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Anatomy integration: Effective change or change of affect? 
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Introduction
Anatomy is fundamental to clinical practice, and is key to professional identity formation. Many US medical schools are integrating anatomy into an organ–based preclinical curricula [1]. This curricular change could affect one or more of the three domains of learning: cognitive, affective and psychomotor, including learner preparation to work in teams [2].

Our previous study prospectively queried the effects of integrating anatomy into the existing organ-based curriculum at the University of New Mexico School of Medicine. Results showed that students with integrated anatomy initially increased content acquisition, but had similar mastery of anatomical concepts at the end of the first year of the pre-clinical curriculum. Interestingly, attitudinal differences towards anatomy dissection, working in teams, reflective practices and professional identity formation were seen between students in the two curricula.

The current study set out to test the hypothesis that the differences in attitudes would persist as students progressed through the pre-clinical curriculum. It also asked if additional changes in the affective domain could be detected that may impact content mastery and patient care.

Methods
To assess knowledge, confidence, and attitudes of three cohorts of medical students, a mixed methods approach used pre, post and follow-up knowledge and confidence surveys, focus groups, internal and AAMC surveys, and USMLE performance metrics. Demographics for all three cohorts were similar in age, mean MCAT score, percent of Hispanics and women. Study participation was between 43-45%, a representative sample (20-32%) completed all assessments for matched comparisons. IRB approval 14-210.

Results
We found an increase in anatomy content mastery and confidence in their mastery for all cohorts, but no change in metacognitive awareness for students in the integrated curriculum. Differences were detected in students’ attitudes towards working in teams, reflective practices and professional identity formation between the cohorts [3]. These differences persisted within each cohort as attitudes did not change overtime (data not shown).

There was a decrease in the USMLE Step 1 Gross anatomy sub-score for the first cohort in the integrated curriculum (Cohort 2) compared to previous cohorts, although their perceived preparation for this topic upon completing Step 1 was similar (internal survey). Lastly, data from the AAMC Y2Q showed increased perceived stress in Cohort 2.

Discussion
Anatomy is one of the first medical student experiences with collaborative learning. Our results point to potential effects on the affective domain of learning as a result of curricular adjustments, including attitudes towards working together in teams, reflective practices and professional identity formation.

Limitations include the possibility that other curricular revisions could also have influenced student learning and/or attitudinal differences between cohorts. The small number of concepts included on the knowledge survey may impact the generalizability of the cognitive data; additional questions/concepts could be included in future studies.

Conclusions
The results of this study suggest that attitudinal outcomes should be monitored in assessment of student outcomes and evaluation strategies following curricular change. In light of the importance of non-content skills in patient care. The observed gaps in affect, if persistent, could have a short-term impact on the ability to work in teams and a long-term impact on patient care.

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