The 21st Century Student: Open Knowledge + Education Innovation

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Duke University | EHD Bass Connections – Education & Human Development

I WISH I HAD KNOWN: COLLABORATIVE TOOLS FOR INTEGRATED STUDENT PATHWAYS | Ryan + Robert + Zuzu

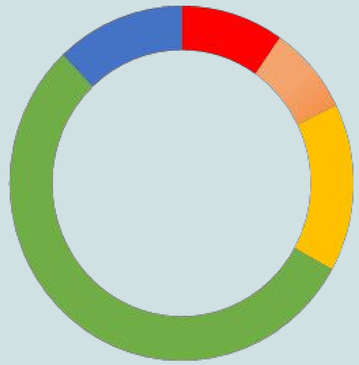
Research Question | As Duke faculty consider a new curriculum and various departments and programs adopt new technologies and strategies for engaging students, we aimed to gauge student perceptions about their day to day experience at Duke. How do undergraduates feel about Duke's new technologies and curricular programs and innovations? At the same time, has Duke successfully implemented basic elements of university life like advising, course selection, and major selection?

Methodology | We surveyed 163 students about Duke's technologies and the undergraduate experience more broadly. The survey focused on a few major themes:

- knowledge and comfort of various technologies
- technology as a tool for self-reflection and identity development
- student academic pathways
- student relationships (student-faculty, peer, student-parent)

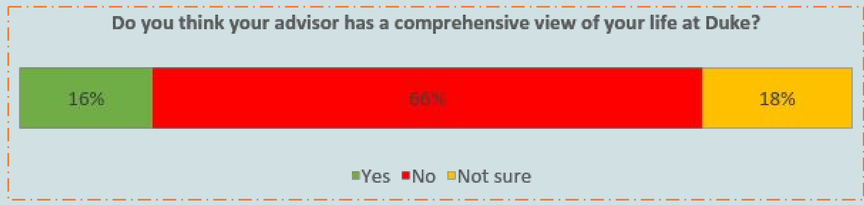
85% of students advised other students about courses to take

ALMOST HALF of students felt uncomfortable registering for classes before their first year



Findings + Recommendations

- Students need more interactions with faculty who can mentor them along their **whole experience**
- **Increase infrastructure** for peer advising to fill gaps and give students more information
- Be **intentional and more consistent** in adoption of new technology



THE PROJECT-BASED ADDITION: APPLYING KNOWLEDGE BEYOND THE COMPUTER SCIENCE CLASSROOM | Brent + Carter

Research Question | CS pedagogy is heavily focused on lectures and not on connecting students to outside learning; however, to produce exceptional graduates, we should support outside learning and foster key skills like team-work, problem-solving, and communication. How can we produce CS graduates prepared to be exceptional in the workforce?

Finding + Recommendation | Access to project-based learning opportunities outside the classroom:

Local Community
Non-profits pitch technical projects on which they want to collaborate with students

Duke CS Students
Duke CS students are eager to work collaboratively and practice the skills they've learned in their classes

HackDuke
HackDuke joins students and non-profits, where they have a learning experience outside the formal bounds of academia

THE OPEN CLASSROOM | Anna

Design + Implementation Outcomes

- **Open Project Collaboration from Elementary to University Classrooms** (article published in Opensource.com)
- **Outside the Box: Teaching 3D Printing with Low-Tech STEM Activities** (presentation at Construct 3D conference at Duke)
- **Make:Code** (6-week afterschool program at Durham elementary school)
- **21st Century Education within the Context of Open** (participation in session at Creative Commons Global Summit)