

PowerSchool at NCVPS: Executive Summary

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The North Carolina Virtual Public School (NCVPS) is a supplemental service to the public schools of North Carolina. NCVPS is not considered a stand-alone public school in North Carolina. It is the second largest state run virtual school in the nation, next to Florida. Students enroll through their local public school, private school, or homeschool representative. Grades are reported to their school, and their school awards credit. The courses use learning management and collaborative software to maximize student interaction in each class. NCVPS teachers use the latest technologies to engage students as well as to prepare them to be career and college ready. The North Carolina Virtual Public School has served over 175,000 middle and high school students since its initial launch in the summer of 2007. Each semester, there are over 25,000 student enrollments across the state including public, private, and homeschooled students.

All public schools in North Carolina, including charter schools, use PowerSchool as their student information system (SIS). NCVPS currently uses a homegrown system called Registration, but has been working on adopting PowerSchool to allow easier student management and more streamlined registration processes for most of its stakeholders and clients. While the public schools of North Carolina adopted PowerSchool four years ago, NCVPS has yet to adopt it due to the special nature of NCVPS operations. PowerSchool and the North Carolina Department of Instruction have been working together to create add-on tools and customizations that must be put in place for PowerSchool to be a viable option for NCVPS. A cross-enrollment function is one of these critical tools. The cross-enrollment function would need to be included on the public school's instance of PowerSchool for the schools to enroll

students in NCVPS classes like they currently do through Registration, NCVPS's current homegrown student information system.

While this cross-enrollment feature is still in the testing phase, NCVPS is getting ready for the adoption of PowerSchool for the next academic school year in 2017-2018. Because of this, all 25 NCVPS full-time permanent employees will need training on the new student information system. NCVPS identified thirteen topics that need to be taught to employees. Those thirteen modules were created for this Capstone project.

Front-End Analysis

Project Learners and Needs

There are 25 full-time permanent employees that will participate in this instruction in their home offices as all learners are virtual employees. As all staff are virtual, this will not be an issue as working remotely is a daily operation and the norm. All learners have completed at least a bachelor's degree with many having advanced degrees. All learners also work with technology every day as the organization is a technical education institution. Only a handful of learners have any knowledge of the new SIS, PowerSchool. All learners are familiar with the current SIS and registration policies. The purpose of this project is to educate all employees on how to properly use the new student information system, PowerSchool. Use of the student information system is part of the learners' daily tasks and what generates revenue for the institution. It is also where grade reporting and student information resides.

Instructional Goal and Performance Objectives

Overall Goal: NCVPS employees will be proficient in performing daily operations in PowerSchool as they do in the current student information system, Registration, that allows for a seamless transition between the two systems without productivity or revenue loss.

There are thirteen total modules. Each module has its own objective.

1. *Basic Navigation* Objective: After completing the *Basic Navigation* module, NCVPS employees will be able to select the appropriate section of the start page to officially begin a task and demonstrate 100% mastery on the end-of-module assessment.
2. *Enabling Smart Search* Objective: After completing the *Enabling Smart Search* module, NCVPS employees will be able to enable the smart search feature in PowerSchool. This will allow them to perform searches in a more timely and efficient manner. Employees will demonstrate 100% mastery on the process assessment at the end of the module.
3. *Narrowing Searches to Only Active Students and Staff* Objective: After completing the *Narrowing Searches to Only Active Students and Staff* module, NCVPS employees will be able to disable the smart search option that includes inactive students and staff in search results, expediting the search process. Employees will demonstrate 100% mastery on the process assessment at the end of the module.
4. *Searching for Students and Staff* Objective: After completing the *Searching for Students and Staff* module, NCVPS employees will be able to use the main page of PowerSchool to quickly search for students and staff as needed. Employees will demonstrate 100% mastery on the end-of-module assessment.
5. *Simple Search Commands* Objective: After completing the *Simple Search Commands* module, NCVPS employees will be able to use a variety of search commands to quickly locate the information they are seeking. Employees will demonstrate 100% mastery on the end-of-module assessment.
6. *Multi-Value Commands in a Search Field* Objective: After completing the *Multi-Value Commands in a Search Field* module, NCVPS employees will be able to use the search feature

to search for more than one value in a field. Employees will demonstrate 100% mastery on the end-of-module assessment.

7. *Compound Searches* Objective: After completing the *Compound Searches* module, NCVPS employees will be able to perform a compound search allowing them to simultaneously search two or more fields at a time. Employees will demonstrate 100% mastery on the end-of-module assessment.

8. *Creating Course Sections* Objective: After completing the *Creating Course Sections* module, NCVPS employees will be able to create course sections in the NCVPS PowerSchool database. Employees will demonstrate 100% mastery on the end-of-module assessment.

9. *Changing Teachers* objective: After completing the *Changing Teachers* module, NCVPS employees will be able to change course teachers in courses in PowerSchool. Employees will demonstrate 100% mastery on the end-of-module assessment.

10. *Enrolling a Student* Objective: After completing the *Enrolling a Student* module, NCVPS employees will be able to enroll a student who is not in the North Carolina Public School system. Employees will demonstrate 100% mastery on the end-of-module assessment.

11. *Removing and Enrolling a Student from/to a Course(s)* Objective: After completing the *Removing and Enrolling a Student from/to a Course(s)* module, NCVPS employees will be able to remove a student from his or her course(s) and re-enroll them into a new course or set of courses as needed. Employees will demonstrate 100% mastery on the end-of-module assessment.

12. *Creating a Customized Checklist Using "List Students"* Objective: After completing the *Creating a Customized Checklist Using "List Students"* module, NCVPS employees will be able

to select a group of students by hand, create a numbered checklist, and print the numbered checklist. Employees will demonstrate 100% mastery on the end-of-module assessment.

13. *Creating a Customized List Using "Quick Export"* Objective: After completing the *Creating a Customized List Using "Quick Export"* module, NCVPS employees will be able to use the quick export feature to move and save data into a convenient Excel file. Employees will demonstrate 100% mastery on the end-of-module assessment.

Project Context and Media

Project deliverables are thirteen courses created with Articulate Storyline 2. Prior to the official launch of PowerSchool training for NCVPS employees, a course shell will be created on NCVPS's Canvas learning management system where all PowerSchool training modules will be housed. These published Articulate Storyline 2 courses include various slides of content, instruction, and assessments. Most all instruction is in the form of screencasts captured and edited with Screencast-O-Matic Pro. Voice over narration is included in all instructional content slides. Once a launch date for PowerSchool is set, the instructional modules and location will be released to NCVPS employees with a specified timeline of completion.

Project Description

The project is composed of thirteen instructional modules developed in Articulate Storyline 2. Each module includes a slide listing an objective as well as an overview of the topics covered. Any module containing student information will have a note on the third slide informing the learner that the data is not real data but is masked data. This is done as to not violate any FERPA laws. Each module consists of instruction on a particular facet of PowerSchool that employees will use regularly. Some modules include a practice of the process and then an assessment on that same process. Most modules include a three-question multiple

choice quiz based on the content of the module. Feedback is provided in all assessments.

Learners must demonstrate a 100% mastery on the quiz component. Learners are motivated by applied methodologies adapted from Keller's ARCS model. For example, each quiz directly follows the content it covers. This maintains the learners' attention. Additionally, since the instructional information was just reviewed, the learners can feel more confident in their ability to recall and apply that information.

The client wanted their learners to relate personally to this instruction; so, examples of real situations that employees face on the job are incorporated. These examples are presented for concept, principle, procedure, and higher-order thinking skills. Concept-checking questions are included to check memorization of the processes, even though the intention is to relay concepts rather than to just list sequences of information.

Content

The intention was to create instructional modules that provided training in PowerSchool. Employees need to feel comfortable with the new system as it will be heavily used. Each module consists of an example, an instructional segment, and a quiz or assessment of the content viewed.

At the beginning of each course, the learner is presented with the objective of the course as well as what to expect as far as topics covered. The same slide is presented before each topic, with that topic highlighted on the slide so that learners understand what is coming up. Next, the instructional content is presented. Each instructional segment consists of a specific function in PowerSchool such as how to search using multiple values or by using compound searches, which includes more than one field for the field name part of a search command. Writing styles are coordinated so that the learning modules do not clash with each other. However, there is some

overlap in some of the modules where the topics are similar. This helped to utilize the *attention-focusing* enrichment strategy. Relevant examples and scenarios are used in order to make the instruction personable and relatable to the learners by using examples and scenarios relevant to the target learners. Much of the functionality of PowerSchool does not apply to NCPVS. Thus, using generic examples would not have been beneficial for the learners.

At the end of each module is an assessment that learners must demonstrate 100% mastery to pass the course. The quizzes and scenarios are presented in relation to the intended learning objective. Detailed instructive feedback is provided for correct and incorrect answer selections. Learners can answer the questions as many times as it takes for them to get the correct answer, guaranteeing 100% mastery.

Project Elements

A learner controlled player is used, which allows the learner to use navigational buttons to advance through the course at their own pace. Learners may want to go back to a previous slide to review content before viewing new content to reach the objective successfully. Walls of text are kept to a minimum. The modules employ both audio narration and text to open two simultaneous learning channels. All screencasts use the PowerSchool system. All screencasts start with the PowerSchool start page, as this is the page that all learners will start at when performing various tasks in PowerSchool.

The sequence of the presentation is: introduction, objective and topics to be presented, examples and instruction, and an assessment component. If a question in the assessment is answered incorrectly, the learner has an unlimited amount of times to answer the question correctly, which guarantees a 100% mastery score. The information presented is precise, concise, and interesting all at the same time.

The main tasks for the learners are concept, principle, procedure and higher-order thinking. Both aspects of higher-order thinking, conceptual and causal, are also utilized. The conceptual aspect falls under the overall umbrella of PowerSchool as a database of student and staff information. The principle aspect covers cause-and-effect such as, “Doing this will result in this situation, and doing that will result in that situation.” The focus is on criteria-based responses that produce the desired results. Procedure tasks make up the major portion of the instruction. The learners are instructed to follow specific procedures depending on what task they are trying to complete in PowerSchool. Memorization tasks are minimal.

Instructional Strategies

For learner motivation, four aspects of Keller’s ARCS model were adapted. The *Attention* aspect of the model is addressed by presenting a situation or example that the learner is familiar with and uses daily as part of their job. Creating these examples helps the learner to understand and grasp the concept better by comparing the current homegrown student information system to the new PowerSchool student information system. Using familiar examples is more than enough stimulus to get a learner’s attention, if what they were being presented with is relevant to their job duties.

NCVPS has 25 permanent full-time employees, but they employ many more contractors as teachers and instructional leaders. Many of the teachers and instructional leaders have used or currently use PowerSchool in their full-time jobs as North Carolina Public School teachers. Therefore, the target audience for this instruction is only the full-time NCVPS employees that do not work in regular public school. Due to the virtual nature of the organization, almost all communication is digital. NCVPS is a virtual school, communicating almost always via computers, so all users are computer savvy. The learner analysis revealed

all members of the target audience who completed the learner survey felt that they would benefit from training on the PowerSchool student information system. Therefore, the *Relevance* aspect of the ARCS model constructs the learning modules in a way that addresses users of technology in an academic environment. For example, examples and scenarios comprised of real situations that are used daily by all employees are presented.

There are two areas in which *Confidence* is an important factor. One area is being able to navigate the learning module itself; the idea behind the composition of the modules is along the lines of the KISS principle – Keep It Sweet and Simple. That way, there is very little cognitive load presented in addition to the instruction itself. The other area in which *Confidence* is a factor is in the instruction itself. For example, if a learner, being presented with a quiz question based on the content of the course, chooses an answer that is not correct, the learner is not penalized, marked off, or chastised in any way. S/he is simply presented with detailed instructive feedback and asked to select a more appropriate answer until it is given. Feedback is given when selecting incorrect answers as to where the learner can go to review the information that the quiz question covers. There is no embarrassment, and confidence in the instruction and the learners themselves is assured. The idea is to validate both the learning and the learner.

As far as *Satisfaction* is concerned, the appropriate methodology is to break the instruction down into its simplest components and to remove the apparent mystique that some learners may seem to think exists around PowerSchool through various nightmare stories shared among the public school system. The learners understand that they are in no way responsible for anything before they begin the learning activities. Instruction is presented in small, easily digestible steps. The learners also understand that they are not being singled-out

but rather are participating in their own career development. Once this idea is established, the learners walk away from the instruction with a strong sense of personal and professional satisfaction.

The routine strategies are presentation, instruction, practice and feedback. An initial example or scenario is presented, then instruction is introduced on how to fulfill or achieve this example or scenario, practice activities are presented, and process assessments or quiz questions are shown to assess what they have learned, and detailed instructional feedback based upon their answer selection is provided.

The main enrichment strategy is the *inductive-generality tactic*. An example and instruction related to that example is presented and then transfer or assimilation of the generality through the end-of-module assessment is presented as well. If the assessment suggests that learning did not take place, the generality is presented again through instructive feedback.

Additional enrichment strategies include the *easy to difficult tactic*, *hierarchical relationships*, and the *attention-focusing tactic*. For each unit, the modules are set up in a hierarchical relationship with the module topics beginning with the easiest task and intensifying to more difficult tasks. The entire modules are set up that way as well as the content within the modules. Each module is also a subordinate of the unit topic. For example, the ***Searching in PowerSchool*** unit is a superordinate topic of the four individual modules housed underneath the unit title. The individual modules within the ***Searching in PowerSchool*** unit are ordered in an easy to difficult order. The first module of the ***Searching in PowerSchool*** unit, *Searching for Students and Staff*, is a coordinate topic with the remaining three modules: *Simple Searches*, *Multi-Value Searches*, and *Compound Searches*. The remaining three modules in the ***Searching in PowerSchool*** unit are arranged in a more defined hierarchical relationship as each subsequent

module was a subordinate of the previous module. All units followed this hierarchical relationship format except for unit 1, Getting Started.

Starting in Unit 1, *Getting Started*, each subsequent module brings up some topic or important task from previous topics. For example, clicking on the PowerSchool logo is brought up in all subsequent modules after the initial instruction is introduced. This is an example of how the *attention-focusing tactic* is used. Another repetitive *attention-focusing tactic* is the mention of several key components of PowerSchool, such as PowerSchool being a powerful database, valid search command components, valid comparators to use in the search commands, and the location of certain elements within their respective main areas of the PowerSchool start page.

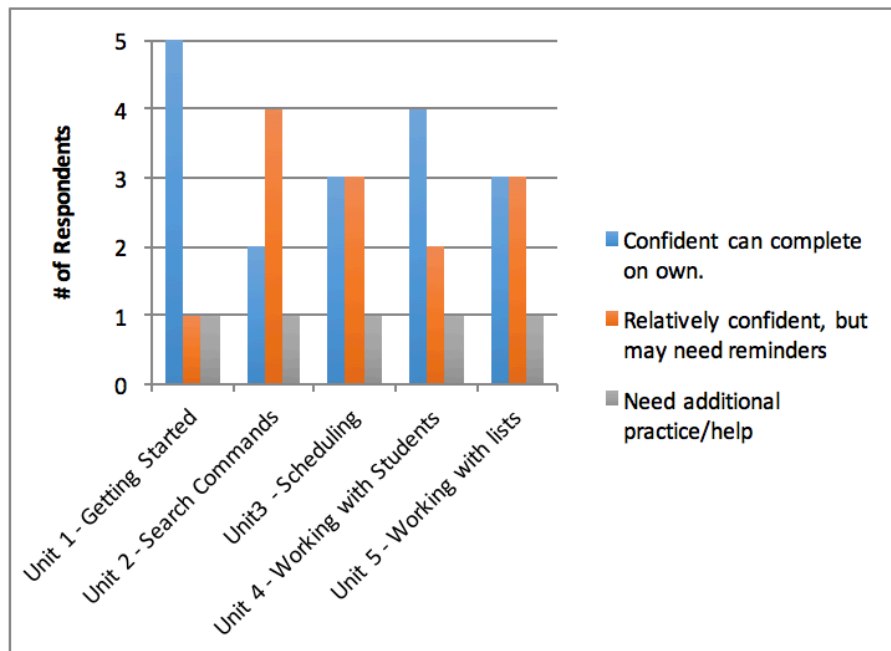
Formative Evaluation

The client, NCVPS, selected seven target learners to participate in a focus group session for the formative evaluation. This evaluation took place on Wednesday, November 23, 2016 at 1:00 p.m. and lasted approximately an hour and a half. Learners completed the modules prior to the focus group meeting since the instructional courses varied in length but totaled over two hours of instruction. The focus group participants were tasked with writing down notes and suggestions or questions about the courses and their content to present during the focus group session. They were asked to record the results of their module assessments in each module as far as how many times it took them to answer all questions correctly. During the time that learners were given to complete the modules, assistance was available via telephone, text message, email or instant message if any issues arose. No issues arose. No one reached out for help.

The modules average about 10 minutes in length, including an assumed time for completion of the assessment activities. All members of the focus group completed all thirteen

modules. After all the learners completed the modules, a focus group session took place. During this session, questions were asked about the content, the behavior of the modules, the results of the quiz questions and general comments about the overall modules including any recommendations the learners had for improvement. All the learners were very pleased with the modules and excited to share their feedback. Interest and excitement for the planned adoption of PowerSchool grew after completing these modules. Improvement suggestions were made on some of the content, such as adding a link to the end of each module informing learners where to go to complete more training, removing feedback on individual steps of the process assessment in one of the modules, consistency and continuity changes, and the timing of the content on the objective slide. Most of these suggestions for improvement have been incorporated.

Below is a graph with its data table that illustrates responses from each of the seven focus group participants.



Unit Modules	Confident can complete on own.	Relatively confident, but may need reminders	Need additional practice/help
Unit 1 - Getting Started	5	1	1
Unit 2 - Search Commands	2	4	1
Unit 3 - Scheduling	3	3	1
Unit 4 - Working with Students	4	2	1
Unit 5 - Working with lists	3	3	1

Most everyone felt confident with the modules. However, there was one person who seemed to struggle. PowerSchool has a reputation among public schools in North Carolina as not being user friendly and being very cumbersome. This is one of the main reasons behind this project. Face to face instruction is an option for working with the one participant and any future participants, that struggled with these modules. Skype is also a solution if face-to-face time cannot be scheduled for whatever reason as NCVPS employees are located all over the state of North Carolina. This particular focus group participant is somewhat local. NCVPS holds work retreats quarterly where all employees are required to travel to the office on NC State's

Centennial Campus, or other designated location, and work together for two full work days.

Different NCVPS departments oversee the topic and agenda of the retreat on a rotational basis.

One idea is to have the next Technology team's retreat topic and agenda focus on PowerSchool.

The data table below illustrates responses to a survey given after all modules were completed by each participant. Overall, the participants seemed to have no issues with the categories presented. Respondent number 4 actually thought that there was too much time allowed for each module due to the fact that she thought the tasks and questions were not challenging enough. Respondent number 4 stated in her comments that the tasks and questions did not take that much time to complete correctly. No participant felt these modules were too vague or unhelpful.

Respondent	Sufficient time for each module	Voiceover clear	Screencast helpful	Tasks and questions matched lesson	Tasks and questions challenging
#1	3	3	3	3	2
#2	1	2	2	3	3
#3	3	3	3	3	2
#4	2	3	3	3	1
#5	3	3	3	3	2
#6	3	3	3	3	3
#7	3	3	3	3	2

3 = totally agree

2 = agree

1 = disagree

The client participated in the focus group session and was very pleased with the results and the overall experience of the session. Constructive criticism was received from the learners

and, as mentioned before, implemented in another revision of the modules. The constructive criticism was welcomed as well as the compliments on the instruction in general. The members of the focus group session were asked to watch with a close eye as they were completing the modules prior to the focus group session. The growing excitement of the participants about the adoption and implementation of PowerSchool showed that this was a very successful formative evaluation that will help to deliver an extraordinary product to all employees of NCVPS.

Recommendations for Future Revisions

A future revision is to re-record the narration for the screencasts in some of the first modules. A professional microphone was purchased during the creation of the course content. Another option is to possibly incorporate additional examples in some of the modules. Also, once a permanent location is established for these courses, the last slide of each course will be updated with that location. The current location listed on the slide is only temporary. This is also a very fluid project. More training modules will be created as the need is identified. Based upon the formative evaluation results, this final project is strong and should enable learners to successfully achieve the instructional goals and objectives.