A Case Study on the Development and Implementation of a Graduate Level Human Performance Technology Course

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Abstract

Given the emerging trend of innovating Instructional Design process (ID) for Human Performance Technology (HPT) related application in order to more effectively addressing organizational performance problems in industries, it is necessary to prepare students majoring in Instructional Design or Educational Technology in terms of how they can apply and further develop the concepts and skills learned from the field of ID to a more complicated and challenging HPT setting for the increasing demand seen in job markets. This paper presents a case study on the design, development, and implementation of a graduate level HPT course for the purpose of better developing ID students for future HPT related tasks. Issues such as (1) locating potential HPT client in an academic setting, (2) the dynamic interaction among stakeholders, (3) Tools used to facilitate the communication (i.e. visual modeling method, WebCT), and (4) effectives of project-base learning for HPT courses are discussed.

What is HPT

Application of HPT in Education Settings

Human Performance Technology (HPT) is defined as "a systematic approach to improving productivity and competence, through a process of analysis, intervention selection and design, development, implementation and evaluation, designed to of programs to most-cost-effectively influence human behavior and accomplishment" (ISPI, 2000). It is usually applied in business or industrial settings to address performance problems, but is increasingly applied in public sectors and community settings (Schaffer & Richardson, 2004). The International Society for Performance Improvement also provides a job description for a human performance technologist: "HP technologist's are those who adopt a systems view of performance gaps, systematically analyze both gap and system, and design cost-effective and efficient interventions that are based on analysis data, scientific knowledge, and documented procedures" (Stolovich & Keeps, 1992).

The infrastructural knowledge (i.e. organizational behavior, employer and employee relationship, incentives for better organizational performance) for facilitating the solution design decision-making process for HPT is also more complicated and dynamic in nature as compared to an instructional problem. Though the concept of developing value-added and cost-effective non-instructional interventions (Reiser & Dempsey, 2002) to solve HPT problems is somewhat novel for many instructional designers, it is clear to see the compatibility between the task of instructional designer and human performance technologist in terms of using a systematic and analytical approach to solve performance problems. While both ISD and HPT use a similar problem-solving approach, the level of organizational impact and the measurability of results that is a hallmark of HPT requires a much stronger emphasis on analysis.

Given that there is an increasing need for human performance solutions in either for-profit industries or educational settings, the venues for developing capable human performance technologist are in demand. Actually many existing graduate level instructional technology, instructional design, and educational technology programs have begun to establish a solid foundation to support the growing demand for performance improvement education.

This paper presents a case study on the design, development, and implementation of a graduate level HPT course in order to share the instructor's as well as students' experiences. The process and tools employed to conduct the human performance project are also discussed in order to establish instructionally practical and pragmatic guidelines for others interested in creating similar learning experiences for students.

Process

The first challenge for the instructor was to introduce the fundamental knowledge, from concept definitions to theory and research of HPT, to novice graduate students in a constrained time frame. It was critical to provide the students with both the broad view in a wide range of topics on HPT, and the specific systems and models to prepare them for the solutions of real HPT problems. This was achieved following a step-by-step learning process through which students were guided to: 1) compare their personal definitions of the field against the textbook and supplementary readings; 2) create a system model and describe its interdependence with other systems, 3) review articles from Performance Improvement Quarterly or Performance Improvement to identify the theoretical framework and discuss the research support for the performance intervention; and 4) compare and contrast three different HPT process models. After they gained enough understanding on the topic, students completed an Individual Performance Analysis Report in which they integrated the concept, theory and system models to address a problem in which they were interested. It also served as practice in using analysis tools for their mo re complex HPT project in the next phase of the course.

HPT Performance Analysis Process

The second challenge was to locate projects that not only could provide practical experiences for students, but were also achievable within the semester timeframe. Since students were novice to the HPT filed, the instructor took the initiative to select the project topics and group the students accordingly. At the beginning of the course, the instructor invited and introduced the "clients", the on-campus Information Technology (IT) division in-charge persons to the class, to help students better understand the expectations and identify the possible problem scopes. Once the general problem areas for projects were identified, the instructor's role became more like a consultant, providing necessary guidance to the students who actually took the responsibility to apply HPT to address real world problems.

Tools

Turing Research into Results—a Guide to Selecting the Right Performance Solutions (Clark & Estes, 2002) and *Performance Consulting* (Robinson, & Robinson, 1995) were selected as the textbooks for this course. Robinson, & Robinson's (1995) Performance Model and Performance Relationship Map offered a good starting point for students to take a systems view of identified performance problems. Students collaborated in developing their own system models and relationship maps for different performance problems, which lay the foundation for later cause analysis and intervention selection.

The instructor also helped students to focus the analysis on the top three causes of performance problem: Knowledge and Skill, Motivation, and Organizational Causes (Clark & Estes, 2002). In the case of one identified problem, P2P file sharing, illegal file sharing was more likely to be caused by motivation and organizational culture than a lack of knowledge or skill . In addition, the instructor introduced the Performance Pyramid (Wedman & Graham, 1998), which visually laid out the possible performance problem causes into building blocks. It provided a particularly useful instrument to ground the design and development of the investigation questionnaire, a major tool for the project teams to collect information.

Project Management

Communication Tools Both project teams used private discussion forums in WebCT to archive team files, chat rooms, and the university web mail to communicate with clients, the instructor and one another. Effective communication was important to keep the project on track and the effort focused in the right areas. WebCT discussion was used among the instructor and the students to clarify questions and concerns, generate ideas, explore solutions and offer in-time assistance. E-mails were frequently utilized to exchange information, update progress and report results. Finally the online survey results were put into MS Excel spread sheets and visual charts were created to present and interpret data to the clients. In doing so students not only learned how to apply HPT theory and principles into specific context, but also practiced consulting skills such as how to "ask the right question right" (Robinson, & Robinson, 1995) and how to visualized the presentation of collected data to help the clients reach conclusions.

Client Involvement As in any successful HPT project, it was critical to involve the client throughout the process of performance analysis. In both projects, the students conducted structured meetings with the clients before, during and after the performance analysis to define the problem, report progress, and obtain feedback. At each crucial stage of the performance analysis, the students would acquire approval from the clients before taking further actions. The client-oriented approach helped to build solid support for the HPT

project as well as ensure customer satisfaction and buy-in to the process and results.

P-Based Learning: Project, Process, People, Problem

This course was offered from a graduate level Educational Technology program at Purdue University. A "P-based" approach to course development was used including project, problem, process, and people-based methods. Project selection for this course was mainly conducted by the instructor due to students' lack of experience and contacts on campus. The most time consuming part of project selection process was to explain the concept of human performance to potential clients.

The first key requirement for project selection is that the gap between current state of identified performance and desired state of performance was quantifiable in terms of dollar value, hours of manpower consumed, numbers of filed customer complaints, etc. In certain cases especially within educational settings the measurable outcome initially cannot easily be identified, for example, attitude changes. Therefore the clients, course instructor, and students have to work closely to identify projects with measurable outcome. The second concern is the constrained timeframe and resources of the course (i.e. eight weeks from project initiation and final reporting). The scope and depth of projects both were considered in relation to students' novice level of analysis and problem-solving skills within the HPT context.

Although it is not fair to use a dichotomous method to categorize all human performance problems into inductive and deductive ones, this approach did help students in the course to initiate their problem-solving process. Two topics were selected from an on-campus Information Technology division. One project focused on student's awareness of available information security (IS) resources provided by university. The other focused on student's awareness of the detrimental consequences of using the campus network to illegally download copyrighted files via Peer-to-Peer (P2P) file sharing.

The objective of IS project was to identify student behaviors related to securing his or her computer with virus protection software, for example; whereas the P2P project was geared toward trying to understand why students use the campus network to execute illegal transactions. The IS project eventually converged all data into a set of awareness procedures that could be implemented immediately while the data from P2P project produced a number questions requiring further investigation.

It was obvious in the initial stage of project development that each team (IS and P2P) should approach their specific problem with different mindsets. The IS team was looking for an incremental, relatively short term intervention. The P2P was developing a data-driven rationale for further investigation of the problem as the result of HPT process. Students in this course were fortunate enough to encounter both types of HPT problems (i.e. inductive and deductive) in one semester and consequently adjusted certain analysis process (e.g. gap analysis, performance map analysis) in order to accommodate project objectives.

Conclusion and Implication

The HPT course discussed in this paper offered students inductive and deductive types of problems to solve over the course of the semester. By continuing to dissect and learn about the many facets of human performance theory it was clear that many things other than knowledge and skill cause poor performance. The ability to quickly apply theory provided students with the opportunity to facilitate problem solving in a complex setting with real time lines. In the future, students will be introduced to HPT frameworks and processes in much the same way as in the current course. However, future courses will allow students to select their own projects rather than rely only on instructor-selected projects. Due to the amount of work and time needed to complete the semester-long project, students in current and future classes will be given a longer timeline for completion. Additional online discussions will be available to support learners through peer feedback, and a web-based performance support tool will be used to provide student analysts with process support, tools, and report templates.

A significant change in the course is conducted is the introduction of methods to promote reflective inquiry. Learners reflect upon each of the major analysis processes: define, analyze and select, by writing brief statements about their experiences while completing processes. Learners also self-assess their confidence in completing processes by rating the quality of each deliverable. It is hoped that using action research methods to explore the processes of novice analysts will support deeper learning and better understanding of the analysis process in general.

Sidebar: One Student's Application of the HPT Model

HPT is a meaningful model for a technology coordinator. With the emphasis of the job on the staff

development of K-12 teachers, results showed that the training the teachers completed was not being implemented into their classrooms. Having completed the course has provided a foundation of the HPT to analyze this situation. The model will be incorporated in current and future plans of the school district. For example, performance concerns that exist were being fixed by issuing additional training. Of course, this was the incorrect method of dealing with the issues because performance was not modified.

As a result before trainings are organized, performance is looked upon as what is occurring compared to the ideal performance. Beginning from this point has brought about change and performance improvement. Issues of expectations and feedback as well as desire to perform have been identified. This has provided a starting point for improvement.

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