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Personality Types and Student Performance in an Introductory Physics Course

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We measured the personality type of the students in a large introductory physics course of mostly life science students using the True Colors instrument. We found large correlations of personality type with performance on the Pre-Course Force Concept Inventory (FCI), both term tests, the Post-Course FCI, and the final examination. We also saw correlations with the normalised gain on the FCI. The personality profile of the students in this course is very different from the profile of the physics faculty, and also very different from the profile of students taking the introductory physics course intended for physics majors. The dominant personality type of both physics faculty and majors matched the personality type that performed best on both the summative and formative assessments in the course for life science students. These results support the hypothesis that the assessment and teaching techniques we employ have an inherent bias that benefit students that are similar to the teacher. The personality types give hints about how we might reduce this bias or mitigate its effects on student success.

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