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Innovative use of collaborative video annotation system in physics teacher education

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At the University of British Columbia (UBC) we educate 8-14 future physics teachers annually. Most of them already have B.Sc. degrees in physics or related fields, while some are a completing the B.Sc. concurrently. As part of their secondary teacher education program, teacher-candidates participate in a 3-credit physics methods course taught by the author. Its goal is to help teacher-candidates to acquire Pedagogical Content Knowledge (the knowledge about physics teaching). In order to practice its implementation in a classroom-like situations, teacher-candidates teach four 10-15 minute long mini-lessons during the course. This practice is especially important, as in order to complete the teacher education program, they have to complete successfully a school-based 13-week practicum where they teach real students (under teacher's supervision). To achieve this goal, we started using Collaborative Learning Annotation System (CLAS) (http://ets.educ.ubc.ca/clas/) developed by our UBC colleagues and freely available to the students. CLAS allows physics teacher-candidates to upload videos of their mini-lessons and collaboratively comment and reflect on them. As a result, every teacher-candidate received multiple feedback about their lessons from their peers, the course Teaching Assistant, and the course instructor. During the feedback stage, all of us commented on mini-lessons emphasizing their strengths and suggesting areas for improvement. Then teacher-candidates were asked to incorporate relevant suggestions and reteach the lessons. From teacher-candidates'feedback and our observations, we found CLAS to be extremely useful for preparing future physics teachers. It is especially valuable considering English is not the first language for many of our teacher-candidates. We hope that other faculty members involved in physics (and in general mathematics and science) teacher education will consider incorporating CLAS in their courses.

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