

The Virtual Profession Immersion Model: Bridging Principles and Practice For Instructional Design Students

John M. Roussell, Ph.D.
California State University, Chico

Introduction

Instructional design students are typically provided with a strong set of instructional design theories and models as a major component of an instructional design degree.

These models vary in particulars but include three basic questions:

Where do you need to go? (learner and needs assessment)

How will you get there? (instructional strategies)

How will you know when you have arrived? (evaluation).

The models represent theories that include knowledge from educational psychology, motivation, adult learning, and program assessment and are critical to the design process. However, these models are often presented in a linear manner that implies a step by step approach to designing instruction. The danger is for students, who are presented various models, to learn the models through declarative knowledge acquisition, being able to recall all of the steps of an ID model as if one is memorizing the steps in baking a cake. Students may also be presented and taught ID models that emphasize procedural knowledge acquisition. This approach would focus the student on learning how to perform and complete an instructional design project. Good & Brophy (1995) reported that combining both declarative and procedural knowledge acquisition strategies were most effective for students learning new concepts and skills. But what if learning what the ID models are, and learning how to apply the models do not necessarily coincide with what strategies and activities ID practitioners actually employ when designing instruction?

Instructional design application has been often characterized as being more of a non-linear exercise than is represented in ID models (Smith & Ragan, 1999). Events incorporating instructional design vary in order and necessity based on the context of the instruction, client intervention, costs, and continuous changes inherent in the design process. Unlike relying on the steps of baking a cake, designing instruction is a more fluid process involving a variety of ever-changing factors and players. However students often experience a disconnect between learning ID models without seeing how those models are applied, altered, or ignored in actual practice. This disconnect can turn into anxiety upon hearing practitioners report that they don't really use the models in the "real world". In addition motivational learning hurdles can exist due to the perceived lack of relevance between what is being taught and what will actually be needed in the workplace. Thus a need to explore and present the ID realities of application in conjunction with the presentation of ID theories and models.

Background

Students at the Instructional Technology program at California State University, Chico find themselves accelerated into positions as instructional designers directly out of the undergraduate program. This is a unique situation because traditional instructional design programs are offered at the graduate level. It is vital that these students get a rich understanding and grasp of types of effective instructional design models as well as getting first hand experience for how the models are being applied in the professional setting. Students have been routinely assessed based on their ability to grasp knowledge of instructional design theories and models. The most popular methodology is to evaluate students on their ability to apply ID principles through student led projects that routinely are graded based on how well particular models were followed. Two potential problems became apparent with solely relying on this approach..

1. Students were putting an overwhelming amount of effort on narrowly following model procedures to complete projects that lacked particular authentic components of ID practices.
2. Students were demonstrating a reliance and belief that the ID practice is in fact a linear, step-by-step complete process representative of the way the models were presented to them.

Although there is no denying the benefits of following a particular ID model when developing instruction, and in fact on closer inspection of professional practices, particular models can be identified even if not followed completely to the letter. The fundamental issue is not creating instruction for the purpose of following models, but for the purpose of solving problems. Thus Virtual Professional Immersion (VPI) was designed and developed by the author for the purpose of bringing real-world practices into the classroom to augment traditional ID theories and models for the students.

Virtual Professional Immersion Rationale

One of the potential solutions focused on by the author, centered on providing exposure of real world ID problems and solutions to students in the classroom. Traditionally the senior students in the program took a class that focused primarily on Instructional Design theories. It became apparent that learning theories without application experience would create a false sense of preparedness in students who begin the task of designing and developing instruction. Likewise, the lack of understanding how theories and models are applied created a challenge in truly understanding the complexities involved in learning theories and models. It should be noted that students in the program take ID classes in actually putting learning into practice with ID projects. And although these experiences are extremely worthwhile, they still lack particular real-world application components.

VPI was designed to help students become aware of the relationship between ID theories and models and their actual implementation in professional settings. A communication model was envisioned where practitioners could be welcomed into the classroom for purposeful and meaningful interaction with ID students. Components from two learning

theories were adapted for the purpose of providing a worthwhile experience for the students. First, cognitive flexibility theory (Spiro, R.J. et al, 1992;) provided a rationale for why certain components of the VPI would be necessary for a richer learning experience. Secondly, Vygotsky's Zone of Proximal Development (Driscoll, M., 2000; Miller, P., 1993) was adopted for the purpose of providing students with the opportunity to close the distance between the students' actual developmental level and their potential developmental level through the interaction of more capable peers (ID professionals).

Cognitive Flexibility.

Cognitive flexibility theory reinforced the particular situation that ID students and professionals were operating in due to the actual nature of instructional design. Unlike baking a cake, learning to design instruction is an ongoing and continuously shifting experience. What worked yesterday may not work today. Spiro, R.J., et al (1992) described cognitive flexibility as being useful when the nature of the learning is complex and nonlinear. In addition strategies for success must be continually monitored and a rigid reliance on rules while ignoring significant outside forces should be avoided. Students in the VPI experience would get reinforcement from professionals that emphasize the many changes and situational demands that each ID project entails. Thus multiple perspectives and representations are provided through VPI that focus on the dynamic nature of the process rather than relying on a learning involving a preset list of items and procedures to be memorized and retrieved on cue. According to the theory, the transfer of knowledge is more complex, and must provide the student with a rich and diverse number of perspectives, case studies, and examples. For the transfer to occur students must be able to recognize different ID applications and principles, as well as construct their own personal set of ID application skills to be developed and used in future professional settings. In addition the VPI experience is rich with case studies, as well as providing real live sources for learning, namely the very people who are working in jobs aspired to by students.

Zone of Proximal Development

Vygotsky's Zone of Proximal Development (ZPD) provides a rationale for bringing ID practitioners and students for the purpose of accelerating the learning in the students through purposeful interaction. Although ZPD was originally designed for pedagogical purposes, consistencies between adult learning theories and ZPD were determined and adapted to adult settings. The ZPD focuses on the potential benefits of social interaction between less and more capable peers. These benefits can serve to close the gap between the actual developmental level of experience with a particular problem of a student and the potential for development through interactions with more experienced guidance from others. Without the interaction with ID practitioners known as VPI partners, the ability for students to gain experience and understanding of the design and delivery of instruction in a professional setting. In fact, one could imagine that this experience and understanding would not possibly be attained without actual professional experience on the part of the students. VPI's primary purpose is to provide a mechanism for students to learn intricate application knowledge that would be unattainable without the VPI

partners. Finally, the VPI experience puts a premium on learning prior to being a practitioner. In Vygotsky's approach to learning, "it occurs in advance of development ...and can set developmental processes in motion" (Driscoll, M., 2000; p.249). According to the VPI model, before students can truly be professional they must learn what being a professional is and entails from professionals. This can either be accomplished before their hired through VPI, or will be realized after being hired. VPI is designed to help turning students into professionals.

The Virtual Professional Immersion Experience

VPI Goal

Students and VPI partners will be able to engage in a purposeful and meaningful experience that involves a prior to live assignment for students to brain storm solutions as well as a live web-based interaction for the purpose of gaining insight into ID practices.

The VPI will include but not be limited to the following activities:

1. An authentic scenario and problem statement,
2. Individual student problem solving activity
3. Student awareness of problem solving techniques employed during problem solving
4. Live interactive discussion and assessment of student proposed solutions
5. Exploration of alternative solutions to solving the problem, as well as
6. Detailed presentation of how actual problem is currently being solved or was solved.
7. Discussion of relevant ID theories and models (if any) that were used in solving the problem.

VPI Design

The design of VPI centered on creating a live web-based multimedia environment where the instructor, students, and VPI presenter could interact in a synchronous environment while being able to overcome geographical distance. Ideally, bringing in the presenters face-to-face would be an effective learning environment, but cost and time would make it unrealistic for interacting in this matter. The purpose of VPI is to use instructional, communication, and multimedia technologies that provide a distance learning environment that differs from traditional distance learning models. In VPI distance learning, students and instructor may or may not be physically present in the classroom during the live learning, but the distance element is the ID professional serving the role of VPI presenter. This interaction is purposely designed for presenters to be able to participate at their work place having all of the necessary materials for conducting the communication as well as sharing and illustrating information from their own computer. It is also important that the VPI experience be easily accessible from a distant site, simple to navigate and not requiring special software downloading for participation. This is a particularly new and considerable concern due to the rise in virus protection and company firewall protocols.

The instructor and students can interact from computers in a lab classroom creating a virtual classroom visitation. The web-based environment chosen for VPI was a

combination of WEB-CT© and HORIZON-LIVE© applications. WEB-CT currently provides the means for the asynchronous web-based learning for the senior class that includes VPI through a variety of posts, class e-mail, and discussion boards. Students respond to various lecture and supplemental class material as well as post web-based assignments for the class. Horizon-Live© provides live web-based communication through a series of multimedia capabilities including live audio, video, presentation graphics, and text chat features. The VPI experiences have been limited by not including live two-way video due to the lack of the video quality due to bandwidth limitations. This has resulted in very little impact due to the learning context and content presented are not dependent on live video attributes. The need for video would be more prominent in class situations where demonstrations, modeling, and live visual feedback become more necessary for learning to occur. Currently a professional presenter participates in one VPI experience for the semester. This involves the development and distribution of a brief real world ID scenario and problem statement for the class as well as reviewing the students' responses concerning potential problem solving solutions before the actual live VPI component. On the day of the live, roughly one hour long VPI session, the scenario and student responses are presented and discussed for potential benefits, challenges, and the likelihood of success.

VPI Activities

An authentic scenario and problem statement

The VPI presenter provides the class with a brief scenario that is posted in the class WEB-CT site. The scenario includes a real world instructional design situation where a problem is stated as well as clearly defining what role the students should have in attempting to solve the problem. VPI presenters have often used particular projects that they have been working on and have come to some successful resolution. More than likely the presenter will limit the scenario to one part of the ID process for the sake of keeping it simple for the students as well as easy for the presenter to assess student responses. Often times the actual client is identified and particular issues are presented within the scenario, but in some cases, due to confidentiality contracts that restrict certain companies and organizations, particular aspects of the scenario may be altered or omitted. Students access the VPI scenario from the discussion bulletin board section of the class web site.

Individual student problem solving activity

Students are required to address all of the issues presented in the scenario and provide a narrative that shows both what they would do to successfully solve the problem, and why they would do it. The responses are sent via the class e-mail system to the instructor who threads them into one document and sends to presenter to read and reflect for particular worth in solving the problem.

Student awareness of problem solving techniques

Students are asked to reflect on what techniques did they employ to help solve the presented problem. This is used to provide the students with a context for their solutions

as well as key them into how ID theory and models may be used for solving the particular problem presented in the scenario.

Live interactive discussion and assessment of student proposed solutions

On the day of the live VPI experience, the presenter logs on to a Horizon-Live web site that has been designed and developed for the VPI interaction. Using live, streamed audio, the presenter starts with revisiting the scenario that was provided earlier to the students. This is an opportunity for the presenter to provide a richer, detailed narrative concerning the scenario. A PowerPoint slide is shown at the top half of the computer while an interactive chat window appears at the bottom of the screen where students can text messages or questions to the VPI presenter (see Fig. 1).

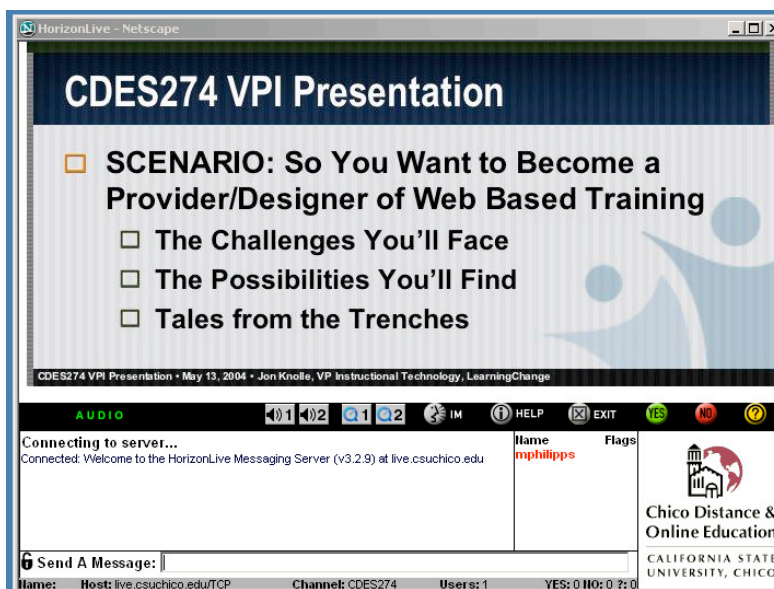


Fig.-1-computer screen layout for VPI experience. Scenario

Students are able to hear live audio, see the presentation and provide responses as well as ask questions during the presentation. In addition to providing a detailed narrative of the scenario, the presenter also provides feedback in the form of responding to and assessing student-posted solutions (see Fig.-2)

HorizonLive - Netscape

A Few of the Challenges You've Identified

- Compatible with all platforms
- Lack of motivation/attention in users**
- Access to technology
- Presenting too much information (overwhelming)
- Level of comfort with technology

CDES274 VPI Presentation • May 13, 2004 • Jon Knolle, VP Instructional Technology, LearningChange

AUDIO

Connecting to server...
Connected: Welcome to the HorizonLive Messaging Server (v3.2.9) at live.csuchico.edu

Name: mphilipps

Flags

Chico Distance & Online Education
CALIFORNIA STATE UNIVERSITY, CHICO

Send A Message:

Name: Host: live.csuchico.edu/TCP Channel: CDES274 Users: 1 YES: 0 NO: 0 ? : 0

Fig.-2-Assessing student responses

Particular worthwhile answers can be hi-lighted and included in the presentation for the purpose of recognizing superior student responses. In addition this serves as a catalyst for discussing the merits, potential pitfalls, and possibility for success of certain responses. Students could be called on to provide further detail on their response. This has tremendous positive motivation for the students because they are able to showcase their worthwhile insights to professional instructional designers.

Detailed presentation of how actual problem was solved

The presentation of the actual problem solving that took place by the ID professional serves two important learning purposes. First of all it provides satisfaction to the students to see how the problem was actually solved including both the steps involved and why were they taken. Secondly, it provides the students with a real world model that they can reflect on and compare what they proposed to do with what was actually done by the professional. Presenters also include any responses and assessment from clients and others to help determine if the problem was satisfactorily solved. This also provides the students with opportunities to see tangible projects that were created in the problem solving process (see Fig.-3). This can be shown from the Live VPI site.

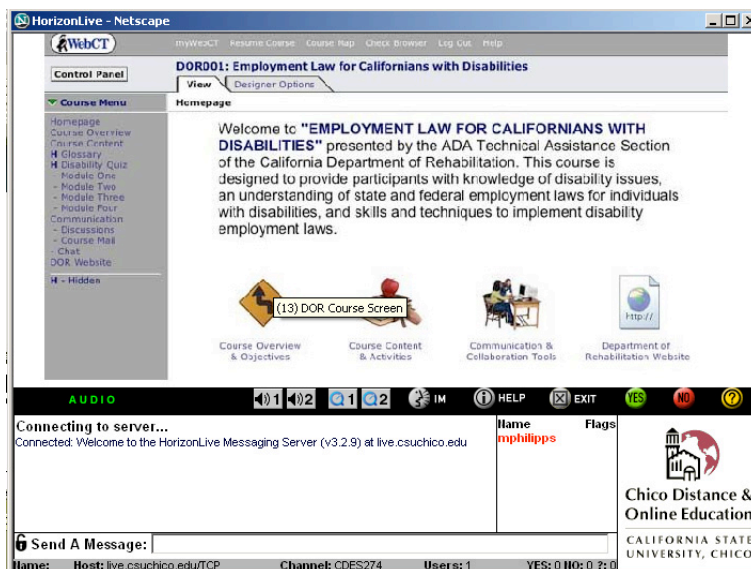


Fig.-3- Demonstrating web site design for solving client's problem

Discussion of relevant ID theories and models

Finally, a discussion of ID theories and models used by the presenter to solve the scenario problem provides the students with an opportunity to tie in theory and models that have been presented by the instructor during the semester. It gives students an opportunity to revisit theories and models and see their applications. In reality, certain ID theories and models may have not been identified by the presenter, but this creates an opportunity for seeing how what was done during the design closely resembles and reflects the theories and models learned. This is also where discussions centering on the linear nature of models don't necessarily reflect the actual design experience. These discussions prove valuable in reinforcing the idea of instructional design practice where designers don't rely blindly on following steps in a model to solve problems. It's not the model itself, but it's the designer and the experience with those models that solve problems.

Conclusion

The VPI experience was designed for the purpose of providing Instructional Design and Technology students in the program at California State University, Chico with opportunities for seeing how theory and models are applied in the field. Future studies will include exploring the effects of implementing the VPI model into other areas of study. Although formal assessment activities have not yet been done, prototype implementation of the VPI has initially shown positive possibilities for learning in a variety of settings. This includes observing the positive effects on students' attitudes toward the class and the instructional design profession. The effects have also been reflected in student evaluation forms where they report that they are excited to get real world involvement into the class and value the opportunity to discuss ID principles and practices with their more capable professional peers. VPI partners have also responded that they found the experience worthwhile, for both providing opportunities to guide future ID practitioners as well as being able to engage in meaningful discussions about

theory and application. A summative assessment study is being developed to measure the effects of VPI on student learning and motivation. There have also been instances where the VPI experience provided presenters with insights, on a particular problem, that they were able to incorporate in their professional duties. Finally, the presentations, discussions, content, and problem solving experiences, have enriched the learning environment for the class and provides continuous feedback to the author. The VPI serves as a dynamic mechanism that helps to keep theories, models and class content relevant to the students and focused on the application of knowledge for the purpose of preparing future instructional designers.

Author's note- The figures that were shown came from screen captures of an actual live VPI experience with the CDES 274 class and Jon Knolle, Vice-President of Learning Change Corporation.

References

Driscoll, M. (2000). Psychology For Learning For Instruction (2nd ed.). Needham Heights, MA: Allen & Bacon

Good, T., and J. Brophy. (1995). Contemporary Educational Psychology (5th ed.). New York: Allyn & Bacon/Longman

Miller, P. (1993) Theories of Developmental Psychology. New York: W.H. Freeman and Co.

Smith, P.L. & Ragan, T. (1999) Instructional Design New York: John Wiley & Sons

Spiro, R.J., Feltovich, P.J., Jacobson, M.J., & Coulson, R.L. (1992). Cognitive flexibility, constructivism and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. In T. Duffy & D. Jonassen (Eds.), Constructivism and the Technology of Instruction. Hillsdale, NJ: Erlbaum.