

Cross-Fertilizing Engineering Education R&D



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TABLE 1
Citation Summary. The 43 papers in 2009 issues of *CEE* had 868 citations

Journal cited	# citations in <i>CEE</i> of journal/proceedings studied	% of all citations in <i>CEE</i>	# citations of <i>CEE</i> in journal/proceedings studied	% all citations in journal/proceedings
<i>ASEE Proc.</i>	35	4.0%	78* (38)	0.5%* (0.2%)
<i>J. Engr. Ed. (JEE)</i>	16	1.8%	2	0.1%
<i>FIE Proc.</i>	10	1.2%	5	0.3%
<i>IEEE Trans. Ed.</i>	0	0	7	0.5%
<i>CEE</i>	139	16.0%	139	16.0%
<i>PRISM</i>	1	0.1%	0	0%
<i>J. Prof. Iss.</i>	3	0.3%	0	0%
<i>J. STEM Ed.</i>	1	0.1%	0	0%
<i>Advances Engr. Ed.</i>	0	0	7	2.4%
Total	205	23.6%	238	0.7%

* 40 of the citations of *CEE* were in one paper. Results ignoring this paper are in shown in parenthesis.

One possible contributor to the slow rate of dissemination of proven engineering education innovations is that engineering educators in different engineering disciplines seldom communicate with each other. To study this issue the citations in the 2009 papers in the nine U.S. engineering education journals/proceedings listed in Table 1 were counted.

Table 1 illustrates that *CEE* authors are most likely to cite papers in *CEE* and rarely cite other engineering education journals/proceedings. The converse of this is also true: *CEE* is rarely cited in the other engineering education journals/proceedings. Results for other engineering education journals and proceedings (Wankat, 2011^[1]) show that there is very little cross-citing of journals/proceedings. This data is consistent with the hypothesis that there are individual “silos” in each engineering education discipline that seldom communicate with each other.

The following recommendations are made for *CEE* to help reduce the silo effect and increase the dissemination of engineering education innovations: 1. Authors of *CEE* papers should be strongly encouraged by reviewers and editors to read and cite appropriate papers from other en-

gineering education journals (e.g., *JEE*) and proceedings. 2. Very strongly encourage all potential and new engineering professors to take a how-to-teach course or workshop (Felder, et al., 2011^[2]) to improve teaching, make them more aware of innovations, increase their understanding of the engineering education research, and help them write the education section in NSF Career proposals. 3. ChE professors who are familiar with advanced pedagogical methods should volunteer to teach how-to-teach courses. 4. Minimize jargon, and if jargon is necessary, clearly define terms. The glossary in Felder, et al.,^[2] is an example of demystifying jargon. 5. After a one- or two-year lag, *CEE* should make all papers available free on the Internet.

REFERENCES

1. Wankat, P.C., Editorials in *IEEE Trans. Educ.*, *J. STEM Educ.*, and *J. Prof. Issues Engr. Ed. Practice*, in press, 2011
2. Felder, R.M., R. Brent, and M.J. Prince, *J. Eng. Educ.*, **100**, 89 (2011)

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