LARC Enrollment - Student enrollment system for tutorials offered by the Learning & Academic Resource Center at UC Irvine

UC Tech 2020 - Larry L. Sautter Award Program Submission

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Summary
LARC Enrollment is a web application that manages enrollment for student-led tutorials offered by the Learning & Academic Resource Center (LARC) at UCI. It was created to replace a cumbersome, time-consuming, and error prone legacy process, offering a streamlined interface for staff and accessible, self-service enrollment for students. LARC Enrollment was developed by the Office of the Vice Provost for Teaching and Learning IT (OVPTL IT) team in close partnership with LARC.

Problem
The Learning & Academic Resource Center offers supplemental student-led tutorials for challenging gateway courses at UC Irvine. Prior to the LARC Enrollment project, LARC staff were required to manually enter information about 110-140 tutorials per quarter into three separate systems in order to make them available to students and track enrollment. It was frequently unclear to students which tutorial matched with the courses they were enrolled in, leading to a lot of incorrect enrollments, which had to be

manually corrected by LARC staff. Information about tutorial enrollment, such as waitlist position and attendance records, were tracked manually on paper, and students had to call LARC staff to get this information.

In addition to the challenges above, UC Irvine was in the process of making major changes to its enrollment systems. These changes would have made LARC's existing enrollment process unusable, so it was important that a new LARC enrollment process be defined and implemented within 18 months.

Challenges
The LARC business rules are complex, and the relationship between the LARC team and OVPTL IT had been strained due to previous unsatisfactory project experiences. Additionally, the timeline for this project was only 18 months from initiation to required delivery.

Solution
The goals of the LARC Enrollment project were to reimagine the entire enrollment process by creating an easy-to-use system for LARC to advertise tutorials to students, and allow students to self-enroll in those LARC tutorials. To ensure that both the LARC team and OVPTL IT were in agreement on business rules and which features were the highest priority, and to ensure a positive project experience for all, a highly collaborative process with frequent check-ins between LARC and OVPTL IT was used throughout the entire development cycle.

Project Kickoff
In March 2018, OVPTL IT and LARC met for a project kickoff meeting. In this meeting, members of both teams, plus a representative of the campus Learning Management System team, brainstormed to come up with a wishlist of features. Both teams then worked together to categorize these features by priority to ensure that everyone was in agreement as to what the minimum viable product would include.

OVPTL IT Scrum Master Emily Young leads an activity to identify and prioritize features
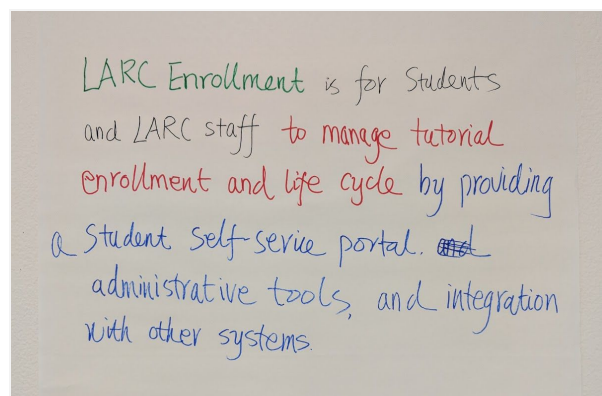
The collaboratively developed LARC Enrollment product vision statement

Development

Development was done using an Agile/Scrum process. Requirements from the project kickoff were converted into user stories, and implemented by OVPTL IT over two-week sprints.

OVPTL IT worked closely with LARC on the order and priority of features to reduce overall project risk. Administrative pages were prioritized for development first, since entering tutorials into the system would be the first functional need. Student facing pages and core self-enrollment functionality were added next in order to support a soft launch of the product in Summer 2019. Finally, student-facing attendance history features that went above and beyond what was possible prior to LARC Enrollment's implementation were added.

Usability Testing

In August 2018, OVPTL IT and LARC invited students to allow themselves to be observed using the LARC Enrollment system to complete a variety of tasks, and then give feedback on the system's ease of use. Gathering this feedback only five months into development allowed OVPTL IT to make usability improvements to the system early.

Screenshots of LARC Enrollment before and after implementing changes based on usability testing

In October 2019, after the official product launch, OVPTL IT conducted another round of usability testing with students to get feedback about the finished product. Like the previous sessions, this round of usability testing yielded valuable information about usability issues, which led to improvements that made the system more intuitive and useful for students. These sessions also acted as a pilot for usability testing as a general practice for use on future projects in OVPTL IT.

LARC later remarked that their participation in the usability tests as observers gave them valuable insights about how students perceive and experience their enrollment process. It also made it easier for them to understand and respond to inquiries from students with questions about the process.

Product Launch
At the beginning of Fall 2019, LARC Enrollment was officially launched, and the project transitioned from active development to ongoing maintenance and support. LARC and OVPTL IT had a launch party to celebrate the release of LARC Enrollment, and a retrospective meeting was held between the two teams to discuss how the project went, and identify any lessons learned that could be applied to future projects. OVPTL IT continues to maintain and add feature improvements to LARC Enrollment as requested.

Collaboration
OVPTL IT and LARC collaborated heavily throughout the entire development process. The project kickoff included activities designed to brainstorm and prioritize a feature list as a group. During the implementation stage of the project, OVPTL IT and LARC held biweekly meetings to check in on status, confirm or revise business rules, and adjust priorities. Both the project scope and progress against that scope were tracked in a project burn up chart as the project progressed.
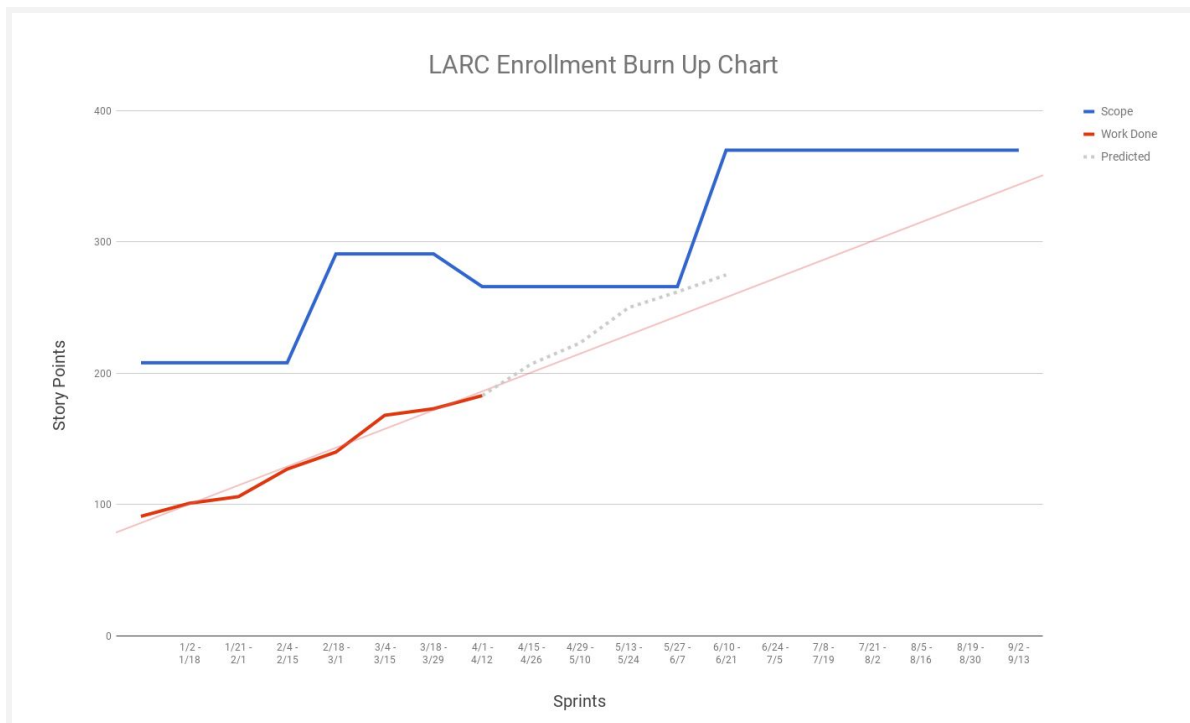
A snapshot of the LARC Enrollment burn up chart

Involving LARC in design discussions early, and having biweekly check ins between LARC and OVPTL IT helped keep the project on track. The project was delivered on time, and both teams were able to adapt to changing priorities and requirements as the system matured. The success of this project has helped strengthen the relationship between LARC and OVPTL IT.

The collaborative process used for this project was the subject of a presentation called Application Design the Agile Way:From conception to implementation at UC Tech 2019 by Jeremy Thacker and Songmei Han.

Technology

LARC Enrollment is an ASP.NET web application with a SQL Server database. Through the implementation of this project, OVPTL IT continued to evolve their best practices by including the implementation of automated unit tests and continuous integration.

Measures of Success
The LARC Enrollment project was delivered on schedule, and included all of the features most important to the LARC office. Staff can now create tutorials and make them available to students quickly and easily. Staff are able to add and remove students from tutorials and track their attendance using the admin sections of the website.

Students are now able to easily and intuitively see what tutorials are being offered for the classes they are taking, and self-enroll in these tutorials. Students are able to manage their enrollments, view their position on tutorial waitlists, and become notified when they are promoted from the waitlist to an enrolled status. Students can also track their attendance history for tutorials using the LARC Enrollment system. The more intuitive interface eliminates most enrollments made in error, and drastically reduces student frustration and the number of calls by students to LARC staff.
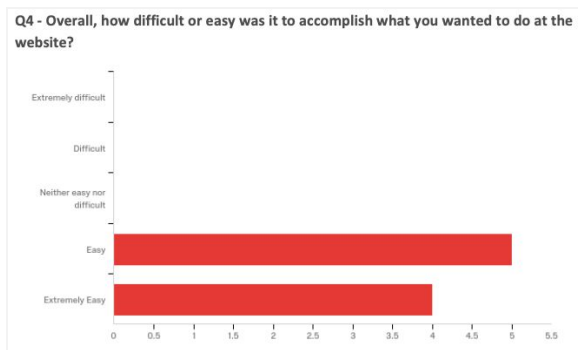
Results of a product feedback survey given to students enrolled in tutorials for Summer Session I, indicating that all felt that LARC Enrollment is 'Easy' or 'Extremely Easy' to use
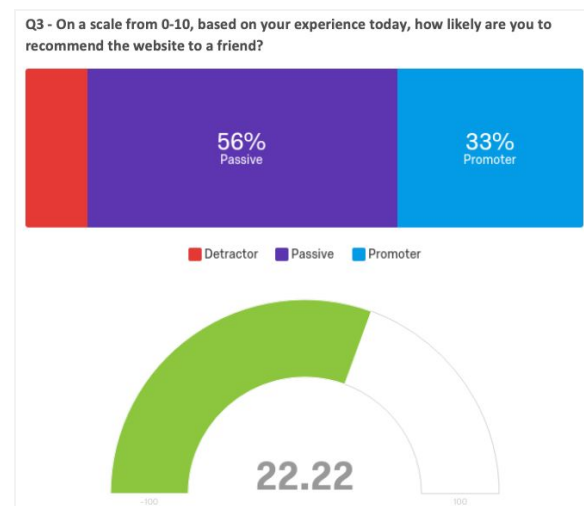
More results, indicating a 33% promoter rate for the website

LARC staff estimate that the new LARC Enrollment system has resulted in time savings of 75% for the administrators in their office.

Additionally, the success of the collaborative approach to the LARC Enrollment project has provided a template for future projects with OVPTL IT's other clients at UC Irvine.

LARC Enrollment URL
https://enroll.larc.uci.edu/