Integrated assessment in a competency-based didactic curriculum

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OVERVIEW

The Physician Assistant (PA) program at Rocky Vista University is the first competency-by-design PA program in the United States. One of the novel features of this program is the fully competency-based didactic curriculum. Assessment is a challenging feature of all competency-based programs which becomes even more difficult in the context of classroom education. Requirements for a competency-based assessment include: an objective standard of performance, an opportunity for students to demonstrate different levels of mastery, integration of subject material across different courses, and the ability to identify and provided targeted interventions for struggling learners.

INTRODUCTION

To satisfy these requirements a novel assessment model was developed for the RVU PA didactic curriculum. The major features of this assessment are:
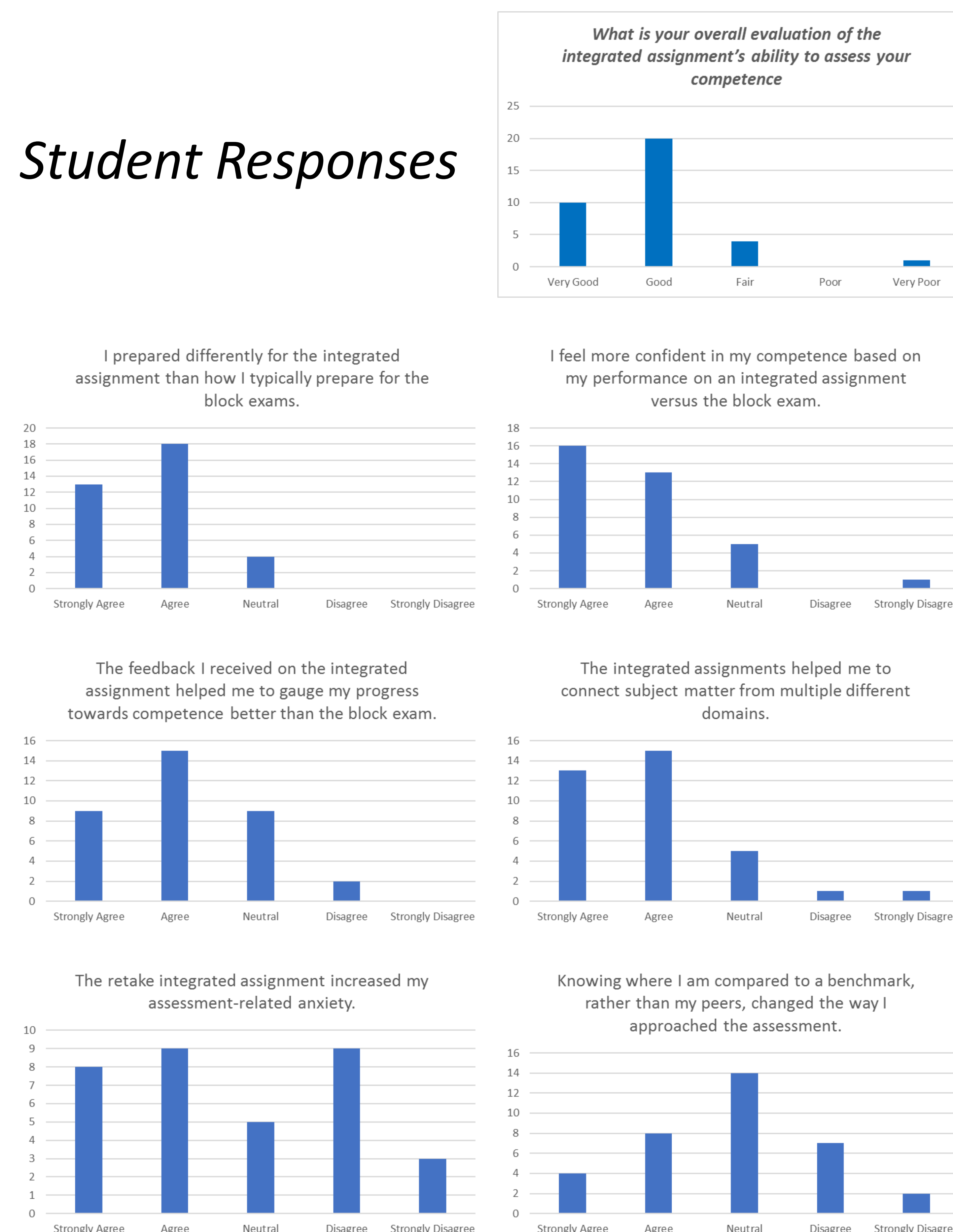
1. It is integrated across all of the didactic courses. The faculty choose a common presentation and each course director writes questions relating to that presentation.

2. The questions are broad and open-ended, answered by students in a short answer or essay style.

3. Grading is not based on points but on the students' demonstration of knowledge at a benchmarked milestone.

4. Students who do not achieve the expected milestone on one or more questions are asked to retake that question within a short time frame.

It is hypothesized that the integrated assignments will enable faculty to assess student competence and will more effectively prepare students for their first competency exam and national certifying exams. Furthermore, it is predicted that the integrated assignments will increase the confidence of both the faculty and the students that the students are competent and prepared for their clinical rotations.

METHODS

The integrated assignments were implemented in the PA 2019-2020 academic year. Interleaved with these assessments were block exams – standard multiple choice exams including questions from each course. As part of standard program assessment surveys were administered to both faculty and students to gauge perceptions about the new assessment modalities and student competence.

Student Responses

What is your overall evaluation of the integrated assignment's ability to assess your competence

I prepared differently for the integrated assignment than how I typically prepare for the block exams.

I feel more confident in my competence based on my performance on an integrated assignment versus the block exam.

The feedback I received on the integrated assignment helped me to gauge my progress towards competence better than the block exam.

The integrated assignments helped me to connect subject matter from multiple different domains.

The retake integrated assignment increased my assessment-related anxiety.

Knowing where I am compared to a benchmark, rather than my peers, changed the way I approached the assessment.

Faculty Responses

1. Do you believe that student performance on the integrated assignment is a more accurate reflection of student competence than the block exams?
   - 6/8 agreed, 1/8 felt it was a good augmentation to other assessment, 1/8 felt improvements needed to be made to the rubrics
2. Is the extra information provided by the integrated assignment worth the extra investment in grading time?
   - 8/8 agreed
3. Do your rubrics adequately capture your assessment of student competence?
   - 4/8 agreed, 4/8 felt improvements were needed
4. Does the required retake increase your confidence that students are competent in all subject domains?
   - 3/8 agreed, 1/8 disagreed, 4/8 expressed a reduced level of confidence

RESULTS

Most students felt the integrated assignments were "good" or "very good" at assessing their competence (30/35). They prepared differently for these assignments than they did for block exams (31/35), they felt more confident in their own competence based on these assignments as compared to block exams (29/35), and the feedback they received on these assignments helped them to gauge their own progress towards competence better than block exams (24/35). Critically, most students reported that the integrated assignments helped them to connect subject matter from multiple different domains (28/35). Test anxiety and competitiveness were not consistently impacted by the assignments.

The faculty unanimously agreed that the extra information gained from the assignments was valuable, even though it increased the burden of grading. Most agreed that student performance was a better reflection of student competence – with some caveats. Issues were identified with rubric design and the retakes did not fully increase the faculty's confidence that students were competent.

CONCLUSIONS

These data are very limited (only 35 students and 8 faculty) and represent trends only. However, these early data suggest that both students and faculty perceive value is added by the addition of the integrated assignments to the assessment model. In addition, the integrated assignments are more consistent with a competency based curriculum and therefore make it possible to compare student competence and progression between didactic and clinical phases of PA education. At the end of the didactic year students will participate in two cumulative assessments. The first is the PACKRAT, a multiple-choice assessment for PA students which has been shown to be predictive of PANCE pass rates. The second assessment is an OSCE-style exam which assesses student clinical competence. Future work will evaluate the relationship (if any) between performance on the integrated assignments, performance on the multiple choice block exams, and performance on the PACKRAT and competency exams.

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