TC306 – Geoengineering Education

Report on the SoA-SoP survey process and results

Considering that the practice of geoengineering education is undertaken by the geotechnical engineering community, but the research on geoengineering education is undertaken by another community (engineering education researchers), TC306's first reaction was that the SoP/SoA distinction is not (yet) among its concerns. This is evidenced by indicative response No 61245177165 in Q244 of the SoP/SoA survey, which considers a single state of teaching (SoT).

Hence, TC306 is grateful to CAPG for the opportunity to present to the geotechnical engineering community a spectrum proposed in the literature of engineering education research (Borrego et al. 2008) that includes: basic teaching (perhaps what is described as "SoT" in response No 61245177165), scholarly teaching that goes beyond good content and teaching methods (it also involves classroom assessment and evidence gathering informed by best practice, encourages collaboration and review), scholarship of teaching that is public, open to critique and evaluation, and results in products that others can use and build on (it also involves inquiry and investigation, focusing particularly on student learning) and research on engineering education, which shares the characteristics of scientific inquiry (i.e. it poses research questions, interprets the results in light of theory and pays attention to the design of the study and the methods used).

For TC306, the SoA/SoP survey invited comments on this proposed spectrum.

From the seven answers received, three accepted, tacitly or explicitly, the proposal and recommended stronger ties with the research on engineering education. The remaining four answers did not comment on the spectrum; instead, they provided various pieces of advice for good teaching (use case histories and technical papers, integrate teachers from industry and online teaching). So yes, we are reasonably happy with the responses, since three yes (and zero no) in seven responses is not bad for a new proposal.

All the responses considered together, they underscore a balanced emphasis on good content and methods. This, we believe, is the main take away message from the survey results for TC306 and will be discussed in the workshop in Seoul.

The next survey could improve by also proposing a definition of the SoA in instruction, possibly accompanied by a graph, e.g. see Figure 1. Such a definition could be derived in a loose analogy to SoA in geotechnical engineering consulting (= be closer to research, incorporate geotechnical engineering research findings in practice): SoA in geotechnical engineering instruction = teaching that incorporates and helps generate research findings on geotechnical engineering education.

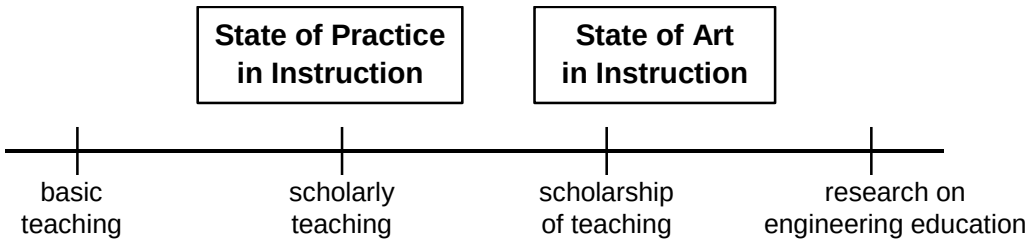


Figure 1: Proposed location of SoP/SoA in instruction within a spectrum covering education efforts from basic teaching to research on engineering education.

Reference

Borrego, M., R.A. Streveler, R.L. Miller and K.A. Smith, 2008, A new paradigm for a new field: Communicating representations of engineering education research, J. of Engineering Education, 97:2:147-162.