First Year Engineering

2017 Faculty Survey Key Findings

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2017 - 2018
Faculty Survey Key
Findings

Report prepared by:

Shannon Sampson
Josh Parsons
Jennifer Stuck

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UK College of
Education
Evaluation Center

143D Taylor Education Building
Lexington, KY 40506
(859) 257-2628
EvaluationCenter@uky.edu
education.uky.edu/evaluationcenter/

INTRODUCTION

The UK College of Education's Evaluation Center has been contracted by the University of Kentucky's College of Engineering to evaluate student and faculty perceptions of the new First-Year Engineering program. The evaluation includes faculty focus groups and online surveys administered to department faculty, current students (both those who have participated in FYE and those who did not), as well as Engineering alumni.

This report features key findings from the 2017-2018 Faculty Survey. It is meant to provide FYE program administrators with a sense of how the Engineering faculty perceive the FYE program. The survey also allows the faculty members to voice their concerns regarding the program's implementation and success. This information will allow the administration team to gauge faculty support for the project as well as provide them with formative feedback which may enable them to make informed decisions on program implementation. Furthermore, because most of the questions on this year's survey are the same as last year's, the data may be studied longitudinally to examine changes over time.

KEY FINDINGS

Faculty members report the curriculum change was motivated by a desire to improve retention rates and students' ability to choose their field of study.

Most faculty members perceive the rationale behind the curriculum change to be beneficial and well-intentioned. Responses indicate they attribute the changes to a desire for better retention rates, students' ability to make an informed decision regarding their Engineering discipline, to provide a more standardized experience across all first-year students, and to enable students to build basic skills essential to their success in later courses.

Potential benefits of the FYE program include building essential core skills and enabling students to make an informed decision as to their field of study.

Building core skills essential to student success, being able to make an informed decision regarding their major, improved retention rates, promoting a broader understanding of Engineering as a whole, and standardizing the first-year experience were the most cited potential benefits of FYE.

Faculty concerns regarding FYE include a biased curriculum, a perceived lack of academic rigor, and a focus on soft skills.

Faculty members are concerned about a perceived bias towards certain Engineering disciplines within the FYE curriculum over others. One respondent wrote, "While other programs have been forced to compress their curricula to 3 years, Computer Science somehow captured the FYE." Others were less

direct, instead referring to an excess of assignments focused on technology and programming. Faculty also expressed the concern that FYE instructors may unintentionally promote their own discipline over others in the courses they teach. Most of the faculty members reported a concern that the FYE curriculum was not rigorous enough to prepare students for advanced coursework, and that the skills taught in the FYE courses were not directly applicable to Engineering. Several faculty members voiced the concern that the FYE program stratified students based on their financial resources, which could lead to alienating students with fewer resources.

FYE success will be evidenced by an increase in retention rates and in improved student performance and outcomes.

Most faculty members indicated they would consider FYE successful if it led to an improvement in student retention rates. Others pointed to improved student performance in advanced coursework or improved outcome and graduation rates as evidence of FYE success. Several faculty members voiced concern about a perceived lack of a control group or baseline data to compare to FYE data, to be able to objectively investigate the extent to which the program is successful.

Many faculty members indicated FYE should provide foundational skills for advanced courses which are directly applicable to student success.

Of the fifteen skills listed on the survey, Problem Solving, Excel, Learning about Majors, Study Skills, and time management were endorsed as important the most often. Circuitry was most endorsed as unimportant. The chart below displays these findings (note: not all faculty endorsed all skills, resulting in different n's for each skill category).

Faculty Ratings of Skill Importance
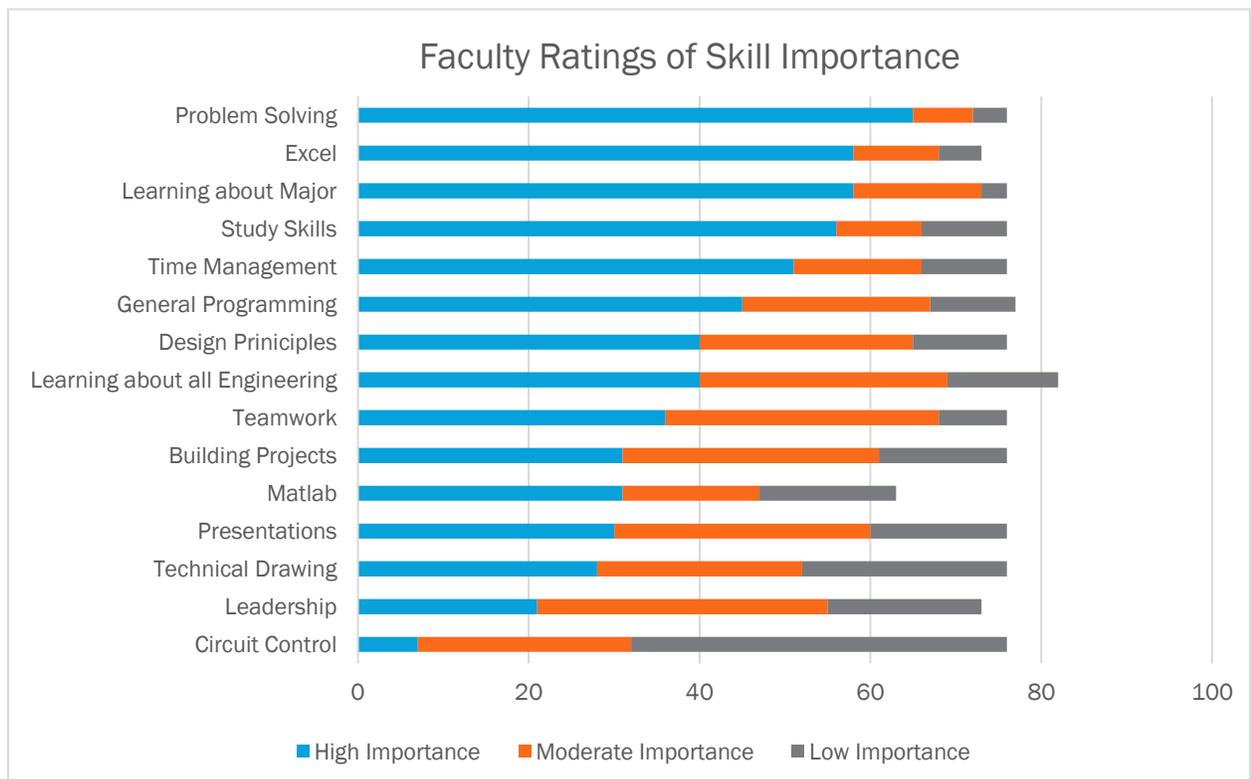
REFLECTIONS

Faculty perceptions have improved since last year.

Overall, faculty perceptions seem to be more positive than findings from the previous year. A few individuals still oppose the program; however, most respondents on this year's survey indicate strong potential benefits and seem willing to give the program a chance to prove its efficacy.

Perceptions of FYE do not differ by department.

On a departmental level, no department wholly supports or rejects the program. Each department has supporters and skeptics, with the majority cautiously optimistic.

Faculty want more communication and transparency about program evaluation.

Faculty are concerned about how the program will be evaluated, specifically the objectivity of the individuals interpreting evaluation findings. Several faculty members reported a concern about the ease with which statistical data can be manipulated and misrepresented. They would like administrators to be transparent regarding the metrics they use to measure success, baseline data, and what will be used as a control groups to gauge program impact.

Faculty want oversight of the FYE curriculum.

Specifically, several faculty asked for an oversight committee to be created, with faculty from each Engineering discipline taking part in the management of FYE curricula. They indicate this will prevent any one discipline from dominating the content and will contribute to the development of a standardized FYE model.

APPENDICES

METHODS & DATA SOURCES

These data were collected via an online survey which was distributed to Engineering faculty members through a link embedded in an email. The survey was accessible from August 17, 2017 through September 21, 2017. The survey was created and hosted on REDCap. It consisted of multiple choice demographic questions, four open ended questions, and a Likert-type response matrix. Survey questions asked respondents their faculty status, Engineering department, perceptions and concerns regarding the FYE program, and the importance of several 21st century skills.

Of the 176 faculty members invited to participate in the survey, 76 responded, yielding a response rate of 43.18%. Response break-down by department consisted of 17 from Chemical and Materials, 14 from Civil and Mechanical, 13 from Biosystems and Agriculture, 9 from Electric and Computer, 7 from Mining, and 3 from Computer Science. Responses by tenure status indicated 50 respondents had tenure, 19 were tenure-track, 7 were lecturers, and 14 did not disclose their status.

A thematic analysis was conducted on the open-ended questions. Each discrete idea/topic within response narratives were open coded. The open codes were analyzed for recurrent themes. Then the response narratives were close coded for theme(s). Each question yielded approximately 20 unique codes. The theme-codes with the highest occurrence rates were reported.