DEVELOPMENT OF MINI-PREPARATORY COURSE USING ONLINE RESOURCES

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ABSTRACT

PURPOSE

Students frequently have difficulties learning the anatomy of the nervous system. To help students' learning in neuroanatomy, a mini-preparatory course was developed and its usage was evaluated. The goal of offering the mini-preparatory course was to encourage students' independent learning during a time when their course load was reduced.

METHODS

A review of a commercially available lecture series purchased by MUSM's library was performed. Sets of video lectures were selected and grouped into important neuroanatomy topics: introduction, ascending and descending pathways, brain stem, and cranial nerves. Freely available online resources were also reviewed and selected. Relevant textbook readings were provided for students who preferred to read rather than listen to lectures. This course was offered as a voluntary, non-credit earning mini-course during winter break. After the final exam, students were asked to complete a course survey that asked about their exam scores and the use of the learning resources in the mini-course.

RESULTS

Fifty-four out of 122 students (44%) participated in the course survey. Sixty-nine percent of respondents recommended the mini-preparatory course after completion. The majority of students who responded indicated that they preferred short lecture videos (< 20 min) and the interactive learning modules freely available from the University of British Columbia, compared to hour-plus long lecture videos. On average, students completed less than 50% of the material before the neuroscience module began but continued to use the material during the module. The correlation between the number of activities completed and exam scores was positive but weak: 0.11 for mid-module exam and 0.16 for the end-of-module exam. Proportion of scores ≥ 70 was higher in groups of students who participated in the mini-preparatory course.

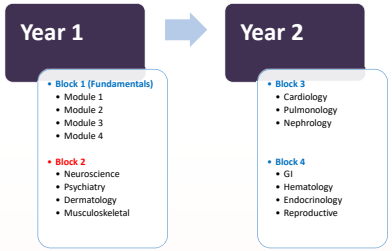
CONCLUSIONS

In conclusion, a self-paced mini-preparatory course was developed to aid students in learning neuroanatomy. The role of the preparatory course on students' performance on the mid-module and end-of-module exams were positive but weak. The interpretation of the course survey is limited because it focused on the number of activities rather than the quality of independent learning.

METHODS

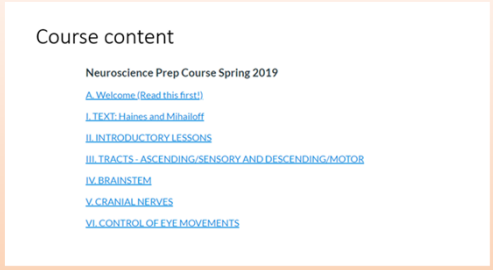
1. Identification of Challenges

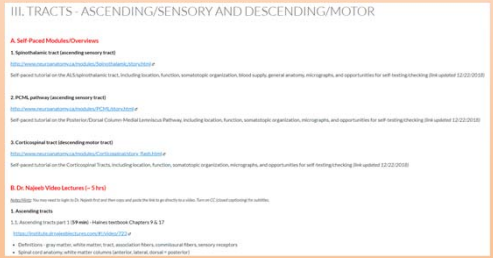
Mercer University School of Medicine Curriculum



The Neuroscience module is one of the most challenging modules during Year 1. The Neuroscience module is also the first organ system introduced in the curriculum, following a semester of foundational basic science modules.

2. Design of Supplementary Course



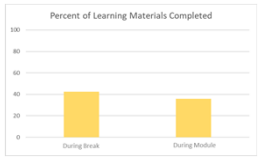


An example of the mini-preparatory course contents is shown above.

RESULTS

1. Usage of the Mini-Preparatory Course

Figure 1. Percent of learning materials completed by students



- On average, students completed 42 ±39% of the learning materials before the neuroscience module began and completed 36 ±38% during the module.

Table 1. Correlations among preparation during the break, preparation during module, mid-module exam score, and end-of-module exam scores

	1	*2*	*3*	*4*
1. Prep during break	1			
2. Prep during module	0.611987871	1		
3. Mid-module exam score	0.11442964	0.017029	1	
4. End-module exam score	0.164941579	-0.09397	0.578774	1

- The correlation between the number of activities completed and student exam scores was positive but weak for the mid-module exam (0.11) and end-of-module exam (0.16).

Table 2a. Comparing Mid-Module Exam Scores

Completed learning materials	≥70	<70	Percentage
None	5	10	33.3%
Some	14	13	51.9%
All	5	2	71.4%

Table 2b. Comparing End-of-Module Exam Scores

Completed learning materials	≥ 70	<70	Percentage
None	11	4	73.3%
Some	23	5	82.1%
All	7	0	100.0%

- The proportion of scores ≥ 70 was higher in groups of students who participated in the mini-preparatory course.

2. Feedback from Students

- Positive comments
  - "Great way to prepare the terminology, anatomy and neurobiology for Block 2. I used it continually during the module as well. I hope it is still accessible for STEP prep!"
  - "I found the neuroprep course EXTREMELY helpful. I went into the module already understanding concepts that it took classmates who did not complete the prep course the whole month to understand. I would hands down recommend it to future first years."
- Negative comments
  - "I did not like the prep course. I spent my Christmas break stressing over finishing the course instead of actually having a break."
- Alternative suggestions
  - "Ninja Nerd videos on YouTube were very helpful."
  - "I suggest doing a little bit of British Columbia during Christmas break. Even a small intro can make a large difference by the end of the module!"