OnSchooler

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Milestone 2: Vision and Scope, User Stories, Iteration Plan

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Prepared by Group 57

Anjali Vasisht
Ridwana Rahman
Liangge Deng

Abstract

About 70% of English Language Learners in the US attend only 10% of elementary schools and fall behind for the first 2-3 years. It was determined that the OnSchooler system would enable all of these students to learn in English as well as their native language. This work will be done to an existing version of the OnSchooler website by using ASP.Net web development to improve the UI and fix bugs on the website.

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1 Background

Stakeholders:

- **Cynthia Fischer**
  Founder and CEO of OnSchooler
- **School Partners**
  Beta testers of the program
- **Parents**
  Parents of home-schooled students, utilizing OnSchooler for additional homework and lessons
- **OSU Accelerator**
  Business support
- **Anvil Marketing**
  Marketing partner

The project is a system of education created by Cynthia Fischer with the following features:

(1) Half online and half hands-on; the online portion replaces lectures, textbooks, worksheets, drill and practice, and quizzes and frees up the teacher to do higher-order thinking activities during the hands-on portion of the lesson and incorporate problem solving, teamwork, multiple subject areas, research, creativity, fun, and inquiry-based learning.

(2) Mastery-based progress means that all students can progress at their personal best pace without ending up with knowledge gaps.

(3) In general the curriculum is much more accelerated than those typically found in the US public school system; it is also more robust, with dedicated tracks for technology, second language, personal development (both physical and social) and the arts starting in 2nd grade. An average student will finish a basic US high school level education by age 14, leaving plenty of time for more advanced classes or career training programs.

(4) The e-learning platform, the curriculum, and the pedagogy (teaching methods, etc) were all developed together as one coordinated system to create a synergy not found in systems with many parts cobbled together. It is so efficient that for most students there is no homework until high school.

(5) The latest version of the e-learning program enables a student to do a lesson in two languages at the same time, fully understanding everything from day on in their native language while rapidly acquiring a second language (especially if the hands-on lessons are taught in the second language).

The system was first tested for five years (2000-2005) in a private lab school. She designed the e-learning platform and hired a programmer to build it over the summer (v. 1), but he failed. Her husband learned ASP.NET the weekend before the school opened and created the e-learning system (v.2). For the first couple of years, she would teach all day then in the evenings he would make fixes and improvements to the software while she wrote the next day's curriculum, then they would drive over to the school at midnight and upload the changes. Eventually they were able to do this using a remote login, but this general pattern continued for five years.

Despite severe budget limitations, the system proved to be very successful academically. Most of the students in the Foundations Series (similar to preschool, kindergarten and first grade) learned to read at age 4, and were reading fluently and independently at age 6. Unfortunately, at that point, most of these students left the program and went to public school. The next academic group, in the Knowledge Series (somewhat analogous to grades 2-7) were mostly students who were struggling in public school and their parents were looking for another solution. Most of them had severe learning and behavioral issues; nevertheless, these students thrived in this environment and most became straight-A students. Due to the extremely efficient learning method, these students were able to back up to the place where their learning gaps started and relearn all the information at a mastery-based level, and quickly catch up to where they should have been academically.

After the school closed, the curriculum was made available online for homeschool students, which remains the primary customer base at present. In 2007 the founder launched a new Foundations class from her home, to teach her own children

and the children of friends, family and neighbors. She closed the program in 2011 with the intention of sending her kids to kindergarten in a public dual-immersion school; unfortunately, they were already reading fluently (they passed the school's tests up to the 5th grade, the highest level offered at the time) and were bored as the other kids were learning their letters and numbers. The next year they tried an e-learning program offered through a private charter school, and completed grades 1 and 2 in one year. At this time the founder became disgusted by the current academic offerings and decided to revive her own e-learning platform.

In 2013 She hired some programmers from Craigslist; the database guy created a beautiful new structure (v. 3) but the front-end developer's work was terrible. In 2014 she took Stanford Online's course Technology Entrepreneurship, and hired new programmers in India (v. 5a), which included the multilingual option and moved to the .NET platform hosted by Amazon S3. All of the homeschool students transferred to this new system. In 2015 she joined the OSU Accelerator program, and hired new programmers in India to continue to fix and improve the system (v. 5b), which moved to the Azure hosting service because it was offering free hosting for Accelerator companies. In 2018 the company was renamed from The Curriculum Projects to OnSchooler as it is shorter, easier to spell, and more understandable.

Now we are working on version 5c, which will continue to fix some features that were never quite right and add a few small features on the wish list.

2 Vision

In general, this system has already been proved in the private lab school to be much more effective, efficient and affordable than the systems typically used in US public schools; adoption of this system would enable US high school students to perform at the same level as students of the same age in other countries (instead of falling further behind).

2.1 Central hypotheses

About 70% of English Language Learners in the US attend only 10% of elementary schools; using the OnSchooler system would enable all of these students to thrive. Right now, in English-only environments, they fall behind for the first 2-3 years and the data show that they never catch up.

This system would be great in areas with a large international population, where two languages are commonly in use, in schools where students can start learning a second language at age 8 (when it's easier) instead of age 15, and with groups that are trying to save or revive traditional languages.

2.2 High-Level Requirements

- Help immigrant families and students complete their studies by establishing a multilingual learning platform to eliminate language barriers.
- Help students complete supplementary educational resources, including assignments and tests
- Another requirement is to improve the interface for students and lesson writers from their Phase 1
    - Improved UI
    - try to update Google user authentication
- The system will also include an improved lesson writer experience

3 Prioritized Project Constraints

- The priority constraint for this project is time compared to the two other elements of resources and scope. In order to achieve and complete the tasks delivered by OnSchooler, they will be laid out into phases as a part of the agile development process. These phases were laid out early in Fall Term in order for the team to estimate the scope of the tasks.
- This way the scope of the tasks can be adjusted according to time constraints set by the senior project class timeline on a term basis.

4 Scope

Review the tasks listed in GitHub, estimate how long each will take, and decide who will do each one. Individuals begin working on respective tasks, keeping the rest of the team updated on progress and any roadblocks they run into. Once tasks are completed, listing can be shifted into the “completed” Github section, and individuals can move onto the next task. As we go along, we can decide how much more time is needed to complete a task.

4.1 Process Flow

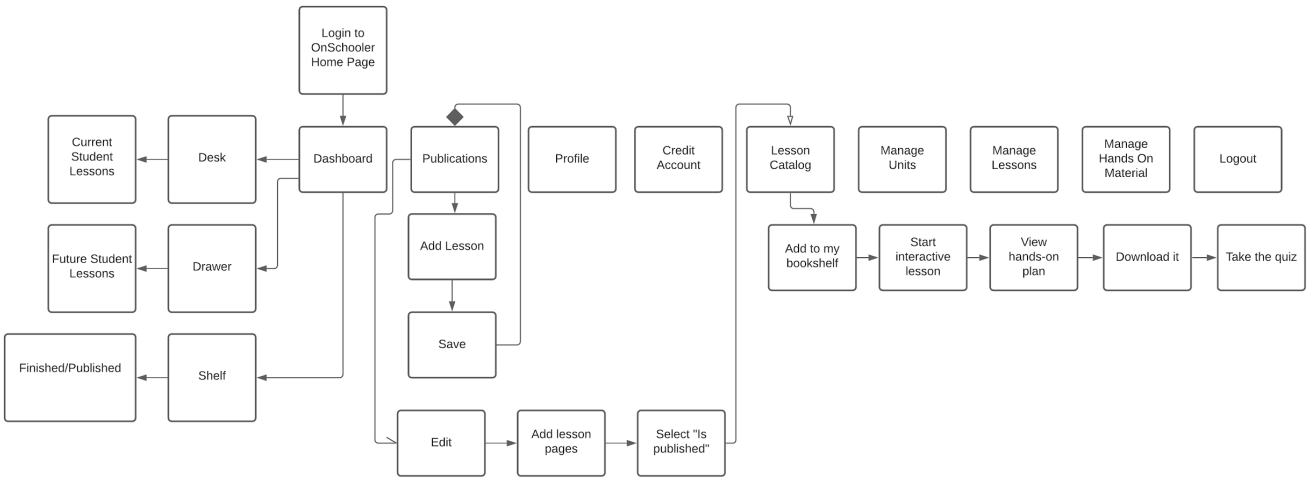

Figure 4.1

The system process flow starts by logging into the OnSchooler account from the home page. Then you land on the dashboard which lists 3 entities called Desk, Drawer and Shelf. The Desk contains student lessons the student is currently working on, the Drawer contains future lessons, and the Shelf contains finished and published lessons. The sidebar menu has different sections available to the user which are Profile, Credit Account, Lesson Catalog, Manage Units, Manage Lessons, Manage Hands On Material and finally Logout. In Publications, the user can first add a lesson, then save it. Then from there the user can edit, add lesson pages to the lesson and then finally publish the lesson. The lesson gets stored in the Lesson Catalog where they can upload the lesson to the bookshelf. Then they can start the interactive lesson, view a hands on plan, download it and then finally take the quiz for it.

4.2 User Stories

Homeschool parents need to find programs that let them make sure they are covering all the basics, but give them plenty of flexibility for their own schedules, and the system must be affordable on a homeschool budget.

Teachers need a way to organize materials in a virtual school environment, reduce their planning and paperwork loads, and provide a system with more built-in supports for students with special needs and for English Language learners so that they can effectively learn lessons in terms they understand.

Schools with limited budgets need a better system for students with language barriers. It’s helpful to have a system that enables multilingual education and levels the playing field for students through use of E-learning that does not take a student’s background--such as gender, race/ethnicity, etc.--into account. All of these can subtly affect the quality of education a student receives from human teachers, but the computer lessons treat every student exactly the same.

4.3 Iteration Plan and Estimate

- Tasks in each phase are finished and moved into “Completed” column in Github
- OnSchooler website is still functioning well with improvements, links aren’t broken
- The UI/UX is improved and more cohesive as a whole, and easier to read and understand
- These goals are tracked and marked to completion in Github
- CEO Cynthia Fischer approves of improvements, and is satisfied with the expected changes that were made to the OnSchooler website
- Students: the system already works for them; it just needs a few small touch-ups.
- Logo: fix the problem once the user clicks on the logo and will log out.
- Menu: Remove the “Profile” option; Adding the function to the top-right gear.
- Lesson Writers: Various bug fixes/UI improvements to the lesson writer functionality which includes the page-by-page system for creating, editing and translating lessons. (mid-Spring term)

5 Risk

Table 5.1

Risk	Likelihood	Impact	Mitigation Strategy	Early Detection	Consequence
Project might include too many goals to be achieved within given time constraints	Likely	Medium-High	- meeting weekly within student group, as well as with founder, to go over new improvements we’ve implemented - making sure everybody’s on track in these meetings - Modify the project objectives, project scope, project structure and other methods to avoid the threat of risk.	Integrating the mitigation strategy by holding weekly meetings to discuss which cards will help detect risk early on.	Should the mitigation strategy fail to prevent/avoid the risk, the project - completion date gets pushed back further - Delayed launch
We might not be able to get the product tested by schools/beta testers on time	Likely	Medium	- Cynthia is working closely with schools and teachers to get them to test the website	- Communicating with Cynthia on how often and when testing will occur for new features and designs that are completed in the project	- Limited to no feedback on features that were built or improved upon - Testing would be delayed or transferred to a new engineering team

6 Report of Alpha Functionality

6.1 Anjali Vasisht

Anjali Vasisht is a senior majoring in computer science and minoring in business and entrepreneurship. She plans on working in cloud development and management after graduating. She contributed to the initial setup of the environment in order to run the website. This includes figuring out what kind of packages were needed to be installed according to the integrated development environment, in order to fix a list of setup errors. She also figured out that the team needed to use Visual Studio over VSCode due to package requirements of ASP.Net in order to run the website. She also worked to replace the outdated google plus sign in API with the new one, however there are still advanced backend issues that may not be solved in time by the end of the year and may need to be passed on to future developers. So therefore, she is working on downloading a database to be able to sign in to the website as a user and work on other bug fixes/improvements regarding the website's lesson writing and functionality.

6.2 Ridwana Rahman

Ridwana Rahman is a junior double majoring in graphic design and computer science and minoring in photography. She hopes to continue onto an MFA program after graduation, or a creative position that's either design or photo-related. Her main contribution to OnSchooler is UI design and UX improvements, mostly with the already existing interface for the website. Some of her specific tasks include fixing type around the site, redesigning the menu for both student and lesson-writer views, and improving the question and quiz page experience.

6.3 Liangge Deng

Liangge Deng is a senior majoring in computer science and minoring in business. He plans to pursue a master's degree in computer science after graduation. His main contribution to Onschooler is to export the database from the BACPAC file and connect the entire project to the database to ensure that the entire project can run on the Windows platform. Deleted duplicate keys and merged functions into the menu bar. Fixed the bug that will log out after clicking the logo.