PEDAGOGICAL BEHAVIOUR IN PRE-SERVICE TEACHERS DROPS WITH INCREASING CONTENT KNOWLEDGE

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We present the results of a novel study investigating the relationship between pre-service science teachers' content knowledge and pedagogical behaviour and how these evolve over time. Forty-one pre-service science teachers at the largest teacher education institution in Norway (Oslo Metropolitan University) were tested before and after a 12-hour module on astronomy at the end of the second and final physics course in the Bachelor of Teaching degree. Three free-response questions in the established Norwegian Introductory Astronomy Questionnaire (NIAQ) elicited astronomy knowledge *and* gave respondents an opportunity to engage in pedagogy. Student responses were analysed along two separate dimensions—content knowledge and pedagogical behaviour (student-centred vs. teacher-centred)—and interpreted in the framework of Pedagogical Content Knowledge (PCK). Overall, we find that the pre-service teachers become more knowledgeable after instruction (responses marked as 'knowledgeable' increased from 39% to 61%), even though a significant fraction remain disconcertingly ignorant. More notably, however, the pre-service teachers also displayed a strong trend of becoming less student-centred (from 36% to 11% of responses) as their content knowledge increased, merely stating the correct—or presumed correct—response without showing any concern for the hypothetical students in the question.

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