Instructional Design for Visual Learners in OTD 339/340

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BACKGROUND

The focus of this rotation was to develop an in-depth experience education and program development to strengthen ones research and gain more experience in education. The education and program development experience took place at Regis University for the Creighton University Hybrid Pathway to assist Dr. Barnes in Anatomy Lab and Lecture. Education and program development was chosen for anatomy due to anatomy being a very important and challenging class for future occupational therapy (OT) clinicians. It is important because future OTs need to know origins, insertions, and actions in order to do a correct evaluation and treatment plan for our patients. According to Mustafa et. al. (2013), 65% of the population are visual learners and prefer visual studying tools in order to engage in learning the human body. Therefore, it was beneficial to create additional studying tools in the classes Occupational Therapy Doctorate (OTD) 339 Clinical Anatomy and OTD 340 Clinical Anatomy Lab. The study tools included resources, flash cards, and visual guides. Due to the recent COVID19 pandemic it was challenged to create a virtual online anatomy lab using the Virtual Human Dissector (VHD) Pro software.

FOCUSED QUESTION

- Focus Question for Instructional Design/Program development
    - How do the OT1 class of 2022 learn? What are their learning styles?.
    - What is the class's studying habits?
    - How do professors organize and implement their lecture structures and material?
    - What are the effective learning and teaching strategies for virtual anatomy cadaver lab for OTD 340?

Program Details

A program of study tools, cheat sheets, and resources were created to facilitate learning for OTD 339 and OTD 340. These tools continued to be developed throughout the semester. A more intense program was developed for online learning for both OTD 339/340. This VHD Pro program is about using a 3D and cross-sectional views of the human body to provide a comprehensive resource for students learning about human anatomy. This program gave the team for OTD 339/340 the ability to dissect a cadaver online, highlight structures, rotate, and quiz students in order to continue to facilitate visual and auditory learning.
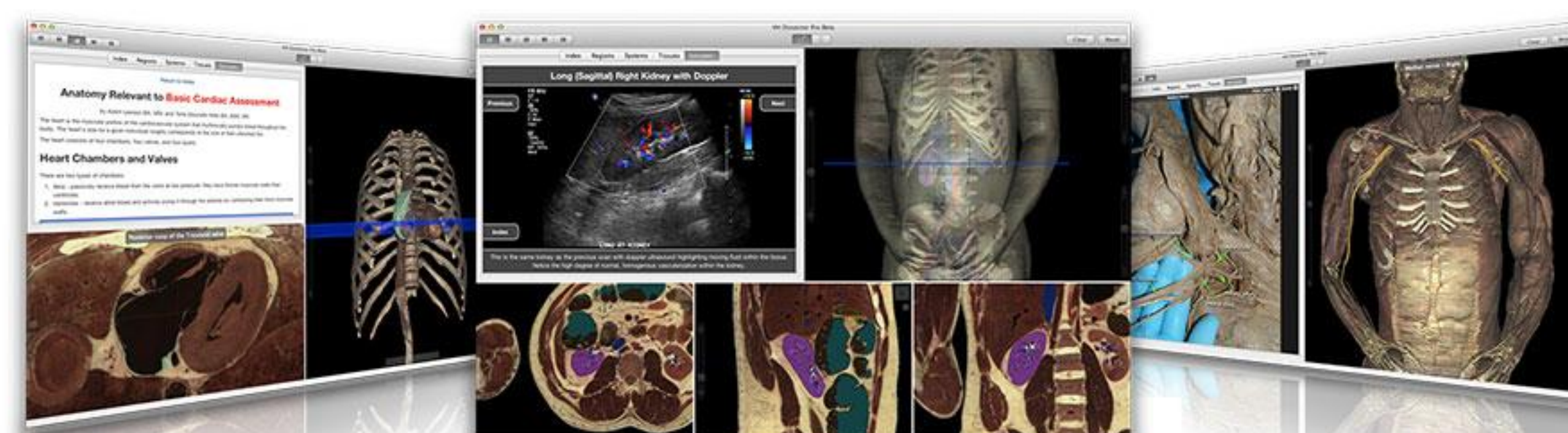

Touch of Life Technologies Inc. (2020). VH Dissector for Medical Education. Retrieved April 27, 2020, from https://www.toltech.net/anatomy-software/solutions/vh-dissector-for-medical-education

METHODS

- Methods of Program Development
    - Completed 1 week of shadowing in the classroom in order to get an understanding of the structure of the class and lab.
    - Created a multiple choice and open-ended five question survey for first year OT1 students to gain an understanding of their studying strategies and habits.
    - Developed a teaching curriculum using evidenced-based active teaching strategies to create visual flash cards, visual guides, and deliver resources to students.
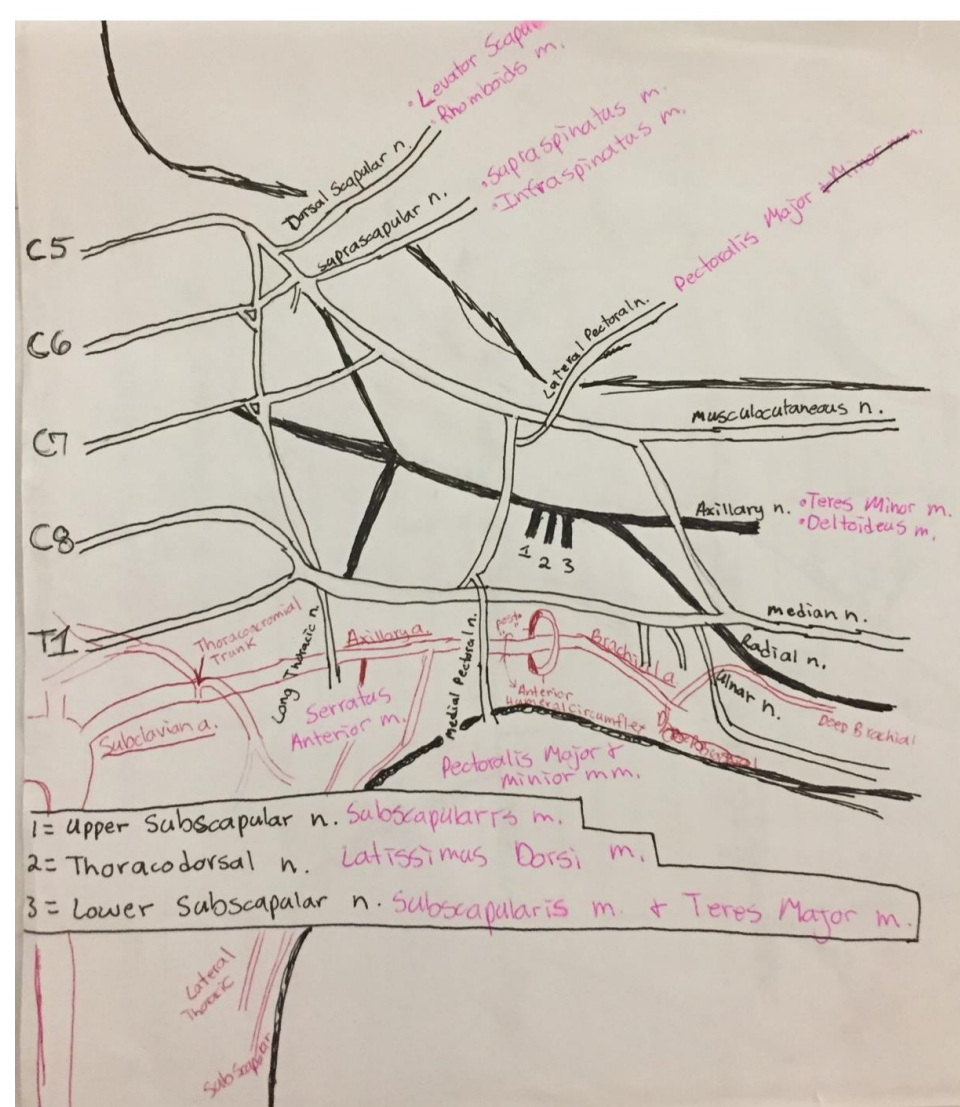
- Developed a virtual online lab for OTD 340 using the VHD Pro as well as create pre-lab assignments, a structured outline, lab sign-up, review quiz, and facilitate two structured 1hr lab sessions and four 30 minutes small group discussions. VHD Pro was contacted to receive consent for using program.
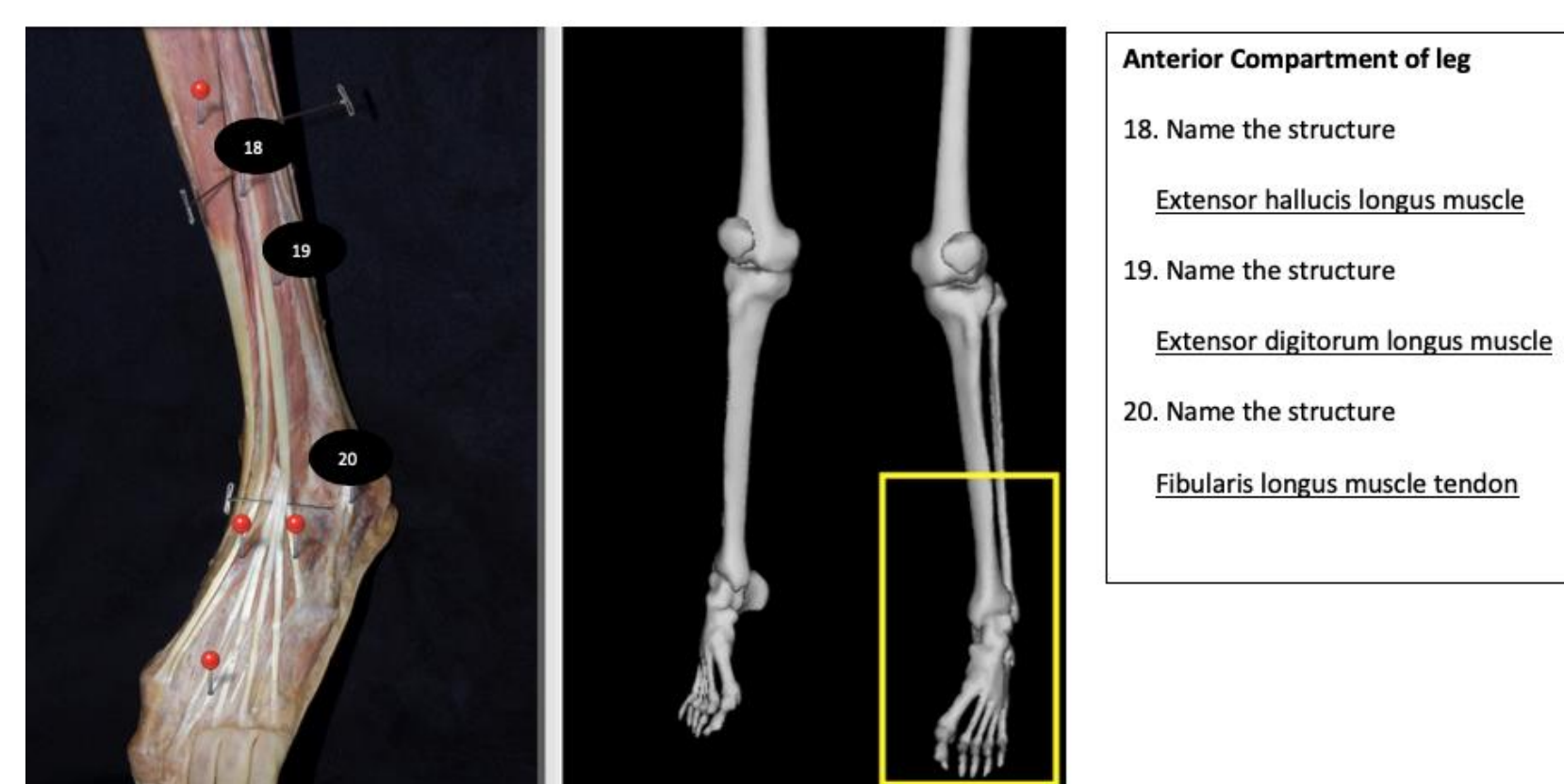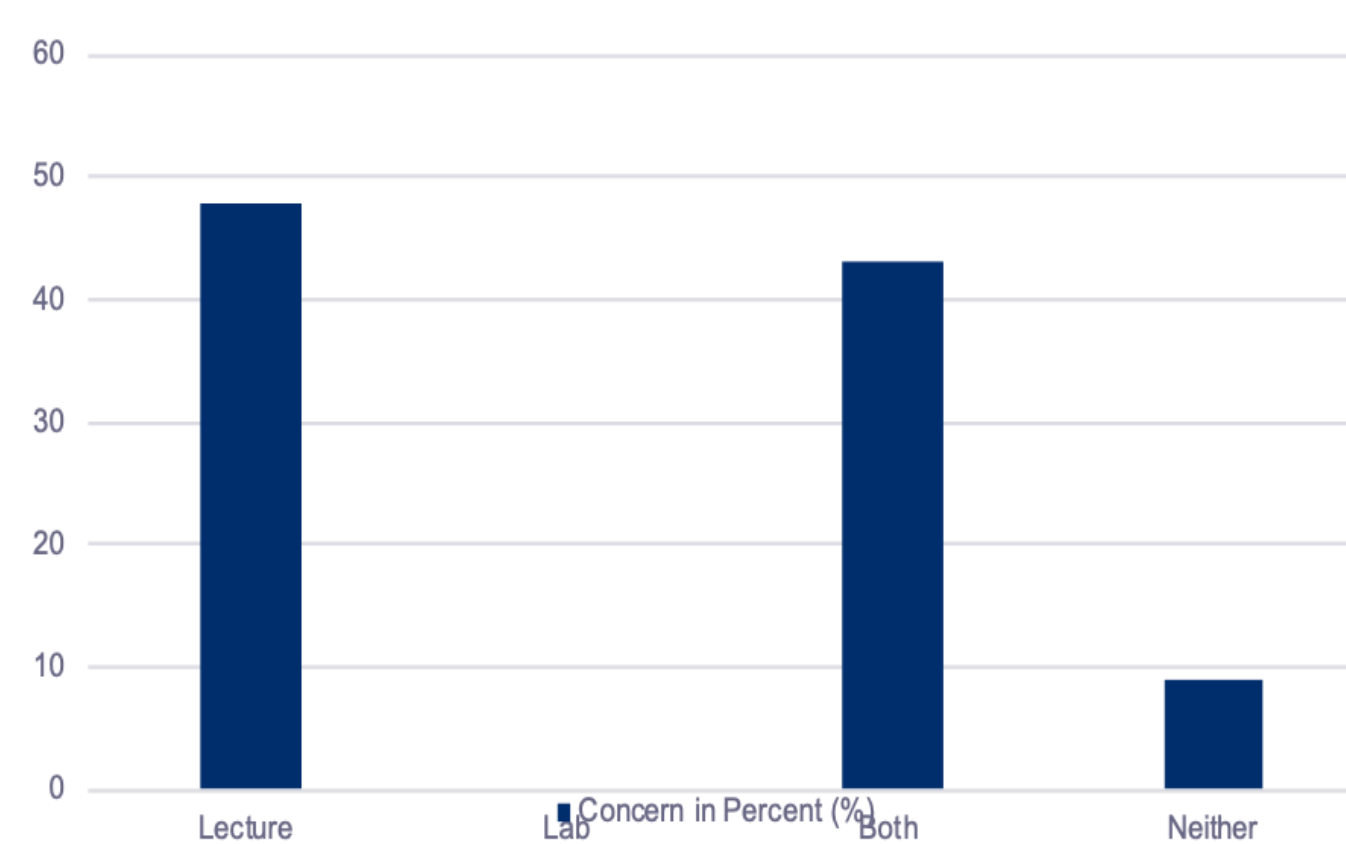

- Created a multiple choice post-instructional survey to gain insight and feedback on study tools, resources, and my progress as a teaching assistant.
- Methods for Organizing/Planning Lecture
    - Completed 1 week of shadowing Dr. Barnes to gain insight and understanding regarding creating and organizing lesson.
    - Created questionnaire, in which three professors were interviewed to gain a better understanding for planning, organizing, and administering lectures.
    - Developed an outline for lesson plan, and received feedback from Dr. Barnes, and made necessary changes and transformed outline into Power Point presentation.
    - Delivered anatomy lesson twice, once to Dr. Barnes, and second to family members, where feedback was received, and necessary changes were made.
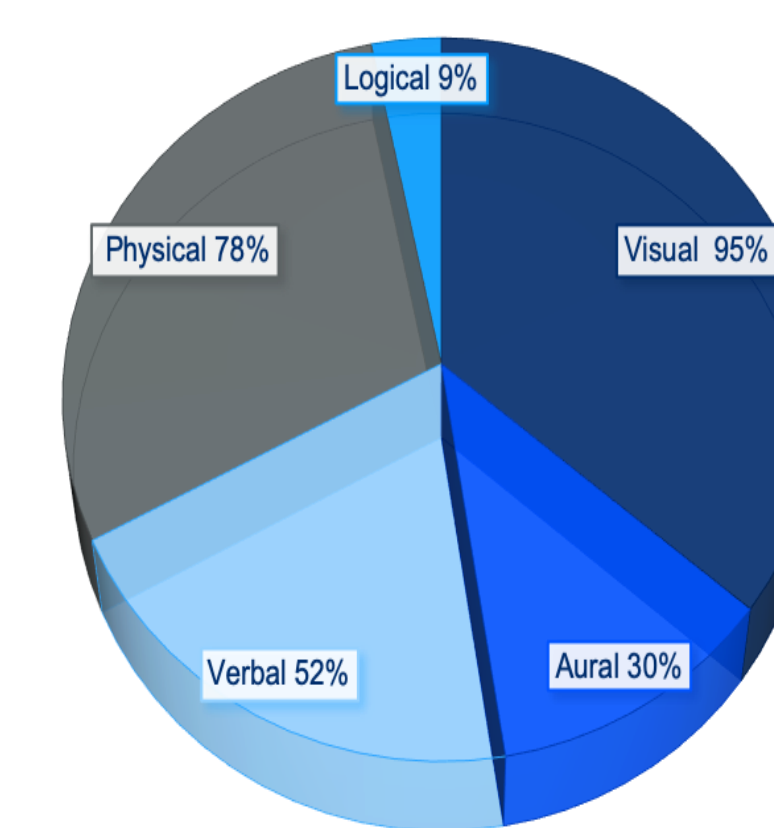
RESULTS

- Results from Pre-Instructional Survey
    - Received 23/23 (100%) of OT1 survey responses, of those responses 15/23 students experienced an anatomy course with cadavers in their prior learning experience while 8/23 did not.
    - Results indicated that 95% of the class are visual learners, 78% are physical, and 52% are verbal learners.
    - 48% of the class indicated that their biggest concern was lecture, 0% said lab, 43% indicated both, and 9% had no concerns.
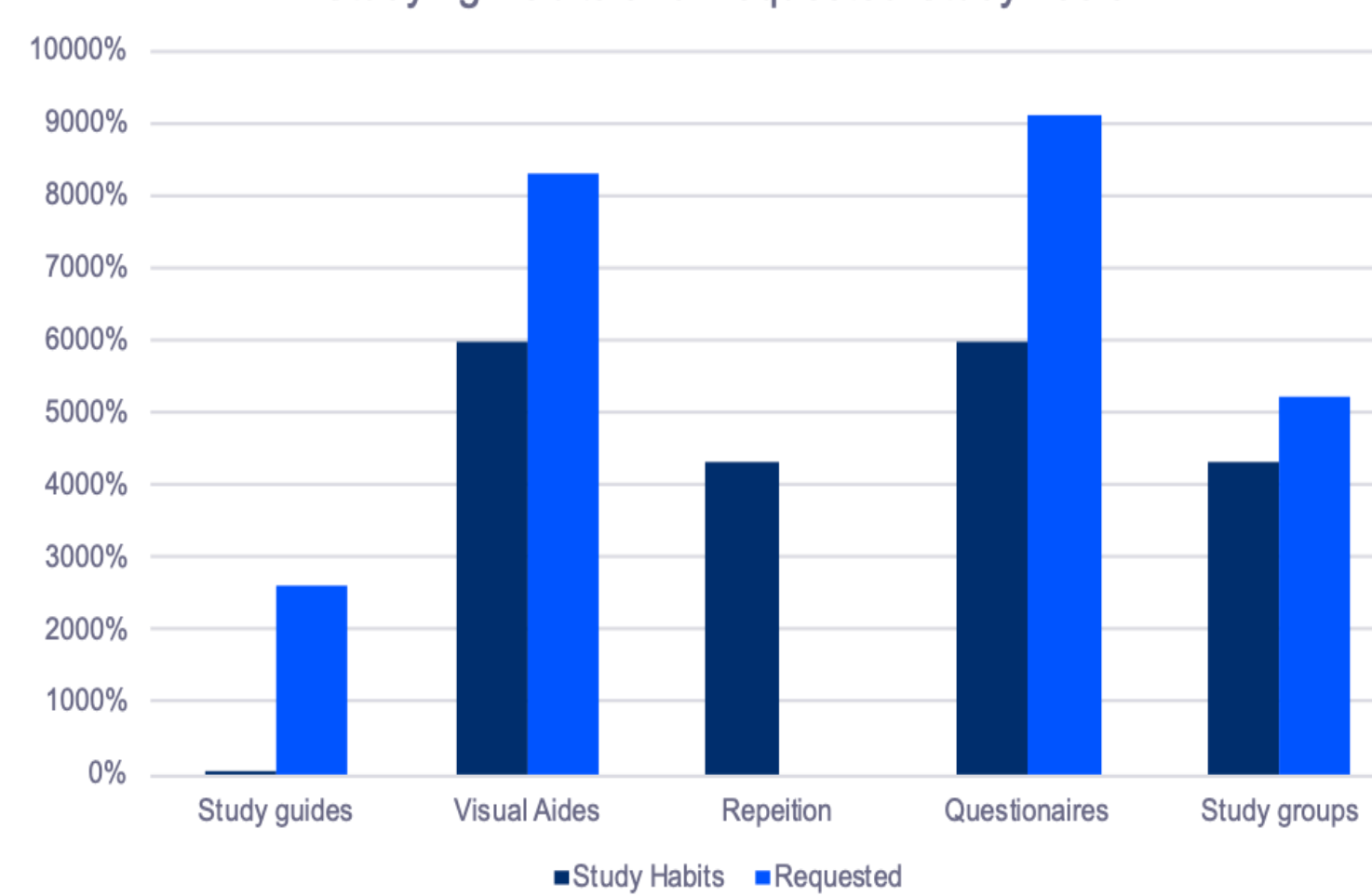

- Due to 95% of the class being visual learners, many of them used visual aids and questionnaires for studying prior to this class as well as requested these specific study tools.

- Results from Post-Instructional Survey
    - Received 16/23 student responses, with a response of 100% positive responses to study tools and 40% of those respondents specifically enjoyed the flashcards
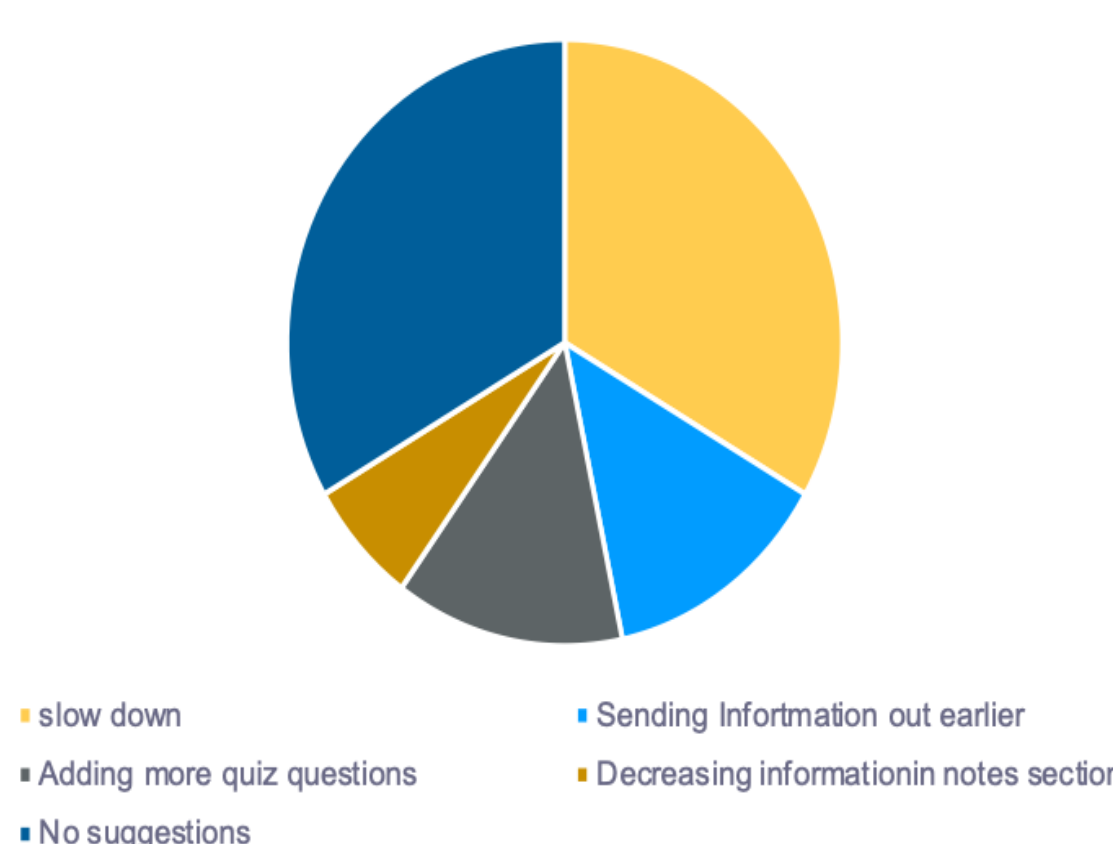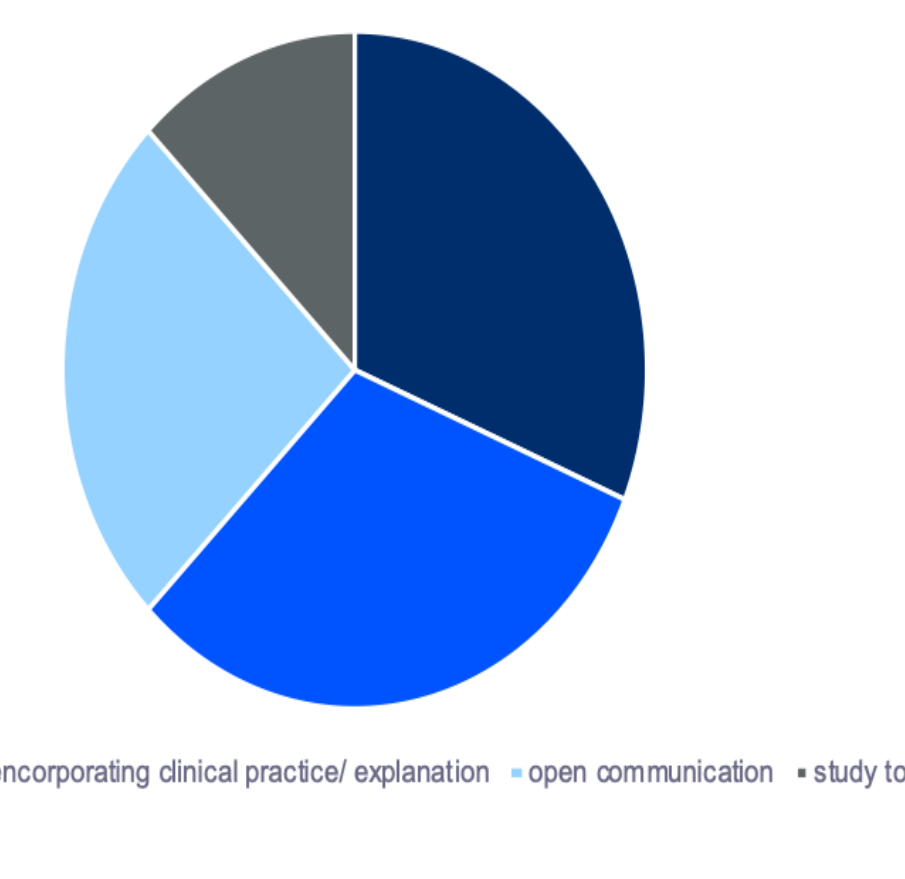
BOTTOM LINE FOR OT

- Due to the statics from the pre-instructional survey, the students specifically requested visual aids and questionnaires. Therefore, visual flashcards and visual study guides of the content were created for each unit throughout the anatomy course in order to facilitate visual learning for examinations. This is important for OT educators to incorporate into the classroom to facilitate learning.

- Prior to lab, there was pre-lab work in order to pilot a virtual human dissection for OTD 340 Lab. The student's response to these studying tactics was very positive and effective. The post-instructional survey results indicated appreciating the visual resources as well as including clinical experience into lab/lecture content, providing examples and mnemonics, and organization. The one suggestion to make for future education included slowing down during delivery of lecture/lab content. Incorporating pre and post surveys into classes will allow for educators to reflect on teaching strategies as well as make necessary changes to teaching curriculum.

- Bottom line for occupational therapy educators is to provide visual aids, guides, and physical demonstrations in order to facilitate learning in all OT courses and specifically for OTD 339 and OTD 340. In addition to these study tools, utilizing innovative technology such as the VHD is also very beneficial for learning. Utilizing technology can assist with off-campus learning, self-directed learning, and of course visual learning. As well as being open-minded to feedback through surveys.

REFERENCES

Fleming-Castaldy, R. P. (2019). National occupational therapist certification exam review & study guide (9th ed.). Evanston, IL: TherapyEd.

Mustafa, Ayman, Allouh, Mohammed, Mustafa, Intisar, & Hoja, Ibrahim. (2013). Anatomy learning styles and strategies among Jordanian and Malaysian medical students: The impact of culture on learning anatomy. Surgical and Radiologic Anatomy, 35(5), 435-441.

Majic, T., Gutzmann, H., Heinz, A., Lang, U. E., & Rapp, M. A. (2013). Animal-assisted therapy and agitation and depression in nursing home residents with dementia: A matched case-control trial. American Journal of Geriatric Psychiatry, 21(11), 1052–1059.

Bibbo, J. (2013). Staff members' perceptions of an animal-assisted activity. Oncology Nursing Forum, 40(4), 320–326. http://dx.doi.org/10.1188/ 13.ONF.E320-E326

Jessica Kersey, Shannon B. Juengst, Elizabeth Skidmore; Effect of strategy training on self-awareness of deficits after stroke. Am J Occup Ther 2019;73(3):7303345020p1-7303345020p7. doi: 10.5014/ajot.2019.031450.

Touch of Life Technologies Inc. (2020). VH Dissector for Medical Education. Retrieved April 27, 2020, from https://www.toltech.net/anatomy-software/solutions/vh-dissector-for-medical-education