

Reciprocal Peer Teaching during Anatomy dissection at CUHAS: A one Year experience

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What's RPT?

- RPT is a teaching method where students alternate roles as teacher and student
 - Its based on the philosophy that 'those who teach learn'
 - Based on the fact that the process of teaching others results in a 90% retention rate of material, compared to 5% lecture, 10% reading, 50% discussion [Eyler & Giles]

Current anatomy teaching

- Anatomy in most medical schools is still taught through didactic lectures and complete dissection of the human body
 - Usually offered at the beginning of medical education to provide a basis for clinical training and practice
- Cadaver dissection is still the core to anatomy teaching
- Dissection of the human cadaver
 - Teaches a multidimensional understanding of the organization of human body
 - Train students in spatial appreciation and orientation and in the use of instruments
 - Small dissection groups force early effective communication among students, engage in cooperative interaction, and utilize self-directed and self-learning

Cadaver Dissection at CUHAS

- Conducted by students divided into groups of 10-20 depending on the size of the class and the number of cadavers available.
- Students are given a schedule of dissection to be accomplished at specified times.
- Dissect with the guidance of a dissection manual.
- Faculty are around during the dissection sessions to
 - Assist in dissections
 - Demonstrate on the clinically important parts
 - Explain the difficult concepts



- Use of cadavers in human anatomy teaching requires adequate number of anatomy instructors
 - who can provide close supervision to students
- Most medical schools in Tz are facing several challenges including
 - Increase in the number of student's intake
 - Shortage of qualified anatomists
- These challenges are affecting the quality of anatomy teaching and potentially the quality of medical doctors
- Additional innovative ways are needed in the current traditional teacher-oriented training system to
 - Address these challenges
 - Improve student's learning

Why RPT?

- RPT have been shown to
 - Improve knowledge and performance in anatomy
 - Increase the collaboration among class peers
 - Improve student's communication skills
 - Improve the effectiveness of their oral presentations
 - *Helps to adress the challenge of shortage of anatomy faculty during dissection sessions*
- The active involvement of students in teaching prepares students to be continual and independent self-learners throughout their professional careers.

Methods

- RPT was introduced to MD1 students in 2014/15 academic year during the 2nd half of 1st semester
- RPT was conducted as follows:
 - All students attended a focused lecture on a specific region before dissecting that region
 - 2 students from each table were chosen randomly with daily rotation to dissect as well as teach the peers of the same table simultaneously under the observation of anatomy faculty.
 - Primary dissectors were taught by anatomy faculty for 45minutes prior to the actual dissection with the help of computerized teaching modules and prosections

- Peer learners participated actively by observing the dissection process and asking questions/ clarifications to the primary dissectors
- 75% of the two hours allocated for dissection was a peer-led dissection
- 25% was used by teachers to clarify remaining doubts from students.
- A schedule was prepared to ensure that each student served in alternating roles as a “primary dissector” and a “peer learner.”



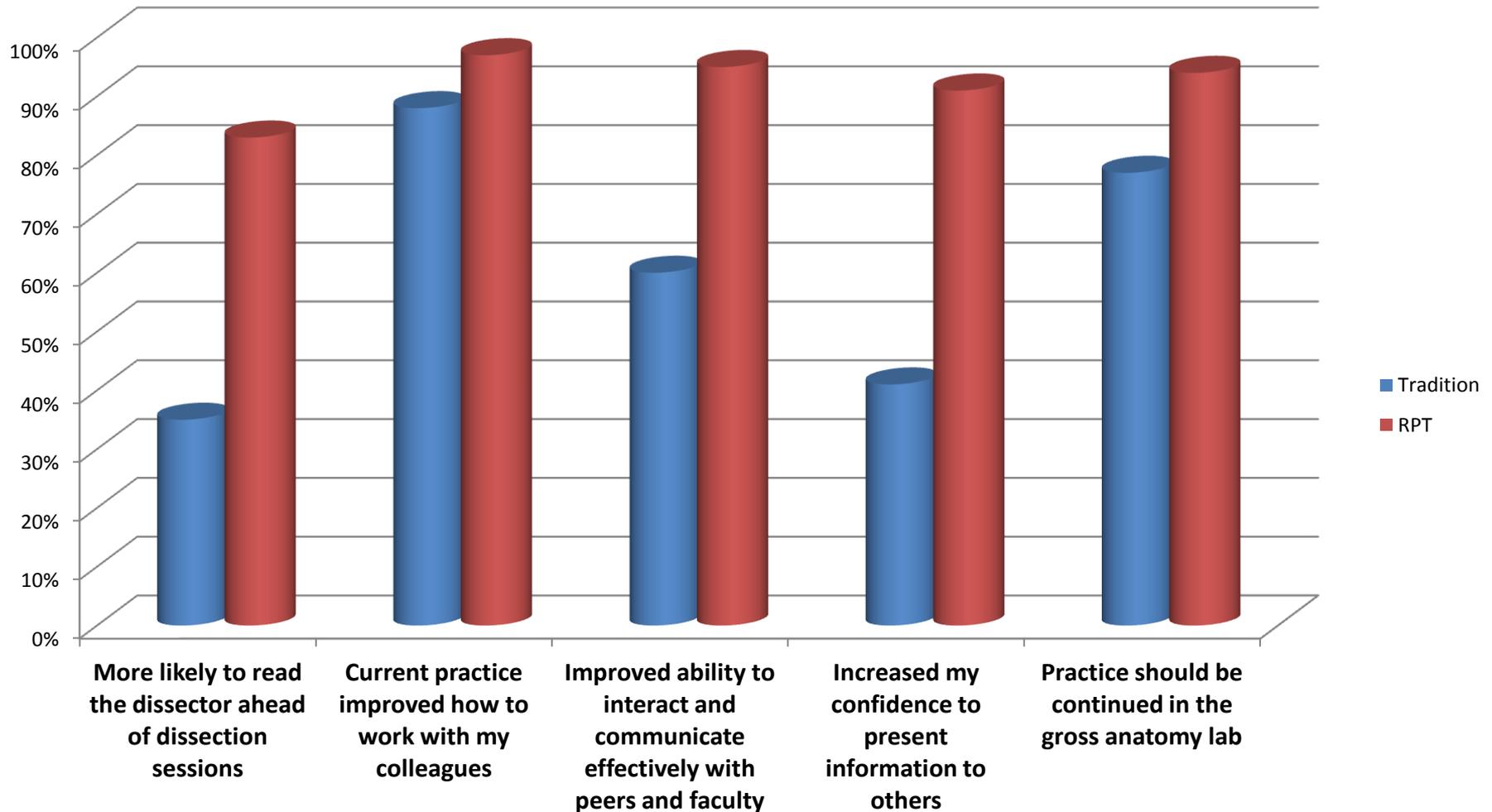
Data collection

- Debriefing questionnaire surveys were administered to determine impacts of both RPT & Traditional teaching on
 - **Student's knowledge**, **Professionalism** and **Communication skills**
- Student scores on 2 exams done before introduction of RPT vs scores on 2 exams done after introduction of RPT
- Comparison of scores of students participating in the RPT-based anatomy program with the four previous classes taught in a traditional manner
- Faculty used an observational tool to score student's conduct and teaching skills
- Data were managed using Microsoft Excel spreadsheet and analysis was done using STATA version 12

Results

Student Opinion on Tradition & RPT methods

- 148 (65%) of students completed the survey



Student Opinion on RPT

<p>The effect of Reciprocal Peer Teaching on my gross anatomy education was:</p>	<p>51% Strongly positive 37% Mildly positive 11% Neutral 1% Mildly negative 0% Strongly negative</p>
<p>In your opinion, what is the greatest benefit of Reciprocal Peer Teaching (RPT)?</p>	<p>59% Enhanced learning of anatomy 10% More efficient use of time 26% Experience of teaching peers 1% There are no benefits of RPT 4% Other, please specify (builds confidence)</p>
<p>In your opinion, what is the greatest drawback of Reciprocal Peer Teaching?</p>	<p>25% Not enough time in the lab 48% Too few opportunities to actively dissect 7% Did not receive adequate teaching from Peers 8% There are no drawbacks of RPT 12% Other (Too many people in one group, Inadequate teaching facilities)</p>
<p>Do you have any comments related specifically to Reciprocal Peer Teaching in the anatomy lab?</p>	<p>1. Every student should have an opportunity to play both roles 2. RPT should be maintained at CUHAS 3. Dissection groups should be smaller for easy teaching & understanding</p>

Mean score obtained with & without RPT (same class)

Class (n)	Mean Score	Std deviation	p value
With RPT (227)	63.7	11.4	< 0.0001
Without RPT (227)	58.6	10.8	

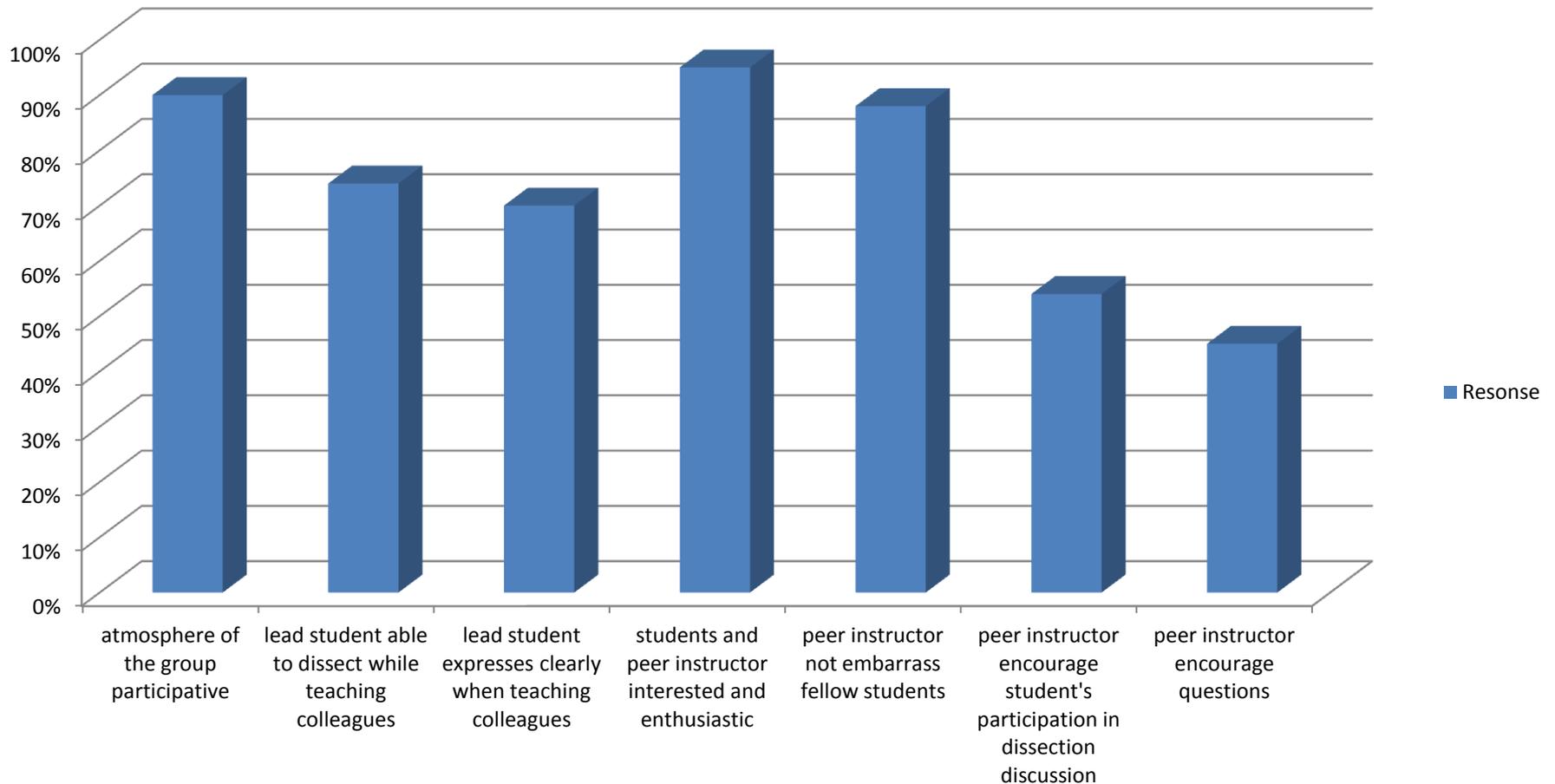
Differences between scores of classes educated with and without RPT

Academic Year	Number of students	Mean score
2010/11	162	59
2011/12	155	56
2012/13	155	54
2013/14	175	54
2014/15	227	56

- Chi-square showed that there is statistical significant difference in student grades in different years 2010 to 2015 (p-value < 0.0002].
- Students in academic year 2010/11 performed better than students from other years.

Faculty feedback

Resonse



Conclusion

- Majority of our student
 - Had positive experiences with RPT, and that they believe it should continue for future classes.
 - Increased collaboration among same class peers
 - Felt that RPT improved student's communication skills.
- Pre-lab sessions (focused instruction and interactive demonstrations) lead to greatly reduced student-to-instructor ratio

- Students experienced a formal introduction to medically related peer teaching, gaining confidence and skills that they can apply throughout their careers.

Future dissection practice

- Continue RPT practice
- Continue to evaluate RPT protocol and make modifications based on student feedback and available resources

Limitations

- Our initial plan for RPT implementation was to have
 - Tablets loaded with anatomical images to supplement anatomical atlases (hard copies)
 - Plastinated dissected regions/parts of the body to be used during pre-lab sessions
- *These could not be possible however b'se of procurement delays*

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