corporate marketplace (Senge, 1999).

Within an academic setting, placing priority on individual action and learning is the mission of those in education. Although, not typically emphasized in the university context, placing priority on group and organizational action and learning has the potential to further enhance teaching methods. Although promising new instructional methods are appearing in the literature, many instructional design programs still primarily rely on presentations of concepts, procedures, simple examples, exercises and small projects (Rowland, Parra & Basnet, 1995). In contrast, Tessmer & Wedman (1995) note learning processes of exploration and construction may be as important [to the training of instructional designers] as the learning product that is produced. To help enhance methods and training in this discipline, Winn (1989) suggests a focus on reflective practice of instructional design for students rather than additional courses in procedures. Creating established outlets and methods for reflecting on both an individual basis through electronic portfolios and on a group basis through project Web sites can provide new avenues for individual as well organizational or program learning. Incorporating methods that focus on process as well as content into teaching can only enhance the formal and informal learning processes of a budding designer.
Facilitation of Action Learning

The facilitator of an action learning group has the responsibility to provide support for the group to take the time necessary to reflect on their actions and learning as well as to monitor progress assisting the group in moving forward. As Marquardt (1999) indicates, “the facilitator acts as a link to maintain contact with key people outside the action learning group; as a catalyst to move people out of anecdotal mode and into analytical mode; as an observer to focus on and prompt group process; as a climate setter to help establish an open, trusting atmosphere for communication; an communications enabler to help group members develop skills of giving and receiving information and opinions; and as a learning coach to assist team members in taking responsibility for their own learning as well as to appreciate their experiences within the group as a valuable growth opportunity” (Marquardt, 1999, pp.37-38).

Providing a teaching focus on process rather than content within instructional design courses and experiences supports a constructivist orientation and situated learning perspective requiring the facilitation of learning by the instructor. This type of instructional experience is best offered to students after a course in basic terminology, procedures and models. Brown (1992) delineates the aspects of teaching in this manner where instructors assume a coaching role providing advice and modeling to students on learning tasks. In addition, students assume an expert role in mastering a particular aspect of the task at hand and then participating in a form of reciprocal teaching (Palincsar, 1989). Winn (1995) terms this shared responsibility for student learning as an apprentice-mastership that is co-created by both students and instructor. Those who take a constructivist stance within the field of instructional design support the process of facilitating student’s mastery of their own learning and the development of new strategies, tools and resources that support student’s in functioning within an authentic learning context (Lebow, 1995).

Integration of Action Learning Constructs in Teaching Instructional Design

There are obvious correlates between the action learning process and the teaching and practice of instructional design. The process has the potential to better address the complexity of instructional design in training students. Additionally, adopting an action learning approach can combat the problems of teaching content abstracted from practice and the time constraints of the traditional college classroom that provide a limited experience. In this regard, the action learning model has been applied to the teaching of instructional design coursework in the Instructional Technology Masters program at George Mason University (GMU). Labeled the "Immersion Program" this academic experience attempts to integrate authentic instructional design project-based experiences with principles of action learning. The features of the program include the following: interaction with a real world design problem and subject matter experts; a design team of 8-10 students initially unfamiliar with the problem and the setting and other team members; and the promotion of students' positive interaction with a design team and support of their development as independent learners. Please see Table 1 for reference of the integration of the principles of action learning, considerations for teaching instructional design and the implementation of these ideas into GMU’s Immersion program.

The Immersion program is a full-time Masters and Doctoral level in which students from various academic and professional backgrounds participate in corporate, military or grant-sponsored projects and work through the instructional design process in a team-based experience context similar to real world practice. Different from a traditional three credit course model, the Immersion program is composed of a nine-credit per semester instructional design applied project experience.
complemented by conventional courses in technology and theory that further support the project work. Students are also supported by several professors, instructors and project intermediaries or representatives from the sponsoring organization who provide content, resources and instruction when needed. Incentive to participate in this intensive program is based in the student's desire to learn in a more authentic manner, paid tuition for the majority of program credits by the sponsor, and creation of a tangible product to demonstrate to potential employers.

The learning experience of the Immersion program is based upon integrating instructional design content knowledge and promoting team-based problem solving to effectively develop an instructional design solution. Typically, the experience culminates in the production of both a prototype project (generally computer-based) and a comprehensive instructional design document that rationalizes the integration of current theoretical and prescriptive principles prominent in the instructional design field. The sponsor may then elect to further develop the prototype project or reinvest in another Immersion design group to complete development on the project.

Currently three separate Immersion design groups of 8-10 students are in progress at GMU. Support for the program is currently provided by various sponsoring organizations, including the U.S. Department of Defense (DoD) and the U.S. Department of Education. Design projects that the students are currently working on include: the development of a CD-ROM based orientation program for the Senior Executive Service in DoD; a Web-based electronic performance support system for literacy facilitators who work with students with special needs; and an immersive virtual environment teaching science concepts to learning disabled high school students. The majority of sponsor organizations have designated a project representative or intermediary to interface with the Immersion design team and the organization in order to help facilitate access to relevant data, content and subject matter experts. These intermediaries work closely with the instructors/facilitators on attempting to eliminate logistical and administrative obstacles that may inhibit progress on the project for the Immersion group.

The students are selected into the program based on the match of their skills to the project at hand, availability for full-time study and on fulfillment of prerequisite courses in basic instructional design and Web development. Since the majority of graduate students attend GMU on a part-time basis, providing funding for recruitment of full-time students becomes a necessity. Students are provided with coverage of the majority of their coursework through grant and sponsor organization funding. In return, the sponsor receives a developed prototype and design document that reflects current theoretical and prescriptive constructs in the field of instructional design. The students are provided with a rich, authentic design and development experience supported through instruction and facilitation by the instructors and project intermediaries.

Aligned with action learning principles, the Immersion program is heavily focused on learning processes, rather than a specific product deliverable. Although the goal is to progress through the design process from analysis to evaluation, the group is not typically held accountable for a fully developed, commercial level product. The emphasis remains on the teaching and learning that occurs through experience in designing and developing the project. Sponsor organizations have been very supportive of this emphasis and endorse this perspective through attending presentations and formative review sessions set up by the students.

Clearly established objectives and expectations as well as requirements and assessment methods have been formulated for this unique instructional experience. Assessment methods include instructor review of required individual Web-based portfolio as well as self, peer and instructor assessment of individual's progress via a five element rubric on team contributions, skill sharing,
In addition group design processes are documented through the student development of a project Web site (including contacts, status reports, design deliverables and presentation products). Students use the project site to communicate amongst their team, share drafts of required documents and post final design document deliverables such as a needs assessment for subject matter expert review. This documentation of collaborative and individual perspectives on design processes ensures a focus on learning and reflection while working toward solutions on real problems. A strong emphasis is also placed on establishing teamwork processes, egalitarian project management tactics, application of theory and encouraging fresh approaches to the applied practice of design.

**Conclusions**

Clearly, traditional methods of teaching instructional design are incompatible with the complexity of realistic instructional design problems, rapid change prominent in the contexts where instructional design is practiced, and the need to more realistically reflect the integration of content, process and practice. Action learning provides an alternative paradigm that could inform the teaching and learning of instructional design. This approach can further the success of some current methods of authentically-based teaching that have indicated student satisfaction and learning in presenting issues within an academic context typically only encountered in the work environment (Quinn, 1994). Implemented at the programmatic level within a full-time Masters program, an action learning approach has been shown to constitute a highly complementary teaching method for instructional design by providing a framework for team-based, authentic project experiences and support in a learning context. The action learning approach incorporated into the teaching of instructional design within George Mason University's Immersion program strives to provide the opportunity for students that Winn (1997) describes in bringing theory to design and application in a direct manner.

**References**


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