

Online Peer Assessment in a Random Processes Course (Poster)

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Abstract

Random process course is considered to be among the most challenging courses in Electrical Engineering undergraduate studies due to the counter-intuition and high abstraction of the material it covers. One of the remedies in teaching probability and random processes is an extensive usage of simulations-based illustrations and homework assignments (Kay, 2006). Regardless of the form of homework assignments, formative feedback is an essential part of the learning process (Nicol & Macfarlane-Dick, 2006). Such feedback may entail intensive resources from the instructor of large cohorts. Using peer assessment offers a solution to this constrain while presenting numerous pedagogical benefits such as increased motivation and involvement (Brindley & Scoffield, 1998), more time (and thus practice) spent on the assignment, greater sense of accountability and greater volume and immediacy of feedback (Topping, 2009).

Thus, this research is conducted in two cohorts of Random Processes course in their third year of study in the department of Electrical Engineering in an engineering college in the fall semester of 2018/2019 academic year. Students are required to submit six simulation exercises and provide feedback and grading to three other students for each exercise, via the Learning Management System. The peer assessment is double blind, i.e. students do not know who they are assessing and who is assessing them, in order to minimize bias stemming from relationships among students (Topping, 2009; Wen & Tsai, 2006). Students are provided with a solution and a rubric in order to guide them through the assessment process. The grades of the exercises, calculated for each students as the average of the three assessments he or she received for each exercise, will compose ten percent of the final grade in the course, while the other remaining ninety percent are assigned to the final exam.

Students' perceptions of the process are evaluated using anonymous questionnaires that are administered before they commence the peer review, during

the semester, and after the final exam of the course in order to capture students' perception after the full learning experience of the course. The questionnaire explores: 1) the cognitive and emotional effort the peer assessment requires, 2) its contribution to students' motivation and learning and 3) the negative effects of the process, as perceived by the students. Following the presentation of the process to the students in the first lecture, a short survey aimed to capture preliminary attitude showed mostly negative approach, but with great diversity.

Keywords: probability, random processes, simulations, peer assessment, learning.

References

- Brindley, C., & Scoffield, S. (1998). Peer assessment in undergraduate programmes. *Teaching in Higher Education*, 3(1), 79–90.
- Kay, S. (2006). *Intuitive probability and random processes using MATLAB®*. Springer Science & Business Media.
- Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199–218.
- Topping, K. J. (2009). Peer assessment. *Theory into Practice*, 48(1), 20–27.
- Wen, M. L., & Tsai, C.-C. (2006). University students' perceptions of and attitudes toward (online) peer assessment. *Higher Education*, 51(1), 27–44.