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SSWiS: An Information System for Graduate Education in Social Work

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Abstract: In graduate programs such as social work, field education is the signature pedagogy of education. As such, student placement with an appropriate field education agency is critical to ensure academic success and career readiness. A variety of Learning Management System (LMS) and Integrated Planning and Advising Service (IPAS) technologies have been developed to fully integrate technology into the educational system and streamline and improve the learning experience for students, educators, and administrators. Few (if any) of the existing solutions have capabilities to match students with field educators on the basis of an individual student's completed coursework and area of specialization, as well as field educator needs and opportunities. This paper describes our experience developing a custom LMS/IPAS system—the School of Social Work information System (SSWiS)—that was designed specifically for student learning, faculty advising, and academic administration within our social work graduate program. We present the challenges that motivated the design of the SSWiS before describing the architecture and functionality of our solution. We then discuss our preliminary evaluation results. We conclude with a discussion of the benefits and limitations of our system in the context of today's technical needs in graduate education in social work and other fields.

Keywords: learning management system; integrated planning and advising system; information system; field education; social work; graduate education

1. Introduction

A variety of Learning Management System (LMS) and Integrated Planning and Advising Service (IPAS) technologies have been developed to fully integrate technology into the educational system and streamline and improve the learning experience for students, educators, and administrators [1,2]. These systems typically aim to support various aspects of student instruction, faculty advising, administrative data management, academic assessment, and reporting. While many existing systems have features that support course registration, completion of graduation requirements, and career planning, few (if any) have capabilities to match an individual student with an appropriate field agency placement using information on the student's program (i.e., campus full-time, distance education, advanced standing), Plan of Study, and population of interest (e.g., the elderly, people with mental health issues, immigrants), and field agency needs and opportunities. In graduate programs such as social work, field education

is the signature pedagogy of education [3]. As such, student placement with an appropriate field agency placement is critical to ensure academic success and career readiness and to assess the student's character and moral maturation.

This paper describes our experience developing a feature-rich, custom LMAS/IPAS system—the School of Social Work information System (SSWiS)—that was designed specifically for student learning, faculty advising, and academic administration within our social work graduate program.

2. Challenges Driving the Need for the SSWiS

SSWiS was developed in response to an administrative need to integrate and extend two independent information systems: (1) a system for course registration and degree specialization; and (2) a system for field education. The overall goal was to streamline administrative and educator efforts and improve student learning, especially the field education experience.

Our graduate program's Master of Social Work places a heavy emphasis on field education, which comprises approximately 1100 credit hours. Field education is provided by >250 partnering government, non-profit, and other human services agencies located across the State of North Carolina. Many of these agencies offer multiple placements with varying scopes. Students must be matched to an appropriate field educator by the student's completed coursework and specialization and the field educator's specific needs and opportunities. In the past, this process was conducted on a student-by-student basis, through meetings with student-advisor teams. More recently, an online directory of available field educators was made available for student examination before placement by the student's advisor. However, the school's administration saw a need to improve the efficiency and accuracy of the matchmaking process and enrich the student field experience through better use of technology. Thus, the SSWiS was conceptualized.

3. Technical Architecture and Capabilities of the SSWiS

SSWiS is designed as a Microsoft SQL Server with Reporting Features. The current version, SSWiS v 1.0, was launched in May 2016 and comprises 142 base tables and 411 routines (i.e., procedures or functions).

3.1. Sub-schema, Tables, and Data Elements

The SSWiS database includes sub-schema that are integral to the overall functionality of the system. Figure 1 provides a partial overview of the *Field Education* sub-schema. This and several other sub-schema are described below.

Student Information includes tables and data elements representing: student application information (this is currently imported from ApplyYourself, the university's student admission system); acceptance decision; enrollment year/term; program (e.g., on-site full-time, distance education, advanced standing); start date; current year/term; current status (e.g., active, withdrawn, graduated, leave of absence); field placement; and graduation date. This information is used to track students and assist with the development of a student Plan of Study and placement for field education.

Plan of Study includes tables and data elements related to a student's degree/certificate/licensure program, faculty advisor and department, courses, and specialty concentration. *Plan of Study Forms* are used to generate individualized student reports.

Field Education contains tables and data elements relevant to both students and faculty advisors. Faculty-related data elements include: placement agency(ies), department(s), and unit(s); availability and number of student placements; assigned students; and signed student contract agreements. Student-related data elements include: assigned placement agency(ies), department(s), and unit(s); assigned advisor(s) and title (e.g., professor, instructor, supervisor); start/end dates; and specific training activities (e.g., field observation, working luncheons, workshops, etc.). *Field Education Forms* are used to generate monthly student reports on the field education experience and end-of-semester advisor evaluations of students. Importantly, the forms provide students with an opportunity to reflectively integrate their field experience with their coursework and serve as a mechanism to receive professional and academic feedback from field personnel (i.e., field instructors, task supervisors, faculty advisors). The submission of a student's monthly report triggers an automated email notification to the student's field personnel to review the submitted report and provide feedback before signing off on the form.

Faculty Report contains tables and data elements on course grades, student evaluations, student advisee(s), report type, and report status (e.g., required, completed, outstanding). This information is used to generate reports, track student progress, and identify students who are not making adequate progress.

3.2. Outputs

The SSWiS provides two major types of output: (1) administrative and student forms and reports; and (2) field placement options for individual students.

SSWiS forms and reports are intended to assist with administrative duties, including faculty advising. Examples of forms include student contracts for field education placement, student contracts regarding ethical conduct, and faculty/advisor evaluations. Student Plan of Study forms contain detailed information on a student's learning and career goals, concentration, anticipated course load, expected graduation, and current progress, as well as basic information on the student such as student identification number, contact information, and faculty advisor. Reports are varied and include lists of students by demographic group, lists of student field placements by count, and lists of outstanding or completed tasks. The forms and reports are auto-generated in response to specific student and administrative workflow tasks and related notifications are selectively sent via email to the relevant parties (i.e., field educators, faculty member, administrative staff) for information purposes only or for electronic signature, when required. Forms and reports can also be created on demand. All completed forms and reports are stored in the central SSWiS database for retrieval as needed or for auditing purposes, when appropriate.

Field placement is achieved via a powerful search engine that uses metadata on potential field placements (i.e., agencies and available positions within an agency) and an individual student's Plan of Study in order to match students with appropriate field placement agencies. The search can be broad or narrow, depending on the number of fields selected. After generating a list of potential field placements, faculty advisors can then work with students to select a specific field agency placement. As with the forms and reports, the field placement lists are saved in the central SSWiS database.

3.3. Case Example

Figures 2–4 provide anonymized screenshots to demonstrate the functionality of SSWiS. Figure 2 shows the Field Placement search form. As shown, potential field agencies can be

identified by searching on one or more fields, including the desired county, state, and country, the academic year, and the type of service and agency. A search returns information on all available agencies, including names and units, academic year of availability, number of available positions, and city and country. More detailed information can be obtained by clicking on a specific field agency, as demonstrate by the screenshot in Figure 3. Figure 4 provides a screenshot of the requisite monthly report that each student is required to complete over the course of the field education. In addition to boxes to enter basic information such as number of hours in field placement during the month, the report also contains boxes for each student to enter narrative descriptions of his/her progress and self-reflection, which can be used by both the student and the student's faculty advisor in order to ensure that training remains in line with a student's Plan of Study and learning and career goals.

3.4. Security

Several security features are embedded into the SSWiS in order to protect the privacy of students, faculty advisors, and field educators and agencies. Specifically, access to the system is secured by authentication via user identifier and password, and authorization for webpage access and level of access (i.e., view only versus view/edit) are controlled by a user Access Control List (ACL) that automatically assign rights to users. An additional feature is the ability to enable an auto-lockdown of pages after certain tasks are complete. For example, student Plans of Study can be automatically locked from further editing by students after advisor approval.

3.5. Testing and Evaluation

Development of SSWiS began in 2011. A prototype system was deployed in 2014 and tested and evaluated using virtual machines populated with dummy data. Because the system is rich in features, the testing and evaluation process was complex. Feature-based testing was conducted by the central administrator, whereas functionality, including ease of use of the UI, was tested by end users. Figures 2–5, while demonstrating the functionality of the system, also provide an example of the type of heuristic testing and evaluation that was conducted by end users. Fixes and updates to the system were applied over the testing and evaluation period, and SSWiS v 1.0 was deployed in May 2016. Informal testing and evaluation continues, primarily via end user feedback; only minor fixes have been required since the system went “live”.

4. Discussion

Institutions of higher education are slowly recognizing the need for cultural and pedagogical change in order to embrace the demands and learning style of the “Net Generation” [4] of “digital natives” [5,6]. These students have a desire and an expectation for information technology to be incorporated into all aspects of their learning experiences, including academic administration and advising [7]. While there is debate about the extent to which academic institutions need to incorporate new technologies such as social media, e-textbooks, and mobile devices into the educational setting [8,9], the fact remains that new technologies have the potential to improve student learning, academic instruction, and academic administration.

In social work training, field education is perhaps the most important aspect of a student's educational experience [3]. We saw a need to improve student learning during field education

through the use of technology to automate the matchmaking process between students and field educators and to provide multiple opportunities for professional and academic feedback. We emphasize, however, that our SSWiS system does not override the student–faculty advisor team but rather complements it by identifying a short list of potential field placements for students from a long list of >250 possible placements. Thus far, our system has demonstrated success, and we are confident that ongoing modifications will further improve the matchmaking and student assessment processes.

5. Conclusions

The SSWiS has four major applications: (1) internal administrative functions, such as student admission, course enrollment, course grading; (2) student Plans of Study, including course selection and enrollment, field education placement, and faculty/advisor evaluations; (3) student matching with field education opportunities; and (4) student tracking, in terms of Plans of Study, student monthly reports, course grades, graduation statistics, etc.

While our system was developed specifically for the academic program in place at our institution, we note that the system can be adapted to other social work programs and to other fields that rely on the efficient and accurate placement and evaluation of students with field educators (e.g., medical residency and other healthcare programs, student teacher placements).

The SSWiS architecture is freely available upon request.

Acknowledgments

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Author Contributions

Oleg Kapelushink and Manuel Garcia designed and deployed SSWiS under the guidance of Charles Schmitt; Larry Rosenfeld maintains SSWiS and is responsible for ongoing testing and evaluation under the guidance of Rebecca Brigham and Sarah Naylor; Karamarie Fecho drafted the initial version of this manuscript; and all authors reviewed the manuscript and approved submission.

Conflicts of Interest

The authors declare no conflict of interest.

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Figure 1. Partial overview of SSWiS *Field Education* sub-schema.

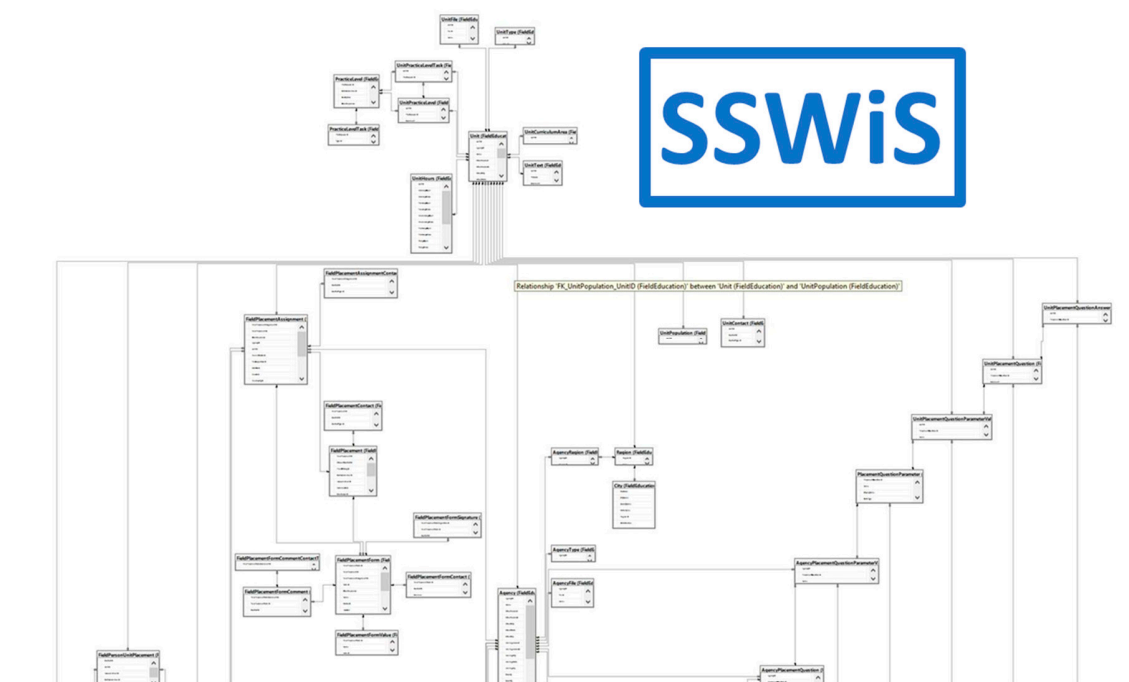



Figure 2. The SSWiS Field Placement search form.

Figure 3. Detailed information on each Field Placement agency identified by a search.

Figure 4. Student Monthly Field Education report.



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Welcome [redacted] Logout

Home > [Field Education](#) > [Student Documents](#) > Concentration Monthly Report I (August)

Date:

Student:

Field Instructor:

Agency:

City:

Field Faculty:

Year: 2015

State: NC

Hours in Placement:

Email:

Email:

Unit:

Zip Code:

Email:

The monthly report is intended to provide the student with an opportunity for self-reflection, and to be useful in guiding discussion during supervision. In addition it provides the student, field instructor and field faculty member with documentation regarding learning experiences and hours in field. It is expected that the monthly report be well written, specific and detailed. We encourage Field Instructors and Students to contact your Field Faculty member if you have any concerns regarding this practicum experience.

1. Which Competencies and Practice Behaviors from your Learning Agreement were the focus of your learning this month? Which activities from your Learning Agreement facilitated this learning?

2. Describe an experience in field that was significant or challenging for you this month. How did this experience contribute to your understanding of yourself, the agency and community, diversity issues, social work values and/or ethics? How will it influence what you will do in the future?

3. Describe an experience in Field this month when you were able to apply what you've learned in the classroom this year. Did this experience differ from your expectations or from your classroom learning? If so, in what way(s)?

4. Identify activities in which you demonstrated an aspect of leadership this month:

☐ Self-knowledge

☐ Moral Courage

☐ Teamwork & Collaboration

☐ Focus on Results

Choose one activity from the above list. How did this activity contribute to your understanding of yourself as a leader?

[Save](#)
[Lock Form](#)

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