

CAMPUS TECHNOLOGY

“Internship Management: Optimizing Evaluation of Professions”

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Disciplines in professional and technical fields, such as health careers and education,

have long used experiential learning as a means to achieving the competency necessary for successful professional performance (Cantor, 1997). Clinical education was first used at the Florence Nightingale School as a community service and the practice crossed the Atlantic with the establishment of 3 US nursing schools in 1873 (Smith, 1969). The first use of apprenticeships in training of student teachers can be traced to the establishment of an elementary laboratory school in 17th century Paris (Horrocks, 2006, p. 5). The use of internships in more academic fields is traced to the University of Cincinnati's cooperative education program which was established in 1906 (Turnbull, 2000). It is important to note that, even at this early date, these educational experiences differ from *on the job* training by focusing on education (Smith, 1969). As pedagogical research has validated the benefits of authentic learnBloom, B. (1956). *Taxonomy of educational objectives the classification of educational goals*, (1st ed.). New York: Longmans Green.

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ing and assessment, experiential learning programs have developed that cross the range of academic divisions (Cantor, 1997).

Advantages of Internships, Clinical Education and Service Learning

Implementation of experiential learning in the undergraduate setting is growing due to increased competition within the job market for most fields and an increasingly diverse student population which demands more varied modes of learning (Cantor, 1997). Advantages to the student of experiential learning include better career preparation, improved job-related skills, stronger resumes and higher starting salaries, among other benefits (Weible, 2009). The student experiences providing such benefits are known by a plethora of titles – internships, externships, apprenticeships, clinical education, cooperative education, field experience, service learning... While differences in definition for each of these terms exist in the literature, they all refer to a temporary job experience which emphasizes education rather than employment. For the purposes of this presentation, I will use the term *internship* to refer to any of these experiential learning opportunities.

Internships benefit not only the student, but also the employer and the educational institution. Employer benefits include gaining an additional, low-cost labor source and providing an excellent recruitment opportunity (Knemeyer & Murphy, 2001); (D'abate, Youndt, & Wenzel, 2009). Student presence in the workforce also benefits the employer by exposing current employees to new ideas (Knemeyer & Murphy, 2001) which results in “cross fertilization of ideas among intern, faculty sponsors, and business supervisors” and provides a means for remaining current in the field (Thiel & Hartley, 1997). The educational institutions benefit, at a minimum, from networking with the local community and obtaining practitioner input to curriculum revision (Weible, 2009). Additionally, the educational institutions may benefit in more tangible ways from the creation of educational partnerships in the form of scholarships, funding and in-kind donations.

Educational Focus

The educational focus of internships can be determined by the objectives published for the experiences. In most cases those objectives can be divided into three major domains: cognitive, psychomotor and affective. These domains are well established and widely used in instructional design (Bloom, 1956). The cognitive domain focuses on intellectual abilities and skills, the affective domain focuses on attitudes and values, and the psychomotor domain focuses on the application of knowledge to manipulation and motor skills. Other authors (Hodges, Inch, & Silver, 2001; Madigosky, Headrick, Nelson, Cox, & Anderson, 2006; Rowe, Ryan, Therrien, & Mulloy, 1995) refer to these domains as the essential “knowledge, skills and attitudes” necessary for the position. In recent literature, Verney, Holoviak, & Winter (Verney, Holoviak, & Winter, 2009) describe these domains as Knowledge and Skills, Character Traits and Performance Objectives. Gault,

et al (2000) divided Verney's knowledge and skills field into four career skill categories: communication skills, academic skills, leadership skills and job acquisition skills.

In addition to focusing on the holistic development of the student, internships also focus on moving students toward higher level performance, such as application, analysis, synthesis and evaluation, within each of the domains (Howley, 2004). The internship environment is uniquely suited to the development of these higher-order thinking skills, due to the intertwining of a variety of subject knowledge and the complex and ill-structured problems posed in real-world situations (Jonassen, 2004).

Evaluating Knowledge, Skills and Attitudes

Numerous evaluation models focusing on the knowledge, skills and attitudes exist in the literature (Patel, Yoskowitz, & Arocha, 2009). These assessments are used to determine competence, evaluate performance and assign a summative grade, and the method of assessment can greatly influence how and what the students learn.

Some debate exists regarding the evaluation of all three domains, with the greatest discussion surrounding the evaluation of attitudes, or the affective domain. While Gault (2000) excludes character traits and performance objectives from his study on the basis that such skills are personality-related and rarely impacted by the institution, Boyle, et al (2007) found targeting of such skills, and subsequent remediation, to be highly successful in improving the performance of individuals not exhibiting professional behaviors from the outset. Particularly for the service learning type of internship, professionalism and ethical formation are central learning objectives (Tannenbaum, 2008).

While many scholars attempt to recommend the ideal evaluation tool for internship evaluation, Howley (2004) suggests three key ideas for the creation of successful internship evaluation: 1) The performance assessments should be evidence-based and locally developed, providing validity in context. 2) The performance assessments should be based on established educational outcomes, while providing accommodations for noncognitive factors such as anxiety, motivation and learning styles. 3) More performance assessments should provide authentic assessment and be conducted in a naturalistic environment. Additionally, principles of good assessment practice, including provision of meaningful and timely feedback, are essential to assessment of the internship experience. These ideas form the basis of the ProgressChex project.

Challenges to Implementing Internships

Many surveys (D'abate et al., 2009; Horrocks, 2006; Rothman, 2007) have been conducted regarding student perceptions of their internship experiences. A recurring theme in these studies of internship experiences is lack of detailed and timely feedback to the student (Rothman, 2007;(Thiel & Hartley, 1997). This comes as no surprise to any educator who has faced the daunting task of distributing, collecting and compiling

individual assessment documents to multiple internship sites for each student enrolled in a course.

An Electronic Answer?

As we have progressed into the technological age, virtually every faculty member who coordinates internship experiences and their evaluation has dreamed of being able to do away with the paper-based evaluations and the associated time involved with distribution of evaluations to internship sites, collection of completed evaluations, data entry, distribution of the completed evaluations to the students for review and retrieval of the completed evaluations from the students for filing. To review their completed evaluations, students must schedule an office visit. Even when the system is working optimally, it takes a minimum of two weeks for my students to get feedback on their performance. For critical feedback that may determine whether the student passes or fails the course, a two week wait is unacceptable. Under less than optimal conditions, the evaluations get lost, precepting supervisors fail to complete the evaluations without repeated reminders and completed evaluations are mis-filed.

But, transferring an internship evaluation system to an electronic format is not as easy as it would seem...

We could create electronic surveys in our existing course management system (Blackboard, Angel, Moodle). Unfortunately, the internship supervisors are outside the academic "umbrella" and do not have the necessary credentials to access the course management system as an instructor. Even if access was secured, instructor access would allow the preceptors to view academic information for all students assigned to the course, not just those assigned to their site, violating the students' FERPA rights. Additionally, the survey tools in the course management systems are directed to the student, not to the instructor, so the instructor is still unable to complete the evaluation.

We could create the evaluations using web-based survey instruments, such as Zoomerang. But, the evaluation data is uniquely identifiable (or else it is difficult to assign grades) and the unencrypted transmission and storage of the data does not meet the privacy requirements imposed by FERPA.

We could purchase a survey program to embed our evaluations within campus email. However, the email still is not encrypted, and again violates FERPA law.

For health professions, there are a few commercial programs designed specifically to track internship evaluation information - <http://www.dataarc.ws/> <http://www.trajecsys.com/aboutus.htm>. While these systems successfully "tame the paper tiger", they violate Howley's (2004) first principle of successful evaluation by not allowing faculty to create contextually based evaluations of their own. Although the Trajecsys system is much more flexible than DataArc, there are still some aspects of the system that cannot be customized in a manner that can accommodate the noncognitive needs of a particular student group. From a global perspective, these

systems are very focused on health professions and do not provide a platform that is inviting to internship coordinators from other academic disciplines.

Our Solution

We have developed ProgressChex, a database integrated web application using Microsoft .Net protocol to achieve permanent, retrievable student evaluation data archiving. The system was developed by a team of IT professionals and content experts, and allows the faculty administrator to customize the content, organization and accessibility of information. The system provides data encryption and utilizes a mirror back-up to minimize the risk of data loss. The system is designed to be owned and maintained by the educational institution, reducing recurring costs to the program or students. The system allows the IT Administrator to create as many internship shells as necessary to meet the needs of their programs and faculty.

The system is password protected with four levels of access – one for the student, one for supervisors at the clinical sites, one for program faculty, and one for IT administrators. Students have on-demand access to their personal records and grades. The internship supervisors have access to limited information for the students they are currently supervising, and no access to information about other students in the course. Program faculty has access to information on all students, as well as the ability to designate internship supervisors for each student. The security protocol interfaces with the University system and enables students and faculty to use the same single-sign-on that they use for all other institution access.

The three major functions of the system parallel the knowledge, skills and attitudes essential to successful performance in the professional area and provide time-keeping, competency tracking and performance evaluation functions.

The time-keeping function is an important part of encouraging professional attitudes and appropriate workplace behavior. Maintenance of internship time records is also a requirement of many programmatic accrediting bodies. The time-keeping function allows students to clock in and out at a particular internship site. Times are entered using the computer's clock and a record of the corresponding ISP is kept. When clocking in, the student is informed of their assigned hours for the day. After the student clocks out for the day, the time record is sent to the internship supervisor's task list for approval. Approved time is then added to the student's log of completed service hours. Students may also request the use of personal time in this section. Leave requests are forwarded to the internship supervisor and program faculty for approval. Leave taken is automatically subtracted from available leave. Alerts are generated when the student's completed time does not match the scheduled time and whenever a student exceeds a particular amount of leave used. The alert levels are adjustable by student group and sub-group according to the faculty needs. Faculty members have the option to disable both the leave request functions and the time-keeping system as a whole, as their needs dictate.

The competency tracking functions include a practice log, competencies – both needed and completed – and ratings for competency evaluations. The student can enter a task in the practice log and designate their participation as “observed, assisted or performed”. The log is forwarded to the clinical supervisor for verification. The competency evaluation templates are completely customizable by the faculty member and can include sections to be completed by the student, the supervisor, or both. Developed evaluation tools can be copied, edited and shared with faculty members from different programs within the same performance evaluation system. When completing competencies, students will select a particular type of evaluation from the list. Once that evaluation has been completed, it is no longer available for selection, so the student no longer is left to wonder which evaluations they have completed and which ones remain to be done.

The performance evaluation function generates a request for performance evaluations from the internship supervisors based on the date. Like the competency evaluations, the performance evaluations are completely customizable by the program faculty and can include sections for student reflection in addition to evaluation by the supervisor. Each rating will have a corresponding comments section. The student and program faculty are able to view each individual evaluation as well as a summary and plotted progress over time.

Administratively, all data can be filtered by student group and sub-group, assigned internship site, or by individual student name. All data is archived in perpetuity and can be accessed for both current and previous students. The data can be exported to spreadsheets as the faculty member desires. The system also provides a number of communications tools, including an alert system on the entry page that notifies the user of areas that need attention, an area for posting and accessing schedules and an announcements tool that allows the faculty member to add notices to the alert board based on their assigned role.

System Usability

The usability plan for the project was developed in collaboration with the Information Experience Laboratory (IE Lab) at the University of Missouri (MU), a user-centered design and usability evaluation enterprise. The IE Lab is operated by the School of Information Science & Learning Technologies (SISLT) in the College of Education. Staff of the lab includes six MU faculty members, two staff project managers and six doctoral students. The IE Lab expertise base includes designers and researchers with such diverse backgrounds as information science, learning technologies, medicine, and nursing.

Usability studies performed include, 1) user needs assessment to determine initial organization of content, functionality and organization of the application, 2) study of initial design of the application based on user needs assessment, wherein user are interviewed to provide detailed feedback on the design; 3) study of partially-functional application, when links are active and content has been developed for one or two of the

primary main navigational menu items; and 4) study of the completed product, to determine problems with the product prior to official launch.

Outcomes:

Although still in the final stages of testing, we believe this project will result in more timely feedback to students and internship supervisors, less faculty time spent performing data entry, and greater student satisfaction with the clinical experience. The system was carefully designed to provide a platform that would be suitable for all types of internship experiences and faculty needs, giving the academic institution the flexibility to meet the needs of students in all formats of experiential learning.

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