

End-of-Program Review Workshop June 20012

Natural or Physical Sciences Across the Curriculum 2006-11

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Natural or Physical Sciences in the 2006-2011 curriculum

Using the broadest definition of what constitutes natural or physical sciences, a relatively constant proportion of programs offered during this 5-year period offered some exposure to science (45-62% of all programs, Fig. 1). Any trends extrapolated from the annual End of Program Review survey data from 2006 to 2011, especially regarding the sciences, needs to be corrected for a spike in 2009-10 for science credit student demand and a sudden drop in 2010-11 for Scientific Inquiry faculty responding to the survey (fig. 2).

Three interesting characteristics to examine are the extent of science instruction, the level of instruction, and the most common fields of study. Most of the programs containing sciences had either an extensive or a little focus, while a limited number of programs had a moderate focus (Fig. 3).

Amount of science in the program

Separating the 305 programs that reported natural or physical sciences into extent of instruction shows that 98 programs had a little instruction, 55 had moderate, and 152 included extensive instruction. This bimodal distribution indicates students have many program opportunities for brief introductions and to gain depth in particular subject areas. It also suggests relatively fewer programs are reaching moderate level learning experiences that may be required for meaningful interdisciplinary integration of themes and content.

Level of teaching

Figures 4 and 5 total to more than 100% within each category because a single program may offer multiple levels (beginning through advanced). Overall, the level of instruction is skewed towards introductory level teaching; on

Figure 1. Proportion of programs with any science content, EPR 06/07-10/11

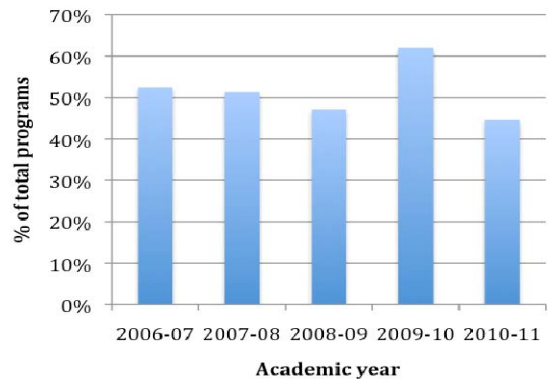


Figure 2. Number of non-responding faculty by planning unit, End of Program Review 06/07-10/11

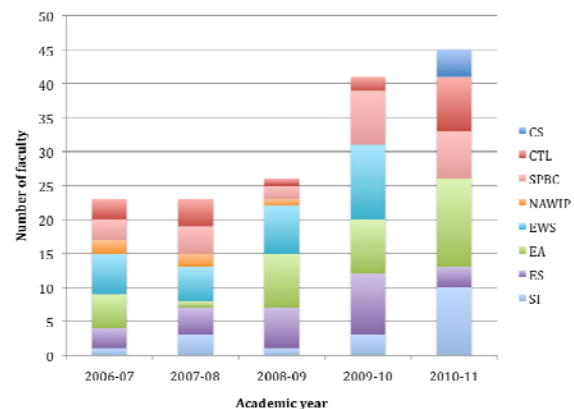
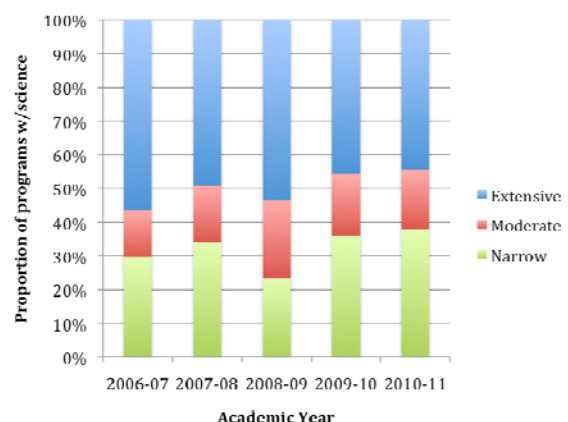


Figure 3. Science curriculum divided by extent of focus, EPR 06/07-10/11



average half of the programs (48-63%) offered only introductory level instruction (Fig 4.).

Of the 152 programs reporting extensive natural and physical science instruction, there is an equal distribution across beginning, intermediate, and advanced levels of instruction (Fig 5). Conversely, most programs reporting a little science instruction also covered science at a beginning level (89 of 98 programs). One notable challenge to understanding the extent of introductory science learning opportunities is that the survey data show a wide range of faculty input on what constitutes natural and physical sciences and what amount of inclusion counts as worth reporting.

The number of science programs and extent of instruction vary considerable across planning units. Not surprisingly, Scientific Inquiry (SI), Environmental Studies (ES), and Inter Area programs accounted for the majority of programs with science instruction and the vast majority of programs with extensive science instruction. Thus science faculty taught most of the extensive science programs and did so proportionally across all levels of the curriculum. Beginning level, low-intensity science is available almost uniformly across the planning units.

When considered from the perspective of fields of study, the science curriculum is dominated by biology, physical sciences and environmental sciences (table 1).

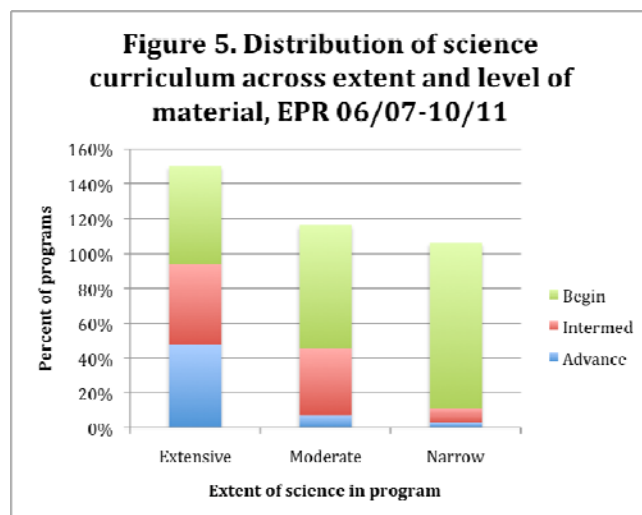
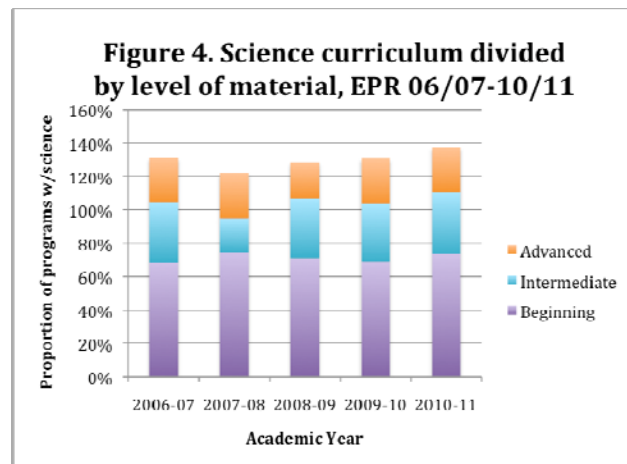


Table 1. Breakdown by fields of study, 305 total programs. Because some programs reported multiple fields of study the total responses are greater than 305.

Natural and Physical Sciences Fields of Study	Number of programs reporting
Biological Sciences	274
Physical Sciences (Chemistry, Physics, Geology, etc)	179
Environmental Sciences	174

Mathematics	32
Philosophy and/or History of Science	27
Applied Sciences (Architecture, Public Policy, Health, Nutrition, Horticulture, etc)	27

Summary thoughts

If a College goal is to increase the number of programs including science to at least a moderate extent then one option for program planning should further combine ES and SI faculty with other planning units in interdisciplinary programs.