Game Changers

EDUCATION and INFORMATION TECHNOLOGIES

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FROM THE EDITOR

I would like to thank the many people who made this book possible, particularly Gregory Dobbin for managing the project and Karen Mateer for her research.

—Diana G. Oblinger

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STAR: Using Technology to Enhance the Academic Journey

Erika Lacro and Gary Rodwell

Introduction

INCORPORATING TECHNOLOGY INTO EDUCATION continues to be at the forefront of research focused on improving student success. As the nation struggles with getting more students educated and prepared for work, institutions are attempting to combine and integrate technologies that successfully support student learning and success. A large portion of technology adoption has focused on the classroom support of students in their learning, such as the emporium model and classroom online assessments. Other uses of technology have concentrated on information dissemination and advising/degree attainment support for students.

The STAR Academic Journey

In 2005, the University of Hawaii at Manoa, the largest of the ten-campus University of Hawaii (UH) system, embarked on the development of a cross-institution, online advising/degree attainment support system called the "STAR Academic Journey," knowing that the future of higher education growth (i.e., enrollment) within four-year institutions would most probably not come from high school graduates but from transfer students from community colleges, coupled with the tenet that while the United States has excelled at providing access to higher education, especially at the community college level, we have not fared as well with ensuring college retention and completion.

Hence the need to design a real-time "academic journey system" that could span all of the campuses within the UH system with the express goals of

- engaging students in real time as they are making course choices and helping them to understand the effect of their choices on the degree program they are currently pursuing, including future aspirations irrespective of the UH institution(s) at which they are taking the course(s);

- allowing students to see in real time what courses they could take at any UH campus that would meet a "particular degree requirement" at their home institution and then "dragging and dropping them" into their academic plan;

- increasing retention rates by contacting advisors and letting them know which students are most off-track with the courses they are taking and the degree requirements (combined with leading indicators in the future);

- increasing transfers from community colleges to four-year institutions by letting students know not only how far along they are with their community college degree but also how far along they are with a four-year degree should they choose to carry on to a four-year campus (in addition to allowing students to do a "what if" for any degree at any campus);

- providing a tool that aids unit understanding of the demand for students' courses so that they can then plan accordingly (not just based on students in their major);

- allowing struggling students to automatically transfer credits from the four-year institution back to the community colleges so that they may be eligible for a community college degree when they would have otherwise dropped out without any degree;

- decreasing the time to graduation and increasing graduation rates, thereby decreasing the burden of the cost on the student, state, and the federal financial aid support programs, while ensuring no decrease in the quality of the education;

- creating a symbiotic relationship between advising and counseling staff, allowing advisors to engage the students in deeper conversations and enabling the mechanics of getting the degree program to the academic journey software;

- ensuring a simple and highly automated technical process for entering "degree rules" (what courses fulfill a requirement) that requires a maximum of one to two full-time employees entering in the rules for all ten campuses and 60,000 students;

- being able to process up to a maximum of one hundred hits per second (twenty hits per second, steady state) with a turnaround of 5 seconds, so that all 60,000 students could be processed in less than one hour; and

- technically functioning as an "intelligent cloud," thereby reducing required technical staff to two full-time employees and ten student helpers.

Six years later, students have flocked to the STAR system, which receives almost a million hits a semester—an average of about fifteen hits per semester by a student. Faculty and staff absorption rates have not been as stratospheric.
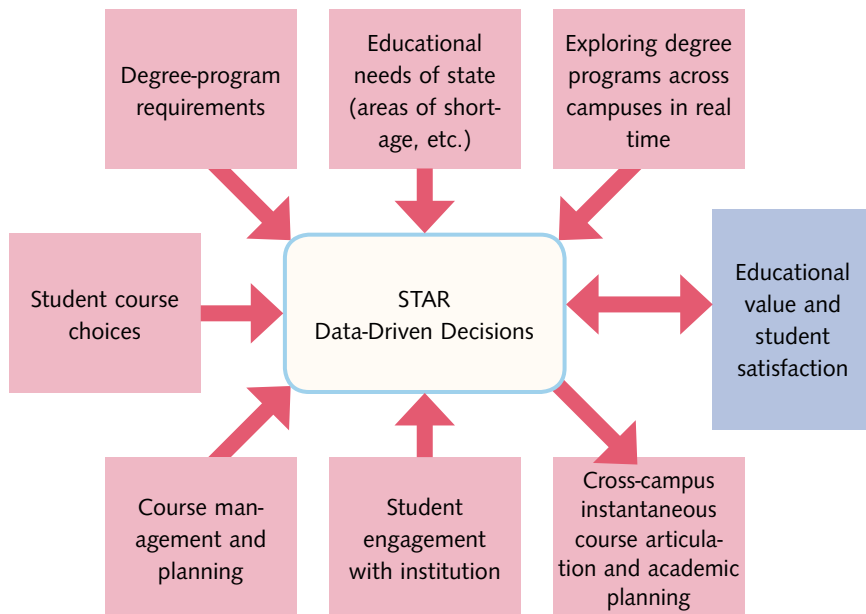

Other Features

Utilizing learner analytics and data mining of student trends, the STAR system is just at the tip of the iceberg of uncovering how this intelligence can help guide students. For example, the "Giving Tree" feature in STAR lets students know of scholarship opportunities (based on intelligent mining of the student and scholarship criteria).

Future Developments

The mission of the STAR project now includes a number of future developments. Capitalizing on learner analytics, other planned enhancements to STAR include development of a one-stop shop for students across a specific region, such as those belonging to the Western Interstate Commission for Higher Education (WICHE). This would allow students from other states to explore degree paths and transfer options across regions. A current initiative under way by the Western Alliance of Community College Academic Leaders (WACCAL) is working to establish a western states "core requirements" agreement. Students could potentially explore how their credits earned would apply to other degrees at other colleges and build a road map for on-time completion. In addition, serving as a one-stop shop, STAR could provide resources on scholarship options, online tutoring resources, and social networking interfaces, allowing students to further explore and make better-informed decisions.

Other features in the development phase include social networking interfaces that would be accessed through STAR. Online tutoring resources are in place and will be positioned as a separate module through STAR, thus making

Figure 1. **STAR CIP Model**

Degree-program requirements	Educational needs of state (areas of short-age, etc.)	Exploring degree programs across campuses in real time

Student course choices	STAR Data-Driven Decisions	Educational value and student satisfaction

Course man-agement and planning	Student engagement with institution	Cross-campus instantaneous course articula-tion and academic planning

STAR the primary portal for students. Once these activities are launched, decision makers will have the ability to monitor and evaluate the use and success of the social networking activities.

The STAR Model and Continuous Improvement Process

The STAR Continuous Improvement Process (CIP) model (see Figure 1) identifies the inputs necessary to achieve student success and the long-term educational value to graduates. STAR has the ability to provide intelligent data sets that will assist college administrators in decision making related to course scheduling and in identifying trends.

Key to the success of this unique product is the constant engagement of students. Student surveys of user satisfaction are routinely employed to gauge feedback and to identify areas for improvement. The sustainability of the STAR improvements is based upon student programmers. Having students involved in the programming of the product not only benefits their financial status but

also allows for important student feedback into the needed modules or features available in STAR.

Conclusion

STAR is a proven, enterprise-level software program developed by the University of Hawaii that addresses the implementation of software academic advisory tools that engage students by offering them "borderless" access to web-based, accurate information about course registration, automatic admission and reverse-transfer policies, scholarships, and social networking. Students entering college are more technologically savvy than ever. They expect dynamic, integrated systems available 24/7 to assist them through their academic endeavors, providing information-rich guidance. The University of Hawaii, specifically, has found this system to be an excellent tool for students and an important continuous improvement model. With a goal of increasing degrees and certificates awarded by 25 percent by 2015, the STAR tools improve student access to information while tracking and evaluating student patterns and utilizing data for decision making.

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