


CS486C – Senior Capstone Design in Computer Science

Project Description

Project Title: Student Teacher Intern Tracking Software	
Sponsor Information:	
 <p>NAU NORTHERN ARIZONA UNIVERSITY College of Education</p>	Chris Aungst – Director of Professional Education Programs NAU College of Education Professional Education Programs Chris.Aungst@nau.edu

Project Overview:

For years, the public education system has dealt with sweeping teacher shortages. Last year, shortages were worsening. Reasons for the teacher shortage range from low teacher pay to large class sizes, difficulty with teacher retention to burnout from the coronavirus. The staffing issues tend to affect some states more than others, but most districts have difficulty hiring and retaining employees.

These shortages have been magnified over the past 3 years in no small part due to the Covid issue. As a result, teacher shortages in 2022 could continue to persist. As we head back to school, we are already seeing massive shortages in Arizona as school resumes this August 2022. These shortages are exacerbated by the lack of substitute teachers as teaching jobs remain vacant into the 2022-2023 school year.

While this shortage can have dire consequences if left unresolved, it also means plenty of career opportunities for aspiring teachers.

The college of education at NAU is the only nationally accredited teacher preparation program in the state and graduates more than 600 newly certified teachers per year. Over the past several years NAU has partnered with the Arizona Department of Education to create a program that allows student teachers (in their last semester before graduating) to fill open teaching positions while getting credit to finish their degree. This program is called the student teaching intern certificate (STIC) program.

The STIC program has grown over the last several years and has quickly become a popular way for graduating seniors to get a head start on their careers and be paid as a full-time teacher as they finish up their student teaching requirements. It is truly a win-win for school districts, Arizona children and aspiring teachers. To be eligible to participate in the STIC program there are many moving parts and keeping track of all the requirements can become difficult at times.

The Sponsor:

My name is Chris Aungst, and I am the Director that oversees the student teaching program at NAU. My role is to make sure that student teachers meet all the requirements of student teaching, find schools for them to student teach in, oversee the student teaching coursework, and assist students in obtaining their teaching license when they graduate.

The problem:

With hundreds of student teachers to place all over the state each semester, keeping track of all the additional testing, recommendations from faculty and applications for the STIC program can be burdensome. Every program (NAU has 22) has different testing requirements to be eligible to participate in the STIC program. Students can often get confused and maintaining accurate records can be difficult. This is an issue because if all these requirements are not in place, then the Arizona Department of Education may not recognize their experience as a valid student teaching placement and could deny them a teaching certification after graduation.

The solution:

We need to create a web based and mobile compatible software system that will outline the process and requirements for each program area with a clear checklist type pathway for students to follow. Here are the goals:

A minimum viable product (MVP) would include,

- Dashboard feature that will show students and administrators exactly where each student is in the process.
- The software should be able to map a student into the correct tests based on their program area
- Reporting functions with export to excel abilities

A nice software product (stretch goals) would include,

- Having drop box functions for secure storage of all required documents.
- Allowing direct communication via email and/or text messaging to teacher candidates

Impact of successful product:

In addition to improving the teacher candidate management, NAU's education students will have an easier, and less stressful pathway to complete all requirements to apply for and obtain their intern certificate through the department of education. This will allow NAU students to apply for one of the over 1200 vacant teaching position currently in Arizona to jumpstart their career and help to address the severe teacher shortage in Arizona. This will directly impact hundreds if not thousands of school age children across Arizona, providing them qualified teachers and ultimately a better education.

Knowledge, skills, and expertise required for this project:

- Potential interactivity with a major data storage system (SalesForce, used by the University)
- Experience with professional web development
- Experience with UI/UX interaction, and creating a friendly, effective product

Equipment Requirements:

- Most parts of this project will not require anything more than available development tools and a development device (a mobile phone and/or web browser)
- It is currently planned to use the University's SalesForce system which is already available

Software and other Deliverables:

Students will deliver the following,

- A strong as-built report detailing the design and implementation of the product in a complete, clear and professional manner. This document should provide a strong basis for future development of the product.
- Complete and thorough instructions for connection and interaction with the Salesforce tools, or another data storage system as needed
- Complete professionally-documented codebase, delivered both as a repository in GitHub, BitBucket, or some other version control repository; and as a physical archive on a USB drive.