

Introduction

Asynchronous learning modalities have recently been incorporated alongside traditional didactic methods to improve educational outcomes in medical education.

Research indicates that residents favor substituting one hour of traditional in-person education for asynchronous learning due to increased convenience, retention of information, work/life balance, enjoyability, and educational preference¹.

Our study aims to assess resident satisfaction with academic didactic education following the incorporation of asynchronous assignments. In addition, we evaluate the relationship between residents' subjective perceptions of in-training exam (ITE) preparedness following the incorporation of consistent Rosh Review questions into the asynchronous curriculum.

Methods & Materials

The asynchronous curriculum consisted of one hour long weekly assignments derived from free open access medical education (FOAMed) radiology and EKG resources, and Rosh Review question sets. Assignments were emailed to residents one week prior to the due date and included a deliverable assessment to be completed for asynchronous educational credit.

The curriculum was initiated in August 2024. Thirty question randomized Rosh Review question banks were assigned 1-2 times per month until nine weeks prior to the ITE, where all weekly asynchronous assignments were Rosh review question banks.

To evaluate resident satisfaction and subjective preparedness for the ITE, residents were sent an anonymous 11 question Likert scale survey nine weeks prior and one week after the ITE. Data was analyzed using Fischer's Exact test. Along with the pre- and post-ITE survey, residents were assigned a 30 question Rosh Review assessment of highly tested ITE topics and data was analyzed via t-test to evaluate for overall score improvements by PGY year.

	Pre ITE average	Post ITE average	p Value
PGY 3	75.69	77.75	0.522
PGY 2	65.36	79.9	0.018
PGY 1	63.25	67.92	0.049
All	68.1	75.19	0.005

Table 1. Results of Rosh Review Questions Evaluating Overall Score Improvements

Results

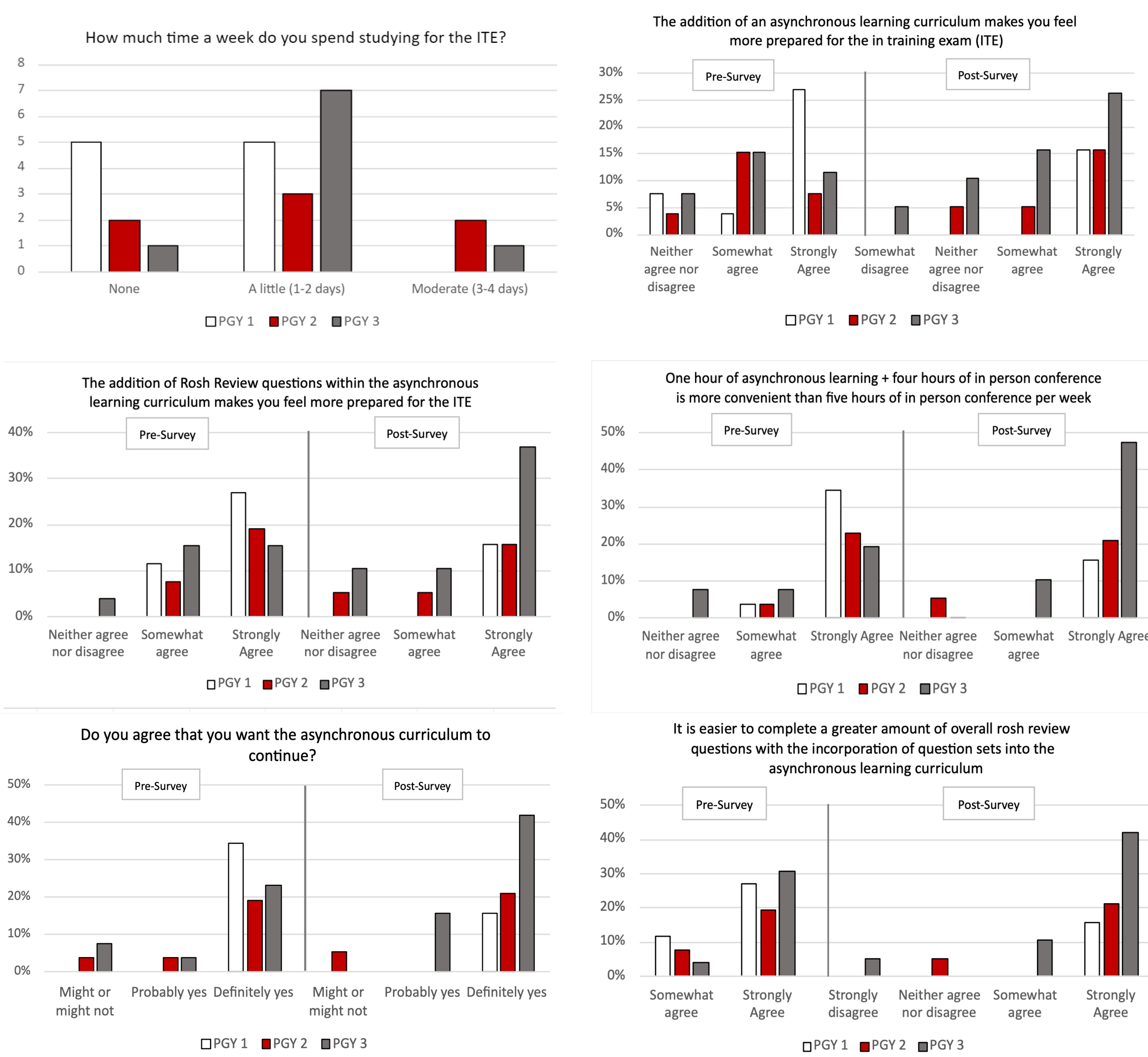
A total of 47 residents participated in the study. The pre-survey had 26 responses (10 PGY-1, 7 PGY-2, 9 PGY-3) and the post-survey had 19 responses (3 PGY-1, 5 PGY-2, 11 PGY-3). There was no significant differences between pre- and post-survey answers, with most participants agreeing or strongly agreeing with all questions.

In the pre-survey, 8 residents reported not studying weekly, 15 studied 1-2 days/week, and 3 studied 3-4 days/week (p=0.183) (Fig 1). 46% of pre-survey and 58% of post-survey participants strongly agreed that the asynchronous curriculum made them feel more prepared for the ITE (p=0.185). 61% of pre-survey and 68% of post-survey respondents strongly agreed that the addition of Rosh Review questions enhanced their ITE preparedness (p=0.185). Additionally, 77% of pre-survey and 79% of post-survey respondents found it easier to complete more Rosh Review questions with the asynchronous curriculum (p=0.237) (Fig 1).

Regarding the asynchronous model's convenience, 77% of pre-survey and 84% of post-survey participants strongly agreed (p=0.83) (Fig 1). Finally, 77% of pre-survey and 79% of post-survey participants wanted the asynchronous curriculum to continue (p=0.648) (Fig 1).

43% of residents completed the pre-ITE Rosh review test and 36 completed the post-test, with 33 completing both. Specifically, 11 PGY-3, 10 PGY-2, and 12 PGY-1 residents completed both tests. There were statistically significant improvements in scores for PGY-1 (p<0.05) and PGY-2 (p<0.02), as well as overall improvements across all PGY years (p<0.01) (Table 1).

Figure 1. Resident Pre & Post Survey Responses



Discussion

This study demonstrated a favorable response to the asynchronous curriculum. While there was no significant difference between the pre- and post-ITE surveys, most residents agreed or strongly agreed with the positive impact of the curriculum. Both surveys, conducted post-implementation, showed sustained positive effects throughout the year.

The asynchronous curriculum enabled regular study, with 77% of residents in the pre-survey and 79% in the post-survey finding it easier to complete more Rosh Review questions. Previously, most residents (23/26) did not study weekly or studied only 1-2 days per week. This curriculum provided a more structured way for regular ITE preparation.

Residents also felt overall more prepared for the ITE, with an increase in those who "strongly agreed" with their preparedness, from 46% to 58%, and specifically regarding Rosh Review, from 61% to 68%. The improvement in Rosh Review question set scores reflects this enhanced preparedness.

Responses indicated a preference for the new conference style over the traditional one, with 77% in the pre-survey and 84% in the post-survey finding it more convenient. Residents also strongly supported continuing the asynchronous curriculum. Overall, the data suggests that the asynchronous curriculum with Rosh Review question sets improves regular study habits, ITE preparedness, and resident satisfaction. Further research with larger sample sizes is recommended, but a hybrid conference curriculum appears superior to a traditional all-in-person setup.

References

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